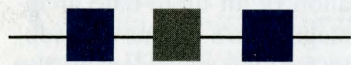


IEEE life members newsletter



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A Voice for 26,000 Life Members

Luis T. Gandia, Chair, IEEE Life Members Committee

Life-members@ieee.org

As I was thinking about a suitable greeting for this article, I found this quote by Winston Churchill: "We make a living by what we get, but we make a life by what we give."

There are over 26,000 Life Members (LMs), and I believe we have been very fortunate to make a living by developing the technologies that have improved lives throughout the world. I feel that the public may have underappreciated our efforts, which is why I'm glad that the IEEE has launched a public visibility initiative. The goal of this initiative is to increase the visibility of the IEEE and promote public understanding of how engineering, computing, and technology benefit humanity.

I would encourage you to view the "IEEE: One Voice" video, which was made as part of the larger IEEE Public Visibility Initiative. This video aims to make those in the technology community proud to be part of the IEEE and to encourage those who are not affiliated with the IEEE to feel good about the contributions of technology to society. The video is available on the IEEE Web site, at http://www.ieee.org/go/brand_videos.

Daytona Section—Small Radio Telescope. In keeping with the theme of the quote by Winston Churchill, I would like to comment on the efforts of the IEEE Daytona Section LM Affinity Group. In February 2009, the Life Members Committee (LMC) members and Regional Life Members Coordinators visited the Daytona Section in Daytona, Florida, USA. We had the pleasure of meeting with the volunteers who are giving back to the community by constructing a small radio telescope (SRT) with funds donated by the IEEE Life Members Fund (LMF). The telescope has been constructed and will be placed in the Museum of Arts & Sciences in Daytona Beach. It is expected that approximately 8,000 students

and 12,000 adults will view the telescope as part of the museum's planetarium program. Once operational, the SRT will be used to conduct radio astronomy experiments and as a teaching tool for students and adults in the Daytona area. I congratulate the Daytona Section LM Affinity Group for their hard work and hope that their efforts will be an example for other LM affinity groups.

Grants Awards by the IEEE LMC.

We are very fortunate that IEEE LMs continue to contribute to the IEEE LMF. Thank you for your continued support. The LMF/LMC grant proposal submission process has been consolidated with the IEEE Foundation process. This ensures that more proposals of a greater variety are submitted to the LMC for consideration. During our February meeting, the LMC approved five grant requests, totaling over US\$42,000. Please see the article on page 2 for more information.

LM Technology Travel/Tours.

The LMC feels that IEEE LMs would be interested in participating in an IEEE-sponsored travel program. Each tour will focus on an IEEE historical milestone or similar attraction of interest to IEEE LMs. We are currently working on a Panama Canal tour. I would like to thank Ted Bickart, LMC member, for his efforts in organizing and developing this program. Please see his article on page 2 for more information.

LM Affinity Groups. The LMC has an ongoing effort to establish LM affinity groups to encourage LMs to take an active part in local IEEE Sections. A total of 57 groups have been formed. I would like to specifically congratulate the following Sections for forming an LM affinity group in 2009:

Region 1 – New Hampshire Section

Region 3 – Orlando Section

Region 6 – Los Alamos/Northern New Mexico Section.



Celebrating 125 Years
of Engineering the Future

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Life Members Committee Grants Awarded

The Life Members Committee (LMC) is pleased to announce its support for the programs in the following areas of interest:

Students or Young Professionals

- **IEEE/EESTEC Robotics Workshop:** The LMC agreed to provide US\$4,523 to support a robotics workshop organized by IEEE Student Branches and ESTEC (Electrical Engineering Students' European Association).
- **IEEE Student Branch iPhone GPS Robot:** The LMC agreed to provide US\$4,000 to the Wentworth Institute of Technology Student Branch to develop a robot that has capabilities that could be extended for security, investigation, and protection purposes. The robot will be controlled by an iPhone's accelerometer.

History

- **Improved Historical Record of the Magnetron:** The LMC agreed to provide US\$12,000 to support a two-day international conference on the evolution of the

Magnetron, to be held in April 2010. The goals of the conference include the creation of an up-to-date archival historical record of the Magnetron's origins and subsequent developments. The funding provided by the Life Members Fund (LMF) will support speaker invitations and student attendance.

IEEE Life Members

- **Earthzine – IEEE Voice of Sustainability:** The LMC agreed to provide US\$22,100 to support *Earthzine*, an Internet-based IEEE Webzine focused on the societal benefits of Earth information. *Earthzine* is directed at, and benefits, the general public by informing on engineering contributions to society in a practical, day-to-day way. This proposal is to develop a sustainable funding model for *Earthzine* through expanding *Earthzine* readership.

Future editions of the *IEEE Life Members Newsletter* will include updates/progress reports on the projects supported by the IEEE LMF.

IEEE Technical Tour to Cruise Panama Canal in 2010

The IEEE History Center's Milestones celebrate technological breakthroughs or turning points around which the Life Member Committee (LMC) intends to organize a number of technology themed tours. These IEEE Technical Tours could complement some of the video technical tours that have been developed for www.ieee.tv. The first of the LMC's IEEE Tech Tours will be of the Panama Canal in the middle of February 2010. The Milestone, in this instance, is of the Panama Canal Electrical and Control Installations of 1914. The dedication was held on 4 April 2003 under the auspices of the Panama Section. The lead paragraph from the commentary on the award, copied from the IEEE History Center Web site, is provided in the sidebar.

The tour will start with a partial (or, possibly, complete) transit of the canal from the Pacific toward (or to) the Atlantic, returning by bus. The next day will be dedicated to a special technology-oriented tour and presentation at the Panama Canal Visitors Center adjacent to the Miraflores Locks and to the power and control facilities for these locks that were the basis for the IEEE's designation of the Panama Canal as a History Milestone.

During the second day, the participants will view a presentation at the CATHALAC research, learning, and technology transfer center to learn about its efforts with respect to water resources in Latin America and the Caribbean. CATHALAC seeks to benefit the establishment of sustainable agriculture, preservation of natural habitats, and preparation for natural, often catastrophic, events. (To learn more about this organization committed to science, education, and policy for people, see www.cathalac.org.)

The third day will be spent touring the three cities now enveloped by Panama City—Old Panama from the days of the conquistadores (1500s), Casco Viejo from the days of the pirates who destroyed Old Panama (1800s), and the new and cosmopolitan City of Panama. This tour will include stops at museums and historic buildings, such as the Panama Canal Museum and the National Theater, and at traditional markets, including produce, arts and crafts, and

The Panama Canal project included one of the largest and most important electrical installations in the world, early in the 20th century. The use of 1,022 electric motors with an installed capacity of 28,290 horsepower largely replaced the commonly used steam and water powered equipment. Reliability and safety were also engineered into the innovative electrical control system, enabling remote lock operation from a central location.

souvenirs. Lunch will be enjoyed in a typical Panamanian restaurant and dinner will be held at another restaurant featuring local cuisine and culture.

Days four through six are currently in the planning stage and will likely include a boat trip into the tropical rain forest to the native Embera Indian Village to experience their culture. En route to or from this excursion will be a stop at the botanical gardens and the zoo.

The fifth day will include a choice of activities such as visits to galleries, museums, historic sites, and shopping. Later, an evening at a traditional restaurant with entertainment will be organized.

The morning into early afternoon of the sixth day is comprised of an excursion into the rain forest by canoe or may be spent on a Gatun Lake island. Sometime in mid-afternoon, the group will arrive at the Gamboa Rainforest Resort for an Aerial Tram ride over the rainforest and/or a climb into the rainforest canopy.

Stay alert for the announcement of the tour. As you might imagine, the size of the tour group will be limited by the size of the group that the Panama Canal Authority can accommodate at their facilities. So, make a reservation early to experience the history of the Panama Canal and the life of Panama. If you have any questions or comments on the proposed LM Technical Tour program, please e-mail LM-Tours@ieee.org.

Expanding the Global History Network

Under the guidance of the IEEE History Committee, the IEEE History Center staff has developed the IEEE Global History Network (GHN). The GHN provides the premier global network of the history of IEEE-related technologies, professions, and industries and supports the mission of the IEEE's historical activities to enhance the preservation, research, and dissemination of information about the history of electrical and informational sciences and technologies.

The GHN continues to integrate existing IEEE history resources with the capabilities of the Web for collab-

oration. A wiki-based environment enables individuals to share their experiences in "fostering technological innovation and excellence for the benefit of humanity." There are four major capabilities for IEEE Members to participate in the GHN:

- share their experiences as an individual
- share their experiences as a member of a group in a corporation or organization (including IEEE organizational units)
- share information about a particular technological innovation, products, or service

- share comments on the GHN entries provided by others
- store and share other historical resources, e.g., archival material from IEEE's organizational units, corporate R&D labs, and design units.

The wiki functionality allows members to find value and enjoyment in participating, while the resulting content increases the public's awareness and understanding of the role of engineering and technology, and of the IEEE, in the improvement of the quality of life for people throughout the world.

Congratulations to the Outstanding Life Member Affinity Groups

The IEEE Life Members Committee (LMC) is pleased to announce the inaugural list of Outstanding Life Member (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 Life Members Fund (LMF) in 2008.

As a total, the groups noted below conducted 76 events, with more than 630 participants and members within their Sections contributing more than US\$28,500.

Region	Section	Chair of LM Group
1	Boston	Edward Altshuler
1	New York	E. Elvove
4	Cedar Rapids	M.F. Wilson
5	Dallas	B.T. Vincent
5	New Orleans	J.F. Malm
5	Oklahoma City	Joe Watson
6	Buenaventura	Jerry E Knotts
7	Kingston	Vilayil John
8	United Kingdom and the Republic of Ireland	Roland J. Saam
9	Chile	Agustin Leon
9	Colombia	Alfonso Perez-Gama
9	Puerto Rico and the Caribbean	F.L. Perez-Bracetti
9	South Brazil	Jose Roberto Lacerda
10	Bombay	Pravin B. Parikh

The LMC believes that keeping LMs *active* and *engaged* is a key component to the success of the IEEE in local IEEE activities. This engagement can be conducted through the local Section and/or Technical Chapter but the LMC believes that it 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 2008, IEEE LM Affinity Groups conducted over 150 events, which included more than 4,000 participants.

Future issues of the *IEEE Life Members Newsletter* will highlight specific activities of Outstanding LM Affinity Groups. The IEEE LMC would like to congratulate each Outstanding LM Affinity Group for its efforts.

IEEE Foundation Renames Planned Giving Donor Recognition Group

The IEEE Foundation is pleased to announce that, effective in 2009, the Goldsmith League will now be known as the *IEEE Goldsmith Legacy League*. The planned giving donor recognition group was renamed to make it more prominent and better affiliate the group to the IEEE. Members of the IEEE Goldsmith Legacy League are forever generous. They build for tomorrow by leaving legacy gifts to benefit future generations of engineers. Many members of the League have included a bequest in their wills or trust documents. Some have named the IEEE Foundation as beneficiary of a life insurance policy, retirement plan, or charitable remainder trust. Others have made outright gifts from their IRA during their lifetime.

The League is named for Alfred N. and Gertrude Goldsmith in recognition of their extraordinary commitment to the IEEE. During his lifetime, Alfred N. Goldsmith made a significant personal commitment to furthering the goals of the engineering profession. He was one of the founders of the Institute of Radio Engineers (IRE), a predecessor society of the IEEE, editor of the *Proceedings of the IRE* for 42 years, and a member of the IRE board for 51 years. He perpetuated his commitment to the profession after his death by providing a significant bequest to the IEEE Foundation through his estate. Gertrude honored her husband's legacy in the engineering community by leaving a generous portion of her estate to the IEEE Foundation. Together, Alfred N. and

Gertrude Goldsmith's philanthropic vision seeded the IEEE Foundation's ability to support the IEEE's mission.

As was in the past, members of the IEEE Goldsmith Legacy League will receive the IEEE *Foundation Focus* newsletter and are recognized annually in the Honor Roll of Donors. Going forward, the benefits offered to this special group have been expanded to include a keepsake coin, certificate of membership, invitation to attend the annual IEEE Honors Ceremony, recognition on the "Wall of Fame," and eligibility to receive personal estate and tax planning information. To join or learn how you can make a planned gift, contact the IEEE Development Office at +1 732 562 3860, or by e-mail at donate@ieee.org.

IEEE Foundation Announces New Humanitarian Technology Fund

The IEEE Foundation has established a new fund that will provide unique opportunities for engineers to make a difference to people all over the world, especially in developing areas.

The Humanitarian Technology Fund was created to support the development and application of innovative uses of technology for humanitarian causes and to support the IEEE's activities in working to benefit humanity. In regions of the world where technology is sparse and the need is not for high technology but for basic needs like clean water, power, and communication, the IEEE has an opportunity to serve people and improve their quality of life.

Through the awarding of grants, the Humanitarian Technology Fund supports projects that provide technological solutions to problems including health services, disaster relief, microfinancing, interactions with government, disaster relief, economic

development, clean water, energy, and communication. Grants may be awarded to IEEE units or outside organizations.

This fund is important in aiding in the transfer of technology to those who need it, and it has attracted the support of the IEEE president and two IEEE past presidents. The 1984 IEEE President and current IEEE Foundation President Richard (Dick) J. Gowen seeded the fund along with John R. Vig, IEEE president, and Lewis M. Terman, IEEE past president. Staff members have also contributed to the fund.

"This fund will give IEEE members the opportunity to receive funding to bring together industry and the needs of the developing world," said Gowen. "I was a proponent for the establishment of this fund recognizing that IEEE has a significant opportunity to assist and bring necessary technology to people in developing areas

and improve their existence, which is part of IEEE's mission."

"I am honored to be a founding contributor to this fund in celebration of the IEEE 125th anniversary," said Vig. "We hope the Humanitarian Technology Fund will inspire individuals and organizations to contribute to the fund and to develop innovative technologies that will benefit humanity, globally."

Reflecting the IEEE mission to foster technological innovation and excellence for the benefit of humanity, the Humanitarian Technology Fund is accepting donations for this purpose. To learn more or to contribute to the fund, visit ieeefoundation.org. Contributions to this fund will be dedicated to supporting humanitarian project grants awarded by the IEEE Foundation that use technology to improve the quality of human life. You may direct your questions to donate@ieee.org.

A Voice for 26,000 Life Members

continued from page 1

We have 115 sections with over 50 LMs. If your Section does not have an LM affinity group, I encourage you to take the steps to form one. Please visit the LMC Web page (<http://www.ieee.org/lmc>) for a complete list of LM affinity groups and for information on forming an affinity group in your local area.

LM Category and Retired Status. During the LMC meeting in February, the LMC discussed, but did not make any recommendation regarding, the change in the IEEE policy stating, "if you are an IEEE Life Member, you are not eligible to receive the discount associated with the

'retired' category." This policy includes Society dues and subscriptions to IEEE Society magazines and journals not covered under the basic Society dues or IEEE-Standards Association dues. As an LM, once you maintain membership in a Society for five or more years, you are eligible to maintain this membership without payment, but no discount will be offered on subscriptions not covered under the basic society dues.

I would like to close this article with a quote attributed to Norman Vincent Peale: "Live your life and forget your age." I wish you good health and happiness.

2008 IEEE Life Members Fund Donor Roll of Honor

The IEEE Life Members Committee acknowledges those IEEE members and other friends who generously contributed and designated their **2008 calendar year** donation to the **IEEE Life Members Fund**. We are fortunate to receive support from so many that we, unfortunately, cannot list them all. Each and every gift provides the resources the IEEE Life Members Committee needs to support philanthropic activities that encourage students and young electrical engineers to

pursue a career in engineering, investigate the history of electrical engineering, and represent the interests of IEEE Life Members or similarly mature members.

The IEEE Development Office makes every effort to ensure the accuracy of the listings in this report including proper acknowledgement of gifts and correct spelling. Please notify us of any errors by sending an email to donate@ieee.org or contact us by telephone at +1 732 562 5550.

Associate (US\$2,500 to US\$4,999)

Paul Baran, LF

Sponsor (US\$1,000 to US\$2,499)

Charles A. Eldon, LF
Penelope Foley
GE Foundation, Corporation
Theodore S. Saad, LF

Gold Advocate (US\$500 to US\$749)

Anonymous (1), LSM
Wallace E. Basco, LM
Richard D. Gitlin, LF
Yeichi Hayashi, LM
Choong-Ki Kim, LF
Richard W. Landon, LM
Howard E. Nichols, LM
Lorenzo L. Wong, LSM

Silver Advocate (US\$250 to US\$499)

Jordan J. Baruch, LF
Roger S. Boyd, LM
David Brooks, LM
Ray F. Campbell, LM
V.R. Canino, PE, LM
Michael W. Cresswell, Ph.D., LF
Bliss L. Diamond, LM
Kenneth P. Dixon, LM
Steve O. Dixon, LM
Luis Gandia, LSM
Philip W. Gorman, Jr., LM
Richard W. Grow, LF
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Dr. James S. Harris, Jr., LF
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Marko Jagodic, LM
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Bernard T. Marren, LM
Alex McCulloch
Joe L. Mumma, LSM
J. Muroga, LM
Allan D. Packler, LM
Harry E. Poe, LM
Robert W. Ramsey, Jr., LM
Richard G. Rhoda, LM
John D. Robbins, LSM
Roland Schwerdtfeger, LM
Kenneth D. Skjervem, LM
Hisanobu Sugano, LM
R.L. Sullivan, LF
Richard I. Tanaka, LF
Thomas L. Weaver, LF
William M. Webster, LF
Wayne L. Weigle, LM
Robert L. Werner, LSM
Thomas A. Williams, SM
Arthur W. Winston, LF

Bronze Advocate (US\$100 to US\$249)

Anonymous (1), LF
Anonymous (4), LSM
Anonymous (11), LM
Carlton J. Abbott, LM

M.E. Acar, LM
Herbert I. Ackerman, LM
Kenneth Acton, LM
Philip S. Adams, LM
A.W. Adkins, Jr., LSM
John S. Adler, LM
Michael S. Adler, LF
D. Adrian, LM
Cary J. Ahzano, LM
Ray E. Aker, LSM
Y. Akiyama, LM
Alessandro Q. Alberigi, LF
L.R. Albright, LM
Henry R. Aldag, LM
James F. Aldrich, LM
Winser E. Alexander, LSM
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Murray W. Allen, LM
William D. Allen, LM
Bipin C. Almaula, LM
Tuna A. Alper, LM
Robert A. Alpert, LM
Samuel P. Altman, LM
Seymour S. Altman, LM
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Takao Amano, LM
G.B. Amerault, Jr., LM
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Ross C. Anderson, LSM
Walter L. Anderson, LM
William E. Anderson, LSM
Juris K. Andreika, LM
Kenneth W. Andresen, LM
Frederick T. Andrews, Jr., LF

Stephen Angyal, LM
E. Aoki, LSM
Michael Aparc, LSM
Marc T. Apter, LSM
Katsuyuki Ara, LM
Jorge R. Arce, LSM
Robert F. Arehart, LSM
Desmond R. Armstrong, LM
Dale T. Arnold, LM
V. Arnold, LSM
Donald A. Ashford, LSM
J. Robert Ashley, LF
John R. Asmus, LSM
Theodore C. Asousa, LM
Antonio D. Asprer, LM
James L. Atchison, LM
Michael E. Austin, LSM
Rogelio M. Avenido, LM
Henry L. Bachman, LF
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Arthur B. Baggeroer, Ph.D., LF
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Munnu Bajpai, LSM
John A. Baka, LSM
C. Vincent Baker, LM
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Anastasia A. Balafas, LM
Frank J. Balash, LM
Dan Balfie, LM
T.R. Balfie, LM
John W. Ball, LM
Harold Balshem, LM

LM: Life Member, LSM: Life Senior Member, LF: Life Fellow, SM: Senior Member, M: Member, and GSM: Graduate Student Member

*Deceased

#2008 IEEE Life Member Committee Member

Coupler Guys and a Thalamus

I had the privilege of carpooling to the University of Toronto, where I was associate chair of the engineering science program, with my neighbor, Dr. Les Organ, of the Faculty of Medicine. His speciality involved research in electrophysiology as it applied to understanding its potential for the management of pain. This association led to my being introduced in 1973 to Dr. Ron Tasker, an eminent neurosurgeon and head of the Pain Clinic at Toronto General Hospital.

Dr. Tasker, assisted by Dr. Organ, was experimenting with treatment by stereotactic surgery for the control of involuntary movement as in Parkinson's and for the relief of intractable pain. This involved destroying plaques or producing with precision a lesion deep in the brain by RF electro-coagulation. At that time they employed a frustratingly slow, risky, and delayed two-stage technique for 3-D mapping of the patient's thalamus by a process of in situ electrostimulation and observation of the patient's responses. The entry through the skull and the stimulation session was performed on day one using a Leksell frame attached to

the patient's skull for spatial reference. The second stage of remedial surgery was performed the following day. In the interim, the patient's skull had to bear four stainless steel anchors and bandages covering the open bore holes while the surgical team labored at making precise maps of the patient's thalamus. I found this appalling and suggested that a computerized solution could be developed with the goal of accomplishing all of the data collection, analysis, and presentation as operative templates in one session.

With the assistance of one of my fourth-year students, Peter Hawrylshyn, a computer-based method was devised for obtaining an almost real-time 3-D map that could be employed immediately by the surgeon. During the stimulation session, Peter sat at my portable computer terminal in the operating room and input thalamus landmarks and patient responses through an acoustic telephone coupler, connected back to the main IBM System 370/165 computer center at the university. There the computer morphed a standardized atlas map of the thalamus along with observed

responses into the coordinate system of the patient, referenced to the surgical Leksell frame screwed to the patient's head. When the output maps appeared on the university's wide-bed plotter, complete with precisely located figurines depicting a variety of responses, a runner tore off the paper and raced back to the operating room, a distance of about a kilometer. The surgeon could then complete his task, confident that he was dealing with a very accurate, scaled depiction of the thalamus and its diseased areas in three dimensions. This may have been the first use of computer-assisted surgery in Toronto and resulted in a lot of publicity as well as publication in a leading journal of neurosurgery.

Thirty years later I was in Seattle and happened across a PBS portrayal of stereotactic surgery. The procedure was now routinely employed in primary care centers everywhere, aided by a whole new array of imaging techniques. There was not an acoustic coupler in sight.

Ian Rowe, Ph.D., LSM
Mount Hope, ON, Canada

Jarred Memory

Articles in the December 2008 *IEEE Life Members Newsletter* led me to recall similar incidents. For example, "How Not to Test a Pressure Vessel" led me to recollect an incident at Convairst, Fort Worth, Texas. In the summer of 1958, I was waiting for the bus to take me from the engineering offices on the hill to the radiation area, when a smoker threw his cigarette into the gutter. Grass clippings in the gutter started sputtering like a fuse. The guard standing there informed me that the dam between the water moderated reactor and a new dry area had been 150% proof tested with ammonium nitrate fertilizer. After testing the reactor pool integrity, several hundred pounds of the fertilizer (in the water) were applied to the grass around the Convairst buildings. And since the fertilizer was quite flammable the sprinkler system had to be on all the time.

Another time in 1958, Health Physics started collecting air samples using an aluminum-coated dirigible and used a small model engine with filter paper over the carburetor air intake. Unfortunately, the wind always blows in Fort Worth, and early on in the tests it blew the dirigible into our 13.5 KV power line. The balloon was punctured, and the helium spewing out wrapped the balloon around the line several times leading to a loss of power for some time.

The tale on highlighting shortcomings ("Flavor of the Weak") reminded me of a time in 1974 at the Sherman Texas Instruments plant where the drive voltage to the gas discharge display had to be reduced, which had the side effect of reducing the IC driver failure rate from 3% to .5%.

"Search and Destroyers" reminded me of a time in 1964 when I was doing semiconductor materials

research. It seems that a lab project to build and outfit a buoy to calibrate sonar accuracy was running behind schedule. I was drafted to breadboard (on a piece of plywood) the telemetry circuits running over the tow cable, since I had worked at Texas Instruments, which made transistors at the time. One coworker inquired if I would be asked to do brain surgery if I had worked at a hospital? At the time I thought, why not join (rejoin) the IEEE? I asked the electrical engineer that took the telemetry project over from me to sign my application. He replied, "No! I took over your project and you were incompetent." Later, a technician who made the boards told me that I had done an impressive and outstanding job. Go figure.

E.G. (Jerry) Bylander, LSM
Sherman, TX

Retro-Style Housing is for the Birds

In the early days of laser communication, we were setting up a laser over-the-air propagation experiment in Montreal at MPB Technologies, a spin off of RCA Research Labs. The purpose of the project was to run this experiment for a period of about six months, which would include winter, under all the possible weather conditions that Montreal could throw at us including all the nice snowstorms and harsh cold that we have learned to love. The laser links consisted of a CO₂ laser running at 10.6 μ and a He-Ne laser running at .6328 μ . Comparative attenuation constants at those two wavelengths could then be obtained along with statistical data. The actual link originated from our lab and ended at a retro-reflector installed on a weather radar tower at a McGill University campus. The total link had a length of about 1 km. The receivers were situated back at the lab.

While building the link we tried to anticipate all sorts of problems such as self calibration that would be consistent over the duration of the experiment, the effect of the sun on the retro-reflector, snow deposition, and

dew formation. We mounted the retro inside a metal tube to act as a baffle to protect from the direct rays of the sun, and we heated the tube chamber to keep the temperature above freezing and dew point. We actually started a few trial runs in the fall and went through the debugging phase and calibration procedure and were satisfied with our results.

One morning, however, looking over the result of the night's run, we were surprised to notice a strong attenuation at both wavelengths that started at about sunset and ended early in the morning before we got to work. We knew that the previous evening and night were uneventful in terms of the weather. Our first conclusion was that we had an equipment malfunction. We checked and rechecked and could not find anything wrong. We were afraid that it was one of those intermittent faults that are often difficult to pinpoint. We hoped that this was a one-time incident. Unfortunately, the next day we had a repeat performance. We knew that this time we had to find the cause. We installed a telescope to point at the retro-reflector and decid-

ed to stay in the lab that evening until the attenuation event that we now anticipated would start. At the same time, we would observe the retro through the telescope.

As the sun was setting, we noticed that birds were flying happily around the tower. What we did not anticipate was that some of the birds were going into the retro tube and were not coming out. With each bird docking into it, the attenuation was increasing in step. The mystery was solved. Come to think of it, what better way for a bird to spend the night than to cozy up in a heated tube when the temperature was falling at sunset in autumn. We came back next day early at sunrise to watch the reverse events taking place with the birds leaving their night hotel for a presumably busy bird day. Needless to say that we quickly solved the problem by installing a screen in front of the retro, with some regrets that it would leave the birds out in the cold!

Armand Waksberg, LSM
Montreal, Canada

Serendipity

From 1962 to 1963 I operated a field site on the island of Malta for the Stanford University Radioscience Laboratory. The project was under the direction of Dr. O.G. "Mike" Villard. We were analyzing HF (shortwave) radio propagation during the sunspot minimum and thus the project was called "Minispot Malta."

The (British) Royal Army had given us a space for our equipment in an old powder magazine at Fort Bingemma, which was built in 1875 as part of the Victoria Lines. A dry moat, cut into the native limestone, surrounded three sides of the fort. The fourth side was a cliff, part of the escarpment that crosses the island. Several abandoned gun emplacements were located along the cliff edge. The fort was then part of a Royal Army Signals "torn tape" teleprinter relay station. We had space for our HF beam antennas as well as a very effective sloping-V antenna that

dropped over the cliff edge down to a farmer's field. It was an excellent site for HF radio reception.

Our equipment consisted of a number of Collins 75S-1 HF receivers and a Sanborn-Ampex FM tape recorder. On Malta, ac power is 240 V, 50 Hz. We had a large 240-120 V transformer to operate our equipment. The power supply transformers tolerated the 50 Hz power, though some ran a bit hotter. The tape recorder deck was an Ampex 350 unit. The recorder was special ordered with a capstan diameter ground for 50 Hz, since the ac line frequency determined the tape motor speed.

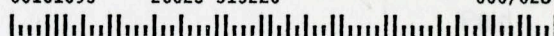
At the end of the project I, as well as all of the equipment, returned to Stanford. The Radioscience Lab had numerous projects that made use of this equipment pool. We needed the tape recorder, and I was requested to have it modified to operate on 60 Hz power. It took some time to find the proper department at Ampex that knew

anything about this type of deck. Ampex said that a new capstan would have to be made, and there would be a considerable cost as well as time in obtaining the part, as it was not a stocked part. The lady I was talking to said that a Mr. "Smith" in the engineering department might have more information on how long the part might take to be built.

I called Mr. Smith and described the problem. After looking up production times he commented that he might have a part that was removed from a deck several years earlier. He then looked in his desk drawer and pulled out a capstan unit. It was a 60 Hz capstan. The attached tag noted the serial number of the deck from which the part had been removed. It was our serial number! Mr. Smith said to come on over and he would give it to me, which he did.

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The *IEEE Life Members Newsletter* is distributed to Life Members and those who are not Life Members but are 1) IEEE members 65 years and older, 2) retired IEEE members aged 62–64, and 3) members of special boards and committees.

Submitting Articles

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 16 October 2009. Please include your Life grade, town, state, country, phone number, member number, and/or an e-mail address with your piece.

Stopping IEEE Services

Those Life Members who wish to have all services stopped should contact IEEE Member Services. If you are doing so at the request of someone else, submit the member's name, number, grade, address, change date and your connection, e.g., Section Chair.

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To qualify as a Life Member, an IEEE Member must be at least 65 years old, and the sum of the member's age and the number of years of paid membership effective the following January must equal or exceed 100 years.

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