

Proceedings of The Radio Club of America

Volume 36, No. 2

FALL, 1960



Founded 1909

GOLDEN JUBILEE ANNIVERSARY NUMBER

Address by DR. ALFRED N. GOLDSMITH

Remarks by PAUL F. GODLEY

Medals and Honor Presentations

THE RADIO CLUB OF AMERICA, INC.
11 WEST 42nd STREET ★ ★ ★ NEW YORK CITY

The Radio Club of America, Inc.

11 West 42nd Street, New York City

Telephone — Longacre 5-6622

Officers for 1960

President

R. H. McMann, Jr.

Vice President

George Washington, Jr.

Treasurer

Joseph J. Stantley

Corresponding Secretary

James Morelock

Recording Secretary

Albert F. Toth

Directors

Ernest V. Amy
John H. Bose
George E. Burghard
John R. Edinger
Frank A. Gunther
Harry W. Houck

Fred A. Klingenschmitt
Walter A. Knoop
Jerry B. Minter
Alanson W. Parkes, Jr.
Harry Sadenwater
Frank H. Shepard, Jr.

Charles H. Yocum

Committee Chairmen - 1960

Affiliations

Walter Knoop

Armstrong Memorial

George E. Burghard

Budget

Joseph J. Stantley

Banquet & Entertainment

Albert F. Toth

Legal Counsellor

George E. Burghard

Manuscript

George Washington, Jr.

Medals

Harry W. Houck

Membership

Robert Finlay

Papers & Meetings

Alexander Proudfit

Publications

Ralph R. Batcher

Publicity

Lloyd Jacquet

PROCEEDINGS OF THE RADIO CLUB OF AMERICA

Editor

Ralph R. Batcher

Business and Advertising Manager

Lloyd Jacquet

PROCEEDINGS OF THE RADIO CLUB OF AMERICA

Volume 36, No. 2

ANNIVERSARY NUMBER

FALL 1960

THE FIFTIETH ANNIVERSARY GET-TOGETHER

To celebrate the half-century of its founding, The Radio Club of America held, at the Hotel Plaza in New York, on the evening of December 4th, 1959, its greatest banquet. Covering the period "from cat whisker crystal to moon-rocket communication," (to quote pioneer President W. E. D. Stokes words for the occasion) the gathering was an outstanding event long to be remembered.

Near the hotel's 58th street entrance, a film company was shooting a night scene in the glare of strong floodlights, as guests and members arrived for the cocktail hour preliminary to the banquet. Soon several hundred persons, with ladies invited for the first time to an official Club function, were exchanging greetings and stories in the good fellowship tradition of the Club. Some, like Art Lynch, from Florida, had journeyed long distances to attend.

As small groups formed to renew their contacts, some members recognized one of the founding members, dignified and scholarly Faitoute Munn, and greeted him warmly. In an alcove, Bill Oppenhauser who was to later tape every word of the evening's proceedings on gear set up in back of the dais, was assisting a small crew in recording famous Club member interviews for world broadcasting via "Voice of America" facilities. In another group, John Bose, later that evening to receive the coveted Armstrong Medal award of the Club, was commenting upon the good fellowship here present, and the need for a Club like ours to spread this spirit among young and new members.

Meanwhile, Banquet Committeemen, with Chairman Ernest Amy, were checking over last banquet details in the Small Ballroom next to the lounge. At their signal, all filed in and took their places at the tables. A small band was playing turn-of-the-century tunes which softly faded out as President Walter Knoop officially opened the Golden Jubilee celebration meeting of The Radio Club of America.

Applause sparked as he introduced the impressive group sitting on the dais one by one. (Photo see p. 5) He said Frank Gunther, slated to M. C. the program was unexpectedly ill and could not be present, but Harry Sadenwater had volunteered to take his place. A number of messages from friends, well-wishers, and from members unable to attend were read, including telegrams from David Sarnoff, Jack Hogan, Paul Ware, and others.

W. E. D. Stokes, the Club's first President, was fittingly the first speaker. Hard working 50th Anniversary Committee chairman George Burghard was called upon to speak. He called attention to the copy of the

Club's Golden Anniversary Yearbook on each table as a souvenir, and received a big hand for the year-long anniversary preparations culminating with this splendid evening.

As the program continued, M. C. Harry Sadenwater called upon Harry Houck, Medals and Awards Committee Chairman, to make first-time presentation of the Special Medal to Club Founders and Charter Members. Five surviving members in succession, Faitoute Munn, Frank King, W. E. D. Stokes, Jr., George Burghard, and Ernest Amy stepped forward to receive their gold medals. The charter medal to George J. Eltz, who died before this event, was received on his behalf by his son. A Special Medal for merit surprised Joseph Stantley, rewarding many years of faithful work as Club Treasurer. One of our beloved Fellow Members, Lloyd Espenschied, gratefully received his Honorary Membership parchment.

The honor of receiving the Armstrong Medal on the Club's Fiftieth Anniversary meeting went to John H. Bose, former President and long-time associate of Professor Armstrong, after whom the award is named. Receiving the silver medal bearing a relief bust of Major Edwin H. Armstrong, John Bose replied feelingly to the Citation in a short speech, both reported in full in this Proceedings.

The Anniversary Committee was fortunate in securing as guest speaker Dr. Alfred N. Goldsmith, consulting engineer with a long background in our field. Emphasizing that a Club such as ours is primarily "individuals," with distinctive personalities and accomplishments, he went down the Club's roster, reading his own "citations" as a salute to famous and outstanding Club members he had known through the years. His recollection of early radio days, interspersed with humorous experiences, made many present to chuckle. The full text of Dr. Goldsmith's speech appears in this issue of the Proceedings.

As the little orchestra played gay tunes of decades ago, the room went dark, and lantern slides popped on the screen for an unexpected surprise. Here for all to see flashed pictures of early Club members as they appeared in their pre-wireless dress. Youthful, handsome Frank King; mischievous-appearing Fred Klingenschmidt; serious-looking Ernest May; and carefree Frank Gunther were some that paraded on the screen amid laughter and applause. The Committee acknowledges with thanks the help received from wives and relatives who dug into family albums to provide this interesting documentation.

(Continued on page 13)

ADDRESS BY DR. ALFRED N. GOLDSMITH

Before The Radio Club of America, December 4, 1959,
New York City

Introduction of Dr. Alfred N. Goldsmith as guest speaker at the 50th Anniversary Banquet of The Radio Club of America on December 4, 1959 at the Grand Ball Room of the Hotel Plaza in New York City.

Mr. Harry Sadenwater:

Ladies and gentlemen, in making the next introduction I go back to a time when as a young wireless operator in 1912 I reported back to the office of the Marconi Wireless Telegraph Company, Ltd., on Cliff Street in New York, and turned in my receipts for the trip and was paid off my \$25 a month salary.

In reporting at the office, I learned that there was a meeting around the corner at Sweet's Restaurant, and somehow or other either I barged aboard or was invited, and there I met the next speaker for the first time. He was busily engaged with a few other old-timers in writing the constitution for - and the by-laws for The Institute of Radio Engineers.

Later on, as a young radio inspector for the Department of Commerce and Labor, I had the occasion to visit the City College of New York, where this same man was a professor of electrical engineering, had just recently established the first communications laboratory in any college around the world.

He has been a leader in wireless, in radio, in radio broadcasting, in television, color television, the motion picture arts, and it is an extreme pleasure for me to present our speaker of the evening, Dr. Alfred Norton Goldsmith.

(APPLAUSE)

* * * * *

(Based, with editing, on the delivered address without loss of informality)

Thank you very kindly, Harry. And now, so as to confound and out-shout any possible hecklers, I am placing the microphone at an appropriately close distance. (LAUGHTER).

Ladies and gentlemen, on this very auspicious occasion, I will introduce myself as the former builder and operator of experimental station W2XN, New York, thus establishing a close, continuous and, I hope, long future association with our good field of amateur and professional radio.

I want to begin with a few words dealing with my earlier days in amateur radio. I started out around 1901 by building a portable

coherer receiving set - couplers, tuners, and all the rest of it. Its coherer had the disconcerting habit of conducting all the time because the buzzer that was supposed to decohere it also cohered it. So the coherer would keep on going indefinitely, thus producing one long dash. This signal was very hard to read because nobody knows what one long dash means, except equipment disaster. In fact, the signals were most incoherent despite the use of a coherer!

However, I finally managed partly to shield the buzzer contact terminals, and I also tried the shunted-capacity method of reducing the spark in the buzzer. And then I began to get signals from ships in the New York harbor, and vicinity. I learned how to read them. And finally I got into a very bad personal mess as a result of this.

I took this portable receiving set with me to the homes of my boy friends and pals, and set it up. I connected the ground to a steam heater, threw a wire around outside the window as an aerial, and received messages - buzzes, dots, and dashes. And the fond mothers of the youngsters with whom I was working or playing would come and say, "What on earth are you doing? Why have you got the window open?" They may have suspected I intended to commit suicide by jumping, or doing something equally dire.

In any case, the mothers objected. And when I explained that this was "wireless", they would say disdainfully, "And what is wireless?" I would answer "Well, it's a way to get messages through the air. Now this message, for example, is from a ship in the harbor planning to do so-and-so or reporting on thus and such." I aroused nothing but scornful incredulity by such talk.

So they went very indignantly to my good mother and condescendingly told her, "Your son is an evil person. He's a liar and he's misleading my young boy. He talks rubbish, and he says some ridiculous stuff about something that he calls "wireless". I don't want him to play with my boy. He's going to get him into bad habits of lying and cheating." And so I discovered that I just had to stop home demonstrations of portable receiving sets, because the very little reputation which I then had was being rapidly ruined.

All this shows that in those days, at least, broadcasting would have been regarded as the work of the devil. Some seem to think that maybe it is. At those long past times, there were no rigged programs, either.



Seating at Dais - Left to Right - W. E. D. Stokes, Jr., W. Faitoute Munn, Frank King (3 Founding Members); P. F. Godley, C. R. Runyon, Jr., John H. Bose (Armstrong Medal Recipient), Walter A. Knoop (Club President), Harry Sadenwater (Toastmaster), Dr. Alfred N. Goldsmith (Guest Speaker), Dr. Lloyd Espenschied (Recipient of Honorary Membership), Dr. R. A. Heising, Dr. John Dunning, Harry W. Houck, George H. Burghard (Chairman 50th Anniversary Committee).

There were only rigged and unfavorable material reactions.

When you go into the radio transmitting business, you start by erecting an antenna. This matter of putting up antennas was also an occupational hazard in the early days of amateur radio. Take my own experiences. It so happened that The College of the City of New York, where my laboratory and transmitter were located, had two rather tall towers. One of them was about 180 or 200 feet from the ground and the other about 120, and they were about 500 feet apart. And I wanted to stretch an antenna - a large multiple-wire antenna, if you please - between these two towers. This antenna included much heavy phosphor-bronze wire, heavy insulators, and all the other appropriate hardware. But there was no way to get to the outside of the taller of the towers. You could get to the inside of the lower tower. But you could not get inside the taller one. You had to crawl around the outside of that tower, with a very interesting and fairly ominous view of the city below and of a clear drop down to the street about 200 feet below.

And the method of staying on the outside of the tower, instead of falling to the pavement,

was to hold on to some gargoyles and decorations which had been cemented into the side of the tower. These gargoyles were very handsome from the street but not so handsome from nearby nor when considered as a means of support.

And yet I had to climb outside this tower and pass some wires and insulators around the tower and the gargoyles and other projections. In the midst of this work on a rather windy day, I suddenly made a horrifying discovery; namely, that the gargoyle to which I was clinging was loose and slowly sagging. And this occurrence gave me a vivid picture of the distance to the ground. Grabbing the next nearest gargoyle, I held on to that. Then I swung around and got over the edge of the parapet at the top of the tower. I then sat down shakily and rapturously contemplated some of the pleasures of amateur radio.

I need hardly tell you I did survive even this incident. What happened closely resembles the old vaudeville story of the two comedians, Massa Bones and Mister Interlocutor in the minstrel show. Massa Bones says, "You know, when I was young, I was such a puny baby that they didn't think I would live." And

(Continued on page 6)

Mister Interlocutor replies, "Did you?" Whereupon Massa Bones says, "Did I? Why say - you should see me now!" (LAUGHTER)

Well, you should see me now. But if you had seen me then, you would have seen a very white-faced youngster who had no ambition for climbing outside of towers or doing any risky radio work for quite a time.

Nevertheless, there was finally established in my laboratory a long-wave tube transmitting outfit for radio-telephony, operating on approximately 180 kilocycles. And the carrier power in the antenna was 1200 watts. In those days, you put whatever power into the antenna that you could and nobody inquired about it.

Still, this transmitter got me into more trouble, because it produced almost too excellent signals. One of my "friends" up in Ossining came down to New York and was gunning for me. He said he had tuned my signal in and he happened to tune exactly on my frequency. Now, he had a very fine tube amplifier set, and he could work some rather distant stations. And when he tuned into this practically local and powerful station only a short distance from Ossining, he heard it full blast. The signals were so loud that he figured his head set had gotten grounded across the power lines. So he tore off the headset and automatically threw it away from him with full force. And I am told it went through the window, with violent breakage, frightened the cat, and generally created havoc.

As I recall, he reproached me saying, "You shouldn't produce signals that strong. Or else you ought to warn people with receivers in advance!" That was the only time I ever had that complaint, on even a short-distance reception.

Actually, I did work all the way to Grand Forks, out in North Dakota, where my correspondent Professor A. Hoyt Taylor was located at that time. Each evening I used to send him a program of speech and phonograph recordings. I also had splices, of course, to my wire telephone line. (If this fact is not reported to the Telephone Company, I shall be just as happy) So I telephoned up from downtown by wire and then out by radio. I happened to live at the time down around 11th Street and Fifth Avenue. The phone calls from downtown controlled the transmitter uptown and could send any scheduled speech, telephone messages, and music. All this was in the winter of 1915-16. And Professor Taylor would then telegraph me by Western Union from Grand Forks, so that by midnight I knew how the tests had gone.

Oddly enough, we did get through this distance of nearly 1200 miles fairly consistently on winter nights. These tests took up

my evenings, and, I might add, affected my domestic felicity for a time.

I was also working that winter with W. C. White. You will all remember White of the General Electric Company; and also Dr. E. F. W. Alexanderson, the high-frequency alternator expert at Schenectady. We were trying to establish a radiophone circuit between Schenectady and New York on the stated power of about a kilowatt and on frequencies between 150 and 200 kilocycles.

Along in early December, the two-way signals came bouncing through so beautifully that we thought we had the complete answer. The signals-to-noise ratio was very large. And the signals were clear and sharp. It was real two-way telephony. And then came January. The signals became fair but not too good. In February they were worse, and by the time we got to April the signals were completely buried under the noise. So another fond hope was laid to rest.

That was typical of the dangers you ran into in those days. You thought you really had something and then you discovered you did not. But it was good fun, and we certainly did learn.

Indeed, since that time I have had lots of fun although the U. S. Patent Office Examiners (there having been some hundreds of patents issued to me) have sometimes spoken very bitterly of what I thought fun. And when I filed a new patent application, they would often and automatically reject all its claims. (Rejection of claims means they do not permit you to patent the claimed methods or devices at all. And you then sit back and devise ways of changing their minds, or changing the claims, or both.)

And on one occasion a very strange and worrisome thing happened to me. All the claims of a patent application were approved and allowed on a first reading by the Examiner. And this greatly frightened my attorney and me. We concluded either the claims had been drawn to be too narrow (and therefore they had been allowed) and I was not going to get what I was entitled to, or else the Examiner was careless or incompetent. Or else he was malicious and was allowing the patent so that it would be invalidated and worthless later.

So this business of having all claims allowed on a first action by the Patent Office is not all beer and skittles. If it happens to you, insist on getting unfavorable action. It will help you later. (LAUGHTER)

But, enough of this personal reminiscing. I want to pass to a far more important matter, namely the Radio Club of America. And particularly I want to speak of its anniversary and what it implies. And now I am extremely serious.

First of all, I want to stress that, all real professionals are amateurs. For what is an amateur? One who loves his work, his trials, his triumphs. He is one who has an inquiring mind and resourceful ways. He is one who rates discovery, successes, and even failures, and the joy of exploration beyond financial return. And he is one who does not believe "it cannot be done."

Further, what is a professional? You might think he was very different from an amateur, but he is not. He is one who is particularly engrossed in his work, steady in his purpose, happy when he succeeds, and not too much discouraged when he fails. He is one who analyzes, plans, questions, and who is ingenious. He is one who places his professional standing and his opportunity of advancing his field and contributing to it beyond fees and material rewards. And he is one who also believes and insists that "it can be done."

Of course, not every so-called amateur is really an amateur in the finest sense of the word, any more than every professional lives up to the lofty standards of his profession. But so far as the true professionals and the true amateurs are concerned, they are brothers under the skin.

Present-day verbal distinctions between professionals and amateurs are arbitrary and often meaningless. All scientific and engineering work started as an amateur activity and later becomes, as we say, "professional". And its best followers have remained advanced amateurs to the end of their days.

Consider, for example, Sir Charles Herschel, who made the first great telescope at his own expense; Lieuwenhoek, the Dutch optician, who made the early microscope in his spectacle shop; Faraday, who dabbled in everything electrical; and founded our modern electrical arts (including motors and transformers); and Lodge and Marconi, who were super-amateurs in radio. And in America, the "gentlemen scientists" have included Rowland, Alfred Loomis, and John Hays Hammond, Jr.

And so it was with a myriad of others. Here in America the history of radio and electronics is inextricably interwoven with the history of the amateur. Even many years ago the American amateur was an active and valued contributor to the advancement of the radio art. And yet, he was attacked. He was attacked in this country of freedom and threatened with curtailment or destruction of his privileges.

(Continued on page 12)



Presentation of Honorary Membership to Club Fellow Dr. Lloyd Espenschied, (center), by Club President Walter A. Knoop. (left), as Harry Sadenwater, who substituted as Master of Ceremonies for Frank Gunther because of Frank's illness, looks on with approval.



A high point in the distribution of honors: Bestowal of the Radio Club's distinguished Armstrong Medal to John H. Bose, former Club President, and associate professor of Engineering at Columbia University, by Walter A. Knoop, Club President.

GOLDEN JUBILEE MEDALS AND AWARDS

Presentation of Armstrong Medal, first Special Medals to Club Founders and Charter Members, and an Honorary Membership

When Club President Walter Knoop read the following citation, and presented the silver Armstrong Medal to John H. Bose during the Club's Golden Anniversary dinner on December 4, 1959 at the Plaza in New York, he became the eleventh person to receive this award since its institution by the Club in 1935:

"This award of the Armstrong Medal of The Radio Club of America to you is in recognition of your pioneering work in the art of radio communications, and particularly frequency modulation. You have been closely associated with Edwin Howard Armstrong and have contributed especially to the development of FM multiplexing systems phase shift frequency modulation, and CW Radar.

"An inventor, teacher, and true scientist, much is still expected from you, John Bose, in the continuing advance of radio communications techniques. You are a comparatively young man with years of productive and creative work ahead. You are an outstanding first of radio's second generation."

Responding to President Knoop's presentation, Professor Bose answered as follows:

"I am deeply conscious of the very great honor which the bestowal of the Armstrong

Medal of The Radio Club of America represents. And in expressing my heartfelt thanks, I can only say that I will try to live up to the generous evaluation your Awards Committee has made of my work.

"This award is specially meaningful to me because it was my good fortune and privilege to have been associated for nearly twenty years with the great inventor and teacher whose likeness is reproduced on this medal. Working with Major Armstrong it was very easy to uncover new things, since the well-plowed field held very little interest for him. Because the Radio Club was close to Major Armstrong's heart, many members have had the opportunity to know him and to gain in knowledge and inspiration from his teaching.

"In communicating his findings about our art, he had few equals. His disclosures were masterpieces of exposition, demonstrating great physical insight and never failing to recognize the contributions of others. He liked to keep the record straight. In a membership as vigorous as ours, many individual contributions remain to be recognized. As the Radio Club enters its next fifty years and

(Continued on page 14)

REMARKS BY PAUL F. GODLEY

before the RADIO CLUB OF AMERICA, on the occasion
of its 50th Anniversary Banquet, Hotel Plaza, New York

Mr. Toastmaster, Distinguished Guests
and Fellow Members, Ladies and Gentlemen:

It is, indeed, a privilege and deep pleasure to be with you here this evening on this momentous and impressive occasion. The Radio Club of America has been, and is a club of unique significance. As such, it has had - and it will continue to have - great impact upon the lives and fruitfulness of its members. The uninhibited, individualistic and sometimes "free-wheeling" exchanges here across half a century have often proven to be catalytic in their effects; and as we look about us here this evening, and think upon the roster of its members, this cannot be gainsaid.

Moreover, the associations here fostered will, surely, further contribute to the leavening of understanding on this planet the size of which, in effect, these associations have served to so greatly shrink.

It has been asked that I say something about what this club has meant to me. Please bear with me. For I must briefly scan the salients of the story across more than 60 years.

In my 7th year, I lived in a small college community in Central Iowa. Our home faced the Old National Road along which there had passed - within the vivid memory of the elders - those Oregon-bound wagon trains. By now, the railroad and the telegraph, so essential to the binding of the continental nation, had, of course, come; but that storied golden spike had been driven on the high plains but 27 years before.

My only brother, and oftentimes mentor, had, together with a college classmate, built a telegraph line between our homes - a mysterious affair which I was admonished to leave alone. But child perversity kept saying: "What brother can do I can do better."

Then, right past our door - with its mysteries - came the first westward-bound tentacles of the telephone; and, shortly, the exciting story (if it could be believed) of that boy in Italy who had a telegraph without wires!

Our home atmosphere was, I am happy to say, a somewhat scholarly one. We had no telephone; no phonograph; none of the gadgets of the present day; and, for that matter, no daily newspaper. Only The Books; plus the long and treasured letters from the families in the east. But there were endless discussions amongst the grown-ups of the philosophies, the sciences, the languages - and of the disparate civilizations across the world - plus frequent speculation as to the fate of humanity in the

light of the seemingly impassable communication gulfs.

And, thus it was, I there came to dream that, perhaps, my own existence could be justified by taking some small part in the improvement of world communications means.

In those days things were not so easy; sometimes hard; discouragements along the way many. And there came that, for me, great let-down when, in 1909 as operator and engineer on the Great Lakes, I found that 150 miles was about the extreme limit of dependable ship-shore communications.

Yet, in that same year, there was stimulation, too, when - after being bodily thrown out of his laboratory a-top the Majestic Theatre Building in Chicago - I was able to acquire a couple of De Forest's "Audions"; and some further enticement when, from the middle of Lake Michigan one night, I "worked" station "DF", Manhattan Beach, New York.

However - and later - what cause for deep reflection the earnest counsel of Dr. Berg, Dean of Engineering, University of Illinois - close associate of the great Steinmetz. My session with him in his study through the evening twilight and into complete darkness within the room left deep impression. And I can hear him now as he summarized: "Wireless has no possibility of fruitful future." And this was something to ponder! - as I worked and studied and fought the discomforts within the great rain forests of the Amazon; and the static, the static! - circuits dependable for but 6 or 7 hours of the 24.

But how about much shorter waves. No good! Or so everyone said. Did anyone really know! Certainly I needed to know more. And thus it was that, from the Amazon, I wrote that colorful and lucid speaker of this evening, Dr. Goldsmith, at the College of the City of New York, asking if study with him in his new courses could enhance my understanding. And his reply? "With your background the cost in time and money could scarcely be justified."

And so, upon return to the States in 1914 there was but to have a, perhaps final, go at wireless on the shorter waves and with the amateurs. I would set myself up to play around there. Something might, or might not, come of it.

At the then principal source of radio supplies in New York City I asked a clerk for a number of things, some of which were not to be had. His curiosity aroused, he asked me what I was up to; introduced himself; took me to dinner - and on to a meeting of some radio club "way up town."

I am unable to remember the paper read before the Radio Club of America that evening, or too many of those who were there. But I

(Continued on page 11)



The fifty-year old spark gap of this wireless transmitter, pounds out the introductory message of the Golden Jubilee LP Record. Harry Houck, owner and builder of the equipment, is the operator.

GOLDEN JUBILEE COMMEMORATIVE ANNIVERSARY RECORD

Historical sounds of radio preserved on unique Anniversary souvenir recording.

A unique historical memento, a golden-jacketed Golden Jubilee phonograph record of sounds of radio history was distributed as a souvenir of the occasion to guests and members attending the Radio Club's fiftieth Anniversary Banquet in New York.

Work on this commemorative LP record began a year before the Anniversary, by Jerry Minter, who conceived the idea. Searching for material through the Club's archives, he found recorded sounds of many of the Radio Club's famous members and events. Some of the material, such as the important IBCG tape, unfortunately could not be located. But outstanding and historically valuable remarks by Edwin H. Armstrong (said to be the last ones he made before the Club), Capt. H. J. Rounds, and others are now preserved for posterity on the Golden Jubilee record.

The making of the final product involved interesting techniques. The occasion of the award of the 1952 Armstrong Medal yielded interesting material spoken by Edwin H. Armstrong, and H. J. Rounds who discloses a little-known World War I radio secret. First President W. E. D. Stokes' introductory remarks were made in New York in October,

1959, and those of Paul Godley were taped in his living room the following month. Club President Walter Knop's remarks were recorded at the Denville studio.

When all the voices were on tape, they were edited, condensed in content where required, and combined into a final tape. From this tape was cut the master record, a special hydrofeed(r) precision master recording machine designed and built by Jerry Minter being used in the process. From this master record, the presentation records were pressed.

The code messages, keyed in 1909-style by operator Harry Houck himself on his original fifty-year old spark rig, were recorded in the Fall of 1909 in a screen-shielded room to minimize radio interference. The authentic sound of wireless, circa 1909, was picked up by a microphone placed near the ham-made spark gap. To cross-mix and fade the code sounds into the spoken sequences, three tape machines were used, the mixed outputs of two machines feeding a third recorder. Anyone who can read code at five words per minute will easily catch Harry's staccato fist.

(Continued on page 14)

REMARKS BY PAUL F. GODLEY (Continued)

clearly remember my surprise when, unexpectedly, my host, Louis Pacent, rose to ask that I speak of Amazon experiences; and when I had sat down, my astonishment when some chap at the rear got up and said he had been regularly hearing my Amazon stations at his home in Yonkers, N. Y.

This, I was loth to believe. And on adjournment, I collared him. Asked to see his "rig". Demurely, he said this might not be possible. He would have to ask his patent attorneys. And as I pressed him further I was thinking: - Well, you can guess what I was thinking.

But Howard Armstrong didn't forget. Within a few days I was with him in Yonkers. And I was thrilled!

Finally, I asked what he had been able to do on the short waves. He said that he had been unable to get performance below about 900 meters due, he thought, to the characteristics of the vacuum tubes which he had been able to get and that, in any case, he was only interested in the longer waves where possibilities for commercial exploitation lay. The challenge thus presented silenced me!

And so it was, that out of those following, pajama-clad days and nights in Leonia, N. J. came the first short-wave regenerative receiver. And from that travail, too, came a very long, not very good, yet, I like to think, timely and popular paper read before this club, "Applications of the Audion" - plus the effective application of knowledge and know-how gained to the urgent needs of the great world war which, all too soon, came along.

After some delay following the war, came a great resurgence of amateur activities; re-organization of the national amateur's League; definite plans for the publication of an authentic and badly needed Radio Amateur's Handbook. And of my part in this during that critical period I am deeply proud.

Then - quite out of the "blue" - came a long telegram. Would I go to Europe and serve as Official Operator for the imminent trans-Atlantic Tests of the American Radio Relay League in December, 1921! This called for some soul searching - and some sacrifice, both then and later on. Yet, I asked myself, could this be, perhaps, "right up the alley" of those boyhood dreams?

But the story is well known to you. The great burst of interest, seemingly everywhere. Success! - as spark-plugged by station IBCG, last-minute-built by knowledgeable, enthusiastic and energetic members of this Club. The fevered interest of the commercial entities. The quickly expanding work, trans-Atlantic,
(Continued on page 14)

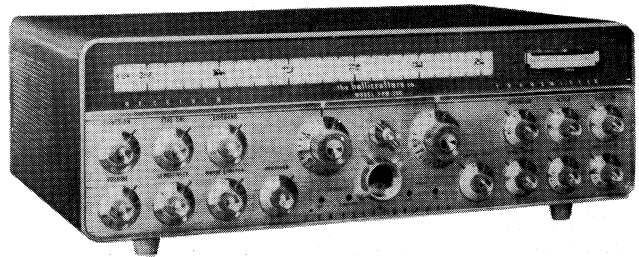


We are pleased to give our friends this advance notice of another Hallicrafters "first" in communications, and major breakthrough in the state of the art.

Field tests have been successfully completed, and limited production scheduled for

THE HALLICRAFTERS
FPM-200 TRANSISTORIZED
TRANSMITTER/RECEIVER

...launching a new era in operational reliability, performance, convenience and compactness for radio amateurs.



the new ideas
in communications are born at . . .



The **hallicrafters** Company

4401 West Fifth Avenue, Chicago, Illinois

GOLDSMITH (Continued)

Indeed, there was some talk at the time of his abolition, as you have heard this evening.

It was my great privilege, indeed, to speak energetically and publicly at that time and in the newspapers against these unwise and unjust proposals which would have been so injurious to our own field, not only in the amateur sense but also in the professional sense. I well remember writing indignant letters to the papers and finding that my good colleagues in some cases wondered why I was so "hot under the collar." I was worried and angry not only for the amateur, but also for the professionals and for the art itself, because I foresaw that if scientific freedom of experimentation were curtailed for young and enthusiastic people, there would be no end to travel along an evil path. And, fortunately, such proposals were completely defeated.

Now I come to the welcome opportunity of mentioning some of the great figures of the Radio Club of America. Their standing will sufficiently indicate its high character. I have selected a number of these names from your membership list. I apologize to those whom I have not known well enough to describe in detail. I realize that each and every one of you might with equal justice have been mentioned or even rightly eulogized. But I had to select a limited number in alphabetical order, since time presses, and these are men whom I happened to know best. And perhaps you will pardon therefore the incompleteness and informality of the so-called citations. I shall now go through them.

One name, out of context and alphabetic order - is of course our own Major Edwin Howard Armstrong. Brilliant, inventive, tenacious of purpose, tragically devoted to the pursuit of truth and to the determined justification of his life aims. Let us have a moment of silence in his memory.

And now I shall not dwell on the individual accomplishments of each of the gentlemen I mention, but only briefly mention their names and something of their activities.

Ernest V. Amy, who needs as much introduction to you as the United States itself. You know him full well as a gentleman and scholar, in the finest sense of the words.

George W. Bailey, leader, executive, professional, and amateur. Dr. W. R. G. Baker, eminent industrial and technical leader, who, though presently in Syracuse, I know is with you in spirit tonight. Ralph R. Batcher, a most capable engineer and valued author. Dr. Harold H. Beverage, a leading research worker and a thoroughly inspired pioneer. John R. Binns, deceased, literally an historical landmark and executive. Pierre Boucheron, commercial engineer, advertising expert,

publicist, and amateur. George Burghard - of him, I need say only, "Our very own George".

And I want to tell you something about George and his loyalties. (I simply cannot restrain myself from telling you this story.) Years ago, it was my very good fortune to be the director of a Naval school of which George was the officer in charge. And at that time his sidekick and pal was, as he still is, Runyon. Now, George was an ensign; but Runyon was what they then called a "radio gunner". And a radio gunner is a lower grade than an ensign. So, Burghard set out to remedy this inequity, and he decided that Runyon should become an ensign.

So he went to the District Communications Superintendent, an occasionally difficult gentleman by the name of Lieutenant-Commander Latham. He was a Southerner with a real drawl. And Burghard explained, very respectfully, to Latham that he thought his friend - Runyon - should become an ensign. Latham wanted to know why. So George Burghard explained that Runyon knew more about tactics and strategy than Napoleon ever had; he was a greater soldier than Caesar and Alexander the Great rolled into one; and that the Navy would go down directly to hopeless defeat if Runyon were not made an ensign. The conversation went on for about fifteen minutes, with Latham looking at him quizzically. And when it was all over, Latham said in that drawl of his, "Burghard, I can't do anything about this. This man couldn't be anything less than an admiral, and there are no such openings just now." (LAUGHTER)

So the Commander was mischievous enough to keep the promotion in abeyance for a month or two, if I remember correctly, before he did approve the Runyon ensigncy. But it does show that loyalty going too far can be dangerous.

Going back to our membership roll, John L. Callahan, leading professional and enthusiastic amateur. Louis M. Clement, noted contributor over the years to engineering advancement. Murray G. Crosby, a most resourceful and inventive engineer and experimenter. John S. DiBlasi, another of our great historical figures. Edward T. Dickey, stimulator and guide of much of the professional literature of our own field. William Dubilier, world-renowned engineer, inventor, and industrial leader. Allan B. Dumont, major contributor to many of the most important aspects of our field. Melville Eastham, rare combination of industrial planner and engineering leader, as well as a thorough gentleman. Lloyd Espenschied, brilliant and prolific inventor and indefatigable worker. Edgar Felix, thoughtful, analytic and most helpful

(Continued on page 13)

GOLDSMITH (Continued)

to our field. Donald G. Fink, blending in rare combination great engineering originality and the art of clearest exposition. Harry G. Gawler, pioneer engineer and friend to so many of us. Paul Godley, leading experimenter and most careful and dependable analyst. Dr. Thomas T. Goldsmith, Jr., combined research worker and organization manager. Virgil Graham, ever dependable and ultra-competent planner for the whole electronics industry. A.H. Grebe, deceased, pioneer manufacturer and engineer, and John G. Grinan, deceased, untiring and ingenious experimenter.

Let us again pause for a moment in memory of these two illustrious gentlemen. And let me take the moment to point out that this preliminary sample of our membership sufficiently indicates the Gold Medal nature of the membership, its high selectivity.

Frank A. Gunther. But why paint the lily? Only his absence this evening prevents my embarrassing him by great praise. Raymond Guy, leader in broadcast engineering and recipient of a shower of well-deserved honors and offices. Ralph A. Hackbusch, engineering leader under two flags, those of Canada and the United States. Daniel E. Harnett, one of our best known and most valuable engineers. Professor Louis A. Hazeltine who I know is sorry not to be here this evening, because of poor health, and who taught all of us so much during his brilliant career. Dr. Raymond Heising, experimenter, inventor, planner and leader in research. Keith Henney, whose prodigious memory and outstanding literary skill have made the complex seem very simple. Frank A. Hinners, ever devoted to his field and a dependable contributor to its advancement. Dr. Charles J. Hirsch, recognized organization executive and most resourceful engineer. John V.L. Hogan, another truly historic figure who has retained all his major ingenuity, inventiveness, and skill over the years. Harry W. Houck, greatly respected worker and contributor over the decades to the welfare of our art. Charles W. Horn, who, again under two flags - that of the United States (where he is a naval Captain, retired) and of Mexico - has been and is an industrial and military leader. Dr. Louis M. Hull, another of our great engineers. Kenneth Jarvis, distinguished by practical, thoughtful and authoritative contributions throughout his work. Frank King, another highly respected member of the old guard. Fred Klingenschmitt, whom we all know and greatly admire. Ralph H. Langley, untiring worker, pioneer and experimenter. James L. Lamb, effective engineer as well as enthusiastic amateur and legal expert. Clarence J. Le Bel, a rare combination of a highly experienced radio engineer and a leading acoustic expert, inventor, and engineering organizer.

(Continued in the next Proceedings"

FIFIETH ANNIVERSARY
GOLDEN YEARBOOK

A Brief Review by Carl Dreher

GOLDEN JUBILEE

Only less fascinating than the future of an art is its past --and we know more about it. The history of what was "wireless," became radio (which includes TV), and is now electronics, is practically summed up in the history of the Radio Club of America, which issued its Golden Jubilee Yearbook on its fiftieth anniversary. The founders of the Club in 1909 were a group of wireless amateurs: W. E. D. Stokes, Jr., George Eltz, Frederick Seymour, Frank King, and Faitoute Munn. Since then most of the eminent radio engineers, innovators and administrators have been members. The most illustrious of them was Edwin Howard Armstrong, the inventor of regeneration, and superheterodyne, and the system of FM broadcasting which is now coming into its own, unhappily after Armstrong's tragic death. "Howard tried to do it all himself and it was too much even for his great intellect and personality," is the way H. J. Round, Britain's leading radio engineer, sums it up.

The Golden Jubilee Yearbook is a compound of humor, nostalgia and the great technological achievements which have given us radio as we know it today--a major factor in the world's communications, military activities, and entertainment, and indispensable as man prepares to step off into space. The boys who founded the Club in 1909 had some provision of what was to come. On page 18 there is a picture of young Stokes, the 14-year-old president in 1910, at the key of his wireless station on the roof of the Hotel Ansonia. (His father owned the hotel.) Appearing before a Congressional committee that same year, Stokes assured the lawmakers that "within ten years, a man in his automobile meeting with an accident twenty-five miles from home will be able to signal on a specific wave length, call up his own home by ringing a bell there, bring his butler to the telephone and tell him the cause of his delay, and that he will not be home for dinner." In his boyish innocence, he assumed that everybody had a butler. Another photograph (page 53) of a member with quite different origins, shows David Sarnoff, at the Siasconset, Mass. Marconi station in 1908, aged 19, with three other brother operators. On page 204 you can read Sarnoff's biography, the longest in the book (5-1/4 inches), even though he forebore to list his 21 honorary degrees. On page 134 there are the famous photographs of Armstrong, standing 400 feet above Forty-Second Street atop of the iron ball which surmounted the tower of RCA broadcasting station WJZ, the first in New York City. And much else in a handsome 8-1/2 by 11 volume of 216 pages. No one interested in any aspect of radio can afford to miss it.

GOLDEN JUBILEE MEDALS AND AWARDS (Continued)

meets this happy challenge, I am sure that future recipients of this award will feel as I do the tremendous debt we owe this great pioneer. Thank you very much."

Professor Bose is a founding member and a director of the Armstrong Memorial Research Foundation, and a former President of The Radio Club of America.

FOUNDERS' AND CHARTER AWARDS

To mark the Fiftieth Anniversary of the founding of the Club, the Board of Directors, through its Medals and Awards Committee, of which Harry Houck is Chairman, decided to recognize in a suitable way those members who established the Club, and saw it through its pioneer stages. Accordingly, Special Medals to Club Founders and Charter Members were designed, and struck off, and presented to five surviving charter members at the Anniversary Banquet. In addition, this Medal was awarded posthumously to George J. Eltz, Jr., who had died before the event; and to our genial perennial Treasurer, Joseph Stantley went a surprise Special Medal, for merit for long and faithful service to the Club.

Presentation of Honorary Membership was made to Dr. Lloyd Espenschied, a Fellow of the Club, and a former Director, whose interest in radio antedates the founding of the Club by several years. In a characteristically modest way, he acknowledged the award thusly:

"I appreciate the kindness of the Club in making me an Honorary Member. One's fellow beings represent a substantial part of life itself, and the Club does bring together a goodly representation of radio human beings hereabouts. Again, my thanks."

With the award of the Special Medals for the first time in the Club's history, at this historic gathering, another form of honoring distinguished and outstanding members was created. Other awards of the Radio Club include the prized Edwin H. Armstrong Medal, the IBCG Armstrong Medallion recognizing an extraordinary amateur radio achievement, and the certificate of Honorary Membership.



The Club's Special Medal to Club Founders and Charter Members.

PAUL GODLEY (Continued)

of the amateurs. Marconi's experiments and his discovery of the so-called "daylight wave." The revolution in world communication means!

As a child I was once told a story. I think it carries a moral. It was of the fellow who bought a badly-run-down farm overgrown with weeds and scrub, its buildings tumbling down. And after he had worked it diligently across a couple of seasons, the pastor of the local church came by one day and said: "My goodness gracious me! What wonderful things the Lord and you have done here." To which, as he chuckled, the farmer replied: "Thank you, Dominie; and I'm glad you included me, because when the Lord was running this place by Himself it sure was one Helluva mess!"

In conclusion: As I sat last evening, together with countless others, intent, and face-to-face with President Eisenhower as he made his farewell address to the nation at take-off on a monumental journey and a great mission, I found myself, on behalf of all of those who have worked and played in our beloved field, engulfed in a deep sense of satisfaction. For, lacking those facilities which, across these 50 years of ours, have been wrought, those countless confrontations, that farewell address, that unique journey, that hope-filled mission could not have been.

I thank you.

50th ANNIVERSARY RECORD (Continued)

During the editing, unwanted background noises, repetitions, and awkward speech were eliminated where possible. To increase intelligibility to a high degree, J.A. Matthews who developed a novel editing technique, did unusual tape surgery by substituting well-enunciated words of a speaker taken out of other parts of his speech, for poorly spoken words of the same talk.

The jacket labels, which displays a photograph of the original fifty-year old spark gap equipment that served for the transmission of the coded sequences, with Harry Houck its builder, at the key, were contributed through the generosity of C.R. Runyon III.

Because of the limited edition of this historical LP record, it becomes a valuable piece of memorabilia for every person fortunate enough to possess a copy.

INDEX

- ACTIVE Membership List, 179-210.
 ALPINE, N.J., FM Stn., 76; 115; 131; 136.
 AMERICAN Radio Relay League, 33.
 AMY, Ernest V., Stn. 'EA' 13; 18; Cit., Medaillion 96, 97.
 ANNIVERSARY, Silver, 63; Year Book, 65; 66; 150.
 ANSONIA Hotel, Club Hq., 11; 12; 26; 27; 30; 63.
 ARC Telephone, first amateur, 24.
 ARDROSSAN, Scotland - Rec. Stn., 33; 94; 96; 97; 137.
 ARMSTRONG, Edwin H., 24.
 Regen. Cirt., 24; Feedback Circuit, 25; WW-1 Serv., 29, 30; 1BCG, 34; Super Regen. Cirt, 35; Medal, 64; FM Paper, 64, 75, 79; 81. FM Multiplex, 113. Death 115. Honors, 117; 119. Blog., 122-136. 1BCG Memor., 98-99. Stn KE2XCC, 130.
 ARMSTRONG Memorial Comm., 115.
 ARMSTRONG Memor. Research Foundation, 137; Chart. Members. and Directors, 137.
 AUDION, 23, 24; 56; 122; 125.
- BALLANTINE, Charles Stuart, 91-2.
 BANQUETS List, 79.
 BEVERAGE, Harold H., Cit., 75.
 BILL, Radio, 1910, 16; Depew, 1; 16; 22. Alexander, 22. White-Dill, 40; 42.
 BINNS, Jack, "CQD" 75; 78.
 BOSE, John H., Pres., 90. Cit., 109, 111; 113-115; 123.
 BOUCHERON, Pierre, 53; 150.
 BURGHARD, George - Stn., 1'EB' 14; 18; 19.
- CALDWELL, Orestes H., 96; 99; 101.
 CALL BOOK, First Amateur, 21.
 CLUBS - Advertising 73; Columbia U., 73; 139. Engineers' 71; 73. COLUMBIA U., Meet. Place 26; 35. Hartley Labs., 59; Club, 73. Pupin Hall, 64, 113; 122; 128.
 COMMISSION, Federal Radio 40; 41. 'FCC', 132.
 COMMITTEE - 50th Anniv., iii. Golden Yr Bk., iii; 150. De-feat Radio Bill 18. 1BCG Memorial 94.
 CONRAD, Frank, 24.
 CONSTITUTION, Radio Club, new 27; 212-213.
 COOLIDGE, Calvin, U.S. Pres., 37, 38, 42.
 CRONKHITE, Minton, 32. Stn., 34.
- DECEASED Members, 211.
 DeFOREST, Lee - 122; 125; 132.
 DeFOREST Radio Co., 24; 49; 107.
 DEPEW, Senator - 16; 17. Bill-1.
 DETECTORS, Crystal, 23.
 DONOVAN, Maj. Gnl., Wm., 91.
 DROSTE, Geroge, Stn., 53.
- EASTHAM, Melville, 139. 140-141.
 ELTZ, George Jr., Cit. Med., 11; 18; 63; 142; dd., 148.
 EMBLEM, Club, designed, 22.
 ESPENSHIED, Lloyd, 52.
- FARON, Adolphe- Stn., 2 PM 29.
 FEDERAL Communications Comm., 132.
 FESSENDEN, Reginald- 11; 49.
 FLETCHER, Admiral USN 26.
- GODLEY, Paul - Stn. 2ZE 23; 25. 1BCG 33; 56. Monu., 98.
 GOLDSMITH, Alfred N.- 24; 172.
 GRAND CENT. PAL. -Radio Show - 1922 35.
 GREBE, Alfred H., 57; 142.
 GRINAN, John F., Cit., 142-143. Exp., 39. Stn 2PM 28.
 GUNTHER, Frank - Pres., 150.
- HAMILTON RICE- Expedition 39.
 HAZELTINE, Alan 69. Cit., 70-72; Pres., 95.
 HENNEY, Keith 79.
 HEISING, Raymond A., Cit., 112-113.
 HOGAN, John V.L. - 24; 37; 51; 57; Cit., 92-93; 174.
 HISTORY, Club, early 9.
 HONORARY Members List- 172.
 HORLE, Larry 91; 95. Dd 106-107.
 HOTEL Ansonia- 11; 26; 27; 30. Mc Alpin 40; 43; 61. Waldorf Astoria 13.
 HOOVER, Herbert - Sec. Commerce-1; 35; 38. U.S. Pres., 102-103.
 HOUCK, Harry W. - Stn., 15. Cit., 81-82. 83.
 HUDSON, Dr. - Coated Fil., 1; Paper 24
 HUDSON River - 24; 25; 27; 55.
- INCORPORATION, Radio Club- 42.
- JACQUET Lloyd (Heritage)- 4.
 JUNIOR Aero Club- 11; 12.
 JUNIOR Wireless Club Ltd.- vi. First Pres. Message - 1; 11. Minutes - 12.

KING, Frank- vi; 11. Stn 'FK' 13. PROCEEDINGS, Radio Club- Listing
Cit. Med., 62. 18. Pres., 20, 22. 153-159.
NAVY 59. PUPIN, Michael L.- 40; 41; 46;
KLINGENSCHMIDT, Fred A.- 84; 100. 123; 128; 171.
144.

LEMMON, Walter S.- 96; 99.

MacINNES, Miss Mae- (Mrs. E.H.
Armstrong) 115; 132.
MAGNETIC Detector- 14.
MARCONI Company- 15.
MARRIOTT, Robert H.- 24, 26;
42; 48; 171.
MAUBORGNE, Maj. Nnl., J.O.- 79.
MCMANN, Ranville- 142, 146.
MEDAILLION, Armstrong- Cit., 97;
98; 99.
MEDAL, Armstrong- 64. Medalists
67. Design 69. First Cit. 69.
70. 72. 123.
MEMBERSHIP, Lists- First 20.
Active 179. Honorary 172. De-
ceased 211. Jr. Wireless Club
11. Charter 11; 62. Founding
20. Who's Who 169-178.
MEMORIAL Comm., - Stn 1BCG 94.
MINTER, Jerry B.- Pres. 96.
MINUTES, Original- 19.
MONUMENT, 1 BCG Dedi. 94-101;
157.
MULLER, Fred- 55; 99.
MUNN, Faitoute, vi; 11.

NAVY, U.S.- 26-27. Trans-Atlan.
Flight 31. 'USS Mayflower'
27; 55.

OFFICERS, Club- 1959 7. Past
162-166. Past V.P., Sec., and
Treas., 167-168.
OSTMAN, Ted- Stn 58.

PACENT, Louis G.- 25; 33; 55; 59
PICKARD, Greenleaf W.- Cit. 75, 79
PICKERILL, Elmo N.- 49
PREFACE - v.

RADIO STATIONS- Frank King vi;
FK' Portab. 13; 15; 22.
Faitoute Munn- vi;
E. Amy- 'EA' 13; 14.
G. Burghard- '3¢' 'EB'- 14.
D. Brown- 23;
J. Grinan- 2PM 28. NJ2PZ, 38; 40.
C.R. Runyon Jr., 2AG 37; 44-45.
L. Clement 'BD' 50
J. Knapp- 'JFK' 55;
G. Droste 53;
A. R. Nelson 'IUW' 54.
YMCA- 54
G. C. Delage '1VW' 56
H.B. Day '2KK' 57.
L. Spangenberg 58;
T. Ostman '2OM' 58;
1BCG- 32-34; 94-96; 104.
RECEPTION Tests- Trans Atlan. 25.
Ardrossan, Scld.- 32-34.
REGENERATIVE Circuit- 23; 24; 28;
Rcvr.- 55; 57; 72; 122.
ROTARY Spark Gap- 23, 28; 38.
ROUND, Capt. H.J.- Banquet 60-61;
108-111; 119; 121; 175.
RUNYON, Carman R.- Cit. 85-86; 39;
44. Stn. 2 AG 37. Exptn. 39.
FM Tests 75; 142.

SADENWATER, Harry- 25, 26, 31;
Oper. 1 BCG- 32, 52; 55.
SARNOFF, David- 34, 41, 53, 132,
SEYMOUR, Frederick H. Jr.- Charter
Membr. 11.
SHEPARD, Frank H. Jr., - 90; 115;
145. Foreword 152.
SHOW, Grand Central Palace .-
35.
SILVER Anniversary Year Book
Comm. v; 44, 66, 69.
SPARK Coil, 13.
SPARK GAP, Rotary- 28; 58.
Quenched 57.
SPONSORS- 216.

STANTLEY, Joseph J.- Treas. 90;
142.
STOKES, W.E.D., Jr.- 2. Stn 10;
Chart. Mem. 11. Washington
Bill Comm. 18.
STYLES, Thomas J.- Corr. Sec.,
29, 30; 59.
SUPER Heterodyne Rcvr- 44;
122; 125.
SUPER Regenerative Cirt.- 35;
Rcvr.- 122; 125.

TODD, E.L. (Miss)- Honorary
Pres. 11.
TRANS-Atlantic Tests- Stn 1BCG:
Op. Staff 32; Rec. Stn 33;
Transmtr 33, 34; Memorial
Comm. 94-96. Armstrong Med.
96; Dedication Ceremon. 104.
TUBES, Radiotrons UV-204- 34.
West. Elec. 'J' 35. Audion 23,
122, 125. CW Xmtr.- 137.

U.S. NAVY- 26, 27.
USS MAYFLOWER- 27; 55.

VARIOMETER- 23, 56.
VOICE of America- 96; 99.

WALLASTON Wire- 23
WASHINGTON, George- v.
WJZ, Newark, N.J.- 35. N.Y. 132;
WIRELESS Club, Jr.- 11

YEARBOOK- Fiftieth Anniversary
Comm. 150. Intro. 63, 64, 66,
150. Silver Anni., 48.
YONKERS, N.Y.- 39; 128; 135.

ZENNECK, Dr. J.- 24; 178.

(Continued from page 13)

Walter S. Lemmon, rare combination of an idealist in aims and an intensely practical worker in execution. Austin C. Les-carboursa, who always writes so clearly and so well, and whom I greatly respect as a close associate in years past. Louis M. Miller, an engineering contributor and also a highly respected technical worker. Arthur V. Loughren, successful in research, development, and applications. Arthur H. Lynch, who for so many years has been one of our radio leaders and beacons. William A. MacDonald, greatly respected as an engineer, a planner and an executive. Jerry B. Minter, one of our most original thinkers and a prolific contributor to electronics and to radio.

William H. Offenhauser, our own Bill, one of our finest idealists, most practiced of practitioners, and a thorough gentleman. Dr. Greenleaf W. Pickard, deceased, an experimenter and inventor known to and respected by all of us. We again pause a moment in his memory.

C. J. Popkin, ever more active in the TV and radio arts. Jack Poppele, pioneer broadcasting engineer and inventor. Haraden Pratt, one who has exemplified the finest and most fruitful attributes of the engineer. John F. Rider, editor, writer, publisher, unselfish and devoted servant of our country. Henry J. Round, pioneer inventor, of major industrial standing. Ensign C. A. Runyon, Jr. - and you see I do insist on the ensigncy here - another of our own old guard. And Ensign Harry Sadenwater. Harry, were you not finally a Lieutenant (J. G.)?

MR. SADENWATER

Finally, yes.

DR. GOLDSMITH

I thought so.

MR. SADENWATER

And Runyon became a Commander.

DR. GOLDSMITH

So Runyon became a Commander, And you did spark the advancement, I am glad to say.

And now as to Lieutenant (J. G.) Harry Sadenwater. He is one man who is not only a great engineer but inherently, and by his very nature, personality and contacts and behavior, that rare thing, the friend of all of us. General David Sarnoff, who has shown that under our precious American democracy the born leader may rise to solid fame from simple beginnings. Dr. B. E. Shackelford, another man with the strictest professional aims and ideals. Frank H. Shepard, Jr., who blends knowledge and particular ingenuity in his work. Milton Sleeper, editor and indefatigable worker. Lieutenant-Commander William E. D. Stokes, Jr., who from boyhood has stimulated and expanded the radio field and whom we admire for his initiative, for his enthusiasm, and for the spark which he generated, and which has culminated in this great meeting this evening. Harry Tunick, deceased, an unusual combination of the best to be found in the legal and scientific minds and viewpoints.

And so, in conclusion, let me hail the great Radio Club of America. I see it as the home and inspiration of the gentleman scientists of this day and of tomorrow. It numbers in its membership that sturdy breed ranging from the youthful amateur to the skilled ultra-professional, from both of whom, brothers beneath the skin, progress springs. Its members are spiritually and humanly akin to Volta, to Ampere, to Herschel, to Faraday, to Maxwell, to Lodge, to Loomis, to Armstrong, and to Pupin. Its workers have always glowed with enthusiasm and been free from all but a burning desire to probe the universe and to weld humanity together through their chosen implements.

I pay sincere and enthusiastic tribute to this most worthy enterprise, destined to carry the light of truth over the years. And so, a respectful and hearty salute to the Radio Club of America.

50th ANNIVERSARY GET-TOGETHER (Continued from page 3)

In a genial mood, Paul Godley, "gentleman of ham radio," who holds a special niche in the Club's first half-century historical accomplishment through his IBCG association, concluded the shortened speaking program of the evening. His remarks appear in full in this Proceedings.

The hour came all too soon for President Knoop to officially adjourn the Fiftieth Anniversary celebration of The Radio Club of America. The gay, happy crowd filed out, carrying each his Golden Jubilee LP record as a souvenir of the evening, and a Golden Anniversary Yearbook, reminders of a wonderful time spent in good fellowship. - L. J.

NEW!

TRUE RMS Voltmeter
with

1/4% ACCURACY

measures wide range of
 **Waveforms**

BALLANTINE model 350
features:

- High accuracy achieved on waveforms in which peak voltage may be as much as twice the RMS. **Not limited to sinusoidal signals.**
- Left-to-right **DIGITAL READ-OUT.** Fast, simple nulling operation consists of selection of decade range by push-button, and adjustment of four knobs for minimum meter indication. These operations attenuate the input signal to a predetermined value, causing a bridge circuit to be balanced by changing the current through a barretter.
- Temperature-controlled oven contains the barretter and an ambient temperature compensating resistor. Effect of ambient temperature changes is less than 0.005%/° C from 20° C.
- Proper NIXIE digit is lighted automatically while bridge is being balanced. No jitter.
- Rugged, accurate. Doesn't require the extreme care of many laboratory standard instruments. No meter scales to read. Useful for laboratory, production line, and in the field.

specifications:

VOLTAGE RANGE: 0.1 to 1199.9 v

FREQUENCY RANGE: 50 cps to 20 kc

ACCURACY: 1/4% 0.1 to 300 v, 100 cps to 10 kc;
1/2% 0.1 v to 1199.9 v, 50 cps to 20 kc

\$720

INPUT IMPEDANCE: 2 megohms in parallel with 15 pF to 45 pF

POWER: 60 watts, 115/230 v, 50 to 400 cps



Available in Cabinet or Rack Models

Write for brochure giving many more details

— Since 1932 —



BALLANTINE LABORATORIES INC.

Boonton, New Jersey

CHECK WITH BALLANTINE FIRST FOR LABORATORY AC VACUUM TUBE VOLTMETERS, REGARDLESS OF YOUR REQUIREMENTS FOR AMPLITUDE, FREQUENCY, OR WAVEFORM. WE HAVE A LARGE LINE, WITH ADDITIONS EACH YEAR. ALSO AC/DC AND DC/AC INVERTERS, CALIBRATORS, CALIBRATED WIDE BAND AF AMPLIFIER, DIRECT-READING CAPACITANCE METER, OTHER ACCESSORIES. ASK ABOUT OUR LABORATORY VOLTAGE STANDARDS TO 1,000 MC.

MEASUREMENTS
"FAMOUS FIRSTS"

in
Laboratory Standards

- 1939** MODEL 54 STANDARD SIGNAL GENERATOR—Frequency range of 100 Kc. to 20 Mc. The first commercial signal generator with built-in tuning motor.
MODEL 65-B STANDARD SIGNAL GENERATOR—This instrument replaced the Model 54 and incorporated many new features including an extended frequency range of 75 Kc. to 30 Mc.
- 1940** MODEL 58 UHF RADIO NOISE AND FIELD STRENGTH METER—With a frequency coverage from 15 Mc. to 150 Mc. This instrument filled a long wanted need for a field strength meter usable above 20 Mc.
MODEL 79-B PULSE GENERATOR—The first commercially-built pulse generator.
- 1941** MODEL 75 STANDARD SIGNAL GENERATOR—The first generator to meet the need for an instrument covering the I.F. and carrier ranges of high frequency receivers. Frequency range, 50 Mc. to 400 Mc.
- 1942** SPECIALIZED TEST EQUIPMENT FOR THE ARMED SERVICES.
- 1943** MODEL 84 STANDARD SIGNAL GENERATOR—A precision instrument in the frequency range from 300 Mc. to 1000 Mc. The first UHF signal generator to include a self-contained pulse modulator.
- 1944** MODEL 80 STANDARD SIGNAL GENERATOR—With an output metering system that was an innovation in the field of measuring equipment. This signal generator, with a frequency range of 2 Mc. to 400 Mc. replaced the Model 75 and has become a standard test instrument for many manufacturers of electronic equipment.
- 1945** MODEL 78-FM STANDARD SIGNAL GENERATOR—The first instrument to meet the demand for a moderately priced frequency modulated signal generator to cover the range of 86 Mc. to 108 Mc.
- 1946** MODEL 67 PEAK VOLTMETER—The first electronic peak voltmeter to be produced commercially. This new voltmeter overcame the limitations of copper oxide meters and electronic voltmeters of the r.m.s. type.
- 1947** MODEL 90 TELEVISION SIGNAL GENERATOR—The first commercial wide-band, wide-range standard signal generator ever developed to meet the most exacting standards required for high definition television use.
- 1948** MODEL 59 MEGACYCLE METER—The familiar grid-dip meter, but its new design, wide frequency coverage of 2.2 Mc. to 400 Mc. and many other important features make it the first commercial instrument of its type to be suitable for laboratory use.
- 1949** MODEL 82 STANDARD SIGNAL GENERATOR—Providing the extremely wide frequency coverage of 20 cycles to 50 megacycles. An improved mutual inductance type attenuator used in conjunction with the 80 Kc. to 50 Mc. oscillator is one of the many new features.
- 1950** MODEL 111 CRYSTAL CALIBRATOR—A calibrator that not only provides a test signal of crystal-controlled frequency but also has a self-contained receiver of 2 microwatts sensitivity.
- 1951** MODEL 31 INTERMODULATION METER—With completely self-contained test signal generator, analyzer, voltmeter and power supply. Model 31 aids in obtaining peak performance from audio systems, AM and FM receivers and transmitters.
- 1952** MODEL 84 TV STANDARD SIGNAL GENERATOR—With a frequency range of 300-1000 Mc., this versatile new instrument is the first of its kind designed for the UHF television field.
- 1953** MODEL 59-UHF MEGACYCLE METER—With a frequency range of 420 to 940 megacycles, the first grid-dip meter to cover this range in a single band and to provide laboratory instrument performance.
- 1954** FM STANDARD SIGNAL GENERATOR. Designed originally for Military service, the commercial Model 95 is engineered to meet the rigid test requirements imposed on modern high quality electronic instruments. It provides frequency coverage between 50 Mc. and 400 Mc.
- 1955**
- 1956** MODEL 505 STANDARD TEST SET FOR TRANSISTORS. A versatile transistor test set which facilitates the measurement of static and dynamic transistor parameters.



RESEARCH AND MANUFACTURING ENGINEERS
of

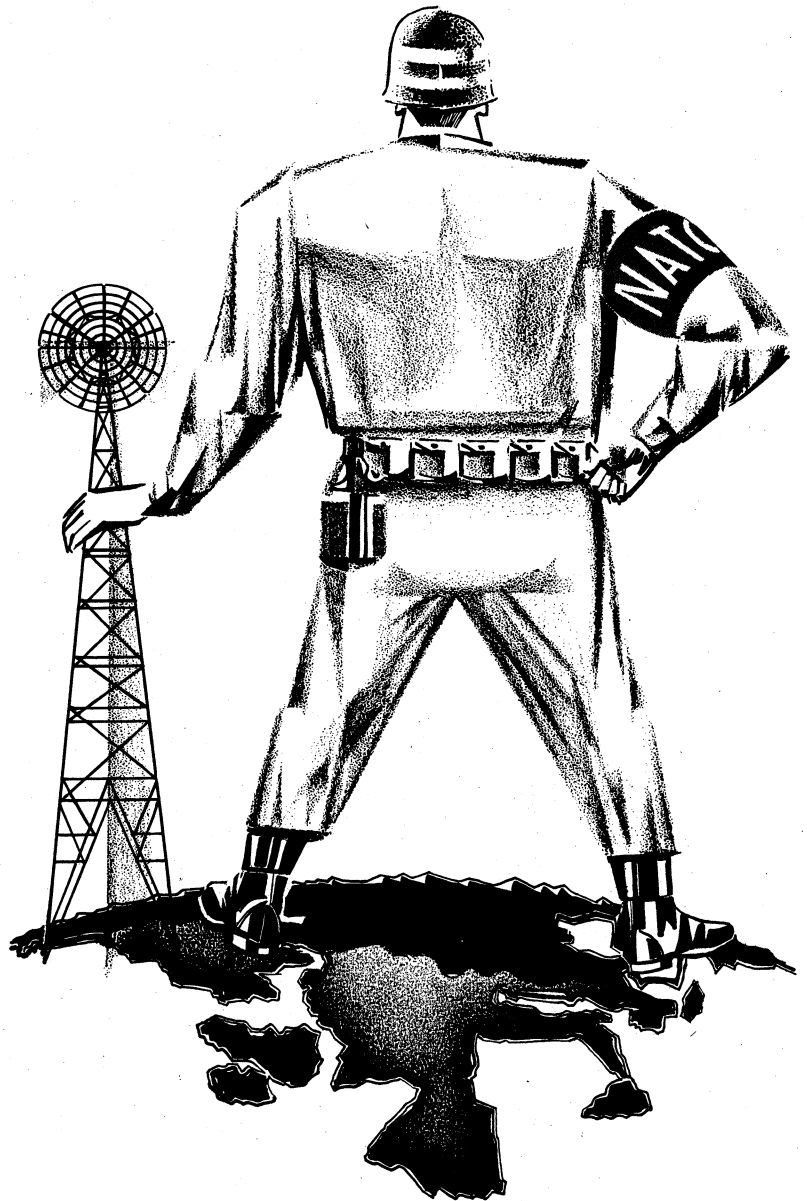
Standard Signal Generators
Vacuum Tube Voltmeters

Crystal Calibrators
UHF Radio Noise & Field
Strength Meters

Megacycle Meters
Pulse Generators

FM Signal Generators
Television and FM Test
Equipment

Square Wave Generators
Intermodulation Meters



Sentry that spans a continent

The pre-eminence of Radio Engineering Laboratories, Inc., in specialized radio communications is again underscored by the selection of its equipment for the gigantic tropo-spheric scatter network being constructed by NATO.

This network, with more than a continental span, will stretch from Norway to Turkey. It is larger by far than any other tropo communications complex yet conceived. REL has designed and is constructing one hundred fifty-three transmitter modulators, one hundred nine 10-kilowatt amplifiers, and seventy-seven quadruple

diversity receivers with combiners.

With millions of lives at stake, only supremely reliable equipment could be considered. REL, which has developed and manufactured more tropo scatter radio apparatus than all other companies combined, was awarded the contract after international competitive bidding in accordance with NATO infra-structure procedure.

The imagination and facilities which have won REL world leadership in military and civil tropo scatter can help solve *your* specialized radio problems.



Radio Engineering Laboratories·Inc

A subsidiary of Dynamics Corporation of America

Dept. F • 29-01 Borden Ave • Long Island City 1, NY