



IEEE

Published by the Life Member Fund Committee

The Life Member Fund Newsletter

Fall/Winter 1987

A Note from the Chairman

We got your message. The bottom line in the survey results (pgs. 2 & 3), that we can and should assist young potential engineers. Students who one day will be the solid membership backbone of the Institute.

April 1987 saw a vitalized Life Member group (see page 6) at the New York City ELECTRO '87. The Wednesday luncheon was overflowing. The main speaker, Dr. Fred Sterzer of RCA (Princeton, New Jersey), gave an inspiring talk on microwave treatment, actual and prospective, for cancer with video and slide presentations.

Many thanks to every single contributor to the Life Member Fund; and to all who vigorously support Section, Regional and Institute activities. I personally continue to work actively for your interests. On behalf of the entire Life Member Fund Committee, best wishes to you during the holiday season.

William W. Terry, Chairman
1987 Life Member Fund Committee



Photo from IEEE brochure. The brochure was created to help Life members such as John Dietz, Alvin Smith and Al Markwardt inform students about amateur radio.

A Dream Dissolved

Back in 1955, great interest was expressed in efforts to locate, list, and preserve the historical equipment and literature of the electrical industry, "to promote interest in electrical engineering in the youth of America" (Sound familiar?). After about 10 months of organizing preliminaries, the Electrical Historical Foundation was established in August, 1956.

An editorial published in the March 28, 1955 issue of the Electrical World entitled "First an Inventory, Then a Museum" brought letters from manufacturers, museum officials, and others endorsing the idea, and several suggested sites for an electrical museum.

Over the years, many of the proponents for such an effort have passed away. Interest in the project declined; some artifacts were turned over to Robert A. Lincoln, curator of the Western Museum of Mining and Industry in Colorado Springs and to Edward M. Clark, who has his own museum in North Woodstock, New Hampshire. The funds of the Foundation, amounting to only \$569.13, were turned over to me in 1973, which I deposited in a savings bank.

Because little has been accomplished through the years, the dissolution of the Foundation and disposal of the funds was agreed upon. On October 30, 1987, a check made out to the IEEE Life Member Fund was given to Mr. Don Suppers, Secretary of the Life Member Fund Committee. Thus, the Electrical Historical Foundation is now dissolved and its \$1093 is part of the IEEE Life Member Fund.

Julian D. Tebo
Past Chairman
Life Member Fund Committee

Care to Contribute?

If you would like to make a donation to the Life Member Fund (LMF), it would be greatly appreciated! The check should be made out to: IEEE Life Member Fund, P.O. Box 811, Somerset, N.J. 08875-0800.

What do your dollars support? Well, the money assists projects such as the Amateur Radio project and the Student Papers Contest. And at the October 1987 meeting, keeping in mind your responses to the survey, the LMF Committee voted to support the Medal for Engineering Excellence and the Hertz Centennial Exhibits Catalog which documents Hertz's discovery process step by step.

Life Member Fund Survey Results

Thank you, thank you and thank you for your tremendous response on the Life Member Fund Survey mailed last spring. We were hoping to receive 1,000 replies but tabulated 2,422 questionnaires instead! The numbers are posted on page four.

Helping our young, in particular our engineers of tomorrow, received overwhelming support. Also, the sentiments of W.F. Witzig, who said in the preliminary survey, "Use us!" came out strongly in the comments and in the voting. Promoting engineering and technology, in general, to our youth through local programs using Life members was stressed. Financing history projects covering the past 50 years, and again using Life members to develop history projects received high marks. As did projects utilizing the talents of older engineers to help society. And emphasis was placed on enhancing the professional image of electrical engineers.

Guidelines are being drawn up by the Life Member Fund Committee based on these results. And at the October meeting proposals were reviewed with your opinions in mind. For instance, the IEEE Education Medal will continue to be supported by the Life Member Fund.

Also, the many comments received added depth to the survey responses. They affirmed the answers given, added perspective, and offered new ideas to consider. These nine points came up over and over again (not listed in any particular order):

- 1) Help educate the young, and promote student interest in engineering.
- 2) Provide *factual* history.
- 3) Encourage societies to provide conference discounts to Life Members.
- 4) Don't forget about helping people in non-US regions.
- 5) Give awards to deserving people who usually go unrecognized.
- 6) Let Life Members use IEEE's "clout" to back their local project endeavors.
- 7) Publish in Life Member Fund Newsletter the groups that could use Life Members' assistance locally.
- 8) Life Members can help IEEE Members make the transition from corporate life to retirement.
- 9) Do a few projects extremely well. Don't spread the Life Member Fund too thin.

A small sampling of comments received:

"Any activity that removes the impression that science is tough and encourages young people to study science and mathematics should be pursued."

Ruth A. King

"The younger the children are that we help, the higher the number of children we interest in engineering."

Robert Fitzgerald

"My interest in things 'electrical' began at about age 11 when a friend of my family gave me a one tube regenerative receiver, a step above my crystal set."

Barton S. Pulling

"Build interest in Electrical Engineering among young children with Life Member Fund sponsored programs. Provide local Life Members with materials to be used in an organized presentation."

Richard N. Sweetland

"Just once, I would like to read a factual/honest history where a member would admit he had a fancy title for years but actually did very little—just keeping bosses happy with soft-soap, etc. (I realize I'm a dreamer of course. You rarely move up by telling the actual facts in straight forward language. I've managed a few projects where none of us knew what we were suppose to accomplish.)"

William C. Urlovic

"I do not support awards—most have gone to people working to get an award."

Robert B. Adams

"Some members seem to collect awards frequently. Whereas, many other deserving members are overlooked."

Charles J. Marshall

"When the Life Member Fund was established, I was hopeful that it would take an exciting direction. I'm still hopeful, but, it doesn't seem to be taking an impelling direction. Thanks for trying."

Charles W. Miller

The Tally

	Number of Responses with these Point Values					Total Point Value
	0	1	2	3	4	
1. Generally, the Life Member Fund should be used to benefit:						
1.1 General Public	1561	508	189	79	85	1463
1.2 IEEE Members in General	769	401	686	408	158	3629
1.3 Young Engineers and Potential Engineers	339	141	494	549	899	6372
1.4 Life Members, Other Mature Members/Engineers	532	228	577	495	590	5227
1.5 Other	2308	31	22	28	33	291
2. To promote education, the Life Member Fund should sponsor:						
2.1 Graduate Fellowships	1065	325	447	322	263	3237
2.2 Undergraduate Scholarships	581	267	495	537	542	5036
2.3 High School Awards for Students 15-18 years old	463	150	656	582	571	5492
2.4 Jr. High School Awards/Activities for Students 12-14 years old	861	437	522	425	177	3464
2.5 Elementary School Activities for Students 9-11 years old	1452	418	311	118	123	1886
2.6 Other	2351	11	17	6	37	211
3. In electrical history, Life Member Fund should go to:						
3.1 Projects Covering Recent History (Past 50 Years)	513	210	601	565	533	5239
3.2 History Projects Undertaken by LM	635	232	602	593	360	4655
3.3 Collection & Transcription of Oral Histories of LM	905	388	586	365	178	3367
3.4 Traveling Exhibits	1120	507	423	221	151	2620
3.5 Other	2326	18	18	18	42	276
4. Regarding awards and prizes, the Life Member Fund should contribute to:						
4.1 Any or All Existing IEEE Awards	1414	385	317	163	143	2080
4.2 New Awards for Outstanding Achievement in Electrical Engineering	938	307	470	404	303	3671
4.3 The IEEE Education Medal	742	210	404	469	597	4813
4.4 Awards for Work in Electrical History	888	395	575	408	156	3393
4.5 Awards for Achievement After Attaining IEEE LM	872	293	497	426	334	3901
4.6 Other	2361	9	23	6	23	165
5. Other project areas the Life Member Fund should support:						
5.1 Expansion of the LM Fund Newsletter with an Eventual Goal of being a Quarterly Magazine	1150	341	374	291	266	3026
5.2 Economic and Sociological Studies Directed to the Status, Welfare or Usefulness of Older Engineers	913	284	488	429	308	3779
5.3 Technology and Research Benefitting Older Engineers/People	984	256	514	468	200	3488
5.4 Projects Dealing With Concerns of Older Engineers/People	1037	292	499	423	171	3243
5.5 Projects Utilizing the Talents of Older Engineers to Help Society	653	168	473	583	545	5043
5.6 Projects That Enhance the Professional Image of Electrical Engineers	931	250	486	416	339	3826
5.7 Expansion of the Life Member Directory to Include Obituary List	1490	400	305	143	84	1775
5.8 Publication of an Annual Detailed Obituary Book of Life Fellows	1808	353	168	54	39	1007
5.9 Support for a National Lectureship by 1 or 2 LM	1498	328	355	163	78	1839

Computer bulletin boards

Computer bulletin boards are in a sense very much like the old-fashioned neighborhood cork-board. They, too, are used to post public messages listing items for sale, items wanted, and general announcements—but there the similarity stops.

Computer bulletin boards post messages on floppy disks. You access a bulletin board by calling it on the telephone, and use your personal computer as a terminal to display the messages on the bulletin board.

There are three basic types of electronic bulletin boards in operation: 1) specialty boards, 2) general public access boards, and 3) national commercial bulletin board systems. Specialty boards usually concentrate on one or more related topics, such as a particular computer type, (e.g., the IBM PC), or a specific operating system (e.g., CP/M), and are normally supported by the active users of the bulletin board. General public access boards, on the other hand, typically cover a much greater variety of subject matters, and are usually available to anyone who is willing to pay the phone charge involved when logging on. The third class of bulletin boards are the national systems. CompuServe®, for example, has about 250,000 subscribers, who pay an hourly connect fee for the use of its services.

Getting Started

Three components are required to become a bulletin board user. The first component is a personal computer.

The second hardware component is a modem. A modem converts sequential binary data logic levels into audio frequency modulated tones which can be transmitted over ordinary telephone lines; it also converts the audio tones from the telephone link back into sequential digital data which can be used by a computer. Modems are used at both ends of the telephone link.

Most modems operate at data rates of either 300 baud (bits per second) or 1200 baud—rates which are equivalent to 30 and 120 characters per second, respectively.

A 300-baud modem can be purchased for less than \$100, while the 120-baud modems are typically \$300-\$400. External modems are generally interfaced to a computer through a serial RS232 port, while internal modems are plugged directly into the computer motherboard. You connect the modem directly to the telephone line, as you would a standard modular telephone.

Your final requirement is a telecommunications program. Naturally, the program you choose must be written to support your computer and modem.

Two popular programs for the IBM PC and compatibles are Kermit and PC Talk. Kermit is available in the public domain at no cost, while PC Talk is a "shareware" product distributed by many computer clubs and bulletin boards. The best way to locate a communications program for your computer is to talk with members of a computer club or seek the assistance of a local computer store.

Most public bulletin board systems allow new users to log in for free and assign themselves their own passwords; but frequently restrict new user privileges until they are validated as full users. Specialized bulletin boards, such as those operated by computer clubs, typically require that you be a club member in order to receive full use privileges. Commercial bulletin boards, such as CompuServe normally require that you purchase a "Starter Kit," which includes an assigned user number and password, plus time credit toward your first few hours of operation.

Since many of the popular bulletin boards are in use 24 hours a day, telephone lines are frequently busy serving other users. That's when a computer

with an auto-dial modem is indispensable. Many communications programs support a feature which will automatically re-dial a telephone number until a connection is made.

Software

Public domain software costs only the price of a phone call to a bulletin board. "Shareware" authors suggest that users donate a nominal fee, usually between \$5 and \$75, if they like and use a program.

Once you have located a program you wish to try, you will want to transfer a copy of the software from the bulletin board system to your local computer. This process is called downloading.

A file transfer program is run at both ends. To ensure that the data is received correctly, bulletin board developers have established a standard file transmission protocol in order to render the downloading process error-free. The most popular of these are Xmodem and Kermit.

The Xmodem protocol splits a file into many 128-byte blocks. Each block also includes additional error-checking information. The error check is either a simple 8-bit check-sum or a two-byte CRC (cyclic redundancy check).

Before the block is transmitted over the telephone line, a CRC value is computed from the bytes in the transmitted block. A CRC value is also computed at the received end (your computer) after the block is received. If the two CRCs agree, then one can say with a high degree of confidence that the data has been received correctly, and an acknowledgement (ACK) is sent back over.

If, however, the two CRCs differ, then a negative acknowledge (NAK) is sent back to the sender. The block is retransmitted until correctly received or a predetermined number of re-tries is exceeded. It is essential that both ends of the download process speak the same protocol.

Bulletin board users are encouraged to contribute to the software databases by uploading any programs they have created. No matter how trivial your program may seem, others will benefit from your efforts. Bulletin boards are also excellent ways of exchanging programs and data between different types of computers which use different disk storage formats. For example, if a BASIC program for the IBM PC is uploaded as an ASCII text file, a Macintosh user can download the text file and run it with his BASIC interpreter with few, if any, changes or modifications.

New bulletin board applications

The popularity of computerized bulletin board systems has also spawned some rather clever applications of the basic bulletin board concepts.

Packet radio bulletin systems operate in a manner very similar to any other bulletin board system. However, they are accessed over high-frequency packet radios. A packet radio uses a popular new mode of digital data transmission. Instead of transmitting information using Morse code, short

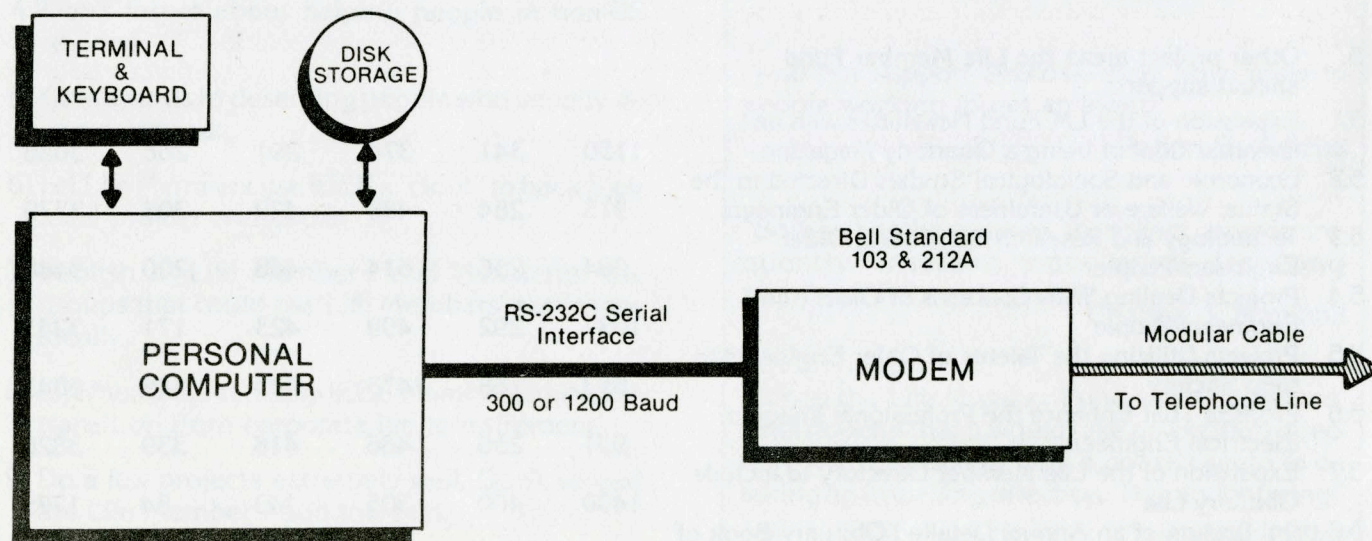
packets of digital information are transmitted in short bursts. Each packet typically contains 128 to 256 bytes of data, plus information about whom the packet is addressed to and information used for error checking upon receipt. Each received packet is acknowledged to the sender; and if a transmission error has occurred, the packet is repeated until correctly received.

Radio amateurs who have waiting mail are notified by periodic beacons or broadcasts from the packet bulletin board, which lists the call letters of those to whom mail is addressed.

The Visual/Voice Conferencing (VCO) program is an entertaining method of holding group discussions. Many of the large national bulletin board systems support multiple access to the system, along with a capability for one user to "converse" with one or more other users in real time. VCO runs on the Macintosh computer, and it converts the conference message text into voice using the Macintosh speech synthesizer. The program also displays animated icons of the various conference participants seated around a conference table on the Mac's screen.

Put your computer to work. Give a computerized bulletin board system a try.

Fred J. Deadrick, Project Engineer, Lawrence Livermore National Laboratory's Beam Research Program.



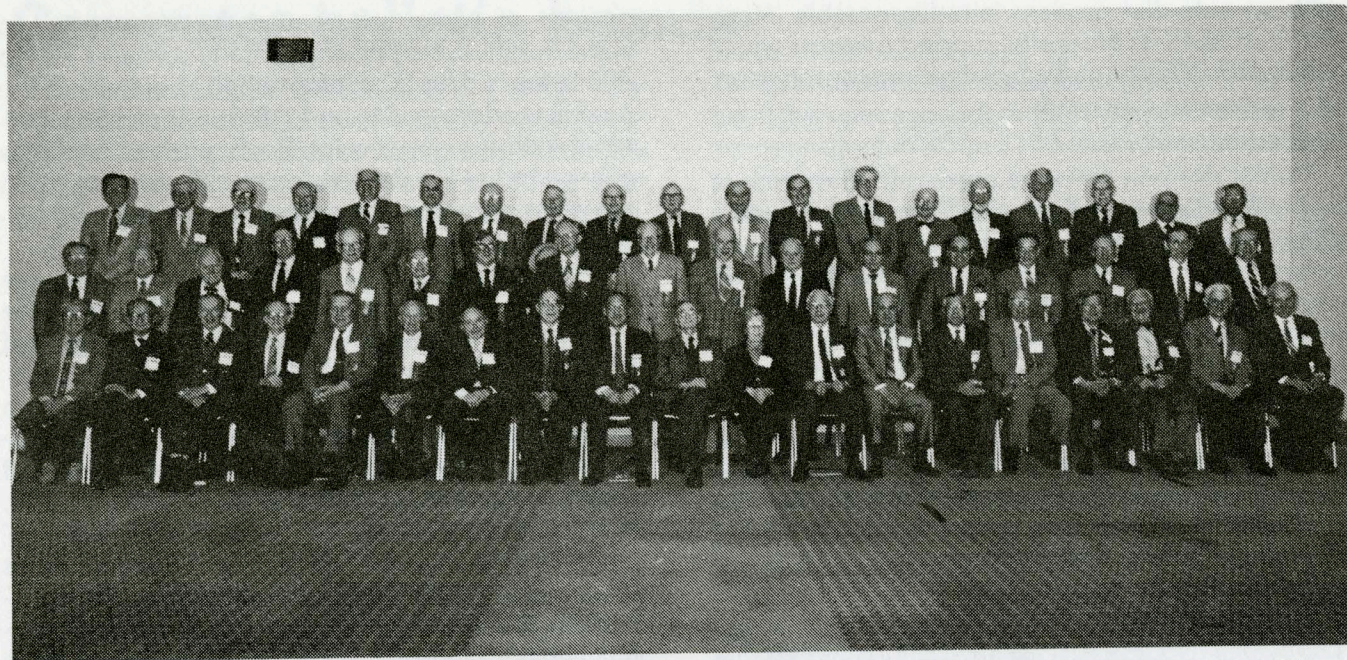
A simple illustration showing the manner in which a modem is connected between a computer and a telephone line.

The AgeLine Database

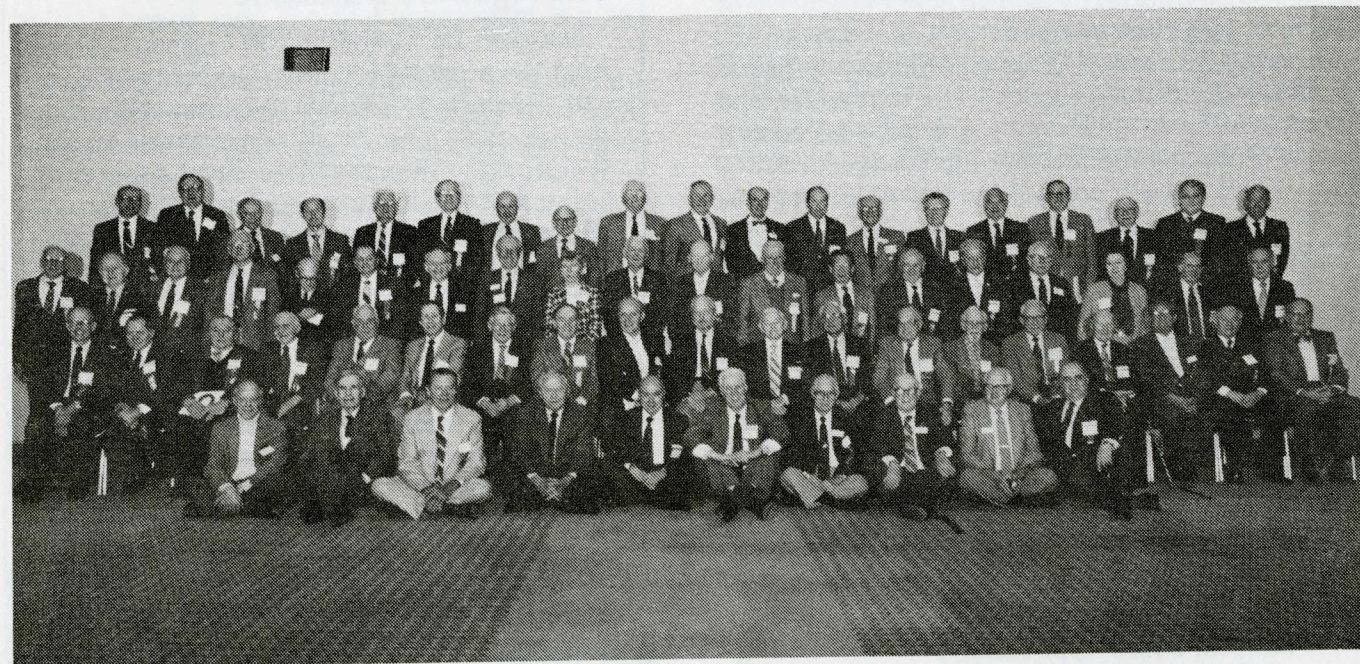
Indexed by almost 1,700 subject terms, AgeLine provides full bibliographic citations with abstracts for 20,000 documents on middle age and aging. Its primary focus is on the social, rather than the biomedical, aspects of aging, with emphasis on such topics as family relationships, health care and costs, service provision, the economics of aging, and policy formation. Each citation in AgeLine is indexed with subject terms from the *Thesaurus of Aging Terminology*.

AgeLine is produced by the American Association of Retired Persons (AARP), through the National Gerontology Resource Center. However, AgeLine is accessed by subscription to the search service BRS Information Technologies. Many academic and state libraries maintain BRS subscriptions and will perform searches for individuals at a pre-arranged fee. Individuals also can subscribe to the service.

To receive an AgeLine brochure or to order the *Thesaurus* (\$5.00 prepaid, checks payable to AARP), write: AgeLine Database, AARP Resource Center, 1909 K St. NW, Washington, DC 20049. For more information on BRS subscriptions, call BRS toll-free at 800/468-0908 (in New York call 518/783-1161).



Electro/87. Seated: (right to left) R.J. Goebel, R. Anderson, Dr. H. Lewis, H. Bloomberg, J. Kopf, Kao Chen, J. Aibala, A. Sorensen, B.L. Rosenberg, H. Rosenberg, W. Chow, R. Pentell, I. Berger, N. Raskhodff, A. Dolan, N. Mather, G. Kirkpatrick, J. Yoh, C. Lascaro. **Second Row:** (left to right) M. Tenzer, S. Krevsy, F. Shepard, R. Schimpf, J. Havel, A. Rogers, J. Robinson, R. Gerhold, T. Gore, L. Nagel, B. Winckowski, A. Cosentino, P. Schiffres, R. Beers, H.S. Gillespie, M. Agress, E. Wahlberg. **Top Row:** (left to right) J. Goetz, R. Sloan, J. Minter, H. Richardson, A. Abramowitz, E. Ebersol, J. Balet, C. Miller, F. Kammeren, A. Goldberg, R. O'Brien, R. O'Connor, T. Palesdes, R. Reisch, C. Marie, O. Mundt, M. Armanious, A. Crowley.



Electro/87 . . . Once again, two pictures were required. (left to right) **Floor:** J. Kurshan, J. Boyd, G. Gilmore, D. Erickson, F. Van Davelaar, F. Williams, J. Tebo, W. Terry, B. Angwin, H.P. Hovnanian. **Seated:** R. Squires, B. Nolte, V. Siclari, G. Varza, E. Goldberg, J. Goodman, N. Turitzin, H. Lustig, E. Keonjian, N. Romanofsky, E. Rabenda, B. Ranky, G. Gaule, F. Oliver, Q. Brown, E. Weber, A. Giordano, J. Bell, J. Konrad. **Middle:** R. Bendett, J. Rosenbaum, P. Ussery, J. Dietz, J. Monshaw, E. Metz, A. Spector, E. Becker, P. Burgmyer, F. Zayac, J. Rajchman, J. Hennessy, J. Chun, J. McConnell, J. Hartmann, J. Cohen, C. Lemay, R. Kulinyi, P. Rosenberg. **Top:** (right to left) S. Grim, M. Weiss, J. Fox, H. Hylas, P. Holcombe, M. Coe, J.A. Mulligan, R. Harvey, R. Lowman, I. Drukaroff, J. McManus, N. Xikes, M. Schramm, L. Kovack, L. Kirkwood, Dr. D. Vitrogan, M. Biskeborn, R. Archbald, A. Spitalny.

Life Members and longevity

After a person attains IEEE Life Member status, simple curiosity about one's life expectancy is replaced by the need to know, "Will my financial hoard be enough to last?" No individual can know the answer. But an engineer can use lifetime statistics to examine the probabilities. Here is a suggestion using data from U.S. Vital Statistics Life Tables in a simple, easily remembered formula.

The longest one is apt to live is in the neighborhood of 100 years. The oldest authenticated U.S. record for longevity is 113. Even today, only 0.01% of the population has reached age 100. Thus, there is a better than 99% probability that the longest lifetime is

$$\text{Longest Lifetime} = 1.0 (100 - \text{Age})$$

A second number is the one called "Life Expectancy" (L.E.). The L.E. represents the *average* years of survival. L.E. values are found in a table from U.S. Vital Statistics. For older people, the L.E. *average* is close enough to the *median* (50% survival) that it approximates that point. If the older person's L.E.

is plotted against age, it is found that a fair approximation between ages 65 and 85 is

$$\text{Life Expectancy} \approx k (100 - \text{Age})$$

where $k = 0.37$ for males and $k = 0.5$ for females, with an average deviation of $\pm 7\%$.

For safe financial plans into the future, with no adverse health factors, male/female differences may be forgotten and some number between $k = 0.5$ and $k = 1.0$ is suitable. A study of the survival versus age curve shows that an intermediate value, $k = 0.7$, is more than 80% safe, i.e. less than 30% of persons will survive longer than that. The calculation should be done periodically as one grows older, and financial plans adjusted accordingly. Each individual may also make a correction up or down for known genetic and lifestyle differences.

Edward W. Herold

1987 Life Member Fund Committee Member
U.S. Vital Statistics, Vol. 2, Section 6
Life Tables, Sept. 1986



Midcon/87. (left to right) **Floor:** R. Norberg, M. Paddleford, P. Jahn, L.E. Matthews, D. Pivan, B.S. Angwin, R.J. Evans, T.E. Tierney, L. LeVesconte. **Sitting:** W.E. Russ, A.F. Schaudenecker, J.R. Sukup, N.K. Zelazo, A. LaRose, L.F. Mayle, A.R. Satullo, J.O. Miller, T.J. Stahl, N. Kraitsik. **Standing:** J.L. Solomen, S.F. Bushman, E.W. Keranen, P. Conway, M. Zerkin, M. Hobbs, G. McDowell, E.P. Kelly, R.G. Perreault, W. Mitchell, D.E. Kampshror, R. Wessling, L.J. Weber, C.J. See, E. Dervishian, R.L. Osborn, W.A. Blikken.

To be a Life Member

To qualify as an IEEE Life Member (LM), you must be 65 or older; and your current age and your number of years of IEEE, or its parent Societies (IRE or AIEE) membership, must total at least 100 years. You will be notified automatically during the summer of the year you qualify as a LM. The free IEEE membership will be in effect as of January 1st of the following year.

To qualify for Society Life Membership, you must have five or more years membership in a Society immediately prior to attaining Life Member status. Thus, you would receive free of charge all technical periodicals—Transactions, Journals, Magazines—offered by each Society for which the prior five-year subscription requirement is satisfied.

To avoid sending unwanted publications, Society Life Members are asked every year to confirm in writing their continued interest in requested publications. There are two options:

- 1. Limited Service.** You remain a member of the Society, but receive only the Newsletters, Conference announcements and other special mailings from that Society.
- 2. Full Service.** In addition to the above, you receive any Magazines, Transactions and Journals you list and are entitled to on the form sent each year in July. (If you do not return the form, the IEEE Service Center will assume you no longer want those Society publications and will stop mailing them to you.)

As a Life Member, you automatically receive SPECTRUM (unless you indicate in writing, otherwise). All other publications—Conference Records, Proceedings of the IEEE, IEEE Press Books, IEEE Membership Directory, IEEE Standards Dictionary of Electrical and Electronics Terms, and so forth—are available at regular member rates.

The INSTITUTE OF ELECTRICAL & ELECTRONICS ENGINEERS, Inc.
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Questionable Stats

Elder abuse, undeniably a serious subject, also has serious shortcomings in its statistical data. For instance, "one million elderly are abused in a given year" is a widely repeated statistic in various reports and articles. But how was this number derived? This estimate is based on responses to a questionnaire sent to 433 elderly residents of the Washington DC. area. Seventy-three of the 433 persons surveyed sent back the form. Of the 73, only three people claimed to be a victim of abuse. So to accommodate the projection to one million elderly victims of abuse, each of these three folks represents 333,333.3 persons. (Source: Elder Abuse: The Latest "Crisis," *The Public Interest*, Summer 1987)

Where to write

Any ideas you would like to share? Opinions you wish to make known? Questions or problems that require assistance? Simply contact the Life Member Fund Committee or its Staff by writing to: IEEE Field Services, 445 Hoes Lane, P.O. Box 1331, Piscataway, N.J. 08855-1331.

Who is on the mailing list?

Surprisingly enough, Life members are not the only ones who receive this newsletter. The Life Member Fund Newsletter is also distributed to IEEE members 65 years and older, retired IEEE members 62 thru 64, and special boards and committees.

1987 LIFE MEMBER FUND COMMITTEE

William W. Terry, Chairman

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