PROF LISTS

Proceedings of
The Radio Club of America, Inc.

Volume 56, Number 1 April, 1982

Founded 1909

THE RADIO CLUB OF AMERICA, INC.
P.O. Box 2112, Grand Central Station, New York, N.Y. 10163-2112

Founded 1909, New York, U.S.A.

The Radio Club of America, Inc.

BOX 2112, GRAND CENTRAL STATION, NEW YORK, N.Y. 10017

Price $2.50

Organized for the interchange of knowledge of the radio art, the promotion of good fellowship among the members thereof, and the advancement of public interest in radio.

TREASURER'S REPORT FOR 1981

INCOME	Receipts	Budget
New members (85)	$ 255	$ 200
Dues for 1981	5,913	4,900
Dues for 1982	(1,783)	
Dues for 1983	(1,780)	
Dues for 1984, 85	(38)	
Life Memberships	375	250
Pins, Certificates, Plaques	1,465	1,000
Proceedings Ads	1,203	4,000
Interest and Dividends	7,348	5,850
Misc.	8	250
TOTAL INCOME:	$16,567	$16,450

EXPENSES	Expenditures	Budget
Rent	$ 600	$ 600
Stationery & Printing	428	650
Office Supplies	164	250
Telephone	148	200
General Postage	1,001	1,000
Meetings Expense	1,251	1,200
Proceedings expense	5,619	5,300
Awards, plaques	695	1,000
Legal, accounting insurance	000	500
Newsletter and Balloting	482	500
Consultant fees	3,000	3,000
Misc.	11	
TOTAL EXPENSES:	$13,399	$14,200

Contributions G-I-A	$17,115	133 contributions
Grants-in-Aid disbursed	4,000	
Preliminary, in Grants-in-Aid Fund	$52,541	

Telecommunications Pioneering — Today —

by William H. Forster, Vice President
International Telephone and Telegraph Corporation; New York, New York

ITT Vice President William H. Forster addresses the Radio Club of America at its annual dinner on November 20th at which he received the Henri Busignies Memorial Award. Mr. Forster predicted that future pioneering efforts in telecommunications will focus on finding economic applications for new technological developments.

It's an especially great honor to receive the Henri Busignies Memorial Award. Dr. Busignies has been a good friend and a respected colleague for many years. Many of you here tonight are contemporaries who knew him and worked with him through many of his 50 years as an active leader in the engineering profession.

Of course, Dr. Busignies is best known as an inventor. Everyone is familiar with his automatic direction finder, which made it possible to find automatically the direction of short-burst radio transmissions from German submarines. The Allied defense ships could then move in and World War II's Battle of the North Atlantic was won.

Many didn't know, perhaps, that Busgnies' first patent on a radio compass was issued while he was still a student at the Institute Normal Electro Technique in Paris. He joined ITT's Paris laboratory in 1928 and retired as a senior vice president of ITT in 1975, 47 years and 139 patents later, a tremendously productive lifetime! He retained his acitve interest in ITT technical affairs as chief scientist emeritus, right up to the date of his death earlier this year.

The engineering profession has very rightly recognized Dr. Busignies' greatness with many international awards, including the Radio Club's Armstrong Medal.

Last, and, perhaps most important, Dr. Busignies worked energetically on the application of electronic technology for the benefit of society. During his last few years with ITT, he lectured around the world on the potentials of new services that could be provided by telecommunications networks.

Telecommunications engineering can be a very rewarding career. Having served as Technical Director for ITT in Europe from 1967 until 1976, I can assure you that international telecommunications is doubly rewarding. Engineers are a worldwide fraternity that cooperate regardless of politics. The laws of Physics are accepted without interpretation!

I will talk with you this evening about three individuals of diverse national ties. They have made and are making significant contributions that will change the way we think and use telecommunications. These individuals demonstrate that new ideas plus energy and courage are changing the world.

Major engineering recognition is usually given to inventions or discoveries that accomplish a specific goal. Optical fibers are an example. Dr. Charles Kao said optical fibers could have wide communications applications if they could be made with low loss. We all agreed that if he were right, the idea would be enormously important. The materials specialists went to work, and 15 years later we have a major new and useful technology.

But, the outstanding contributors I have selected for my present examples worked in a different way. They started with available technology and identified an application. In a sense, they are technical entrepreneurs. They started with no general agreement that their objectives made economic, business or social sense. In fact, there was and continues to be intelligent opposition, but no one can deny that their work is changing the way the world thinks about telecommunications. As a minimum, they are challenging their critics to agree or to "find a better way".

Dr. Lawrence G. Roberts is considered to be the architect of packet switching technology. He received his PhD from MIT in 1963. While working at the MIT Lincoln Lab in the early 60's, he explored methods of linking geographically separated computers. He wanted to share their resources, essentially to be able to obtain access to the data in their memories from any transmission system to interconnect them.

The telecommunications networks of the day were designed for voice and provided only switched or dedicated circuits. They were either noisy or expensive, or both, and many still are!

In 1966 Dr. Roberts moved to DOD's ARPA (Advanced Research Projects Agency), to direct computer and telecommunications research. It was there that he formulated the design and principles of operation of packet switching, to link the computers at the many ARPA-funded sites. In contrast to the continuous connection of switched circuits, a packet switching system accepts data at its node (or switches) and then formats it into strings of

bits that are transmitted as packets over a wideband circuit. Packets from many users are interleaved so that the transmission lines are shared to minimize transmission cost. The key point is that sharing makes it economical to have special wideband, low-noise circuits and the nodes also provide error control.

Dr. Roberts subsequently directed the development and operation of the ARPA net, the first operational packet-switching network. It now serves nearly 100 host computers from Hawaii to Western Europe.

The debate of packet switching versus circuit switching is not over, but with time, different technologies find their niches. It is significant that packet switching is going forward in public and private networks throughout the world. Packet switching is accepted as a way of providing computer-to-computer transmission facilities at acceptable error rate and cost.

PTTs (Posts, Telegraphs and Telephone Administrations) worldwide are now planning ahead for ISDN, an Integrated Services Digital Network for voice, data, facsimile, word processing etc. The ISDN will be 10 to 20 years in the building. In the interim, and perhaps indefinitely, packet switching will make a major contribution. Larry Roberts was instrumental both in the fundamental thinking and in making this happen.

The Beginning of Videotex

A second example of evolution of an idea within a large organization occured in the British Post Office, which is typical of telephone companies around the world, having a reputation for being slow moving. There are more than 450 million telephones in the worldwide network, so it is understandable that making changes takes patience.

Samuel Fedida of the BPO proved that a challenging new idea can get telephone company management support—and quickly. He was born in Alexandria, Egypt and moved to the United Kingdom to be educated. He worked with Marconi until joining the British Post Office Research Laboratory in 1970. He is credited with inventing Viewdata and leading the team that developed it. Viewdata is an information retrieval system that accesses central data banks over telephone lines and displays that desired information on a color television receiver. Viewdata, the original name given by the British Post Office, was later changed to Prestel and the world now refers to the service generically as Videotex.

The genius of Mr. Fedida's contribution was the software by which an ordinary person, without previous training, can obtain information through the public telephone network. Examples would include theater schedules, classified ads, historical information, news, etc.—information without limit. Mr. Fedida reasoned that most people had telephones and TV sets. Put the two together, add a small intergrated-circuit decoder and key block for each subscriber, and then install the data bank equipment at telephone exchanges. The result would be a regional, nationwide or even worldwide information system at minimum additional capital cost.

The first laboratory demonstration was in 1974. Several of my colleagues in Europe were active very early in the program, and deserve considerable credit for spreading the concept throughout Europe. ITT made TV sets with the Viewdata adaptors and then we put on demonstrations to PTTs throughout Europe. We arranged for linking our TV sets over the telephone lines to the BPO computers and then demonstrate the capabilities of the system to PTTs and other interested groups.

The Videotex idea caught on in many countries. Germany and Switzerland put in trial systems using BPO hardware and then extended the concept to access offline data banks, a much more powerful system. France, not unexpectedly, evolved its own system standards—Canada developed Telidon and last June AT&T announced its own set of standards—although they are related to the others.

The promise of quickly building a broadly based public system has not yet been realized. It is not yet clear what services subscribers are willing to pay for or how much they will be willing to pay. But the principles and the potential of Videotex have taken root worldwide. Over 30 experimental system tests are now running in the U.S.

Samuel Fedida provided the two necessary ingredients for success. First was the technical ingenuity and second—and equally important—his personal motivation and inspiring personality, which helped in gaining the attention of the BPO and then the PTTs of other countries. Evolving technology and economic forces will interact to shape the establishment of Videotex services country-by-country, but one thing is obvious: Our vision has been stretched and we are all thinking differently about telephone lines and TV sets because of Mr. Fedida.

An Optical Fiber Network

My third example occurred in Western Germany, which is somewhat unique among highly industrialized countries in that it has no cable television. Only three TV broadcast channels are available throughout the country. The rapid development of fiber optics and the clear worldwide trend toward all-digital telecommunications networks created an opportunity for the Deutsche Bundespost (DBP) to provide entertainment TV over the telephone network.

In 1977, the DBP studied digitalizing the subscriber loops and fiber optics. The result was a set of field trials that are being completed this year. Technical feasibility is demonstrated; economic feasibility is the open question.

The DBP calls the project BIGFON. The concept is to provide 2-way telephone and data service plus 20 high-fidelity music channels and 3 entertainment-quality video channels. Rather than have 105 available channels carried to his door by cable, the subscriber would dial up the video channel desired, which would be then connected to his line, his optical fiber, at the telephone exchange. The possibilities of such a system are great and intrinsic flexibility should maintain the adequacy of an optical-fiber telecommunications network for many decades.

Work is now starting on six additional trials for 1983. The plan is to start commercial installation for tens of thousands of subscribers, beginning in 1985-86. We are still early in the development of this program, certainly much to early to predict either the ultimate technical details or the economic viability.

The size and complexity of the DBP make it difficult to identify individual contributors, but the contribution of one young engineer, Juergen Kanzow, has been significant. He was a key force in expanding the service offerings through the existing copper subscriber pairs—including

(continued on next page)

The Club Elevates 34 New Fellows

A record 34 members *were elevated to the status of Fellow at the 1981 Annual Meeting. Standing, left to right: Martin Cooper, Senior Vice President, Motorola, Inc.; Carlos Roberts, former Chief, Private Radio Bureau, FCC; Arthur McDole, Director of Communications, Montgomery County, CA; Henry Edwards, Phelps Dodge Communications, Monterey, CA; Tom Lamoureux, Executive Director, Telocator Network of America; Henry Crutcher, Communications Director, California State Department of Recreation; Don Wallace, (W6AM) outstanding amateur; William Keller, Senior Engineer, AT&T; Jack Munro, TAC-TEC Systems Inc.; Tom Amoscato, President, Amtol Communications Systems; Ernest deCoste, Curator, Communications Technology Div., Canadian National Museum of Science; James Baker, Executive Director, Forest Industries Association.* **Seated:** *Gordon Raitt, President, Westech Systems Ltd.; George Petrutsas, Attorney; James Troe, Engineer, Bell Labs; Kenneth Bourne, Vice President, Cetec Vega Corp.; Carl Smith, President, Smith Electronics; Robert Mitchell, Vice President, E-Systems; Delbert Wofford, Communications Director, Texas Gas Transmission Corp; Joseph Hamilton, Director of Communications, Montgomery County, PA.* **Not able to be present:** *Dennis Bodson, Jack Carlton, Jack Eggert, Alfred Franz, Stanly Harter, Carl Insel, James McKinney, Joseph Mascuch, Clayton Niles, Michael O'Loughlin, Joseph Scoggins, Ernest Tealey, William Torbick, James Weldon.*

(continued from page 4)

Videotext (Bildschirmtext in Germany) and now in testing the possibilities of an optical-fiber subscriber network.

Many people think that the cost of providing entertainment video via the optical-fiber star network centered on telephone central offices will not be competitive with the conventional tree network, which starts from a trunk circuit and branches out to the homes or businesses, but Kanzow and the DBP may be right for Germany. With no established cable-TV system, Germany may be just the country in which the first optical star network will be practical.

Progress in the basic technology of electronics continues as an accepted and expected fact of life and the future seems almost limitless. The rapidly falling prices and the reliability and flexibility gained through data manipulation by microprocessors, with the enormous bandwidth of optical-fiber transmission, are creating opportunities for consumer and business services.

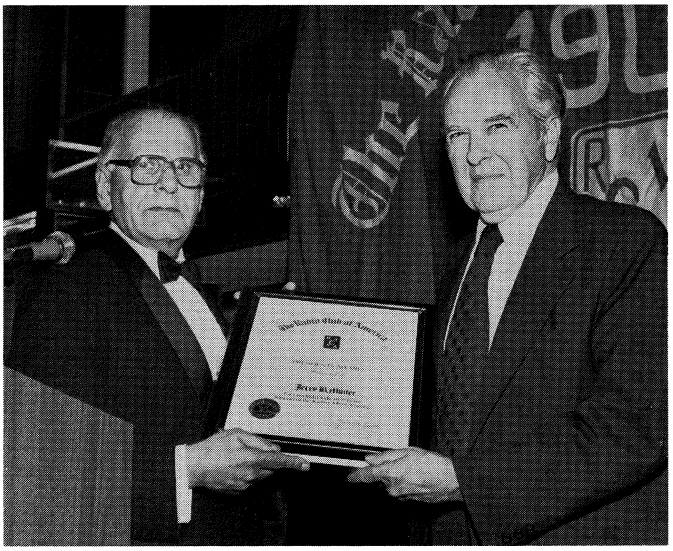
We now tell ourselves that we are in the Information Age, and that our telecommunications network will become an information distribution system analogous to the 60-cycle power grid. We talk about natural monopolies versus the benefits of competition in producing new offerings. We are working in a field that requires large front-end investment and which is served by massive organizations. It's reassuring and encouraging to see examples of great personal imagination and energy—the combination that makes new things happen.

Henri Busignies had both vision and energy to make new things happen. Younger members of the profession continue the tradition. They will continue to find opportunities and to pioneer in telecommunications. □

The 1981 Awards

William H. Forster *of ITT, speaker of the evening, receives the first Henri Busignies Memorial Award from Mrs. Henri Busignies. Flowers were presented to her at the same time. Dr. Henri Busignies, who was chief scientist emeritus of ITT, was a Director of the Club until his death on June 19, 1981. The Award is given to persons, who, in the spirit of Dr. Busignies, make "Significant Contributions to the Advancement of Electronics for the Benefit of Mankind."*

Arthur V. Loughren, *right, receives the Armstrong Award from former co-worker Harold Wheeler, who received the medal in 1964. An early worker in television, Mr. Loughren pioneered in black-and-white as Chief Engineer of Hazeltine, and, in the years 1951-57, as vice president in charge of research, he directed the company group that made important contributions to color TV.*



Jerry B. Minter, *right, receives the President's Award, for "Unselfish Dedication to the Support of the Radio Club of America," from President Fred Link. Jerry's record of service with the Club is unexcelled. President twice, and Director several times, he is also usually found on one or more of the more labor-intensive committees.*

of the Radio Club

Horace Atwood, *right, receives the Allen B. DuMont Citation, for "Important Electronic Contributions to the Science of Television," from Samuel Christaldi, last year's recipient of the award. A pioneer in the design of cathode-ray display devices while working with DuMont in the '40's, Mr. Atwood later specialized in TV receiver and distribution system design.*

William H. Offenhauser, left, presents the Ralph Batcher Memorial Award, for "Preserving the History of Electronic Communications," to **Ernest DeCoste**, *Curator of the Communications Division of the Canadian National Museum of Science and Technology. Mr. Offenhauser was the first recipient of the Award, one of his achievements being collecting and microfilming Ralph Batcher's memorabilia on Canadian telegraph history.*

President Link, left, presents the Sarnoff Citation, for "Significant Contributions to the Advancement of Electronic Communication," to **Jerry Stover**, *retired Chairman of the Board of Communications Industries. Since his retirement, he has joined the staff of the Southern Methodist University School of Engineering and Applied Sciences as a volunteer. Working "on a near full-time basis," he has served as guest lecturer, assisted in developing graduate programs and provided industry liason.*

A Special Award to Connie Conte

Connie Conte receives the award from Stu Meyer.

About two months before the Annual Meeting and Banquet, Jack Poppele turns his TeleMeasurements Inc. into a Banquet booking office, and spends no small time in the various hotel arrangements, program preparation, material transportation, tickets and a host of other things that make the Banquet and Awards presentation the smooth-running affair that many attendees have come to take for granted.

The director, manager and expeditor of this project is Connie Conte, who besides presiding over the guest list, expediting movement of materials and meeting the continual crises that crop up in the preparation period, supervises the properties stored at TeleMeasurements between annual meetings and also hosts the Executive Committee meetings, almost always held at TeleMeasurements.

In partial recognition of her efforts on the Club's behalf, the Executive Committee voted her a special award, which she may be seen receiving in the photo. As some of the other awardees in this issue have contributed to the progress and success of telecommunications, so has Connie contributed to the progress and success of the Club and its functions.

Vehicular Technology Society Meets in San Diego

The 32nd Conference of the Vehicular Technology Society will be held May 23-26, 1982 in San Diego. Eddie Simon, Conference Chairman, notes that national experts in Communications, Transportation, Automotive Electronics and Highway Electronics will be gathering at the Town and Country Hotel in Mission Valley, to explore three general topic areas:

COMMUNICATIONS. Including, mobile telephones in cellular systems; radio guidance technology; mobile propagation; new antenna forms; simulcasting; etc.

AUTOMOTIVE ELECTRONICS. Featuring, electric and hybrid vehicles; vehicular measurement and control; electronic sampling and analysis; etc.

TRANSPORTATION TECHNOLOGY. Examining, the powered highway; guideways for mass transit; magnetic levitation; linear propulsion; etc.

Ms. Adriana Gianturco, Director of Transportation for the State of California, will be the Keynote Speaker. Ms. Gianturco, always innovative, always lively, always at the leading edge of California Transportation will take an overall view of the conference theme: VEHICULAR TECHNOLOGY: Meeting The Challenge of Limited Resources.

Mr. Simon can be reached at (714) 697-6691 for further information.

GRANTS-IN-AID FUNDS

(Includes the Finch)

Fund as of Jan. 1, 1981	$34,174
Contributions 1981	17,115
Interest 1981	5,252
Less Grants 1981	(4,000)
Fund as of Dec. 31, 1981	52,541

Grants Authorized 1981 and Disbursed

Florida Institute of Technology	1,500
New York Polytechnical Institute	1,000
Armstrong Foundation	500
Foundation for Amateur Radio	500
Amsat, Amateur Satelite Foundation	500
Total	$4,000

Grants Authorized 1982 and Disbursed

Stevens Institute of Technology	500
Armstrong Foundation	500
Foundation for Amateur Radio	500
Florida Institute of Technology	1,000
New York Institute of Technology	1,000
The Cooper Union	1,000
Southern Methodist University	1,000
Total	$5,500

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The 72nd Anniversary Dinner and **Awards Presentation** of the Radio Club of America, at the New York Sheraton Hotel, Friday, November 20, 1981, was a warm and enthusiastic success with an international demeanor. Respectful fellowship honored Dr. Henri Busignies, Radio Club Fellow and member of the Board of Directors and an internationally recognized scientist and telecommunications inventor, who passed away in Antibes on the French Riviera on June 19. A special new plaque was presented by Mrs. Busignies to the first recipient of the Henri Busignies Memorial Award. She received a standing ovation and a bouquet of red roses in appreciation.

To permanently and gratefully carry on the recognition of Dr. Busignies life-long contribution to the growth of electronic communications, the Board of Directors established this memorial award, to honor future scientists in his field. The first one to receive it is William H. Forster (M 1970, F 1970), Vice President of the International Telephone and Telegraph Company, who was the featured speaker of the evening. His well delivered and interesting topic was, "Telecommunications Pioneering—TODAY"

Following the chicken kiev dinner at 7 pm, the introduction was given by Executive Vice President Stuart Meyer. Then President Fred M. Link welcomed the members and guests in the sparkling multi-mirrored ballroom. Secretary Frank Shepard reported on the results of the election of officers and directors, which revealed that all the incumbents were returned to office. President Link appointed Willard D. Andrews of Franklin Lakes, NJ to fill the unexpired term of Mr. Busignies on the board. Mr. Shepard announced that the membership now was 945.

President Link stated that the Special Recognition Pioneer Award to James J. Lamb, Fellow, well known among amateur radio operators through his long affiliation with QST as Technical Editor, had already been presented to him at a meeting of the Northern California section. The Ralph Batcher Memorial Award went to Ernest DeCoste, Curator of the Communications Division of the Canadian National

Museum of Science and Technology, for preservation of the history of electronic communication.

This year 34 members were elevated to Fellow member status. Twenty were on hand to receive their handsome recognition plaques. Among those receiving plaudits included past or present FCC people James McKinney, Alfred G. Franz, George Petrutsas and Carlos V. Roberts. Henry Crutcher, Arthur McDole and Stanley Harter of Honolulu were the APCO people awarded recognition. Old-time radio amateur operator Don Wallace, W6AM, was among the more prominent members elevated. The entire new Fellow list appears elsewhere in this issue. Capt. W.G.H. Finch read a note from Fellow Ernest E. Tealey, Dean, Florida Institute of Technology who was to have responded for the Fellows of 1981 but was unable to be present.

The President's Award was received by Jerry B. Minter, Fellow, who has been president of the Radio Club twice and who has a record of long and continuous service and activity.

Arthur V. Loughren, now retired and living in Hawaii, received the 1981 Armstrong Metal for his pioneering contributions to color TV. Jerry Stover, Fellow 1975, received the 1981 Sarnoff Citation. A radio amateur since age 13, he has successfully operated a communications engineering company in Dallas TX, following meritorious service in the U.S. Signal Corps in England, training Royal Air Force night fighters. He is now very active in Grants-in-Aid educational support with us and SMU.

Horace Atwood Jr., Fellow, was awarded the DuMont Citation in recognition of his extensive design work on many cathode-ray display devices at the Allen B. Dumont Laboratories, which resulted in seven circuit patents.

The Grants-in-Aid program is designed to assist deserving students to continue electronic engineering education. Chairman Joe Walker, of the Phillips Petroleum Company, reported that $4,000.00 will be distributed in 1982. Contributions were mostly by members of the Radio Club, plus several corporations. Special recognition and a bouquet of

(continued on next page)

Lamb Receives Pioneer Award

James J. Lamb, longtime technical staff member of the ARRL, and early Fellow (1945) of the Radio Club of America, was honored at the first California Section Award Dinner on October 20, 1981. Jim was awarded the club's Pioneer Award for his contributions to the radio art and specifically for his invention of the "Lamb Noise Silencer." The award plaque was presented by Stuart F. Meyer, Executive Vice President of the Radio Club of America and Vice President of the Vehicular Section of the IEEE. The meeting was attended by nearly fifty local RCA club members at Dinah's Shack, a Palo Alto landmark restaurant.

Lamb's development of the noise silencer came when he was working on improving superheterodyne receivers for radio amateur use. This was in the ARRL laboratory at 38 La Salle Road, West Hartford, Connecticut, which was located near an alley entrance to a busy local market. The resulting high level ignition upset the crystal filters and AGC circuits and efforts to correct the action of the circuitry pointed to the need to eliminate the noise spikes. The result was the now famous, and often rediscovered, noise silencer circuit.

Jim mentioned, during his acceptance remarks, that he called it a "noise silencer" because H.P. Maxim, the ARRL president at that time, had developed a silencer for diesel engines, and the "silencer" term was well known in the lab.

He also mentioned that he did not plan to patent the circuit as the cost was high and there was virtually no market for radio patents at the time due to the depressed business levels. But a little later a man by the name of Marks offered him $200.00 for a half interest in the patent if he would secure it. Under the terms of employment the ARRL was entitled to one third of the sale or income from patents developed in the lab. So Lamb asked for and received $300.00 so that "the artithmetic was easier and he would have $200.00 for Christmas presents"! Later he heard that the patent had been sold to Radio Corporation of America for $10,000.00.

Jim Lamb is now retired and lives in Cupertino, California, with his wife. (For those not too familiar with California, just place him in "Silicon Valley") and the local section members are delighted at his choice.

After the award presentation Stuart Meyer entertained with his slide show history of FM radio developments which he has previously presented on the east coast. A very fine time was had by all attendees and the meeting closed with a standing ovation for Jim Lamb in tribute to a fine man, a loyal RCA member, and a true radio pioneer.

—Dick Barret, W6CFK

Banquet *(continued)*

roses were presented to Connie Conte of TeleMeasurements for her continuing very efficient handling of anniversary reservations and numerous other services. Thanks also went to Jack Poppele, perennial sparkplug of many Awards Dinners.

The 72nd anniversary day started at 2 pm with the customary Electronic Conference Symposium chaired by Stuart Meyer, with a three-point program on "Low Power TV Applications" led by Fellow Edwin Piller of Fairchild Camera and Instrument Co. "Flexible approach to cellular land mobile radio" was discussed by Fellow Gordon Raitt. Niles Barlow, Fellow, revealed new data on "The Implementation of SSB in Land Mobile Systems."

Fellowship was back on track at 5:30 pm with the popular pre-banquet reception, marking another significant milestone in the growth and prestige of the Radio Club of America, now closely approaching the three quarter century mark. 1982 promises to be even greater for the oldest radio club on earth.

—Ero Erickson

Thanks to Contributors

The outstanding support of our members was highly instrumental in making 1981 another successful year for the Radio Club's Grants-In-Aid Committee activity.

At the November Annual Meeting your Board of Directors authorized grants totaling $4,000 to institutions and organizations, as reported in the January 1982 issue of *News Letter.* Additional grants made at the February 9, 1982 meeting of the Club's Executive Committee brought the total 1982 grants to $5,500, as detailed on page 8.

In behalf of the Grants-In-Aid Committee, your Board of Directors and Executive Committee, I want to thank our members for their great support of one of our Club's more important activities, our Grants-In-Aid work. Your continued support is solicited.

We wish to welcome Bill Andrews as a new member of the Grants-In-Aid Committee. Bill fills the vacancy left by Henri Busignies, deceased. We at Grants-In-Aid look forward to working with Bill in another successful year in our drive to lend financial assistance to students pursuing careers in telecommunications, radio or allied fields.

—Joseph F. Walker, Chairman

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Thanks for your help!

If you have moved, or are planning to move shortly, please make sure that an address change is sent to the Club. Address Fred Shunaman, Radio Club of America, 933 East Seventh St., Plainfield, NJ 07062.

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Wilson two-way radio communications systems can save you time by redirecting vehicles. They bolster your security operations. They let you contact personnel for any reason. They make your entire operation smoother, and, therefore, more cost-efficient.

No more costly delays. No more wasting fuel. And none of the frustrations, expenses and limitations of trying to keep in touch by phone.

Our two-way radio communications systems more than pay for themselves. Over and over again.

Wilson makes two-way communications systems of every type. Our line includes portables, mobiles, base stations, repeaters and all of the necessary accessories.

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Wilson Electronics Incorporated

Nevada residents call (702) 739-1931.

Cooley Honored in Nevada

by Don de Neuf

On February 8, 1982, Austin Cooley (M 1971, F 1973) was honored as Nevada's outstanding Inventor of the Year, with Governor List presenting him a plaque on behalf of the Nevada Innovation and Technology Council.

It was almost 50 years ago that Cooley, called "The Father of Facsimile in America," made history by transmitting a newsphoto of the survivors of the Navy's dirigible *Macon* disaster in 1935 across America through the medium of an ordinary telephone call. This in spite of the fact that telephone companies "proved" that it was technically impossible to transmit a telephoto in such a way, and the lawyers said it would be illegal to connect any device to a telephone line in any event.

In the early days, between periods of sailing to Alaska as a shipboard operator and serving as McMillan's radio engineer during his expeditions into the Arctic, Cooley labored over his facsimile system in one of the workshops of his Alma Mater—MIT. His big leap forward took place when he was hired by the publisher of the *New York Times*. The *Times* was desperate for a device that could transmit its World Wide Photo Service over a regular telephone line—from any location where a news event occurred, and without actually connecting anything to the telephone company's circuits. Cooley met the challenge by developing an acoustical system that would couple into an ordinary telephone.

Progress was rapid. Before long his "Times Facsimile Corporation" was in full-speed production of facsimile equipment for both the Association Press Wirephoto service and the U.S. Weather Bureau. Its first national network distributed meteorological facsimile maps from Washington to Weather Bureau offices all over the country. The first printing and distribution of the daily *New York Times* in San Francisco was accomplished by Cooley constructing facsimile machines big enough to handle a full newspaper page on each transmission.

Today Cooley is far from inactive in his "retirement." Hard at work in his lab and plant in Reno—assisted by his wife Helene and daughter Donna —he is developing a fax system for transmitting X-ray pictures from "any place to any place" over a telephone line. A radiologist at a central location will be able to diagnose X-rays transmitted from rural area hospitals not having such a specialist on its staff.

As with all Cooley's developments, the public is the beneficiary.

BOOK BY CLUB MEMBER

Amateur Radio Equipment Fundamentals, by Albert D. Helfrick (M 1981). Prentice-Hall, Inc., Englewood Cliffs, NJ 07632. 6 x 9 inches, 284 pages. Hardbound, $17.95.

Though the title of the book contains the word "fundamentals," the reader is expected to have some knowledge of radio, to recognize the names of components and have a feel for their use in the circuit. In the words of the preface, the reader should have the basic knowledge that is required for an amateur license.

The first chapter, accordingly, starts with high-frequency receiver fundamentals, followed by a chapter on high-frequency transmitter fundamentals. Chapter 3 deals with VHF and UHF transceivers and Chapter 4 with specialized forms of communication, including RTTY and slow-scan television.

The author then turns to specific equipment, with one chapter on selecting transmitters, receivers or transceivers, and one chapter on modernizing and restoring old equipment.

The last three chapters are devoted to home construction, beginning with hints on how to obtain parts and going on to construction projects for transmitters, receivers and various auxiliary devices.

Scholarships Available

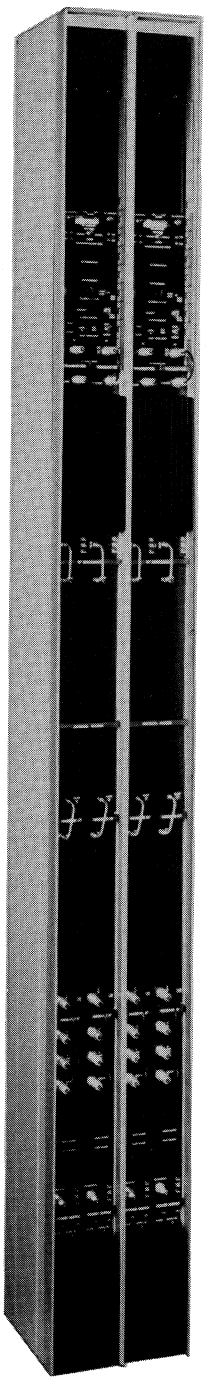
The Foundation for Amateur Radio, Inc., a non-profit organization with headquarters in Washington, D.C., plans to award nine scholarships for the academic year 1982-1983. The Foundation, composed of fifty local area amateur radio clubs, fully funds two of these scholarships from the proceeds of the Gaithersburg (MD) Hamfest. It administers, without cost to the donors, two scholarships for the Quarter Century Wireless Association and one each for the Richard G. Chichester Memorial, the Radio Club of America, the Young Ladies' Radio Leage, the Edmund B. Redington Memorial and the Amateur Radio News Service. The last named award is new this year.

Radio Amateurs holding at least an FCC General Class license or equivalent may compete for one or more of these awards if they plan to pursue a full-time course of studies beyond high school and are enrolled or have been accepted for enrollment in an accredited university, college or technical school. The scholarship awards range from $300 to $900, with preference given in some of them to residents of specific geographical areas or the pursuit of certain study programs.

Additional information and an application form can be requested by a letter or QSL/postcard, postmarked prior to May 31, 1982 from:

Hugh A. Turnbull, W3ABC
6903 Rhode Island Avenue
College Park, Maryland 20740

The FOUNDATION is devoted exclusively to promoting the interests of Amateur Radio and to the scientific, literary and educational pursuits that advance the purposes of the Amateur Radio Service.



L700 Radio Link System

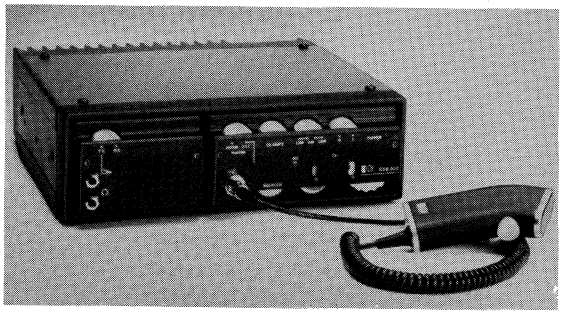
This exciting and versatile new range of link series, introduced by Telecom, includes the Slimline Equipment Practice (as illustrated) and is also available in transportable or wall mounting versions. Up to 132 FDM channels or 30 PCM channels.

M293 VHF/AM Mobile

Now, the AM version of Pye Telecom's successful 290 series of mobiles. Totally flexible yet compact, the M293 is available as a single channel or up to six channel radio, and offers an extensive range of signalling options.

SSB. 200 Series

An H.F. Single Side Band transceiver unit. Mobile or fixed configurations are available. Extensive field trials included a most rigorous Land Rover journey across Europe and North Africa. During this three month expedition direct radio contact was maintained with Cambridge H.Q.



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Here are three new equipments to keep you in touch with the action wherever it's happening. For more than thirty years Pye Telecommunications have played the leading role in radio communications.

Our total capability covers mobile, paging, portable and fixed radiotelephone systems and point to point links throughout the world.

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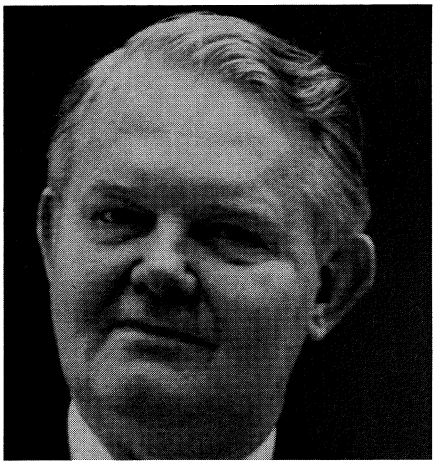
Obituaries



Thomas F. Jones, Jr. (M 1973, F 1974) died July 14, 1981, as reported very briefly in last October's **Proceedings.**

He graduated with Bachelor and Master of Science degrees from Mississippi State University in 1941, and immediately joined the Naval Research Laboratory as a physicist. His contributions to the war effort earned him the Meritorious Service Award.

He went to the Massachusetts Institute of Technology in 1947 as an instructor, and received his Sc.D degree and an associate professorship from that institution. In 1958 he became head of the School of Electrical Engineering at Purdue University.

In 1962 Dr. Jones became President of the University of South Carolina. When his tenure there ended in 1974, he was appointed Distinguished Professor, and remained at the university until 1977, during which time he was also a visiting professor of engineering and education at MIT. He was appointed vice president of research at MIT in 1975, and in 1977, professor in the MIT School of Engineering.

R.M. Booth, W3PS (M 1978) died December 3, 1981, according to a magazine report. He was born in 1911. An attorney, engineer and broadcaster, he was General Counsel for the American Radio Relay League at the time of his death. A retired Commander, USNR and part owner of Station WSAL in Logansport, IN, he was a Life member of IEEE and a trustee of its Washington, DC Section.

Edwin J. (Jay) Quinby (M 1959, F 1963, L 1977) died November 8, 1981, at his home in Summit, NJ. He was 87 years old.

Born in New York City, he received a BSEE from City College and immediately began a career that covered a wide variety of occupations, beginning as motorman on New Jersey suburban trolley lines. Later, he was a radio operator at sea for Marconi, who suddenly found himself—in the middle of a radio message—an employee of RCA. His connection with RCA outlasted his sea experiences and he became founder and long-time editor of the RCA magazine, **Radio Broadcast.**

Quinby was a prolific author, with many short stories based on his early experiences, and at least four longer items. The most ambitious of these, **Ida Was a Tramp,** told of a voyage on a tramp steamer that took its young operator through revolution, rescue at sea, mutiny and an international romance. His shorter items were so numerous that when he printed a collection of them he gave credit to 18 publications for permission to reprint. A number of his articles appeared in the **Proceedings,** including "Who Was Tesla," and "Fessenden, Builder of Tomorrows," as well as a number of shorter pieces.

His hobbies included old trolley lines (he was honorary president of the Electric Railroaders' Association). He was also a leading spirit of the group that rescued the Mississippi steamboat **Delta Queen** and operated it on the Mississippi and tributaries as a tourist excursion ship.

His musical career, which began with a 75-yen portable organ bought in Japan while an operator on **Ida,** extended to the **Delta Queen's** calliope, which he and Radio Club Fellow Frank Shepard reconstructed from a mass of corrosion and rebuilt in Shepard's laboratory. He was a pipe organ buff and contributed articles to **The American Organist.** His own organ filled the entire lower floor of his home in Summit, with a pipe or two extending into the upper story. He actually "lived in his instrument" and the downstairs partions were louvres that could be opened and closed from the organ console.

In addition to his civil experiences, Quinby served in the U.S. Navy in both World War I and II, retiring with the rank of Commander.

Ephraim F. Duskis (M 1964, F 1979) died January 17, 1981. Born in England in 1898, he came to this country as a boy, attending public schools here and receiving an E.E. from Cooper Union in New York.

He worked for Gernsback's Electro Importing Co. in New York in the late 'teens, and later had a radio and electrical parts business of his own, Duskis Sales Inc. For many years he was energy consultant to A.S. Beck in New York, with the title of Director of public utilities.

He received an amateur first grade license in 1916 and was a member of IRE and IEEE since that year.

Willis H. Taylor (M 1920, F 1937, L 1971) died January 2, 1982. He had been a member of the Club for 62 years. Mr. Taylor was a patent attorney in New York City. He was at one time Chairman of the Board of Trustees of the Stevens Institute of Technology, and a Vice President of the Farrand Optical Co.

Frank Krupansky (M 1981) died suddenly November 14, 1981, in Miami, FL, before his membership certificate reached him. (His mother reported receiving the certificate, pin and card posthumously.) He was 32 years old. A graduate of Stevens Institute in New Jersey, he received his Master's degree in Electrical Engineering from the University of Miami. An engineering consultant, he worked with Coulter Electronics of Hialeah, FL, and with Milgo Electronics and General Electric Communications, both of Miami.

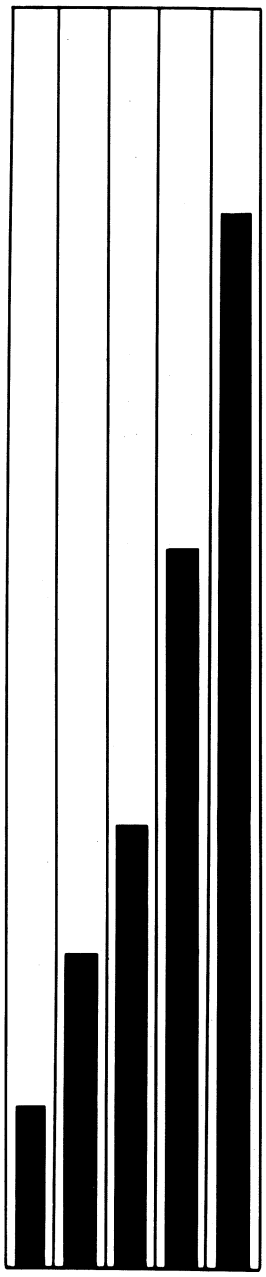
Mr. Krupansky was an amateur, with the call N4BD.

Matthew E. Zaret (M 1951, F 1961, L 1975) died January 9, 1982. He was born in 1909. An Sc.M. from New York University, he started his radio career with Fada, then moved to Sonotone Corp. as Electroacoustic Research Engineer. In 1947 he entered the teaching field and for many years was Professor, Electrical Engineering, at Cooper Union.

We are informed of the death of **Ralph I. Villers** (M 1975) of Steubenville, OH. He was 79 years old. He had been Supervisor of Radio Communications of the City of Steubenville and of Jefferson County, Ohio, since 1936. He was also a radio amateur since 1929.

(continued on page 18)

Penril Corp.



PENRIL CORP., headquartered in Rockville, Maryland, manufactures high technology electronic equipment and consumer audio equipment at profit centers in five states and in Switzerland. Record 1980 earnings were $1.35 per share, $1,783,405, compared to $1.10 per share, $1,453,169 in 1979. 1980 revenue of $33,333,828 was up 47 percent from 1979 revenues of $22,691,797. Fiscal year 1981 first nine months revenue and net earnings were up, compared to the first nine months of fiscal 1980, with a current annualized revenue rate approaching $40 million. Cash dividends have been paid for six consecutive years. The 15 cents paid during 1980 represents a 20 percent increase over 1979 payments.

Contact: Kenneth M. Miller, President.
(301) 881-8151.

Fiscal Years Ended 31 July	Revenues	Net Income	Earnings Per Share	Average No. Outstanding Shares	Cash Dividends Per Share	Net Worth	Working Capital	Current Ratio
1980	$33,333,828	$1,783,405	$1.35	1,324,884	15¢	$13,356,310	$13,453,406	3.7
1979	$22,691,797	$1,453,169	$1.10	1,317,719	12½¢	$ 6,129,666	$ 8,053,349	3.5
1978	$13,608,980	$1,085,170	83¢	1,299,791	7½¢	$ 4,767,931	$ 4,171,653	3.1
1977	$ 9,582,844	$ 820,834	65¢	1,272,378	4¢	$ 3,757,478	$ 2,656,740	2.3
1976	$ 7,885,600	$ 702,623	56¢	1,257,525	3¢	$ 2,978,085	$ 2,450,712	2.2

Penril Corp. / *5520 Randolph Road*
Rockville, MD 20852
(301) 881-8151

News of the Membership

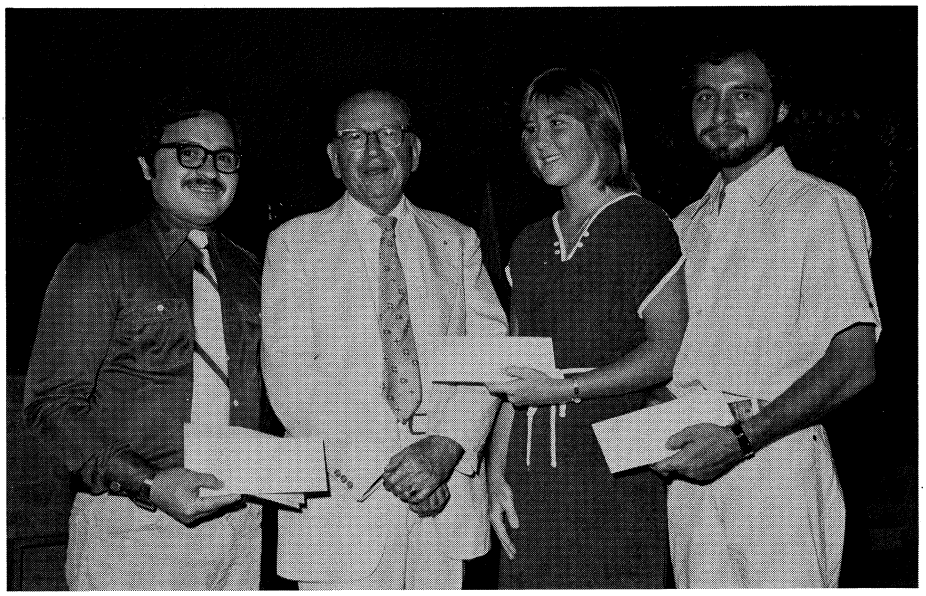
Bob Betteridge (M 1981) of Edmonton, Canada, is co-author with Jack Pulford of the *Global Communications* article "The Aurora (Automatic Roaming Radio) Cellular A.M.T.S. System", describing the mobile telephone system now being set up to serve an area of 600 by 1200 miles in extent, in Western Canada.

Al Gross, W8PAL (M 1977, L 1978, F 1980) "Father of CB", opened the British Citizens Radio Band, buying the first British Citizens license, due to the help of a CB enthusiast who had stood in line all night to hold a place for him. He immediately sent the first legal British CB message from a Rolls-Royce waiting nearby.

Mal Gurian (M 1969, F 1976) former Senior Vice President of Aerotron, Inc., has accepted the post of Vice President and general manager of Oki Electronic Oversea Corp's Advanced Communications Division, Hackensack, NJ. He is responsible for the firm's 800-900 MHz line of mobile telephone equipment.

Ken Miller, K6IR (M 1970, L 1975, F 1980) President of Penril Corp., has been named by Governor Harry Hughes of Maryland as a member of the Governor's Committee on High Technology.

B.K. (Bob) Alexander (M 1973) is retiring from Communications Industries and is starting a new business, consulting in the communications field. He may be reached at Alexander and Associates, 1925 Beltline Road, Carrolton, TX 75006, Telephone 214-242-1982.



Recipients of the Radio Club of America *Finch Fund 1981 scholarships. Left is Thomas A. Cherubino, of Rahway, NJ, an Electronics Technology major, Marine Option. He is a Junior and 9th in his class of 114. Second from left: Capt. W.G.H. Finch, who presented the scholarships at the Awards Night ceremony of the Florida Institute of Technology. Third from left is Linda K. Earl, originally from Omaha, NB, and now living in Deland, FL. Doubling in Electronics and Oceanographic Technology, she is 9th in her sophomore class of 304. At right, Rafael L. Brignoni, born in the Bronx, NY, and now from Melbourne, FL. An Electronics major, he is 12th in his freshman class of 304. Mr. Cherubino received a scholarship of $500; Miss Earl and Mr. Brignoni divided a scholarship between them, receiving $250 each.*

Obituaries *(con't from page 18)*

Alfred A. Menegus (M 1971, F 1978) died January 27, 1982, after a long illness. He had been in the radio publishing field since 1947.

Mr. Menegus began his publishing career with Fred Link, as editor of his house magazine, *The Link Bulletin*, from 1947 to 1952, afterward holding a number of positions in the electronic advertising, promotion and public relations fields. He was also press information officer at the New York World's Fair, 1964. Returning to publishing in 1967, he was Eastern manager for *Broadcast Engineering* and the *PF Reporter*. In 1969 he became Eastern Manager for *Electronics Technician/Dealer*, and in 1971, Publisher of that magazine, a position he held until his retirement a few years ago.

NEW BOOK ON TESLA

The author, Margaret Cheney, calls "the world's greatest engineer" **Tesla, Man Out of Time** (Prentice-Hall, $16.95) and describes him as "possibly the greatest inventor the world has ever known." She has researched her work thoroughly, debunking among other things the "$1 million cash and $1.00 per horsepower royalty" story. She also goes thoroughly into the fate of the documents in Tesla's safe at his death.

Tesla's efforts to keep afloat financially are clearly portrayed. His early (1890's) radio work and his X-ray experiments are detailed, and the Tesla turbine is covered better than in anything published earlier.

An excellent review of the life of Tesla as a man as well as a scientist.

Will all Fellows who know of some member who should be a Fellow please send in the name of your nominee(s), *together with a short paragraph telling why the member should be elevated to Fellow status.* This information will be necessary for the Executive Committee in screening the names of the nominees for presentation to the summer Directors Meeting.

Please mail your nominations to Fred M. Link, Robin Hill Farms, Pittstown, NJ 08867.

LARSEN GETS LEFT OUT IN THE COLD.

The Canadian Arctic presents some of the world's most difficult communications conditions. And when you're keeping track of expensive equipment recording crucial information, you can't afford to lose it in a snow drift. The need for a reliable antenna is a cold hard fact. It's a long way back to the shop for a replacement whip or coil.

That's why Larsen LM series Külrod antennas are used to keep track of scientific monitoring equipment on the polar ice. Because when communication hangs by a slender metal rod, you have to be sure it won't fail you.

That applies whether you're communicating in the Arctic or in a downtown traffic jam. It takes a reliable top performance antenna to do the job right.

And Larsen Antennas do, time after time.

Larsen's exclusive Külrod plating assures that maximum power goes into communication—not heat. So you can talk further. It's a finish that won't buckle under, even to icy exposure.

And the precision tapered stainless steel whip provides flexibility and minimizes radiation pattern distortion to give you a clear consistent signal all the way.

That consistent performance goes into our service too. With prompt delivery, personal attention and a no nonsense warranty that won't leave you in the cold.

So whether you're tracking scientific equipment in the Arctic or a fleet of trucks on the highway, let us know. We'd be glad to show you how Larsen Antennas will work for you.

Write for our free full line catalog.

Larsen Antennas

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IF YOU BUY A TWO-WAY RADIO ON NAME ALONE, YOU HAVEN'T BEEN LISTENING.

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Johnson isn't the best-known two-way radio. So we work at being the best-made.

If you spend a few minutes with a Johnson radio... talking on it... listening to it... checking out its performance and reliability features ... we think you'll see what we mean.

WE WON'T SETTLE FOR A SECOND-RATE RADIO. NEITHER SHOULD YOU.

At Johnson, we specialize in one thing only. Making the best two-way radios. And because we concentrate our attention on this one job, we think we do it better.

Johnson radios have pioneered many breakthroughs in the mobile communications industry. Our CLEARCHANNEL LTR™ solved channel crowding problems by utilizing an advanced microprocessor design.

The innovations continue throughout our entire product line, from handheld radios to mobile two-way FM radios to mobile telephones. In fact, Johnson is one of the few approved suppliers of an advanced new mobile telephone system now being introduced in the U.S.

WE DON'T SELL IT UNTIL WE'RE SURE OF IT.

Nobody is tougher on a Johnson two-way radio than Johnson.

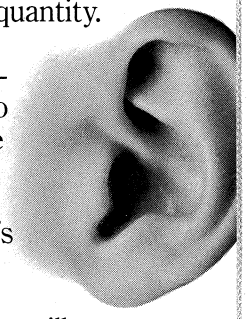
After we build our radio to precise standards, we put them through at least 42 different quality control tests.

Many of our radios are baked at 150°. Others are chilled at 40° below zero. And some are even put through vibration tests for hours at a time.

Why so much testing? Because in the unlikely event that one of our radios has a problem, we want to find out about it before you do.

WHEN YOU'RE NOT THE BEST-KNOWN RADIO, YOU HAVE TO BE THE BEST-MADE.

At Johnson we'd rather be known for the quality, of the radios we make, not the quantity.



That's why every Johnson two-way radio is built to deliver trouble-free performance. It's also why we offer one of the industry's best warranties. Because we know that seldom, if ever, will one of our radios be back for repairs.

Every Johnson radio is also backed by a nationwide network of dealers... providing parts, service and technical assistance whenever you might need it.

It's this kind of commitment that makes Johnson a leader in mobile communications.

It's also why when you're looking for the right two-way radio, you shouldn't just go with a name. You should go with the best. Johnson.

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