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Updated to Sept. 15, 1975

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THE RADIO CLUB OF AMERICA, INC.

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The Radio Club of America, Inc.

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

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.

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THE PRESIDENT'S MESSAGE

We have enjoyed another banner year with several key features sticking out as I compile this message.

As we approach the date of the 66th Anniversary Award Dinner, scheduled for November 21, 1975 at the Park Sheraton Hotel in New York I am most pleased with the arrangements being developed by Jack Poppele, as Chairman along with several added Vice Chairmen handing specific areas — as it now shapes up the "66th Affair" could well be our greatest ever — .

We are dedicating this meeting to our past leaders and we are now hoping that we will have all or nearly all the living Past Presidents of the Club present to be honored. In addition we have, by action of the Board of Directors, singled out two of these former leaders for special awards . . . We will be honoring our legendary "old timer" Ernest "Pop" Amy with our first *PIONEER CITATION award* in recognition of his participation in the historical IBCG-Transatlantic Radio "Short Wave" Tests of 1921 and his participation as founder and staunch club supporter over the past 65 years . . . Also a very special new honor will be made to Bill Offenhauser, to be known as the *RALPH BATCHER MEMORIAL* in recognition of Bill's constant and never ceasing effort to insure the perpetuation of the historical records of the Club and all communications. Ralph Batcher, himself a Past President, compiled vital records and history of radio communications — something even more appreciated today than it was at the time of his effort. Consequently, since Offenhauser has been carrying on the Batcher heritage, what more logical step than to make him the recipient of the initial *RALPH BATCHER MEMORIAL award*.

Another special citation will be given to our active member, *Richard Konter*, for his early participation in Wireless. He is possibly the oldest living wireless operator of the day — and certainly the oldest one in the Club.

With the above new awards added to our important *ARMSTRONG MEDAL* award to Dr. Henri Busignies, and the equally cherished *SARNOFF CITATION* to Edgar F. Johnson we anticipate a lot of interest and activity November 21 . . .

A very high quality new group of FELLOWS will be honored and issued certificates. This feature of the meeting, as in the past, will be the highlight of the evening . . . The guest speaker, himself a former Club Director, Frank P. Barnes, Senior Vice President of ITT Corporation has a long history of activity in communications as well as being much traveled and familiar with international communications, in his position of product group manager — telecommunications products and systems — with worldwide responsibility.

A special feature of this years Awards Meeting will be the informal session set for the afternoon of the banquet. This activity will be handled by our Director, Jerry Stover, of Dallas who will have a special announcement of what is in store in a later Newsletter notice. In any case it is planned to have facilities available at the hotel — probably same location as now planned for the cocktail party prior to the Banquet — from possibly 4 to 5 pm, where visiting and local club members can get together. We have had a lot of comment, all favorable, about this new idea and plan and we hope it will be a success.

Don't miss the Banquet if you possibly can make it.

Fred Link

MOBILE DIGITAL COMMUNICATIONS

Applying modern techniques to mobile communications

By **BILL SHAND**

Radio communication has gone the full circle. It started out as non-voice, went primarily to voice, and is again going back to non-voice and voice-plus. Instead of dots and dashes, modern non-voice and voice-plus communications systems transmit digitally-coded signals. Mobile digital radio communication systems enable operators to push buttons to transmit information quickly and, for many purposes, make a microphone unnecessary.

During the past three to four years, mobile digital communication systems have been introduced for police use. As with all new developments, there are always the basic questions:

1. Does it work?
2. Will the equipment be used?
3. Will it really perform a worthwhile service?
4. Is it economical?

Fortunately all these questions can be answered in the affirmative for most installations made to date.

There are four manufacturers of mobile digital terminals. They are Arcom, Kustom, Motorola and Sunrise



Fig. 1. The hand-held terminal.

Electronics. Basically their terminals perform the same functions. They do differ in memory, display and transmitting speed. Illustrations for this paper pertain to the Arcom terminal, since the information was more readily available to the author.

1. Fig. 1 is the front view of the Arcom terminal. Push buttons for the numerics 0 through 9 are on the top two rows of keys. Rows 3 and 4 are the function keys and the alpha keys make up the remainder of the keyboard. This particular keyboard is unique, since the format does not resemble that of a typewriter.
2. The block diagram, Fig. 2, shows the equipment requirements for one mobile unit and the base station.

The major operational features of a mobile digital system are:

- Full alphanumeric keyboard
- Solid state LED display
- Asynchronous transmission using coherent frequency shift keying
- 80-character buffered memory transmission from mobile unit
- 16-character display
- Squelch feature
- Channel Busy detection
- Selective Address to mobile — unit — group — all cars
- Redundant message transmission
- Automatic vehicle identification
- Automatic transmission recycle (4 times)
- Automatic acknowledgment
- Automatic message hold
- Voice override
- Emergency key

The coding is 8-bit ASCII. Parity and redundancy checking results in an error rate of 1 in 10^{12} .



Bill Shand, a graduate of South East London Technical College, started his career with ITT England as an Engineering Apprentice. He became a Communication Application Engineer with ITT, handling the Middle East territory. In 1962 General Electric brought him to the U.S. as an Application Engineer in their microwave and multiplex communications department in Lynchburg, Virginia.

Since that time he has been employed by various communication companies in engineering and market capacities, serving the Telephone, Broadcast and CATV Industries.

Prior to starting his own company he specialized in Law Enforcement Communications and was noted for the work he did in the application of air-to-ground live TV transmission for various Police departments including those of New York and Los Angeles.

When the system is fully operational, the benefits derived include:

- Direct access to computer data files
- Fast and easy status reporting
- Reduced channel congestion
- Private communications
- Compactness
- Compatibility with existing radio equipment
- Compatibility with existing frequencies
- Low cost

In addition to the above, the following options can be provided:

- Automatic identification of mobile unit with voice transmission

- Audible tone alert to incoming message in mobile unit
- Mobile printer
- Custom mounting

To operate the system, the mobile unit operator first selects the function key. The function keys vary depending on the police department's requirements. A typical function key layout would be:

- LP License Plate
- VR Vehicle Registration
- DL Driver's License
- VIN Vehicle Identification Number
- NAME
- MSG Message
- TEN Status
- SS Social Security
- EMER Emergency
- ERASE

Let's assume the officer wishes to make a license plate inquiry. He depresses the function key marked "LP" followed by the state's abbreviation (say, VA for Virginia) then the license plate number (for example DAR 363). When he has done this, the following appears on his LED (light emitting diode) display, allowing him to check his entered information.

VA DAR 363

The terminal adds a four-character identification code to all messages from

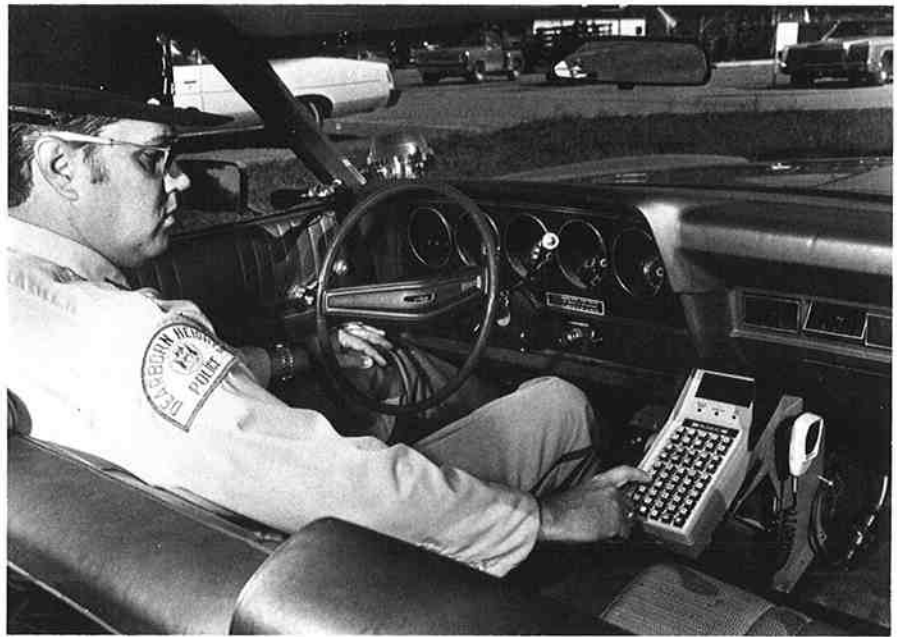


Fig. 3. Installation in a mobile vehicle of the Dearborn, MI, police department.

the mobile unit. After the officer has verified that the information he entered into the terminal is correct, he depresses the **TRANSMIT** key. The terminal then checks for radio channel availability and will transmit the data when clear. The data are transmitted twice to provide redundant transmission. If the terminal does not receive an acknowledgement from the base station, it repeats the redundant transmission four times at

three-second intervals. If at the end of the fourth transmission, an acknowledgment is not received, the terminal will activate a "NO ACK" LED. This would happen in the event of an equipment failure or loss of radio communication. The officer can then depress the **TRANSMIT** key again or **ERASE** the inquiry.

At the base station, a message from a mobile terminal is received by the radio equipment and fed into a radio interface unit, which conditions the data and feeds them into the mini-computer. The minicomputer:

1. Checks the redundant information and rejects the information if the two bit streams are not identical.
2. Recognizes the type of inquiry (from the terminal function key code) and inserts the information necessary to extract the required information from the data bank.
3. Sends the inquiry to the selected data bank.
4. Prints the inquiry on the dispatcher's video monitor with the time and date and activates the hard copy printer.
5. Receives the desired information from the data bank and removes all unnecessary information.
6. Displays the reply with the date and time on the dispatcher's video

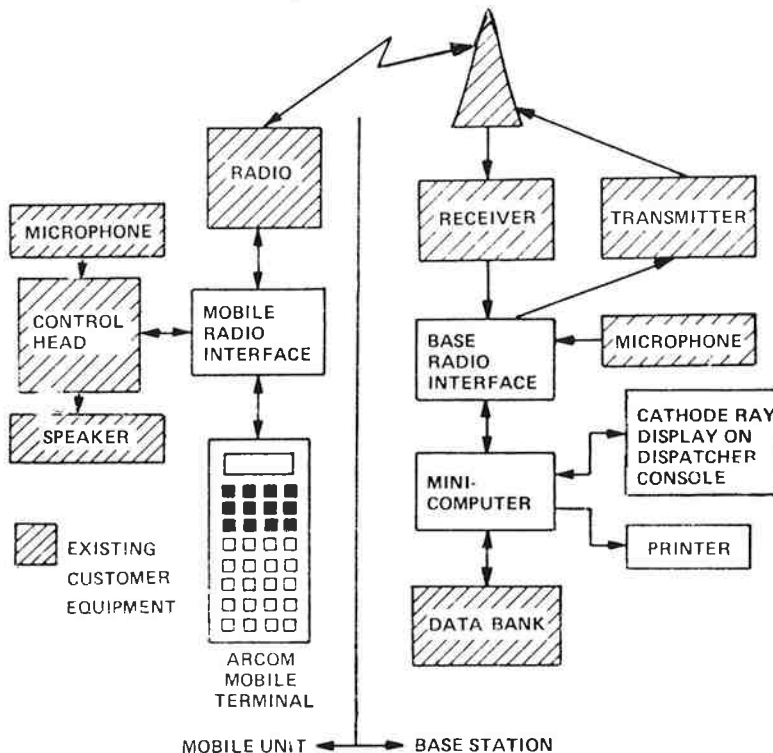


Fig. 2. Block diagram distinguishes new and existing equipment.

monitor and activates the printer to print the same information for record-keeping purposes.

7. Sends the reply to the mobile terminal.

The mobile terminal displays the reply until the officer acknowledges.

All transactions between mobile units and the base station appear on the dispatcher's video monitor. The replies from the mini-computer to the mobile terminals appear as flashing reverse video on the dispatcher's monitor (black characters on a white bar) until the officer in the car acknowledges the reply. With this arrangement, the dispatcher is aware of the inquiry and

knows whether or not the officer in the car has acknowledged the reply.

The mobile terminal's four-character address code allows the dispatcher to select either a single terminal, a group of terminals or all terminals from his console keyboard. Each mobile terminal address code can be assigned daily by the dispatcher or a security officer.

An emergency key on the terminal allows the officer to alert the dispatcher when in trouble. To activate this condition, he depresses the **EMERGENCY** and then the **TRANSMIT** key. The message goes to the dispatcher with the terminal's identification code. The mobile terminal will keep repeating this transmission until help is dispatched.

How a compact mobile terminal is installed in a police car is shown in Fig. 3. A hinged mount permits the terminal to be swung upward to give the officer easy exit from either side of the car, and provides additional flexibility for mounting other equipment.

The digital base station equipment is shown in Fig. 4. The keyboard shown below the CRT can be removed and operated remotely if required.

The pictures are of the ARCOM system in Dearborn Heights, Michigan. The ARCOM system is connected to the state data bank "LEIN" in Lansing, Michigan via high-speed data lines provided by the telephone company.

Table 1 shows the results obtained before and after installation of the ARCOM system.

TABLE I

	1973 12-MONTH PERIOD	1974 6-MONTH PERIOD JULY - DEC.	PERCENT INCREASE
Traffic Warrant Hits	391	1,448	270
Misdemeanor Warrant Hits	124	353	184
Felony Warrant Hits	14	59	321
Recovered Stolen Cars	108	228	111
Recovered Stolen Plates	39	81	107
Suspended Drivers License	213	439	107
Improper License Plates	140	277	98
Total Active LEIN File Hits	1,029	2,885	180

NOTES: 1. These figures show a comparison between 12 full months without a mobile digital system and only 6 months with the system installed.

2. The figures were obtained from detective Robert Salem of the Dearborn Heights Police Department, which has 15 cars equipped with mobile digital terminals.



Fig. 4. The base console unit.

Bill Lear Receives Two Honors

Radio Club Fellow and former director William P. Lear was the subject of a real surprise party last June 28, when 18 Learjets swarmed in on him to wish him Happy Birthday. The place was Stead Airport, Reno, Nevada, headquarters of Lear Companies.

The tribute read to him there said in part: "Birthday greetings and congratulations to one of aviation's all-time greats. If it weren't for your baby, Bill, none of us would be here . . ."

Bill Lear has been further honored by the National Business Aircraft Association by being named winner of the Association's 1975 Meritorious Service Award, being presented to him at the Association's 28th annual meeting in New Orleans October 30. The award is presented to him "for innumerable contributions of incalculable value in the field of aviation safety, navigation, operation and efficiency, spanning more than half a century."



Moya and Bill, with part of the fleet in the background.

CABLES

First transoceanic communications systems had their problems, too.

By DON deNEUF

Most historical references to the so-called "Cyrus Field Atlantic Cable" (1857-1858) attribute the difficulties with the first cable to its parting at various times during the laying operation. Though this was the cause of many delays and frustrations, one rarely finds reference to a much worse problem — insulation defects — so serious when the facts are reviewed that it is almost unbelievable that a signal of any kind could have been received across the Atlantic. When the cable was in the process of manufacture in Greenwich near London, it was coiled in four large vats, and there left exposed day after day to the heat of a summer sun, which was intensified by the tarred coating. Explicit orders had been given that sheds be erected over the vats to prevent this, but for unexplained reasons they were never erected.

When laying time came large sections of the gutta-percha insulation were found to have melted and left the conductor exposed. Some **thirty** miles of faulty cable were cut out and discarded before laying, but the many miles of cable which were deemed acceptable — or good enough to warrant the gamble of submerging — deteriorated badly during the laying operation. Despite the large current leakages of the conductor to the salt water ground, some four hundred messages were successfully transmitted between Ireland and Newfoundland.

There was persistent scepticism for a time in some quarters that the cable was actually laid, and that the whole affair was a hoax. But, with the actual exchange of messages such as those between England's Queen and the President of the U.S., people everywhere began to fully appreciate the importance of such a communications link. Accolades and poems appeared in the news journals, and impromptu displays of flags, illuminations and the sounds of bells celebrated the new tie between the Old and New Worlds.

But the success of the first cable was short-lived. The insulation deteriorated further after being submerged, so higher voltages were impressed on the cable in the hope of forcing a readable signal through. When the voltage was increased to some 2,000, what was left of the gutta-percha was punctured in so many places that the cable became completely "silent" forever.

But Cyrus Field refused to acknowledge defeat. In 1865 he founded the Atlantic Telegraph Company and contracted for another cable laying across the Atlantic in 1866. The venture was a success and a reliable facility was finally realized.

PEUTON DEUX MILLE SEPT CENT DOLLAR

A typical strip of ink-siphon recorded tape.



Don de Neuf began his radio career as an amateur (6ACZ) in 1920. After a short career as a shipboard operator, he continued in technical and managerial capacities with RCA Communications and Press Wireless. He retired as President of Press Wireless in 1971, and is now a telecommunications consultant, doing work here and in South America. He was a member of the Industry Advisory Committee of the FCA and an original member of the FCC Ad Hoc Satellite Communications Committee 1960/61. Don is a Fellow of the Club, a Life Member of IEEE and a Director of the Society of Wireless Pioneers.

In those early days most cable signals were read by the fluctuation of galvanometers, with code signals based on spacings between positive and negative "keying currents" applied from the sending end. Signalling techniques advanced through the use of tiny mirrors reflecting a light beam from an oil lamp. Then extremely sensitive ink-siphon-recording on paper tape was developed, which increased the speed of signalling. By the turn of the century "magnifiers" were developed using thermo-mechanical principles, and later "regenerator" techniques greatly improved the speed capabilities. All however continued to use the original polar changing technique offered by the use of direct current.

A no-signal or "space" condition was indicated by the galvanometer needle resting at zero-center. Code signal dots appeared to the left and dashes to the right. On the syphon-tape recording technique used in the later years, the dots were above, and dashes below. Actually the inherent electrical sluggishness of the cable could not, at usual operating speeds, show the individual dots and dashes on the tape recording. Operators learned to read the intended signal by the length of time the pen remained below or above the zero-center line for each character. For example, the four dots in the letter "H" caused the pen to remain on the upper side of zero-center four times as long as it did the letter "E". (See Fig. 1 of actual cable tape recording). Cable handkeys were double-levered affairs, with two buttons — one on each lever. Normally the first finger keyed the lefthand lever which was dots (positive) and the second finger keyed the dashes (negative). In later years all transmission was by perforated tape (keyboard).

By the end of the 19th century there were about 15 submarine telegraph cables across the North Atlantic Ocean, some with various routes via Ireland, the Azores, Newfoundland and Nova Scotia. Newer techniques resulted in these cables growing in size and capability. In 1894 the Anglo-American Company laid a cable that was the heaviest and fastest up to that

time. It used 650 pounds of copper and 400 pounds of gutta-percha per nautical mile, and was capable of speeds close to 50 words per minute. Machine sending, using perforated paper tape, superseded hand key sending. The tape was punched in a small mechanical device with three buttons on top (dots, spaces, and dashes) which perforated the appropriate holes in the tape. The buttons were struck by the operator with small wooden mallets — one in each hand — dots on the left, spaces in the center, dashes on the right.

Following the end of the U.S. Civil War, the International Ocean Telegraph Co. was formed to construct the cable links between the U.S. and its neighbors to the South — Havana, Panama and St. Thomas. By 1926 there were over 23,000 miles of cables between the U.S. and Latin American points, connecting with Central American points, Ecuador, Peru, Chile and, via a connecting landline over the Andes, to Argentina, Uruguay and Brazil.

At the turn of the century The Commercial Pacific Cable Company had a system operating in the Pacific from San Francisco via Honolulu and Guam to Shanghai and Japan, and the British/Canadian interests had one operating out of Vancouver to Australia and New Zealand.

There was, incidentally, in 1865, a fascinating communications project to extend the U.S. Morse landline circuitry to the Orient via overhead lines on poles via Canada, Alaska, and Siberia. Materials and manpower were actually transported to numerous locations along the way. It was planned to provide circuits between the U.S. and Europe through Russia (none then existed) but the project collapsed quickly when Field's Atlantic Telegraph Cable became a reality.

All the old telegraphic transatlantic undersea cables were abandoned with the laying of new multi-voice-grade co-axial type cables in 1956.

French Transatlantic Cable, Too!

It is rare to find a reference in telecommunications history to the fact that the French Government was, in the period 1869-1870, instrumental in forming a company known as "PQ". (These happened to be in initials of a chief officer of the company.) PQ laid its first cable in 1869 between Brest and St. Pierre — Miquelon (French island possessions south of Newfoundland) a distance of 2685 nautical miles. It obtained from the U.S. a cable landing license and laid its second cable in 1898 from Brest direct to Cape Cod. It was the longest cable ever laid up to the time — 3174 nautical miles. The Cape Cod station operated until 1959.

(It is interesting to note that today in 1975, PQ, the French Cable Company still exists in New York, operating channels between New York and Paris using the new coaxial cable facilities. It is the only foreign telecommunications concern operating in the U.S. in direct competition with such U.S.-owned international carriers as RCA-Global, ITT-Worldcom, and WU-International). All telecommunications in France are a monopoly of the "Postes & Telecommunications", a government entity.

In closing the story, may I express thanks for some of the material in this article to veteran Cablemen Bill Gomes (All America Cables), Coggie Coggeshall (Western Union Cables) and Gene Lemeur (French Cables.)

THE RADIO CLUB

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1975 Armstrong, Sarnoff Awards To:



Dr. Henri Busignies



Edgar F. Johnson

Dr. Henri Busignies, Chief Scientist emeritus of ITT, has been selected to receive the Armstrong Award, highest honor of the Radio Club of America. He will be the 21st person to receive this award in the 40 years that have passed since it was established. It was "... to be bestowed by the Board of Directors... upon any person within its membership who shall have made, in the opinion of the Board and within the spirit of the Club, an important contribution to Radio Art and Science."

Major Armstrong himself was the first recipient, and it has been awarded to such figures as Ballantine, Beverage, Heising and Pickard, among others.

Dr. Busignies, who holds more than 140 patents in air navigation, radar and communications, invented the world's first automatic direction finder for aircraft. He developed the TACAN air navigation system, standard for the U.S. and NATO military aircraft, and part of the civilian VORTAC. During World War II he invented a rapid direction-finding system to locate enemy submarines that came to the surface and transmitted recorded messages in a burst of a second or two, to avoid detection by ordinary direction finders. He is also inventor of the moving-target radar (MTI).

Edgar F. Johnson, recipient of the Sarnoff citation, is known to most of the Club members; his influence in the radio field has been felt since 1923; he has been a pioneer in two-way radio and the first to manufacture amateur radio transmitters.

The Sarnoff Citation, a recent award of the Club, was established in 1973. Named after David Sarnoff, Club member from 1926, it is given "for significant contributions in electronic communication."

Born in 1899, Edgar became interested in electric communication about 1910, when he and a friend set up a "barbed-wire" telegraph. Success was only partial, he says (possibly because "discarded rusty telegraph wire" was used instead of true barbed wire). Later he learned of the existence of radio, discovered the Electro Importing Co. catalog, and built a spark station.

In 1923, he and his bride started a small mail-order business, selling parts to radio amateurs. Developing steadily, even during the depressed years of the '30's, in 1936 the first E.F. Johnson radio manufacturing unit was built. It was a building of 8,000 square feet and 17 employees. Eleven years later he made the first factory-built transmitter, the *Viking I*.



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Higginbotham to Speak

A unique feature of this year's annual meeting will be "Round Table - '75" beginning in the afternoon at 3:30 and ending around 5:00. Director Jerry Stover will serve as net control, and the featured speaker will be Mr. Charles A. Higginbotham, Chief of the FCC Safety & Special Radio Services Bureau. Charlie, a Club Fellow, will give us a briefing on things his Bureau is doing to keep regulation in tune with technological developments, including 900 MHz, microwave, spectrum management, reregulation and deregulation.

Be sure and arrange your travel schedule to get to the hotel in time for this exciting afternoon session!

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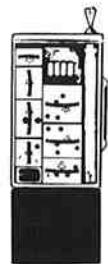
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Citations to New Fellows, 1975

Edward W. Borden *Retired AT&T engineer, 22 College Avenue, Upper Montclair, NJ 07043.*

For contributions during 29 years of engineering activity in mobile land, marine and aeronautical radio, with Bell Telephone Laboratories and AT&T.

Vivian A. Carr *Supervisor, Corporate Planning, Executive Dept. AT&T, 195 Broadway, NY 10013.*

For numerous contributions in the fields of engineering, technical writing and organization.

Arthur A. Collins *Arthur A. Collins, Inc., 13601 Preston Road, Suite 590W, Dallas, TX 75240.*

For more than 40 years service to the amateur and general radio field as designer and manufacturer of radio equipment and founder of Collins Radio.

E. Stuart Davis *Retired Telegraph, Instrumentation and Radio Engineer. Director, The National Telegraph Office Museum, 1149 Weber St., Union, NJ 07083.*

For his efforts in preserving the history of telegraphy and radio through his National Telegraph Museum and items in *Brasspounders Gossip*.

William Eitel *Retired, (founder EIMAC) Sutro Ranch and Laboratory, Box G, Dayton, NV 89403.*

Pioneering work in transmitting tubes. Participation in amateur radio organization and activity, especially moon-bounce and satellite operation.

Ero Erickson *(Publisher of Rain Static and Wind Static newsletters). 4024 N. Pioneer St., Chicago, IL 60634.*

For services during 29 years of public safety communications, and in APCO and other organizations, and as publisher of *Rain Static*.

Milton C. Fruehauf *Retired AT&T engineer. 5325 Ponderosa Drive, Columbus, OH 43229.*

For pioneering contributions in the study, testing, engineering and development of air-ground radio systems.

Harry S. Gartsman *President, Alvaradio Industries, Vice President, Quarter Century Wireless Association (amateur since 1934). 9921 Sunset Blvd., Beverly Hills, CA 90210*

For contributions in the development and manufacture of sophisticated communications equipment.

M. Harvey Gernsback *Publisher, Radio-Electronics 200 Park Avenue South, New York, NY 10003.*

For contributions in Signal Corps publication in World War II and in electronics publication to the present.

Ron E. Grove *General Manager of Product Planning, Pye Telecommunications Ltd., Newmarket Road, Cambridge, England CB5 8PD.*

For contributions to telecommunications for more than 30 years worldwide.

Robert E. Leo *Department of Electrical Engineering, Montana State University, Bozeman, MT 59715.*

For contributions in the fields of education, research and publication.

Lt.-Gen. Walter E. Lotz, Jr. *Deputy Director Defense Research and Engineering, for Test and Evaluation, Department of Defense, Washington, DC*

For advances and improvements in military communications.

F. Vinton Long *Retired. Communications Consultant to the petroleum-gas-pipeline industry. P.O. Box 353, Boca Raton, FL 33432.*

For his many contributions to communications and radio, especially in the petroleum and gas industry.

William L. Miller *President, APCO. Director, Communications Division, Chicago Police Department, Chicago, IL 60630.*

For contributions as active member and officer of major Public Safety Communications associations.

Benjamin H. Oliver *Retired. Former AT&T Vice President, past president AFCEA. 9100 Burning Tree Road, Bethesda, MD 20034.*

For technical and administrative services and leadership in telephony and in communications associations.

Loren McQueen *President, Communications and Control Inc., San Jose, CA 2633 S. Bascom Avenue, Campbell, CA 95008.*

For contributions in special communications systems.

John F. Shafer *Physicist, Law Enforcement Standards Laboratory, National Bureau of Standards, Boulder, CO 80302.*

For contributions to the fields of amateur radio, low-frequency, bolometric power and law enforcement communications equipment standards and fast rise time pulse instrumentation.

A.C. Simmons *Executive Vice President and General Manager, Decibel Products Co., 3184 Quebec St., Dallas, TX 75247.*

For contributions to the antenna industry and specifically for his development of computerized intermodulation product charts, (IPC) and their application in reducing R.F. interference between land-mobile radio stations.

Jerry S. Stover *(Director, Radio Club of America.) President, Communications Industries, Inc., 511 North Akard, Dallas, TX 75201.*

For leadership in the development of communications systems for public safety and industrial operation.

Leslie G. Thomas *Retired. 200 Ocean Lane Drive, Bay Biscayne, FL 33149.*

For pioneer leadership in the electronics manufacturing industry from 1920 to 1956.

David Warshaw *Retired. (Formerly ITT.) 141 Quaspeck Blvd., Valley Cottage, NY 10989.*

For significant contributions to radio propagation knowledge during World War II, and for achievements in the study of solar flares.

Col. Grant A. Williams *Retired. (Formerly Chief Signal Officer, First Army, during World War II.) 12-P Northgate Apts. Camden, NJ, 08102*

For contributions to military communications in World War II. Early exponent of use of voice communications in mechanized vehicles — Armored Forces.



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HANS CHRISTIAN OERSTED
GEORG SIMON OHM
JOSEPH HENRY
HEINRICH DANIEL RUHKORFF
HERMAN L.F. VON HELMHOLTZ
MAHLON LOOMIS
DAVID EDWARD HUGHES
JAMES CLERK MAXWELL
WILLIAM HENRY PREECE
AMOS EMERSON DOLBEAR
EDOUARD BRANLY
ADOLPH K.H. SLABY
AUGUSTO RIGHI
OLIVER HEAVISIDE
KARL FERDINAND BRAUN
EMILE BERLINER
ELIHU THOMSON
JOSEPH RUDOLPH HERTZ
JAGADIS CHUNDER BOSE

ALEXANDER POPOFF
PAUL NIPKOW
GEORGE OWEN SQUIER
REGINALD AUBRY FESSENDEN
CHARLES FRANCIS JENKINS
LOUIS AUSTIN
WILLIS WHITNEY
JOHN STONE
VALDEMAR POULSON
ARTHUR KORN
ERNEST RUTHERFORD
GEORGE WASHINGTON PIERCE
WILLIAM DAVID COOLIDGE
FRANK CONRAD
WILLIAM HENRY ECCLES
GREENLEAF PICKARD
ERNST F.W. ALEXANDERSON
ALBERT HOYT TAYLOR
CHARLES SAMUEL FRANKLIN
ALBERT W. HULL
IRVING LANGMUIR
ROY ALEXANDER WEAGANT
ILIA E. MOUROMTSEFF
HERBERT E. IVES
FREDERICK A. KOLSTER
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EMORY LEON CHAFFE

JOHN HOWARD DELLINGER
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RAYMOND ALPHONSUS HEISING
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RICHARD H. RANGER
VLADIMIR KOSIMA ZWORYKIN
JOHN VINCENT LAWLESS HOGAN
GEORGE CLARK SOUTHWORTH
RALPH BOWN
HAROLD HENRY BEVERAGE
IRVING WOLFF
NILS ERIK LINDENBLAD
STUART BALLANTINE
CLARENCE WESTON HANSELL
RUSSELL H. VARIAN
CHARLES JACOB YOUNG
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Pioneer Members Honored

ERNEST V. AMY

The Radio Club has voted a special award to be presented at the Annual Meeting and Banquet to Ernest V. Amy. "Pop" as many of his friends address him, is one of the Founders of the Club in 1909, Treasurer of the Club from 1911 to 1920, and President from 1926 through 1928. He has been a Director ever since.

Ernie is one — and we believe the only living one — of the original seven members who designed and built Radio Station 1BCG in 1920-21, and took part in the first "short wave" transmissions across the Atlantic.

It was in 1950 that the Club awarded him the Armstrong Medallion, presented to him by the writer, then President of the Club, at the dedication ceremonies of the 1BCG monument at the station site in Greenwich, CN. The Medallion was given to the six who "through the construction and operation of 1BCG, opened a new era in the field of radio communications," and to Paul Godley, who had manned the receiving station in Scotland that completed the transatlantic link.

Fifteen years later, Amy received the Armstrong Medal, which was presented to him by, John Bose at the Annual Banquet, November 19, 1965. The citation read, in part:

"As an amateur, he was active in the organization of this Club, the oldest radio club in the world. A charter and life member, he served either as an officer or as a Director since 1911. He designed and constructed the antenna for the 1BCG transmitter. . . ."

Ernie, by the way, is the only person other than Armstrong himself, to have received both the Armstrong Medal and the Medallion.

He was for many years President of Amy, Aceves and King, a consulting engineering firm on 42nd St. in New York City. For many years the Club Board meetings were held in those offices.

It is for extended service to the Club, his part in founding the Club and his advice and assistance in managing the Club throughout the years that this Special Award will be presented.

RICHARD W. KONTER

A Pioneer Award is being presented to Richard W. Konter, an Honorary Member of the Club. Now 94, he is believed to be the oldest surviving Navy signalman (in terms of enlistment date). He joined the Navy in 1897, under a youth apprenticeship program that was discontinued not long after.

In 1897 "the Navy had signal boys wigwagging the messages from ship to ship," and radio was still several years in the future. Even as late as 1907, the Navy did not have standard radio equipment, though many ships had various types of spark transmitters and equally various types of receivers.

Among his later adventures, Konter went to both the North and South Poles with Byrd. After his retirement in 1927, with the rank of Chief Radio Operator, he edited a publication, *Trade Winds*, to keep together the members of the U.S. Naval Ex-Apprentices Association, which had still a dozen members at the beginning of the '70's, when the publication discontinued.

WM. H. OFFENHAUSER, JR.

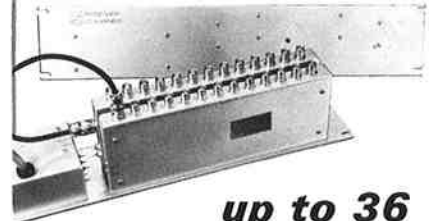
A special award will be presented to William H. Offenhauser, Jr., at the Annual Banquet November 21st.

"Bill," as he is known to all of us, has been an active member of the Club since the mid-thirties, attending many meetings and taking part in technical discussions both at meetings and at "pre-amplifier" sessions.

He has kept in touch and exchanged much information with his British and Canadian friends, as a sort of Hands Across the Sea representative of the Radio Club. With this he has made a study of the large number of news clippings collected by Ralph Batcher, and has succeeded in having these and other historical items — many involving Canadian and British developments — microfilmed. Bill plans to attend the Banquet and there present to the Club the first microfilm copy.

Bill was President of the Club in 1968, and has been a Fellow of the Club since 1936. He holds about 20 patents and has his own consulting business in New Canaan, CN.

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NEW MEMBERS

Since the last issue of the Proceedings was published, 43 new members have joined the Club. This list shows the membership at September 1, 1975. Everyone on the list is a 1975 member.

ALF, Edward A. Senior Electronics Engineer, City of Portland, OR. 315 S.E. 40th, Troutdale, OR 97060.

BARLOW, Niles L. Vice President and General Manager, Standard Products Div., Harris Corp. 1680 University Ave., Rochester, NY 14610.

BROAD, Monroe M., M.D. General surgeon; amateur, advanced class. 177-18 Wexford Terr., Jamaica, NY 11452.

BUCKNELL, James M. National Sales Manager, Pye Telecommunications Ltd., Newmarket Road, Cambridge, England.

CAIN, Marshall L. Assistant Manager, National Communications System. Washington, DC. 20 Ft. Williams Parkway, Alexandria, VA 22304.

CAMPOBASSO, Thomas A. President, AFCEA; Vice President, International Sales and Service Div., Rockwell International, Collins Radio Group, M.S. 407-420, Dallas, TX 75207.

CASPERS, George E. Sales and consultation in marketing, NWR Electronics Corp., Box 333, Coolidge Dr., Lake Nebagamon, WI 54849.

CASTANERA, JUAN R. Chief Engineer, All America Cables Inc., San Juan, PR. P.O. Box 331, Luquillo, PR 00673.

COPERICH, Franklin F. Electronic Engineer, FCC, Laurel, MD. 2101 Pritchard Rd., Silver Spring, MD 20902.

COPSON, John M. Area Sales Manager, point-to-point communications, Pye Telecommunications, Ltd., Cambridge, England. 103 Rampton Rd., Cottenham, Cambridge, England.

CUDMORE, J. Barry, Manager, Commercial Sales, Bell & Howell Comm. Co., Burlington, MA. 117 West Bacon St., Plainville, MA 02762.

EDWARDS, Henry M. Manager, Antenna Sales, Phelps Dodge Comm. Co., 3043 Rosslyn St., Los Angeles, CA 90065.

FORD, J.W. Western Regional Marketing Manager, E.F. Johnson Co., 1402 Norton Ave., Suite 106, Everett, WA 98201.

FOX, Don L. Communications Technician Supervisor, Florida Highway Patrol, Miami, FL. 1156 West 51st Place, Hialeah, FL 33012.

FREDERICK, Gary M. Market Project Manager, Land Mobile Radio, E.F.

Johnson Co., Waseca, MN. 600 8th St., Waseca, MN 56093.

FRENCH, Lloyd A. Owner, Delta Industrial Communications and Engineering, 1831 "I" St., Sacramento, CA 95831.

FRIETSCH, John S. Marketing Services. 1124 Beverly Rd., Jenkintown, PA 19046.

GEILS, John W. Engineering Director, Administration, AT&T, New York, NY. 121 Delaware Rd., Stirling, NJ 07980.

GILBERT, Vincent C. Radio Manufacturer. Gilbert Mfg. Co., 16800 Quarry Rd., Los Gatos, CA 95030.

GIRARD, Paul A. Retired, former president Radio Corporation of Puerto Rico. Verbena 1675, Rio Piedras, PR 00927.

GROTH, Willard B. Senior Marketing Representative, IBM, White Plains, NY. 158 Oakland Ave., Eastchester, NY 10707.

HINDS, Samuel B. Retired, active in amateur and CB radio. 952 South Brinker Ave., Columbus, OH 43204.

HUDSON, Bobby J. President and Gen. Manager. Arva-Hudson, Inc., P.O. Box 1515, Bellevue, WA 98009.

JACOBSON, Erling R. Executive Director, Metrocom, Mobile, IL. 1438 34th Ave., Rock Island, IL 61201.

MACKEY, David L. Product Manager, Multitone Electronics Inc., Springfield, NJ. 59 Mine St., Flemington, NJ 08822.

MAXWELL, James A. Staff Engineer, Lockheed Missiles & Space Co., Sunnyvale, CA. P.O. Box 473, Redwood Estates, CA 95044.

MEEHAN, John D. Supervising Engineer, New York Telephone Co., New York, NY. 74 Hampshire Rd., Rockville Center, NY 11570.

MOREAU, Louise Ramsey, YL Editor, QST Magazine. 305 N. Llanwellen Ave., Glenolden, PA 19036.

NOVAK, Robert D. District Sales Manager, RCA Corp., Southfield, MI. 24875 Apple Crest, Novi, MI 48050.

ONNIGIAN, Peter, General Manager, Jampro Antenna Co., Sacramento, CA. 1236-40th Avenue, Sacramento, CA 95822.

PETERSON, Marvin, Radio Facilities Representative, Lockheed Missiles & Space Co., Inc., Sunnyvale, CA. 810 Dartshire Way, Sunnyvale, CA 94087.

PHILLIPS, Ronald President, Mobile Radio Comm. Inc., 1925 Baltimore Ave., Kansas City, MO 64108.

PULLY, Luther S. Professional Engineer and manufacturers' representative, Diversity Communications Co. 3910 Cedarbrush Dr., Dallas, TX 75229.

RHOADES, I. Otto, Communications Engineer, Illinois Bureau of Investigation, 2401 West Jefferson St., Springfield, IL 64706.

ROSE, Frank L. Acting Chief, Technical Standards Branch, FCC, Washington, DC. 12506 Knowledge Lane, Bowie, MD 20715.

ROSS, Uda B. Director, Electronics Supply S.A., Lima, Peru. Triana 283, Lima, Peru.

STODDART, Hartley T.W. President, Multitone Electronics, One Cornell Parkway, Springfield, NJ 07081.

TELCHEER, Theodore F. Communications Officer, County of Montgomery, Dayton, OH. 1113 Claybourne Rd., Kettering, OH 45429.

TOWNS, Mirabeau C., Jr. Staff Engineer, Lockheed Missiles & Space Co., Sunnyvale, CA. 13035 Regan Lane, Saratoga, CA 95070.

TRENKLE, William J. Retired (W2FWA since 1933). 172-70 Highland Ave., Jamaica, NY 11432.

TROSTER, John G. Businessman/geologist. Contributing Editor, QST. 82 Belbrook Way, Atherton, CA 94025.

WALLOWER, Donald R. Director, Two-Way correspondence course, MTI, College Hill Rd., Summerdale, PA 17093.

WOFFORD, Delbert R. Superintendent, Communications, Texas Gas Transmission Corp., Owensboro, KY. 624 Suffolk Dr., Owensboro, KY 42301.

Since the list above was made up, eight new members have joined. Their names update the list to October 1, 1975. Unlike those above, these names are not in the main Directory.

COOK, Lloyd F., Inspector, Federal Aviation Administration, Logistics Division, Washington, DC. 70 Sadler Road, Bloomfield, NJ 07003.

DOW, William B., Jr. Systems Engineer, Datapoint Corp., 2340 Des Plaines Ave., Des Plaines, IL 60118.

KAHN, Bernard, Executive Vice President, Rogers Radio Communications Svcs., Inc., Chicago, IL. 252 N. Martha St., Lombard, IL 60148.

REINHEIMER, George C. District Sales Mgr., General Electric Co., Mobile Radio Dept., 10700 Beaverton Hillside Hwy., Beaverton, OR 97005.

SCOGGIN, James F., Jr. Professor, Electrical Engineering, The Citadel, Elec. Eng. Dept., Charleston, SC 29409.

TRUEMAN, Arnold W., Director of Engineering, CCA Electronics Corp., 716 Jersey Ave., Gloucester City, NJ 08030.

VILLERS, Ralph I. Supervisor, Radio Communications, City of Steubenville and Jefferson Co. 1645 Oregon Ave., Steubenville, OH 43952.

WENTZEL, Amandus G., Jr. Retired. 318 Gardner Ave., Trenton, NJ 08628.

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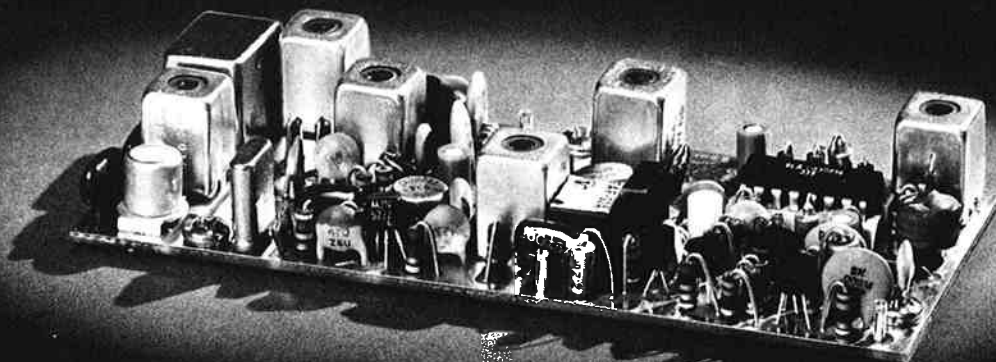
RADIO CLUB OF AMERICA

Membership September 15, 1975

- Abrams, Stephen J.** (M 1961), 3 Charlotte Drive, Spring Valley, NY 10977
- Akin, R. M. Jr.** (M 1924, F 1944, L 1972), 28 Evergreen Way, No. Tarrytown, NY 10593
- Albertson, Fred W.** (M 1957, F 1973, L 1974), 310 Harbor Dr., Bay Biscayne, FL 33149
- Alexander, Bob** (M 1973), Secode Electronics, 908 Dragon St., Dallas, TX 75207
- Alexander, Jay R.** (M 1957), 14 Somerset Lane, Riverside, CN 06871
- Alf, Edward A.** (M 1975), 315 S.E. 40th, Troutdale, OR 97060
- Alimpich, Nicholas** (M 1972, F 1972), Michigan Bell Tel. Co., 23500 Northwest Hwy., Southfield, MI 48075
- Allen, Hugh S. Jr.** (M 1967, F 1974), 3601 Royal Woods Drive., Sherman Oaks, CA 91403
- Altman, Frederick J.** (M 1975), 1212 Trinity Dr., Alexandria, VA 22314
- Amoscatto, Tom** (M 1973, L 1975), Amtol Radio Communications, 150-47A 12th Rd., Whitestone, NY 11357
- Amy, Ernest V.** (M 1909, F 1926, L 1926, H 1964), 1890 Bay Boulevard, Atlantic Beach, NY 11509
- Anderson, Jack G.** (M 1970, F 1973), 64 Hitchcock Lane, Avon, CN 06001
- Ardery, James E.** (M 1973), Rte. 4, Box 10, Lynchburg, VA 24503
- Armitage, Alan L.** (M 1969), c/o Hunterdon Co. Comms. System, Admin. Bldg. - Main St., Flemington, NJ 08822
- Arnold, John W.** (M 1929, F 1938, L 1971), 623 East Broad Street, Westfield, NJ 07090
- Ashton, Shirley S., Jr.** (M 1972, F 1974), P.O. Box 31231, Washington, DC 20031
- Atchley, Dana W., Jr.** (M 1970), Concord Road, Lincoln, MA 01773
- Atkins, C.E.** (M 1962, F 1967), 38 Ardsley Road, Montclair, NJ 07042
- Atwood, Horace, Jr.** (M 1956, F 1961), 13 Valhalla Road, Montville, NJ 07045
- Augustus, Lee M.** (M 1969, F 1972), 1213 Westmoorland Ave., Ypsilanti, MI 48197
- Aull, Wilson, Jr.** (M 1920, F 1926, L 1971), 40-14 149th Street, Flushing, NY 11354
- Avallone, Alfonso** (M 1956), 882 First Ave., Franklin Square, NY 11010
- Aylor, Raymond P., Jr.** (M 1973), 4708 Argyle Ave., Garrett Park, MD 20766
- Babkes, Jack** (M 1974), 136 Whitman Dr., Brooklyn, NY 11234
- Bach, Norman G.** (M 1969, F 1971), 2116 F St., N.W., Apt. 812, Washington, DC 20037
- Bailey, George W.** (M 1948, F 1953, L 1970, H 1974), c/o L. H. Montgomery, 131 Taggart Ave., Nashville, TN 37200
- Bailey, Wm. F.** (M 1960) 37 Chestnut St., Garden City, NY 11530
- Baker, Arthur J.** (M 1972), 11518 Lovejoy St., Silver Spring, MD 20902
- Baker, Bentley G.** (M 1969), 3559 Primrose Road, Philadelphia, PA 19114
- Barber, Alfred W.** (M 1952, F 1957, L 1972), 32-44 Francis Lewis Blvd., Flushing, NY 11358
- Barlow, Niles L.** (M 1975), Harris Corp., RF Communications, 1680 University Ave., Rochester, NY 14610
- Barnes, Frank P.** (M 1969, F 1970), 320 Park Ave., New York, NY 10022
- Barnhill, Robert B.** (M 1970), 535 Wyngate, Timonium, MD 21093
- Barone, Salvatore A.** (M 1926, F 1930, L 1971), 130 Clock Boulevard, Amityville, NY 11701
- Bassett, Rex** (M 1972), Box 4163, Fort Lauderdale, FL 33304
- Becker, Herbert** (M 1971), 3500-339 W. Manchester Ave., Inglewood, CA 90305
- Behr, Joseph** (M 1948, F 1952), 15 Fox Den Road, Danbury, CN 06810
- Belenski, John D.** (M 1974), P.O. Box 88808, Seattle, WA 98188
- Bernard, H.S.** (M 1942, F 1957, L 1971), Indian Harbor Estates, Rte. 2, New Smyrna Beach, FL 32069
- Best, Lewis E.** (M 1971), 5676 Hollyleaf Lane, San Jose, CA 95118
- Beverage, Harold** (M 1920, F 1926, L 1971), P.O. Box BX, Stoney Brook, NY 11790
- Beverly, Jack G.** (M 1974), 4667 Greenwood Dr., Allison Park, PA 15101
- Biggs, J. Alan** (M 1949, L 1971), 49 Hendricks Isle, Fort Lauderdale, FL 33301
- Billings, Ray H.** (M 1973), 1948 W. Mercer Ave., College Park, GA 30337
- Bishop, William T.** (M 1973), 4936 N. Kansas Ave., Kansas City, MO 64119
- Bitcon, William A.** (M 1971), 38 Glendale Ave., Beaconfield, Quebec, Canada
- Black, Robert S.** (M 1971), 5304 Holly St., Bellaire, TX 77401
- Bloor, Robert E.** (M 1974), 24338 Smith Avenue, Westlake, OH 44145
- Bohman, Albert K.** (M 1926, F 1952, L 1970), R.D. #1, Box 319, Horse Shoe, NC 28742
- Bolin, Ray E.** (M 1959), 26 Twin Springs Lane, St. Louis, MO 63124
- Bondon, Lewis A.** (M 1974), Prodelin, Inc., P.O. Box 131, Hightstown, NJ 08520
- Borden, Edward W.** (M 1969, F 1975), 22 College Ave., Upper Montclair, NJ 07043
- Borst, John M.** (M 1934, F 1940, L 1971), 335 West 88th St., New York, NY 10024
- Bose, John** (M 1938, F 1940), 549 W. 123rd St., New York, NY 10027
- Bourne, Kenneth M.** (M 1974), 362 Hawthorne St., Glen Ellyn, IL 60137

- Boyle, Harry** (M 1970), RCA Corporation, 60 Evergreen Place, East Orange, NJ 07018
- Bradford, William J.D.** (M 1973), The Antenna Specialists Co., 12435 Euclid Ave., Cleveland, OH 44106
- Bradshaw, Carl J.** (M 1972, F 1973), Oak Industries Inc., Crystal Lake, IL 60014
- Brinkley, John R.** (M 1971, F 1971), 3 Woodhall Ave., College Road, Dulwich, SE 21, England
- Brizzolari, Anthony J.** (M 1972), 109-10 Queens Blvd., Forest Hills, NY 11375
- Broad, Monroe, M.** (M 1975), 177-18 Wexford Terr., Jamaica, NY 11432
- Brodie, William A.** (M 1973), Brodie Communications Co., P.O. Box 687, Brandon, FL 33511
- Brooks, Carl N.** (M 1973), Box 1008, Arlington Heights, IL 60006
- Brown, John S.** (M 1972), Unit 109, 2301 W. 183, Homewood, IL 60430
- Brown, Louis E.** (M 1970, F 1972), Decibel Products, Inc., 3180 Quebec, Dallas, TX 75247
- Brown, Robert M.** (M 1970), 5611 Mid-daugh Ave., Downers Grove, IL 60515
- Brunet, Meade** (M 1928, F 1952, L 1971), Millsdale Farm, Mendham, NJ 07945
- Bryant, John A.** (M 1974), 1542 Linden Avenue, Owensboro, KY 42301
- Bryson, William B.** (M 1969, F 1972), 403 Middle Rd., Hazlet, NJ 07730
- Bucknell, James M.** (M 1975), Pye Telecommunications Ltd., Newmarket Road, Cambridge, England
- Bunday, Dale L.** (M 1973), 8704 Willowick Dr., Austin, TX 78759
- Burchard, Earl O.** (M 1971), 2017 Sum-ter Ave., Tallahassee, FL 32301
- Burgess, Edward S.** (M 1974), 101 Morse Ave., Rutherford, NJ 07070
- Burton, Jan** (M 1970), 1650 W. Ala-meda Dr., #1155, Tempe, AZ 85282
- Busignies, Dr. Henri G.** (M 1973, F 1974), 71 Melrose Pl., Montclair, NJ 07042
- Buster, Claude F., Jr.** (M 1969), 5407 Richenbacher Ave., Alexandria, VA 22304
- Butt, Harvey R.** (M 1971), 118 River Dr., Bay Ridge, Annapolis, MD 21403
- Buttner, Harold H.** (M 1928, F 1940, L 1971), Int. Tel. & Tel. Corp., 320 Park Avenue, New York, NY 10022
- Byrne, Arthur R.** (M 1970, F 1971), American Can Co., American Lane, Greenwich, CN 06830
- Cain, Marshall L.** (M 1975), 20 Ft. Williams Pky., Alexandria, VA 22304
- Campobasso, Thomas A.** (M 1975), Rockwell Intl., Collins Radio Group, M. S. 407-420, Dallas, TX 75207
- Canavaciol, Frank E.** (M 1934, F 1941, L 1971), 7119 Juno St., Forest Hills, NY 11375
- Caperton, John H.** (M 1969), 516 Coun-try Lane, Louisville, KY 40207
- Carini, Louis F.B.** (M 1930, F 1942, L 1971), 246 Wolcott Hill Road, Wethers-field, CN 06109
- Carlson, Thomas** (M 1971, F 1973), 790 14th Ave., Paterson, NJ 07504
- Carr, Vivian A.** (M 1973, F 1975), 645 Hoey Ave., Long Branch, NJ 07740
- Carter, Thomas F.** (M 1969, F 1969), P.O. Box 31001, Dallas, TX 75231
- Caspers, George E.** (M 1975), Coolidge Drive, Box 333, Lake Nebagamon, WI 54849
- Cassidy, Hugh** (M 1974), 77 Coleman Drive, San Rafael, CA 94901
- Castanera, Juan S.** (M 1975), P.O. Box 331, Loquillo, PR 00673
- Caywood, William** (M 1972), 5740 Beulah Lane, Murrysville, PA 15668
- Cervantes, Howard T.** (M 1939, F 1940, L 1971), 34 Johnson Road, Binghampton, NY 13905
- Chalfin, Norman L.** (M 1948, F 1974), 460 San Juan Pl., Pasadena, CA 91107
- Chapman, James T.** (M 1971), 134 North Ave., New Rochelle, NY 10801
- Childers, Aubrey A.** (M 1969, F 1971), 5208 North 31st Road, Arlington, VA 22207
- Chislow, Joseph H.** (M 1970), 61 Phillips Ave., Deal, NJ 07723
- Chittick, Kenneth A.** (M 1941, F 1953, L 1972), 8020 College Ave., Indian-apolis, IN 46202
- Christaldi, P.S.** (M 1940, F 1950), 132 Squire Hill Road, Upper Montclair, NJ 07043
- Christie, Donald M.** (M 1973), 11405 Ladera Vista Dr., Austin, TX 78759
- Chupp, James W.** (M 1974), 7 Holly Drive, Bayshore, N 11706
- Citron, Robert** (M 1975), Bomar Crystal Co., 201 Blackford Ave., Middlesex, NJ 08846
- Clark, Eugene W.** (M 1971), 1-14 Plaza Road, Fair Lawn, NJ 07410
- Clement, Louis M.** (M 1920, F 1926, L 1971), 72 Palm Court, Pompano Beach, FL 33062
- Cobb, Howard L.** (M 1934, F 1944, L 1971), 250 Rockaway Ave., Boonton, NJ 07005
- Cohen, Leslie L.** (M 1970), 440 West Broadway, Cedarhurst, NY 11516
- Cohn, Hugo** (M 1939, F 1953, L 1971), 905 West End Avenue, New York, NY 10025
- Colaguori, Victor** (M 1974), 240 South Lincoln Ave., Oakhurst, NJ 07755
- Colen, Roy** (M 1969), 115 Morning Sun Ave., Mill Valley, CA 94941
- Collins, Arthur A.** (M 1974, F 1975), 13601 Preston Rd., Suite 590W, Dallas, TX 75240
- Connor, George C.** (M 1936, F 1942, L 1971), P.O. Box 528, Weirsdale, FL 32695
- Cook, Lawrence** (M 1939, F 1957, L 1971), 610 William St., Boonton, NJ 07005
- Cooley, Austin G.** (M 1971, F 1973), 690 West Second St., Reno, NV 89503
- Coperich, Franklin F.** (M 1975), 2101 Pritchard Rd., Silver Spring, MD 20902
- Copson, John M.** (M 1975), 103 Ramp-ton Road, Cottenham, Cambridge, England
- Corbin, David N.** (M 1969), 6939 S. Delaware St., Littleton, CO 80120
- Cote, Andre F.** (M 1972), 1901 North Moore St., Suite 602, Arlington, VA 22209
- Covey, Arnold B.** (M 1972, F 1974), 5 Heights Rd., Apt. E-2, Ridgewood, NJ 07450
- Cowan, Stuart D.** (M 1971), Box 596 North St., Rye, NY 10580
- Crabb, Robert C.** (M 1973), 4321 Clear Valley Drive, Encino, CA 91316
- Craig, James A.** (M 1971) 4902 Justin Drive, N.W., Albuquerque, NM 87114
- Cramer, Bruce D.** (M 1955), P.O. Box 2542, Menlo Park, CA 94025
- Crawford, John D.** (M 1939, F 1957, L 1972), 16 Lodge Rd., Great Neck, NY 11021
- Crawford, Robert V.** (M 1940, F 1953, L 1970), 11 Crest Circle, Murray Hill, NJ 07971
- Cressman, Charles** (M 1970), Box 327, Leesville, SC 29070
- Cudmore, Barry J.** (M 1975), 117 West Bacon St., Plainville, MA 02762
- Cumeralto, Quinten G.** (M 1970), 7091 Springboro Rd., Marine City, MI 48039
- Cunniff, Leo C.** (M 1958, F 1963), 35 Hillcrest Rd., Cedar Grove, NJ 07009
- Dahlen, Phillip B.** (M 1972), 5100 Emerson No., Minneapolis, MN 55430
- D'Airol, Leonard J.** (M 1971), 383 Pitts-burgh Ave., Massapequa Park, NY 11762
- Dagleish, James W.** (M 1972, F 1972), c/o Pye Telecommunications Ltd., New-market Road, Cambridge, England
- Daly, Eugene F.** (M 1974), 1472 Odd-stad Dr., Redwood City, CA 94063
- Daly, John** (M 1969), Repco Inc., 1940 Lockwood Way, Orlando, FL 32804
- Dannals, Harry J.** (M 1973, F 1974), 16 Arbor Lane, Dix Hills, NY 11746
- Darrell, Robert D.** (M 1946, L 1971, F 1972), Balmoral, The Vly, Stone Ridge, NY 12484
- Davis, E. Stuart** (M 1955, F 1975), 1149 Weber St., Union, NJ 07083
- Davis, J. M.** (M 1971), P.O. Box 1853, Deland, FL 32720

- Davison, Charles H.** (M 1971), 107 Springcrest Dr., Hightstown, NJ 08520
- Davison, Charles H., Jr.** (M 1972), 11 Moline Rd., E. Brunswick, NJ 08816
- Dawes, Paul K.** (M 1971), 16841 16th Ave. S.W., Seattle, WA 98166
- de Cubas, Jose** (M 1973), 2148 Maney Dr., Jacksonville, FL 32216
- Deitz, Sidney L., Jr.** (M 1974), 14 Wickford Ave., Trenton, NJ 08618
- deNeuf, Donald K.** (M 1972, F 1974), 602-B Heritage Village, Southbury, CT 06488
- Detwiler, William L.** (M 1973), 304 Palm Court, Indialantic, FL 32903
- Devine, Frank J.** (M 1969), 101 E. 12th St., Huntington Station, New York, NY 11746
- DeZonia, William J.** (M 1970), 4608 Fieldale Road, Lynchburg, VA 24503
- Diamond, Nicholas** (M 1973), 88 Old Stage Road, Chelmsford, MA 01824
- DiBlasi, John** (M 1920, F 1926, L 1971), 155 Bay View Rd., Plandome, NY 11030
- Dickey, E.T.** (M 1927, F 1927, L 1971), 104 Jefferson Road, Princeton, NJ 08541
- Diehl, Wm. F.** (M 1920, F 1926, L 1971), 6851 Roswell Rd., N.E., Apt. F-4, Atlanta, GA 30328
- Dirmann, John F.** (M 1973), P.O. Box 7065, 1940 Lockwood Way, Orlando, FL 32803
- Dooley, Edward G.** (M 1974), COMSAT General Corp., Suite 2662, 630 Fifth Ave., New York, NY 10020
- Dorian, Charles** (M 1971, F 1973), 4444 Chesapeake St., N.W., Washington, DC 20016
- Dornfeld, Seymour** (M 1970), 2760 Elaine St., Bellmore, NY 11710
- Doty, Archibald D., Jr.** (M 1972), 8360 Rushton Rd., South Lyon, MI 48177
- Dreher, Carl** (M 1922, F 1940, L 1970), Rd. 5, Brewster, NY 10509
- Drexler, Hartford P.** (M 1973), Bucks County Dept. of Comms., Administration Bldg., Doylestown, PA 18901
- Dunnell, Richard C.** (M 1970), 41-71 Denman St., Elmhurst, NY 11373
- Duskis, Ephraim F.** (M 1964), Ansonia Hotel, Broadway & 73rd St., New York, NY 10023
- Dux, Walter C.** (M 1973), 9014 Monroe Ave., Jacksonville, FL 32208
- Edge, Walter H.** (M 1969), 104 Forest Ave., W. Caldwell, NJ 07006
- Edinger, J. Raymond** (M 1949, F 1957, L 1975), 852 Henry Street, Uniondale, NY 11553
- Edwards, Henry M.** (M 1975), Phelps-Dodge Comm. Co., 3043 Rosslyn St., Los Angeles, CA 90065
- Eitel, LaNeil** (M 1974, L 1975), P.O. Box G, Dayton, NV 89403
- Eitel, William** (M 1974, L 1975), P.O. Box G, Dayton, NV 89403
- Elder, William E.** (M 1974), 3322 Albion Court, Fairfax, VA 22030
- Eldridge, Albert B.** (M 1958), 23 Fern Rd., Sparta, NJ 07871
- Elliott, Max** (M 1973), P.O. Box 55, Oak Run, CA 96069
- Ellis, I.M.** (M 1971), 6615 Pemberton Dr., Dallas, TX 75230
- Engle, Karl D.** (M 1929, L 1971), 3621 W. Devon Ave., Chicago, IL 60645
- Erickson, Ero** (M 1970, F 1975), 4024 No. Pioneer St., Chicago, IL 60634
- Espenschied, Lloyd** (M 1923, F 1926, H 1959), 99-82nd Road, Kew Gardens, NY 11415
- Evans, J. Lawrence, Jr.** (M 1967), 79 Glenwood Rd., Englewood, NJ 07631
- Evans, R.J.** (M 1969, F 1972), 525 Highland Ave., E. Lansing, MI 48823
- Fahrner, Joseph A.** (M 1971), 6094 East Lake Ave., Box 88, Orchard Park, NY 14126
- Farrand, C.L.** (M 1920, F 1926, L 1971), 117 Wall St., Valhalla, NY 10595
- Felch, Edwin P.** (M 1939, F 1942, L 1971), 109 Fairmount Ave., Chatham, NJ 07928
- Felix, Edgar H.** (M 1928, F 1942, L 1971), 69 Allen Avenue, Manasquan, NJ 08736
- Felt, Marcus A.** (M 1964), 669 Summit St., Englewood Cliffs, NJ 07632
- Fennimore, Roland M.** (M 1968), 5148 Napoli Drive, Naples, FL 33940
- Ferrell, David C.** (M 1973), 601 - 12th Ave., S.E., Waseca, MN 56093
- Ferrell, Oliver P.** (M 1968), Box 239, Park Ridge, NJ 07656
- Finch, Capt. Wm. G.H.** (M 1927, F 1959, L 1971), 3025 Morningside Blvd., Port St. Lucie, FL 33452
- Fine, C. Robert** (M 1971), 570 North St., Harrison, NY 10528
- Fingerle, William** (M 1970, F 1973), 35 Midbrook Lane, Old Greenwich, CN 06870
- Fink, Donald G.** (M 1934, F 1940, L 1973), R.D. #2 Kitchel Road, Mt. Kisco, NY 10549
- Finlay, Robert C.S.** (M 1939, F 1953, L 1970), P.O. Box 4712, Fort Lauderdale, FL 33304
- Finlay, William P.** (M 1965), 15 Vincent Ave., East Providence, RI 02914
- Fisher, Lester M.** (M 1973), 4398 Shady Bend Dr., Dallas, TX 75234
- Flinn, David F. W2CFP** (M 1970), Starlane Farms, 866 Ridge Rd., Lansing, NY 14882
- Flood, Bernard H.** (M 1970, F 1971), Arizona Dept. of Public Safety, P.O. Box 6638, Phoenix, AZ 85005
- Ford, J.W. (Bill)** (M 1975), E. F. Johnson Co., 1402 Norton Ave., Suite 106, Everett, WA 98201
- Forster, William H.** (M 1970, F 1970), ITT Europe, 480 Ave. Louise, 1050 Brussels, Belgium
- Fowler, H.L., Jr.** (M 1956), 37 MacSpar Drive, Mt. Fern, NJ 07801
- Fox, Don L. (M 1975)**, 1156 West 51st Place, Hialeah, FL 33012
- Fraser, Clifford G.** (M 1973), 462 Muriel Ct., Santa Clara, CA 95051
- Frederick, Andrew** (M 1970), 954 Shackamaxon St., Philadelphia, PA 19125
- Frederick, Gary M.** (M 1975), 600 8th St. N.E., Waseca, MN 56093
- Freeman, E.W.** (M 1969), Box 57, Yankton, SD 57078
- Freeman, Robert J.** (M 1972), 11537 Brandy Hall Lane, Gaithersburg, MD 20760
- French, Lloyd A.** (M 1975), Delta Indus. Comm. & Eng., 1831 "I" St., Sacramento, CA 95814
- Friedberg, Milton R.** (M 1971), 2537 Claver Rd., Cleveland, OH 44118
- Frietsch, John S.** (M 1975), 1124 Beverly Rd., Jenkintown, PA 19046
- Fruehauf, Milton C.** (M 1969, F 1975), 5325 Ponderosa Dr., Columbus, OH 43229
- Gagne, Joseph W.** (M 1969, F 1972), Town Lane, Amagansett, NY 11930
- Gamble, William M.** (M 1971, F 1972), 2503 Allender Ave., Pittsburgh, PA 15220
- Ganzenhuber, John H.** (M 1974), Hughey & Phillips Inc., 3050 N. California St., Burbank, CA 91505
- Gartsman, Harry S.** (M 1970, F 1975), 9921 Sunset Blvd., Beverly Hills, CA 90210
- Geils, John** (M 1975), 121 Delaware Avenue, Stirling, NJ 07980
- Genochio, Frank A.** (M 1969, F 1972), 428 Luther Drive, Santa Clara, Calif. 95051
- Gensler, Barry** (M 1970), Barry Electronics Corp., 512 Broadway, New York, NY 10012
- Gernsback, M. Harvey** (M 1970, F 1975), 210 E. 15th St., Apt. 14H, New York, NY 10003
- Gilbert, Kenneth A.** (M 1972), 1716 Saddle Ridge Ct., Vienna, VA 22180
- Gilbert, Robert H.** (M 1970), 521 North East 134, North Miami, FL 33161
- Gilbert, Vincent C.** (M 1975), Gilbert Mfg. Co., 16800 Quarry Road, Los Gatos, CA 95030
- Girard, Paul A.** (M 1975), Verbena 1675, Rio Piedras, PR 00927
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- Goldsmith, Thomas T., Jr.** (M 1939, F 1942, L 1971), RR #2, Box 312, Travelers Rest, SC 29690
- Goldwater, Barry** (M 1969, F 1970), P.O. Box 1601, Scottsdale, AZ 85252
- Graham, Charles B.** (M 1960), 87 Ingram St., Hamden, CN 06517
- Grammes, Elton G.** (M 1971), 1444 San Francisco Ave., Long Beach, CA 90813
- Gravelly, Rear Adm. Samuel L.** (M 1972, F 1972), 7211 Idylwood Ct., Falls Church, VA 22043
- Gray, Gary David, P.E.** (M 1971, L 1974), Orange County Communications, 481 The City Drive So., Orange, CA 92668
- Grebe, Alfred H.** (M 1953, F 1959), 15 Caraway Road, Setauket, NY 11785
- Greenburg, Arthur L.** (M 1972), Box 311, Park St., Wading River, NY 11792
- Gregory, Glydus** (M 1971), 1501 London St., Sacramento, CA 95822
- Grenfell, William** (M 1969, F 1970), 7216 Valleycrest Blvd., Annandale, VA 22003
- Griese, Raymond H.** (M 1973), 405 Giannini Drive, Santa Clara, CA 95051
- Griffith, Percy E.** (M 1970), Route 1, McCrory Lane, Kingston Springs, TN 37082
- Grim, Edgar P.** (M 1970, F 1971), 7400 Apts., 7400 Roosevelt Blvd., Philadelphia, PA 19152
- Grimm, Frank F.** (M 1973, F 1974), Pye Telecommunications Ltd., Newmarket Road, Cambridge, England CB5 8PD
- Grim, W. Manning** (M 1926, F 1938, L 1971), c/o Minogue, Box 251, Somers, NY 10589
- Groth, Willard B.** (M 1975), 158 Oakland Ave., Eastchester, NY 10707
- Grove, Ronald E.** (M 1973, F 1975), Pye Telecommunications Ltd., Newmarket Road, Cambridge, England
- Gruber, Paul** (M 1956, F 1961), 831 Coventry St., Boca Raton, FL 33432
- Gumport, Stephen L., M.D.** (M 1974), 244 East 68th St., New York, NY 10021
- Gunther, Frank A.** (M 1940, F 1951, L 1970), 10 Highpoint Rd., Dongan Hills, NY 10306
- Gurian, Mal** (M 1969), 141 Sunset Lane, Old Tappan, NJ 07675
- Guthrie, Tom F.** (M 1973), 61-19 228th St., Bayside, NY 11364
- Guzzetti, Robert L.** (M 1975), Bomar Crystal Co., 201 Blackford Ave., Middlesex, NJ 08846
- Hajek, Robert J.** (M 1973), P-I-C Communications, Inc., P.O. Drawer H, Riverside, IL 60546
- Hall, John R.** (M 1972), 2731 Preston Drive, Mountain View, CA 94040
- Halligan, William J.** (M 1960, F 1964), 179 E. Lake Shore Drive, Chicago, IL 60611
- Halstead, William S.** (M 1972), 22210 Victory Blvd., Apt. D-102, Woodland Hills, CA 91364
- Hamilton, Hugh G.** (M 1950, L 1971), 1280 Royal Palm Way, Boca Raton, FL 33432
- Hamilton, Joseph D.** (M 1969), 5 Mary Bell Rd., Norristown, PA 19407
- Hara, Banji** (M 1956), 918 S.W. 27 Way, Boynton Beach, FL 33435
- Harmatuk, Samuel N.** (M 1957, F 1961, L 1970), 1575 Odell Street, Bronx, NY 10462
- Harnden, John D., Jr.** (M 1973), G-E Co., Corp. Research, P.O. Box 43, Schenectady, NY 12301
- Harnett, Daniel** (M 1925, F 1927, L 1970), 183 Jacaranda Dr., Leesburg, FL 32748
- Harvey, Robert** (M 1970), F. F. Johnson Co., North Arundel Executive Bldg., 300 Hospital Dr., Suite 27, Glen Burnie, MD 21061
- Hawkins, Stanley L.** (M 1969), 408 N. Gulf Blvd., Indian Rocks Beach, FL 33535
- Hayes, John F.** (M 1974), 201 Carter Rd., Princeton, NJ 08540
- Heintz, Ralph** (M 1973, F 1973), P.O. Box 546, Los Gatos, CA 95030
- Helms, Clegg A.** (M 1971), Apt. 310, Forbes Bldg., 9 Forbes Place, Dunedin Beach, FL 33538
- Henney, J. Keith** (M 1927, F 1932, L 1970), Snowville, NH 03877
- Henson, Marion** (M 1973), 6028 Hollyhurst Way, Sacramento, CA 95823
- Herlihy, Warren W.** (M 1974), 166 Overhill Rd., Orinda, CA 94563
- Herrin, Charles W.** (M 1972), 730 Loma Court, Redwood City, CA 94062
- Hervey, James P.** (M 1969), 27925 Rodgebrook Ct., Palos Verdes Peninsula, CA 90274
- Higginbotham, Charles A.** (M 1973, F 1974), 14416 Pecan Drive, Rockville, MD 20853
- Hinds, Samuel B.** (M 1975), 952 South Brinker Ave., Columbus, OH 43204
- Hinerfeld, Joseph B.** (M 1973), 5051 Pine Branches Close, Dunwoody, GA 30338
- Hirsch, Charles J.** (M 1947, F 1952, L 1971), 1065 Princeton-Kingston Rd., Princeton, NJ 08540
- Hively, Robert R.** (M 1974), 2643 Soderblom Ave., San Diego, CA 92122
- Hollingsworth, Lawrence V.** (M 1972), Communications Systems Div., RCA Corp., 2720 DesPlaines Ave., DesPlaines, IL 60018
- Hollister, Frank J.** (M 1968, F 1972), 26 Townsend St., Glen Head, NY 11545
- Holt, Carles A.** (M 1971, F 1971), 22061 Del Valle St., Woodland Hills, CA 91364
- Hopper, Kenneth D.** (M 1970), P.O. Box 188, Holmdel, NJ 07733
- Horner, Richard E.** (M 1971), President, E. F. Johnson Co., 299 Tenth Ave., Waseca, MN 56093
- Houck, Harry W.** (M 1920, F 1926, L 1970), Mountain Rd., Wallpack, NJ 07881
- Hudson, Bobby J.** (M 1975), Arva-Hudson Inc., P.O. Box 1512, Bellevue, WA 98009
- Hull, Dr. Lewis** (M 1951, F 1951), R.D. #1, Powerville Road, Boonton, NJ 07005
- Hummer, Earl W.** (M 1971), 1007 Borman Ct., Elk Grove Village, IL 60007
- Inglis, Andrew F.** (M 1970, F 1970), RCA Bldg. 15-7, Camden, NJ 08102
- Jacobsen, Erling R.** (M 1975), 1438 34th Avenue, Rock Island, IL 61201
- Jaffe, D.L.** (M 1953, F 1959), 4750 South Ocean Blvd., Highland Beach, FL 33444
- James, Wallace M.** (M 1931, F 1937, L 1971), 56 Francisca Ave., West Caldwell, NJ 07006
- Jarvis, Frank H.** (M 1974), NY Telephone, Military Comm's., 1095 Ave. of the Americas, New York, NY 10036
- Jarvis, K.W.** (M 1935, F 1938, L 1971), 500 King Dr., Apt. 613, Daly City, CA 94015
- Johansen, Harry** (M 1972), 135 Vernon Rd., Scituate, MA 02066
- Johns, Raymond E.** (M 1973), Philips Broadcast Equip. Corp., 1 Philips Parkway, Montvale, NJ 07645
- Johnson, Douglas J.** (M 1972), 1300 East 48th Ave., Denver, CO 80239
- Johnson, Edgar F.** (M 1969, F 1969), 520 9th St., N.E., Waseca, MN 56093
- Johnson, Gustave A.** (M 1969), 33C Red Oak Lane, Old Bridge, NJ 08857
- Johnson, J. Kelly** (M 1941, F 1942, L 1970), R.R. 1, Box 150C, Waitsfield, VT 05673
- Johnson, Robert M.** (M 1971), General Electric Co. - Mobile Radio Dept., 777 14th St., N.W., Washington, DC 20005
- Johnson, Rodney W.** (M 1969), P.O. Box 803, Ben Lomond, CA 95005
- Jones, Carl D.** (M 1974), Box 13, RD No. 3, Volant, PA 16156
- Jones, Harold A.** (M 1971, F 1973), Villa del Oro, 5774 No. Scottsdale Rd., Scottsdale, AZ 85251
- Jones, Thomas F.** (M 1973, F 1974), 60 Wadsworth, 28F, Cambridge, MA 02142
- Kaemmerer, Harry** (M 1974), 6 Patton Dr., Somerset, NJ 08873

- Kahn, Leonard R.** (M 1953, F 1961), 74 North Main St., Freeport, NY 11520
- Kanz, William J.** (M 1970, F 1970), Box 753, King St., Orient, NY 11957
- Kardauskas, Edmund** (M 1951, F 1964), 185 Pricilla Drive, Lincroft, NJ 07738
- Karr, Bruce M.** (M 1974), 4202 Chapman Way, Lake Oswego, OR 97034
- Katz, Paul** (M 1973), 8902 Bridgehaven Ct., Alexandria, VA 22308
- Kaye, Robert K.** (M 1972), 177 Worcester St., Suite 103, Wellesley, MA 02181
- Keel, William P.** (M 1973, L 1974), 1214 Clancy Ave., Flint, MI 48503
- Keller, Edward W.** (M 1973), 398 North Edison St., Arlington, VA 22204
- Kelley, Bruce L.** (M 1965, F 1972), Main Street, Holcomb, NY 14469
- Kelly, Kenneth J.** (M 1972), 60-11 Broadway, Woodside, NY 11377
- Kelley, Leo A.** (M 1938, F 1942, L 1971), 34-38 87th St., Jackson Heights, NY 11372
- Kendall, Elson P.** (M 1975), Office, County Prosecutor, Rahway Avenue, Elizabeth, NJ 07207
- Kershner, Eric S.** (M 1970), 3535 So. Orange Ave. Apt. 250, Orlando, FL 32806
- Kihchel, Oliver D.** (M 1970), RD 2 Woodlawn, Jeannette, PA 15644
- Kimmel, Robert** (M 1969), 880 Scenery Place, Harrisburg, PA 17109
- King, Frank** (M 1909, F 1926, L 1926, H 1972), 85 Willow Ave., Larchmont, NY 10538
- King, Patrick J.** (M 1972), 6219 Lands End Lane, Indianapolis, IN 46220
- Kirby, Richard C.** (M 1971), P.O. Box 813, Boulder, CO 80302
- Kitchen, Jay** (M 1971), 501 Cannon Rd., Silver Spring, MD 20904
- Kline, Larry H.** (M 1972), Antenna Specialists Co., 12435 Euclid Ave., Cleveland, OH 44106
- Klusacek, Emil R.** (M 1969), 26 Locust Lane, Elnora, NY 12065
- Kobi, John T.** (M 1956), 2 Henrietta Lane, Massapequa Park, NY 11762
- Koestler, Anthony** (M 1973), 75 Central Park West, New York, NY 10023
- Konter, Richard W.** (H 1970), 89 Crooke Ave., Brooklyn, NY 11226
- Koski, Jorman I.** (M 1970), 2228 Yucca St., Forth Worth, TX 76111
- Krause, R.C.** (M 1972), 1570 Bourne-mouth St., Grosse Pointe, MI 48236
- Kreer, Henry B.** (M 1970), 1904 Glen Oak Drive, Glenview, IL 60025
- Kunik, I. Jordan** (M 1952, F 1964, L 1975), 521 Fifth Ave., New York, NY 10017
- Lamb, James J.** (F 1958), 20800 Homestead Road, Cupertino, CA 95014
- Lane, Samuel H.** (M 1969, F 1974), L.A. County Dept. of Comms., 900 W. Temple St., Room 183, Los Angeles, CA 90012
- Langer, Peter L.** (M 1954, L 1975), 43-55 168th Street, Flushing, NY 11358
- Larsen, Leland J.** (M 1971, F 1974), Larsen Electronics, Inc., P.O. Box 1686, Vancouver, WA 98663
- Lear, William P.** (M 1969, F 1969), River House, Verdi, NV 89439
- Lee, Robert L.** (M 1972), 309 West Lincoln St., Pontiac, IL 61764
- Lee, William M.** (M 1969, F 1972), 7610 Rockfalls Dr., Richmond, VA 23225
- Leo, Robert E.** (M 1971, F 1975), Rt. 3, Box 104, Bozeman, MT 59715
- Leonard, Paul J.** (M 1974), Lenco, Inc., 319 W. Main St., Jackson, MO 63755
- Levergood, John H.** (M 1970), 4659 Dunover Circle N.E., Atlanta, GA 30340
- Levin, Ferrer** (M 1969), 115 Hartwich Street, Maywood, NJ 07607
- Lewis Harold M.** (M 1923, F 1928, L 1971), 510 Blanchard Pkway., Allenhurst Park, Allenhurst, NJ 07711
- Liebman, Jim** (M 1972), 5757 E. 14th St., Tucson, AZ 85711
- Lindenblad, Nils E.** (M 1974, F 1974), 44 Shady Brook Lane, Princeton, NJ 08540
- Link, Fred M.** (M 1968, F 1968), Robin Hill Farms, Pittstown, NJ 08867
- Logan, Robert G.** (M 1972), 4 Moss Drive, Brewster, NY 10599
- Long, F. Vinton** (M 1970, F 1975), P.O. Box 353, Boca Raton, FL 33432
- Lotz, Lt. Gen. Walter E., Jr.** (M 1974, F 1975), 912 Dalebrook Dr., Alexandria, VA 22308
- Loughren, Arthur V.** (M 1924, F 1929, L 1971), 22 Broadlawn Ave., Great Neck, NY 11024
- Lovell, T.** (M 1970), Box 46, Haskell, NJ 07420
- Luethje, David S.** (M 1970), 20921 Wolfe Way, Woodland Hills, CA 91364
- Lundahl, Tore** (M 1959), 5213 Elvira, Laguna Hills, CA 92653
- Lynch, Arthur H.** (M 1921, F 1926), 152 Eagle Point, Punta Gorda, FL 33950
- Lyons, Walter** (M 1952, F 1961, L 1970), 33-26 160th St., Flushing, NY 11358
- McBurney, Frank J.** (M 1971), 34 Sherwood Ave., Greenwich, CN 06830
- McClure, N.D.** (M 1972), 695 Catkins Dr., Rockford, IL 61111
- McCollum, Byron O.** (M 1970) P.O. Box 145, Penns Park, PA 18943
- McConoughey, Samuel R.** (M 1974), 13017 Chestnut Oak Dr., Gaithersburg, MD 20760
- McCormick, John A.** (M 1969, F 1971), 203 Buckingham Dr., Lynchburg, VA 24502
- McDole, Arthur E.** (M 1971), 333 Tapadero Drive, Salinas, CA 93901
- McDonald, Ramsey** (M 1970, F 1972), 159 Beacon Lane, Jupiter, FL 33458
- McKay, George E., Jr.** (M 1972), McKay Dymek Co., P.O. Box 2100, Pomona, CA 91766
- McKenney, Paul K., Jr.** (M 1974), REPCO, Inc., P.O. Box 7065, Orlando, FL 32804
- McKenzie, Alexander A.** (M 1949, F 1953, L 1970), P.O. Box 38, Eaton Center, NH 03832
- McLean, James D.** (M 1968), 1900 Avenue of the Stars, Los Angeles, CA 90067
- McLeod, James S.** (M 1974, F 1974), Page Comms. Engineers Inc., 801 Follin Lane, Vienna, VA 22180
- McMahon, Morgan** (M 1973), 26451 Dunwood Rd., Rolling Hills Estates, CA 90274
- McMann, Renville H.** (M 1920, F 1926, L 1971), 60 E. 96th St., New York, NY 10028
- McMann, Renville H., Jr.** (M 1944, F 1952), 963 Oenoke Ridge, New Canaan, CN 06840
- McMillian, J. Rhett, Jr.** (M 1970, F 1970), 210 Downing St., New Smyrna Beach, FL 32069
- McQueen, Loren R.** (M 1969, F 1975), 2633 S. Bascom Ave., Campbell, CA 95008
- McVey, Wilson** (M 1973), 6904 Carleton Terr., College Park, MD 20740
- Mackey, David L.** (M 1975), 59 Mine St., Flemington, NJ 08822
- Macklin, Frederick R.** (M 1973), 506 Gerona Ave., Coral Gables, FL 33146
- Mallory, Henry R.** (M 1958, F 1964), c/o Mallory Battery Co., Broadway & Sunnyside Lane, Tarrytown, NY 10591
- Mann, James** (M 1973), 28710 Canwood St., Agoura, CA 91301
- Margiotta, William C.** (M 1970), 3975 Broadlawn, San Diego, CA 92111
- Marshall, Travis** (M 1972), Motorola, Inc., 1747 Pennsylvania Ave., Washington, DC 20006
- Marx, Frank L.** (M 1955, F 1964, L 1975), 490 Bleeker Ave., Apt. 1-C, Mamaroneck, NY 10543
- Masavage, Irvin R.** (M 1965), 18 Schuler Avenue, Waldwick, NJ 07463
- Mason, Robert A.** (M 1971, F 1972), P.O. Box N, Cottonwood, CA 96022
- Mathieu, Edward** (M 1969), Wetmore Rd. R.D. #2, Box 81, Boonton, NJ 07005
- Maxwell, James A.** (M 1975), P.O. Box 473, Redwood Estates, CA 95044
- Mayo, Harry L.** (M 1962), 280 Prospect Ave., Hackensack, NJ 07601

- Meador, Myron E.** (M 1973), 7330 Alto Caro Dr., Dallas, TX 75240
- Meehan, John D.** (M 1975), 74 Hampshire Rd., Rockville Center, NY 11570
- Maxwell, James A.** (M 1975), P.O. Box 473, Redwood Estates, CA 95044
- Menegus, Alfred A.** (M 1971), 300 E. 40th St., Apt. 3V, New York, NY 10016
- Merriam, Robert W.** (M 1963, F 1973), Deep Peace Farm, Tillinghast Rd., East Greenwich, RI 02818
- Meserve, George D.** (M 1971), 8212 Briar Lane, Prairie Village, KS 66208
- Meyer, Stuart F.** (M 1956, F 1967), RCA Bldg., Rm. 953, Arlington, VA 22209
- Meyers, Ray E.** (M 1971, F 1972), Box B, San Gabriel, CA 91778
- Meyerson, Art H.** (M 1957, F 1963), 60 Knolls Crescent, New York, NY 10463
- Meyerson, Leo I.** (M 1972), 1210 N. 97th Court, Omaha, NB 68114
- Miessner, Benjamin** (M 1926, F 1927, L 1970), 680 N.E. 105th St., Miami Shores, FL 33153
- Mignault, Robert D.** (M 1970), Pye Electronics Ltd., 8580 Darnley Road, Montreal 307, Canada
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- Miller, Arthur G.** (M 1949, F 1964), 153 Awixa Avenue, Bay Shore, NY 11706
- Miller, C.C.** (M 1970, F 1972), 103 Dale Drive, San Jose, CA 95127
- Miller, Kenneth M.** (M 1970, L 1975), 16904 Geo. Washington Dr., Rockville, MD 20853
- Miller, William** (M 1974, F 1975), Chicago Police Dept. Comms., 1121 South State St., Chicago, IL 60605
- Milliron, Robert** (M 1973), 506 Diamond Spring Rd., Denville, NJ 07834
- Minderman, Edward K.** (M 1971), 10205 Lakeside Drive, The Village, OK 73120
- Minter, Jerry** (M 1942, F 1944, L 1975), Normandy Heights Rd., Morristown, NJ 07960
- Missailidis, N.S.** (M 1972), 253 Longstreet Ave., Bronx, NY 10465
- Mitchell, George J.** (M 1970), 1082 Cork Dr., Bethel Park, PA 15102
- Moreau, Louise R.** (M 1975), 305 N. Llanwellyn Ave., Glenolden, PA 19036
- Morelock, James** (M 1937, F 1940, L 1971), 120 Basking Ridge Rd., R.D., Millington, NJ 07946
- Morgan, Eugene L.** (M 1974), 513 Berman, Belleville, IL 62221
- Morrissey, John W.** (M 1973), 45 S. 5 St., Park Ridge, NJ 07656
- Morrison, Dearl O.** (M 1969, F 1974), 252 Cambridge Dr., Mt. Clemens, MI 48043
- Morton, William B.** (M 1970, F 1971), 11114 Cedar Lane, Beltsville, MD 20705
- Moss, George K.** (M 1961), P.O. Box 463, Locust Valley, NY 11560
- Mullings, Sanford A.** (M 1971, F 1972), 69 Coolshade Dr., Kingston 8, Jamaica, West Indies
- Munns Ernest F.** (M 1973), Burndept Electronics (E.R.) Ltd., St. Fidelis Rd., Erith, Kent, England
- Munro, John A.** (M 1974), 2660 Frontier Trail, Chamblee, GA 30341
- Myers, Robert O.** (M 1972), 15120 Alaska Rd., Woodbridge, VA 22191
- Nafzger, Lester H.** (M 1970), 903 So. Roosevelt Ave., Columbus, OH 43209
- Natole, Anthony** (M 1973, L 1975), 141-18 South Drive, Malba, NY 11357
- Nelsch, Donald R.** (M 1974), 2545 N. Haven, Cuyahoga Falls, OH 44223
- Nelson, Wayne** (M 1963, F 1973, L 1975), P.O. Box 127, Concord, NC 28025
- Neubauer, John R.** (M 1970, F 1974), 1013 Lakeshore Drive, Collingswood, NJ 08108
- Nicol, William P.** (M 1972, F 1973), Director of Telecommunications, British Home Office, 60 Rochester Row, London, S.W. 1, England
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- Novak, Robert D.** (M 1975), 24875 Apple Crest, Novi, MI 48050
- O'Donnell, Cedric F.** (F 1969), V.P. Research & Tech. Div., Autonetics, 3370 Miraloma St., Anaheim, CA 92805
- Oefinger, Hawley C.** (M 1968), 165 Haig Avenue, Stamford, CN 06905
- Offenhauser, Wm. H., Jr.** (M 1936, F 1941, L 1970), 655 Weed St., New Canaan, CN 06841
- Oliver, Benjamin H.** (M 1974, F 1975), 9100 Burning Tree Road, Bethesda, MD 20034
- Onnigian, Peter K.** (M 1975), 1236-40th Ave., Sacramento, CA 95822
- Osborn, Perry H.** (M 1944, F 1957, L 1972), 1075-A Argyll Circle, Lakewood, NJ 08701
- Osterland, Edmund** (M 1950, F 1957, L 1975), Mountain Lakes, NJ 07046
- Ostrowski, Richard J.** (M 1969), 33 Ravine Drive, Hawthorne, NJ 07507
- Otis, G. Edwin** (M 1953, F 1973), 923 Rollins Ave., Ormond Beach, FL 32074
- Owens, James** (M 1953), 3461 Charleston Blvd., Fort Lauderdale, FL 33304
- Packard, Lucius E.** (M 1940, F 1941), Technology Instrument Corp., Melvin Village, NH 03850
- Pagano, C. Carl** (M 1971), 1807 South Gladys Ave., San Gabriel, CA 91776
- Page, E.C.** (M 1946, F 1957, L 1974), c/o Telcom, Inc., 8027 Leesburg Pike, McLean, VA 22101
- Palmer, C.W.** (M 1935, F 1948, L 1972), 8701 Marble Dr., El Paso, TX 79904
- Papamarcos, George** (M 1941, F 1953), 2841 S.W. 5th St., Boynton Beach, FL 33435
- Parker, John F.** (M 1972), 9 Wawapek Rd., Cold Spring Harbor, NY 11724
- Patterson, Allen C.** (M 1972), 112A Maryetta, Derby, KS 67037
- Peck, Gordon V., K4RG** (M 1961, F 1964), Apt. 704, 521 N. Riverside Dr., Pompano Beach, FL 33062
- Perlmutter, Louis** (M 1974), 437 Golden Isles Dr., Hallandale, FL 33009
- Perretto, Armand** (M 1954), ON 269 Woodvale St., Winfield, IL 60190
- Persson, Roger E.** (M 1971), 147 West St., Elmwood, Mass. 02337
- Peterson, Marvin** (M 1975), 810 Dartshire Way, Sunnyvale, CA 94087
- Peterson, Robert M.** (M 1969), 882 Cordova St., San Diego, CA 92107
- Pfeffer, Nathaniel** (M 1970), 1085 Park Ave., New York, NY 10028
- Pfeifer, Clarence H.** (M 1956, F 1974, L 1975), 53 Warren St., New York, NY 10007
- Phillips, Harold L.** (M 1972), 24333 Southfield Rd., Southfield, MI 48075
- Phillips, Ronald** (M 1975), 1925 Baltimore Ave., Kansas City, MO 64108
- Piller, S. Edwin** (M 1957), 80 Birchwood Park Drive, Syosset, NY 11791
- Poppele, J.R.** (M 1941, F 1942, L 1970), 9 Crest Circle, So. Orange, NJ 07079
- Praul, George A.** (M 1969), 1054 Bristol Road, Warminster, PA 18974
- Prior, William A.** (M 1974), Aerotron, Inc., U.S. Highway One North, Raleigh, NC 27608
- Prystup, Edward** (M 1970), 1133 Old Bayshore Hwy., San Jose, CA 95112
- Puett, J.W.F.** (M 1974), 3008 Abston Drive, Mesquite, TX 75149
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- Quist, A.H.** (M 1940), F 1957, L 1972), 717 Aviary Way, Homestead Run, Toms River, NJ 08753
- Randall, William R.** (M 1972), Antenna Specialists Co., 12435 Euclid Ave., Cleveland, OH 44106
- Raser, Edward G.** (M 1957, F 1964), 19 Blackwood Dr., Wilburtha Gardens, Trenton, NJ 08628
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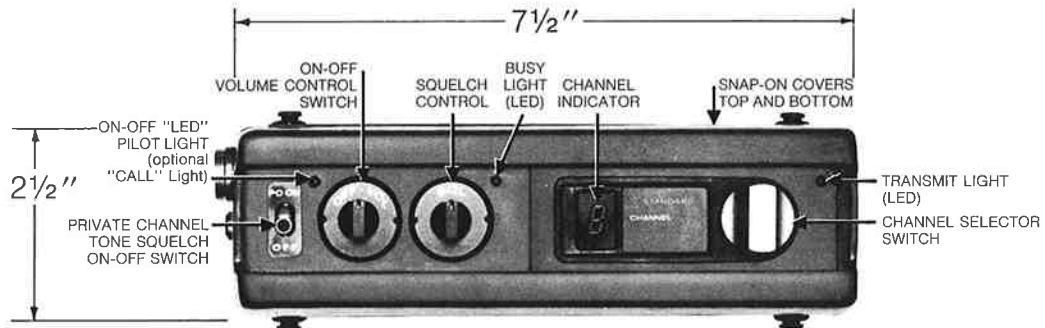
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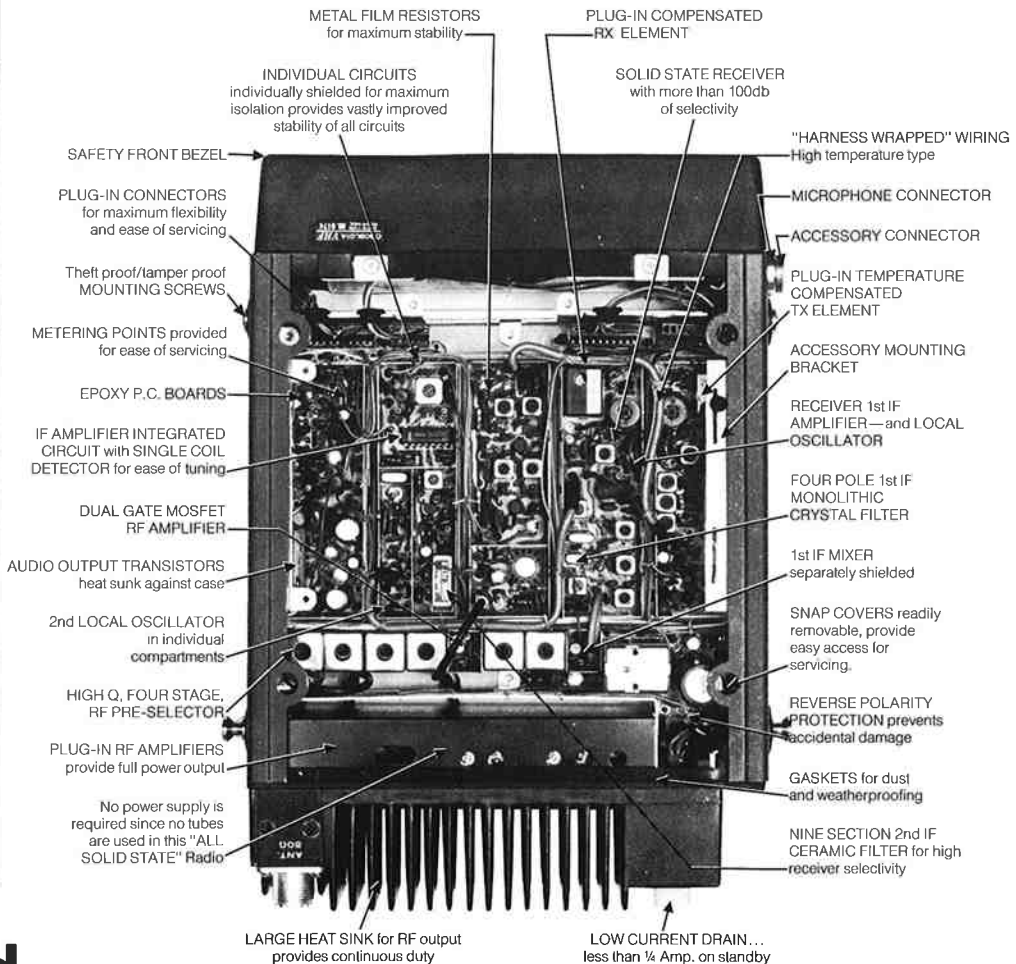
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- Richardson, Kenneth** (M 1974), 254 Vincent Ave., Lynbrook, NY 11563
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- Rider, John F.** (M 1932, F 1937, L 1970), 9800 East Bay Harbor Dr., Miami Beach, FL 33154
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- Rogers, Albert P.** (M 1970), Florida Highway Patrol, Box 15025, West Palm Beach, FL 33406
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- Root, L. Eugene** (M 1974), 1340 Hillview Drive, Menlo Park, CA 94025
- Rose, Frank L.** (M 1975), 12506 Knowledge Lane, Bowie, MD 20715
- Rose, Joseph** (M 1974, F 1974), 4203 Sandhurst Court, Annandale, VA 22003
- Rosenburg, Arnold** (M 1970), 1000 16th St., N.W., Washington, DC 20036
- Rosenbloom, Joseph S.** (M 1974), IBM CHQ., Armonk, NY 10504
- Ross, Uda B.** (M 1975), Triana 283, Lima, Peru
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- Runyon, John B.** (M 1955), 39 Locust Point Rd., Locust, NJ 07760
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- Rutherford, R.E., Jr.** (M 1961, F 1964), P.O. Box 13, New Canaan, CN 06840
- Ryan, George A.** (M 1972), 23 Willow Rd., Mapleshade, NJ 08052
- Rykala, Theodore** (M 1973), American Natural Gas System, One Woodward Ave., Detroit, MI 48226
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- St. Clair, Byron W.** (M 1969), 12120 New Hampshire Ave., Silver Spring, MD 20904
- Salsberg, Arthur P.** (M 1973), 15 Range Dr., Merrick, NY 11566
- Samuels, Ruel P.** (M 1972), 42 Lords Rd., Kingston 5, Jamaica, W.I.
- Sands, Leo G.** (M 1960, F 1969), 250 East 73rd Street, New York, NY 10021
- Sanford, Bernard E.** (M 1971), 5411 Falls of Neuse Rd., Raleigh, NC 27609
- Saveskie, Peter N.** (M 1974), TAI (E-Systems), 7700 Arlington Blvd., Falls Church, VA 22046
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- Schnoll, Nathan** (M 1928, F 1953, L 1971), 132 Dimmig Road, Upper Saddle River, NJ 07458
- Schomburg, Richard A.** (M 1957, F 1971), 1322 S.E. 37 Ave., Hillsboro, OR 97123
- Schwartz, Milton** (M 1971), 166-36 24th Rd., Flushing, NY 11357
- Schwede, Harold F.** (M 1969, F 1970), R.F.D. # 2, West Redding, CN 06896
- Scoggins, E. Joseph** (M 1970), 195 N.E. 131st St., No. Miami, FL 33161
- Selenius, O. Eric** (M 1971), Box 440, Apple Valley, CA 92307
- Shackelford, Benjamin E.** (F 1943, L 1971), 743 Mosswood Ave., Orange, NJ 07050
- Shafer, John** (M 1974, F 1975), 941 Teller Circle, Boulder, CO 80302
- Shand, William A.** (M 1970), S.A. Co. Business Consultants, 207 McHenry St., Vienna, VA 22180
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- Shepard, F.H., Jr.** (M 1936, F 1942, L 1970), P.O. Box 332, Summit, NJ 07901
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- Shortt, Hubert L.** (M 1945, F 1973, L 1975), 3018 Cambridge Rd., Winston-Salem, NC 27104
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- Siegel, Seymour N.** (M 1967, F 1969), 870 United Nations Plaza, Apt. 14C, New York, NY 10017
- Sieminski, Edward** (M 1935, F 1953, L 1973), 134-14 Franklin Ave., Flushing, NY 11355
- Simkins, Robert** (M 1970), 69 Auburn Lane, East Norwich, NY 11732
- Simmons, A.C.** (M 1971, F 1975), 3829 N.W. Parkway, Dallas, TX 75225
- Sims, Joseph R.** (M 1969, F 1971), 302 Country Club Dr., Tequesta, FL 33458
- Sirls, Robert E.** (M 1971), 637 So. Waukegan Rd., Lake Forest, IL 60045
- Skipper, Lionel C.** (M 1946, F 1973), Hofstra Country Estates, 451 Fulton Ave., Hempstead, NY 11550
- Sloop, W.B.** (M 1973), 1204 Glen Eden Drive, Raleigh, NC 27612
- Smith, Arthur V.** (M 1960, F 1969, L 1974), 530 Fifth Ave., New York, NY 10036
- Smith, George E.** (M 1968, F 1969), Brevard Spring, 1816 Brevard Place, Camden, SC 29020
- Smith, Myron T.** (M 1934, F 1942, L 1970), P.O. Box 36, Cape Rd., South Casco, MA 04077
- Smith, Theodore A.** (M 1975), 1208 Limberlost Lane, Gladwyne, PA 19035
- Stantley, Joseph J.** (M 1920, F 1926, H 1967, L 1971), 213 Harvard Ave., Point Pleasant Beach, NJ 07842
- Stapleton, James W.** (M 1974), 141-03 228th St., Laurelton, NY 11413
- Stenger, William R., III** (M 1973), 2624 Wertz Ave., N.W., Canton, OH 44708
- Steen, Jerome R.** (M 1947, F 1957, L 1971), 472 Sidney St., Madison, WI 53703
- Stevens, Thomas W.** (M 1974), P.O. Box 976, Edmond, OK 73034
- Stoddart, Hartley T.W.** (M 1975), 1 Cornell Parkway, Springfield, NJ 07081
- Stodola, E.K.** (M 1958, F 1964), 5324 Montgomery, N.E., Albuquerque, NM 87109
- Stokely, Robert G.** (M 1972), 3519 Bellaire, Shreveport, LA 71109
- Stokes, Houston H.** (M 1972), 1450 E. 55th Pl., Chicago, IL 60637
- Stokes, W.E.D., Jr.** (M 1909, F 1926, L 1971, H 1972), Thistlewood Farm, Box 864, Lenox, Mass. 01240
- Stone, W.R.** (M 1974), E.F. Johnson Co., 299 10th Ave., S.W., Waseca, MN 56093

- Stover, Jerry S.** (M 1972, F 1975), Communications Industries, Inc., 511 No. Akard, Dallas, TX 75201
- Stuart, John F.** (M 1969), 4267 North 9th Ave., Pensacola, FL 32503
- Styles, Thomas J.** (M 1915, F 1926, L 1926), 160-01 84th Drive, Jamaica, NY 11432
- Sudia, Andrew T.** (M 1974), 1556 Putty Hill Ave., Towson, MD 21204
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- Tary, John J.** (M 1974), 7739 Spring Dr., Boulder, CO 80303
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- Telcher, Theodore F.** (M 1975), 1113 Claybourne Rd., Kettering, OH 45429
- Thomas, Leslie G.** (M 1928, L 1971, F 1975), 200 Ocean Lane Dr., Key Biscayne, FL 33149
- Thompson, Owen E.** (M 1972), I. Herman Co., 1050 Ralston Ave., Belmont, CA 94002
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- Tillson, Benjamin F., Jr.** (M 1971), 139 Orchard Place, Ramsey, NJ 07446
- Tischler, Louis** (M 1965), 785 Hyslip Avenue, Westfield, NJ 07090
- Tongue, Ben** (M 1971), 41 Ferris Dr., West Orange, NJ 07052
- Towns, Mirabeau C., Jr.** (M 1975), 13035 Regan Lane, Saratoga, CA 95070
- Treado, Marshall J.** (M 1971, F 1972), National Bureau of Standards, Law Enforcement Standards Lab., Washington, DC 20234
- Trenkle, William J.** (M 1975), 172-70 Highland Ave., Jamaica, NY 11432
- Troster, John G.** (M 1975), 82 Belbrook Way, Atherton, CA 94025
- Tsao, T.C.** (M 1966, F 1973), 351 E. 84th St., New York, NY 10028
- Tuckerman, Lucien P.** (M 1928, F 1942, L 1970), 3001 Veazey Terrace, N.W., Washington, DC 20008
- Turdo, Malcolm M.** (M 1973), 3106 Harrison St., Wall, NJ 07719
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- Tuxen, Niels** (M 1953, F 1972), 24 Nordica Drive, Croton-on-Hudson, NY 10520
- Tyne, Gerald F.J.** (M 1966, F 1974), 40 Kline Place, So., Berkley Heights, NJ 07922
- Ulm, Ernest H.** (M 1950, F 1957), 372 Demarest Drive, Orange, CN 06477
- Van Beuren, John M.** (M 1942, F 1944, L 1975), 1212 Royal St., New Orleans, LA 70116
- Vogel, William H., Jr.** (M 1940, L 1971, F 1972), Strawberry Lane, New Preston, CN 06777
- Voorhis, Harold V.B.** (M 1964), 105 New England Ave., Summit, NJ 07901
- Vorporian, Harry** (M 1941, L 1971), 602-B 194th Street, Flushing, NY 11365
- Wachsmuth, Erich W.** (M 1970), 608 61st Ave., N.E., St. Petersburg, FL 33703
- Wahlin, William S.** (M 1972), 144 W. 86th St., 12B, New York, NY 10024
- Waite, Amory H., Jr.** (M 1974), 46 Monmouth Blvd., Oceanport, NJ 07757
- Walker, A. Prose** (M 1971, F 1972), 12200 Pendercrest Ct., Fairfax, VA 22030
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- Wallenburg, Robert C.** 1349 Mithra St., New Orleans, LA 70122
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- Wallower, Donald R.** (M 1975), MTI, Inc., College Hill Road, Summerdale, PA 17093
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- Walton, Robert C.** (M 1972), 680 South 15 St., San Jose, CA 95112
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- Warshaw, Marguerite E.** (M 1974), 141 Quaspeck Blvd., Valley Cottage, NY 10989
- Watson, Herbert M.** (M 1971, F 1972), 76-955 Sandpiper Dr., Indian Wells, CA 92260
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- Wheeler, Harold A.** (M 1936, F 1936, L 1971), 59 Derby Place, Smithtown, NY 11787
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- Williams, John** (M 1974), ISIS Associates, P.O. Box 2540, Framingham, MA 01701
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- Wilson, William A.** (M 1970), 1569 Seashore Drive, Tacoma, WA 98465
- Winslow, Louis J.** (M 1971), 1 Roseld Ave., Deal, NJ 07723
- Winter, David W.** (M 1971), 84-26 87th St., Woodhaven, NY 11421
- Witt, Frederick E.** (M 1961), R.F.D. 1, Claper Hollow Rd., Jefferson, NY 12093
- Witt, Leonard T.** (M 1972), 144-35 222 St., Springfield Gardens, NY 11413
- Wofford, Delbert R.** (M 1975), 624 Suffolk Drive, Owensboro, KY 42301
- Woodin, Roy H., KL71HH** (M 1970), RCA Alaska Communications, 606 E. Bluff Dr., Anchorage, AK 99501
- Woodworth, Frederick B.** (M 1971), 102 Brixton Rd., Garden City, NY 11530
- Worthen, Kent J.** (M 1972), 19301 Harleigh Dr., Saratoga, CA 95070
- Wright, Winter W.** (M 1973), 141 Black Rock Rd., Hampstead, MD 21074
- Yeager, Clair J.** (M 1972), 502 Davis St., Endwell, NY 13760
- Yefsky, Sheldon A.** (M 1971), 5033 Morse St., Skokie, IL 60076
- Yellen, Anthony F.** (M 1957), 84-46 117th St., Richmond Hill, NY 11418
- Yocum, Charles H.** (M 1937, F 1952, L 1973), 463 Adamsville Rd., Central Village, MA 02790
- Zaret, Matthew E.** (M 1951, F 1961, L 1975), 221 Ashland Ave., Springfield, MA 01119
- Zayac, Frank R.** (M 1948, F 1955, L 1972), R.D. #3, Box 55, Boonton, NJ 07005
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FOUR MEMBERS HAVE PASSED ON

RAYMOND F. GUY (M 1939, F 1940, L 1973) one of the first holders of an amateur radio license as well as one of the first operators of a broadcast station, died July 12 at Boca Raton, Florida. Born in 1899, he received the ham call 2ANC in 1911, and his commercial license in 1916, working as "Sparks" on several ships, and in the Signal Corps during WWI. On receiving his E.E. in 1921, he joined WJZ, the country's second regular broadcast station, as combined engineer, announcer and general functionary. After a term (1924 – 1927) in RCA's research laboratory, he joined NBC in 1929, where he remained until 1961, retiring as Senior Executive Engineer.

Ray Guy was a Fellow of the Radio Club, and an active member of at least 13 other professional societies. He was an active ham to his death, with a record of 63 years as an amateur.

Dr. C.M. JANSKY, Jr. (Fellow, 1970) died March 17, at the age of 79. Best known as co-founder of the distinguished firm of Jansky & Bailey, he was an early worker in the radio field. With Professor Carl M. Terry of the University of Wisconsin, he worked with voice transmission in 1916 and in the development of broadcast station 9XM (now WHA) in 1919. It is one of the many "first broadcast station in the United States" claimants. He was a founder of NAB, served on the Board of Directors of the ARRL, and was on the Board of Directors of the IRE from 1929 through 1942 (President 1934).

ERNEST A. MARX (Member 1949, Fellow 1957) died April 2, He had been General Manager of DuMont Television and later General Manager of Fairchild International. Born in 1896, he was an amateur between 1910 and 1917.

Dr. A. LAFAYETTE WALSH (Member 1952, Fellow 1973) died May 22. A Life Member of the Club, Dr. Walsh was an amateur since 1912, and had maintained his call (2BW, W2BW) since 1920. He had served as Director of the ARRL, and was a Past President of the New York Radio Club.

ALTHOUGH he was never a member of the Radio Club, it is necessary to mention the passing of ERNST F.W. ALEXANDERSON. Last of the great pioneers who established radio communications, he died May 14, at the age of 97. On his arrival in the United States in 1901, he went to work for Steinmetz at General Electric, where he remained until 1948 (spending part of his time in the '20's as Chief Engineer of RCA, then a daughter company of G.E.) After his retirement from G.E. in 1948, he was again a consultant to RCA in color television for a time. It was at General Electric that he developed – in cooperation with Reginald Fessenden – the Alexanderson alternator that made high-power transatlantic radio possible, and was the standard long-distance radio transmitter until it was superseded by tubes. Holder of 342 patents, Alexander did important work in television, magnetic amplifiers and dc power transmission as well as communications.

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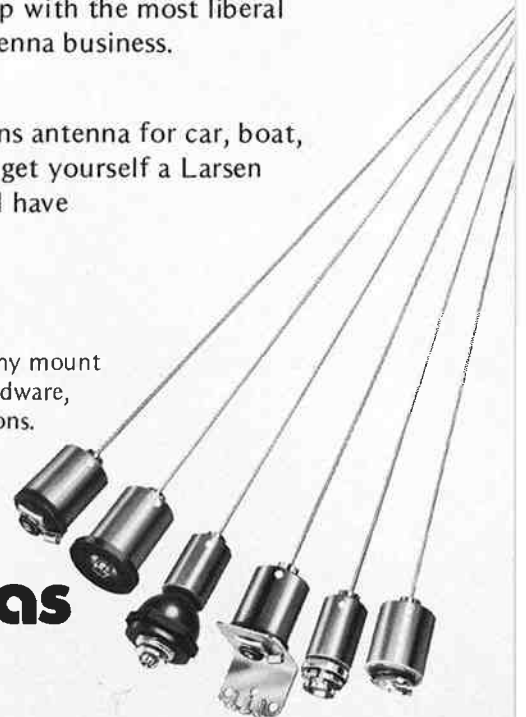
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