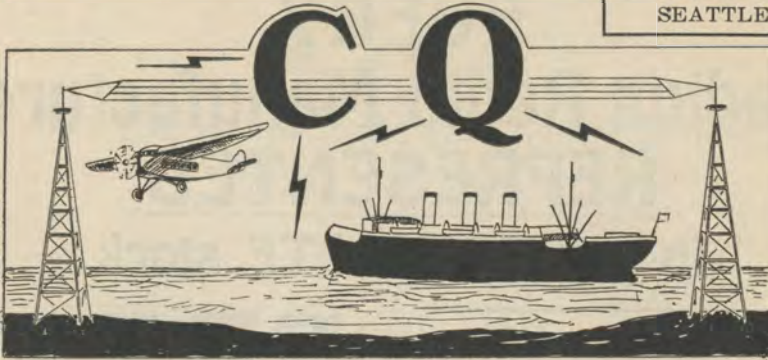


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A Magazine OF, BY and FOR Commercial Radio Operators and Technicians

Vol. 1

MAY, 1932

No. 12

In This Issue:

What To Do About H. R. 6385.....	4
H. R. 6385.....	5
S. 4289 and H. R. 11155, American Citizenship for Operators.....	5
Constitution of the A.R.T.A.....	6
Radio KGPL, Los Angeles Police Station.....	7
V.W.O.A. Notes	10
California Senator Pledges Support to Operators.....	10
Pioneer Radio Operators—Dr. Lee de Forest.....	11
Series and Parallel Circuits—E. H. Rietzke.....	12
LOOK OUT for Paul Shailer—Lew Todd.....	14
Objects of the A.R.T.A.....	16
A Message to American Radio Operators—Dr. Lee de Forest.....	17
How the A.R.T.A. Will Help YOU.....	17
The Glass Arm—Walter H. Candler.....	19
Important Short-Wave Schedules.....	21
Breaks—The SKIPPER	23
Assignment Reports	25
Correspondence Section	26
I.F.R. Bulletin	29

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MAY, 1932

MEMORIAL DAY OBSERVANCE

The Veteran Wireless Operators' Association has sponsored a move to observe a silent period of one minute on Memorial Day, in memory of the operators who have lost their lives at sea. The radio communication companies, Army, Navy and Coast Guard authorities are expected to favor the suggestion. It is proposed that all radio communication cease for one minute immediately after the noon time signals, P.S.T. for the Pacific, and E.S.T. for the Atlantic. Marine and coast station operators are requested to ask foreign ships in American waters to remain off the air during the period we are paying homage to our dead.

* * *

After reading the 1932 Year Book of the Veteran Wireless Operators' Association, we strongly recommend that every radio operator purchase a copy.

A complete list of the Association's Awards for heroism among the radio fraternity, a Roll of Honor of radio men who have distinguished themselves, a list of operators who have made the supreme sac-

rifice and many pages of interesting and worthwhile material go to make up the contents of the new V.W.O.A. Year Book,

* * *

A.R.T.A. members are requested to carefully read the A.R.T.A. Constitution, published on page six of this issue. For the purpose of approving the Constitution and confirming the selection of officers' ballots have been mailed to members. These ballots should be returned to the nearest A.R.T.A. office as soon as possible in order that the Association may begin functioning under the provisions of its new Constitution.

* * *

A banquet for commercial operators will be held at the Hotel Rosslyn, in Los Angeles, on April 29th. Dr. Lee de Forest is scheduled to speak on radio operating in the early days. Means for fighting H. R. 6385 and supporting H. R. 11155 and S. 4289 will also be discussed from the floor. In addition to Dr. de Forest, other prominent in radio are expected to attend and speak.

* * *

Pay your A.R.T.A. dues promptly.



What To Do About H. R. 6385

When H.R. 6385 was introduced in the House of Representatives by Congressman Arthur M. Free, it was referred to the House Committee on Merchant Marine, Radio and Fisheries. At a meeting of this body, held on March eleventh, the Free Bill was sent to the Federal Radio Commission and the Secretary of Commerce for report and recommendations. Perhaps the best way to fight H.R. 6385 is by writing to local Senators and Congressmen, members of the Merchant Marine, Radio and Fisheries Committee, members of the Federal Radio Commission, and officials of the Department of Commerce.

Following is a list of the persons who will consider the Free Bill before it is sent to Congress for a vote:

Federal Radio Commission

Major General C. McK. Saltzman, Chairman.
Eugene O. Sykes
Ira E. Robinson
Harold A. LaFount
William D. L. Starbuck
James W. Baldwin, Secretary

All communications to the Commission should be addressed to the Secretary.

Department of Commerce

W. D. Terrell, Director of Radio, Radio Division, Department of Commerce.

House Committee on Merchant Marine,

Radio and Fisheries

Address mail to room 279, House Office Building, Washington, D. C.

(The town in which each Congressman resides is given in parenthesis after the name of each state.)

Sub-Committee on Radio Laws

Clay S. Briggs, of Texas, Chr. (Galveston)
Schuyler O. Bland, of Virginia (Newport News)

Robert Ramspeck, of Georgia (Atlanta)
Robert O. Johnson, of Missouri (Marshall)
Frederick R. Lehlbach, of New Jersey, (Newark)

Frank L. Bowman, of West Virginia (Morgantown)

Frederick W. Magrady, of Pennsylvania (Mount Carmel)

Following are the names of all the members of the Committee on Merchant Marine, Radio and Fisheries, including those serving on the Sub-Committee on Radio Laws: (R indicates Republicans; D indicates Democrats.)

Edwin L. Davis, D, of Tennessee (Tullahoma)

Schuyler, Otis Bland D, of Virginia (Newport News)

Clay Stone Briggs, D, of Texas (Galveston)

George W. Lindsay, D, of New York (Brooklyn)

Oscar L. Auf der Heide, D, of New Jersey (West New York)

Bolivar E. Kemp, D, of Louisiana (Amite)

Will M. Whittington, D, of Mississippi (Greenwood)

William I. Sirovich, D, of New York (New York City)

Robert Ramspeck, D, of Georgia (Atlanta)

Fletcher B. Swank, D, of Oklahoma (Norman)

Arthur P. Lamneck, D, of Ohio (Columbus)

Robert D. Johnson, D, of Missouri (Marshall)

Frederick R. Lehlbach, R, of New Jersey (Newark)

Arthur M. Free, R, of California (San Jose)

Frank M. Reid, R, of Illinois (Aurora)

Charles L. Gifford, R, of Massachusetts (Cotuit)

Frederick W. Magrady, R, of Pennsylvania (Mount Carmel)

Frank L. Bowman, R, of West Virginia (Morgantown)

Robert H. Clancy, R, of Michigan (Detroit)

Charles A. Kading, R, of Wisconsin (Wartown)

James Wolfenden, R, of Pennsylvania (Upper Darby)

Victor S. K. Houston, R, of Hawaii (Honolulu)

James Wickersham, D, of Alaska (Juneau)

Here are a few questions that operators might ask members of the Merchant Marine Committee and those concerned with H.R. 6385:

(1) Do you know that, since 1919, the British Government has required the installation of radiotelegraph apparatus on all British ships of over 1,600 gross tons and on ships of the same tonnage calling at ports in Great Britain?

(2) Are you aware of the fact that many American ships of 5,000 gross tons are not required to be equipped with radio?

(3) Do you know that forty-nine persons may go to sea on an American ship without benefit of radio protection?

(4) Does Congress consider the saving of a few dollars by steamship companies more important than providing proper radio protection for the lives of American seamen?

(5) Do you know that on British ships having only one radio operator, radio watches are maintained for eight hours a day, in accordance with the schedule of International Marine Radio Watches, while on American ships operators are often unable to maintain radio watches for more than an hour or two per day, because of clerical duties and other extra tasks they are required to perform?

(Continued on page 25)

H. R. 6385

The following bill has been introduced in the present session of Congress by Representative Arthur M. Free of California:

A BILL

To permit an officer or member of the crew of any coastwise vessel to act as the vessel's wireless operator in lieu of the regular operator required by law.

Be it enacted by the Senate and House of Representatives of the United States in Congress assembled—

That section 2 of the Act entitled "An act to amend an Act entitled 'An Act to require apparatus and operators for radio communication on certain ocean steamers, approved June 24, 1910,' approved July 23, 1912," be amended by adding the following at the end of the proviso appearing therein: "On coastwise vessels of the United States, not required by law to be equipped with radio apparatus, a licensed operator may be dispensed with in the discretion of the master, and an officer, member of the crew or other person substituted who shall be certified in the ship's log as competent to receive and send distress calls or other usual calls indicating danger, and to aid in maintaining a wireless watch."

Should H.R. 6385 become a law, its effect upon the commercial radio operating profession will be far from pleasant. If operators on coastwise vessels are replaced by mates, messboys, quartermasters, sailors or other members of the crew, at least 300 marine operators will lose their jobs. As a law, H.R. 6385 will affect ALL licensed commercial radio operators. Marine men thrown out of employment will look for work in airways, broadcasting, coast, marine and point-to-point stations. **Each will have a license entitling him to act as chief or assistant operator in ANY commercial radio station.** Three hundred will be added to the present army of unemployed and hungry operators. Three hundred new applications will be on file for airways, broadcasting and marine jobs. The effect on wages and working conditions can best be realized by recalling the events of the past two years.

If sufficient interest is shown, we shall start a campaign against the **Free Bill**. Experience has proved that it is useless to try to help commercial operators unless they are willing to co-operate. Because of the financial condition of CQ and the Association, it will be impossible to actively oppose the passage of H.R. 6385. If commercial operators desire us to fight this bill they will have to provide the money either by joining the Association or by contributing directly.—M.R.R.

S. 4289 and H. R. 11155

On April first, Senator Hiram Johnson of California introduced a bill in the Senate, known as S. 4289, providing that commercial radio operators' licenses be issued to American citizens only. A similar measure was introduced in the House of Representatives on April sixth by Congressman Edwin L. Davis, Chairman of the House Committee on Merchant Marine, Radio and Fisheries. We have been reliably informed that these measures were introduced as a direct result of the efforts of CQ and the C.R.P.A.

If S. 4289 and H. R. 11155 are to be passed by the Senate and House, we must write to our Senators and Congressmen requesting that they support these measures, and asking them to make sure that they are brought to a vote during the present session of Congress. If we fail to take an interest in S. 4289 and H. R. 11155, they probably will be put in a pigeonhole and forgotten.

It is suggested that operators write also to Senator Johnson and Congressman Davis, thanking them for their interest in our welfare and asking them to help us carry out the balance of our legislative program.

—M. R. R.

Constitution of the A. R. T. A.

ARTICLE I.

Sec. 1. This organization shall be known as American Radio Telegraphists Association, Inc.

Sec. 2. The objects for which this Association has been established are as follows:

a.—To raise and maintain the social and economic status of the American Commercial Radio Operator.

b.—To protect the interests of American licensed commercial radio operators by:

1.—Attempting to secure legislation and publicity favorable to commercial radio operators.

2.—Co-operating with employers and bringing to their attention the value of radio and radio operators in protecting and saving lives, and the advantages to be gained from employing properly trained and experienced radio operators in positions of responsibility. Representing commercial radio operators at conferences with employers. Calling conferences with employers, for the purpose of attempting to secure higher salaries and improved conditions for commercial radio operators, or for arbitrating disputes regarding salaries and working conditions.

3.—Co-operating with existing organizations of commercial radio operators in the United States and foreign countries.

4.—Maintaining a monthly publication, to be known as the official organ of the American Radio Telegraphists' Association, Inc., for the dissemination of technical knowledge, employment information and news of interest to members of the Association. This publication to be of an editorial and literary character calculated to promote the general welfare of the Association and the moral and intellectual character of its members.

5.—Combating unfair methods and/or misleading advertising sponsored or used by radio schools or institutes, and providing for the dissemination of reliable and accurate information regarding conditions existing in the commercial radio field among potential commercial radio operators.

6.—Performing any other service which may assist in raising the standards of commercial radio work or in securing improved conditions for the commercial radio operator.

ARTICLE II.

Membership and Dues

Sec. 1. Active Members—Commercial radio operators holding valid Commercial Extra-First Class, Commercial First, Second, Third Class or Broadcast licenses shall be eligible for membership as Active Members.

Sec. 2. Honorary Members—Any person who shall be nominated as such, and who shall receive a favorable majority of the membership present at three consecutive meetings, or who shall be passed upon favorably by referendum, shall be eligible for Honorary Membership and shall be given such Honorary Membership when he has shown acceptance in writing.

Sec. 3. Associate Members—Persons interested in commercial radio work who desire to assist commercial radio operators in accomplishing the objects for which the Association has been established shall be eligible for membership as Associate Members.

Sec. 4. Persons capable of fulfilling the qualifications for active membership shall not be eligible for membership as Associate Members.

Sec. 5. Persons holding Associate Memberships shall be entitled to enter the Association as Active Members at the initiation fee prevailing at the time of their entry as Associate Members.

Sec. 6. Active Members shall be required to pay to the Secretary-Treasurer an initiation fee of not less than five dollars (\$5.00) and yearly dues of not less than twelve dollars (\$12.00) per year.

Sec. 7. Associate Members shall be required to pay to the Secretary-Treasurer a yearly membership fee of not less than two dollars and fifty cents (\$2.50) per year.

Sec. 8. Full initiation fees, and dues for a period of at least three months, must accompany all applications for membership as Active Members.

Sec. 9. Full yearly dues must accompany all applications for membership as Associate Members.

Sec. 10. An Active Member whose dues are three months in arrears shall be mailed a notification of such arrears and if his dues are not paid within thirty days of such notification, or if an explanatory reply has not been received by the Secretary-Treasurer, he shall be suspended from membership.

ARTICLE III.

OFFICERS—Elections and Duties

Sec. 1. The officers of the Association shall be:

President
Vice-President (5)
Secretary-Treasurer
General Counsel

Sec. 2. Officers shall carry out the policy of the Association as expressed in the Constitution and By-laws.

Sec. 3. During their terms of office, officers shall be amenable directly to the membership body.

Sec. 4. Officers of the Association shall be elected in accordance with the provisions of the Constitution and shall serve until their successors are duly elected.

Sec. 5. In case of death, resignation, removal or suspension of an officer, the vacancy shall be filled as soon as practicable by an election by ballot of the Active Membership.

ARTICLE IV.

President

Sec. 1. The President shall be elected by a majority vote of all Active Members and shall hold office for two years.

Sec. 2. The President shall devote his entire time to the Association and it shall be his duty to preside at all sessions of the membership, whenever possible, and enforce strict obedience to the rules and regulations of the Association.

Sec. 3. In the event of the applications for charters for separate districts, he shall pass upon,—approve or reject such applications. He shall however, present such applications to the membership at the earliest opportunity, with reasons for his approval or rejection.

Sec. 4. He shall pass upon and approve or reject the By-laws of subordinate units, and such by-laws shall not be effective until approved by the President.

Sec. 5. He shall employ clerical help necessary to conduct the business of his office at a rate not to exceed thirty-five dollars (\$35.00) per week. A salary in excess of thirty-five (\$35.00) dollars may be paid if approved by the membership in the regular manner.

Sec. 6. He shall in all respects perform the duties of the Secretary-Treasurer if the office becomes vacant and shall serve in both capacities until a successor to the Secretary-Treasurer is elected.

Sec. 7. When absent from headquarters in the interest of the Association, he shall re-

(Continued on page 17)

RADIO KGPL

LOS ANGELES POLICE DEPT.

By Clifford E. Himoe, Consulting Engineer
De Forest Radio Co.

Police radio transmitters are very similar to broadcast transmitters, with this exception, that, while a police transmitter does not have to run continuously hour after hour, it must be ready—tubes warmed up and crystal oscillating—to go on at a second's notice.

A phone call comes in on the police dispatcher's board. Sailors in a drunken fight at San Pedro. Scout car number 38, patrolling near the docks, must be notified. A snap of the operator's switch and its: "Car No. 38, First and Harbor Streets, a fight—Car No. 38, First and Harbor Streets, a fight—Car No. 38, First and Harbor Sts., a fight—KGPL—that's all."

Los Angeles City covers more area, its outlying districts perform more convolutions, than any other city on the globe. To reach out and direct its police cars, in all these extended lobes and branches, Los Angeles has chosen a DeForest type 4B, 400-watt Police Radio Transmitter. Some of the special points of this transmitter may be of interest.

General Description

The transmitter proper is housed in two steel-framed units, fitted closely together to form a complete transmitter about six feet high by sixty inches across the front and thirty inches deep. The right-hand unit contains the crystal oven, crystal, oscillator and buffer circuits, with their power supply rectifiers and the bias rectifier. The left-hand unit houses the power amplifier and water-cooled modulator.

Glass doors, set in the front panel, allow the tubes to be changed quickly, and also allow the operator to note the color of power tube plates and the degree of blue of the mercury-vapor rectifiers, so that faulty tubes may be located.

These doors have contact buttons set in their edges, interlocked with the power supply through the starting relay system, so that all plate power goes off when any door is opened to remove tubes or examine the transmitter. This precaution saves many a painful shock—maybe an operator's life.

Power and Control Arrangements

All plate and grid voltages are supplied from mercury-vapor rectifiers, with carefully filtered output.

In the power-amplifier-modulator unit, two DeForest, Type 504, 250-watt transmitting Audions and the 520-M water-cooled modulating Audion receive their plate power from a three-phase full-wave

rectifier using six mercury-vapor Audions, type 572.

Plate voltage for the 504's is 2000; for the 520-M modulator, 3500. Plate current for these tubes flows through a 30 henry modulation choke in order that the audio component in the modulator tube's plate circuit will not be shunted out through the power supply.

The three-phase plate transformer supplying this rectifier uses a delta-connected 220-volt primary and a star-connected secondary. A lead is brought out from the center of the secondary star to supply 2000 volts, unmodulated, for the plate of the second R.F. buffer tube—an Audion, type 560.

All grid bias voltages for the transmitter are supplied by a single-phase full-wave rectifier using two mercury-vapor Audions, type 566. Separate potentiometers, used as voltage dividers across this supply, allow close adjustment of the modulator and speech amplifier grid bias voltages. Other bias voltages, for the radio-frequency tubes, are supplied from fixed taps on an additional voltage dividing resistor.

A third mercury-vapor rectifier, using two Audions, type 566, in a single-phase full-wave circuit, supplies plate voltage for the crystal oscillator tube, Audion type 510, and for the first R.F. buffer, Audion type 565.

Time delay relays and magnetic contactors allow the transmitter to be started from a single starting button: the filaments lighting, the grid bias voltages being applied, and the plate power coming on, all automatically and with proper time intervals to allow the mercury-vapor rectifier filaments to heat.

In order that the transmitter may operate at "standby" and be ready for instant broadcasting of a police dispatch, an additional relay allows all tubes to operate with filaments at subnormal brilliance, with grid voltages applied, ready for the "broadcast" button which raises the filament voltage immediately to normal and applies the plate voltage an instant later.

Circuit Arrangement

The transmitter proper besides the mercury-vapor rectifiers used for power supply, uses five radio-frequency tubes and two audio-frequency tubes in the following arrangement:

One type 510 crystal oscillator, one type 565 and one type 560 as first and second
(Continued on Page 20)

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There are many good-paying, pleasant jobs in radio—even in these times. Commercial transmitting and receiving operators, broadcast engineers, radio operators and electricians in Airways Division (Dept. of Commerce), Commercial Airways—all these positions are very desirable from many standpoints.

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Memorial Day - May 30, 1932

In Memoriam

In Battery Park, overlooking New York Bay, through which so many ships pass out to sea, some never to return, stands a fountain-monument dedicated to the memory of wireless operators who have lost their lives in the performance of their duties.

The heroes whose brave deeds are perpetuated are named on the monument as follows:

GEORGE C. ECCLES

S.S. *Ohio*

Foundered 1 A.M.
August 26, 1909
Pacific Coast

STEPHEN F. SCZETANEK,
S.S. *Pere Marquette Car*
Ferry No. 18

September 9, 1910
Lake Michigan

JACK PHILLIPS,

S.S. *Titanic*

April 15, 1912

LAWRENCE PRUDHUNT

S.S. *Rose Crans*

January 7, 1913
Pacific Coast

DONALD CAMPBELL

PERKINS

S.S. *State of California*

August 18, 1913
Pacific Coast

FERDINAND J. KUEHN

S.S. *Monroe*

January 30, 1914

WALTER E. REKER

S.S. *Admiral Sampson*

August 25, 1914
Puget Sound

CLIFTON J. FLEMING

HARRY FRED OTTO

S.S. *Francis H. Legett*

September 18, 1914
Oregon Coast

ADOLPH J. SVENSON

S.S. *Hanalei*

November 23, 1914
Pacific Coast

GEORGE BRUNDEL GEARE

Bark Manga Reva

November, 1916
Atlantic Ocean

JAMES J. CURRAN

S.S. *Moreno*

June 12, 1917
off Azores



RUSSELL A. WILLIAMS

S.S. *Montano*

July 31, 1917

English Channel

FRANCIS JOSEPH DOHERTY

S.S. *City of Athens*

May 1, 1918

Atlantic Coast

BORIS MICHAEL DUTKO

S.S. *Brindilla*

December 1, 1919

at sea

EMILE H. HULSEMANN

S.S. *Cubadist*

March 7, 1920

off Hatteras

LAURENCE B. ROBINSON

S.S. *Macona*

January 17, 1920

Swedish Coast

LAWRENCE M. WARING, JR.

S.S. *Cotopaxi*

December 2, 1921

Florida Coast

FRED SALIM

S.S. *Conejos*

December 27, 1923

Black Sea

ERNEST E. DORSEY

S.S. *Swift Arrow*

July 15, 1923

Caribbean Sea

PETER L. BACUINKA

S.S. *Haleakala*

September 8, 1926

CHARLES E. RUBLE

S.S. *Elkton*

February 19, 1927

J. MAURICE BLACK

S.S. *David C. Reid*

October 14, 1928

South Atlantic

MICHAEL JOSEPH

O'LAUGHLIN

S.S. *Vestris*

November 12, 1928

(Courtesy V.W.O.A.)

V.W.O.A. NOTES

The Veteran Wireless Operators' Association will hold services at the Wireless Operators' Monument in Battery Park, New York City, on April 15, 1932, the 20th anniversary of the Titanic disaster, in which Jack Phillips lost his life.

Ray Meyers, of Nautilus fame, was among the recipients of Testimonial Scrolls at the Seventh Annual Banquet of the Association, on February 12, 1932. Ray entertained the guests with interesting anecdotes concerned with the trip on the Nautilus, and especially with the time when for a week the outside world was anxiously waiting for word from the intrepid explorers, while the submarine was below the ice in the frozen North. Besides being a courageous operator, Ray is an excellent after-dinner speaker.

The Association is in receipt of a letter from Guglielmo Marconi, in which he expressed his appreciation for the Gold Medal awarded to him by the Association on December 12, 1931, the Thirtieth Anniversary of the linking of the two continents by Marconi and his assistants.

Advice to those interested in securing information concerning the Association: Send 50 cents for a copy of the 1932 Year Book, which contains a resume of the doings of the Association during the past few years.

Membership in the Association is open to any person who has at any time qualified as a professional radio operator. (This includes Commercial, Navy, Army, Airways, Coast Guard, or any branch of the Government services.) If such service has been previous to ten years before date of application, the individual will be enrolled as a Veteran Member; if one has not served as an operator ten years prior to date of application, he is eligible for Associate membership.

Mr. Arthur Finch was awarded a Testimonial Scroll, which was presented to him at the March meeting of the Association. Mr. Finch, in accepting the Testimonial, spoke of the events leading up to his sending of an SOS. It seems that Mr. Finch was a member of the Steward's department aboard a ship which was making the trip from the West to the East Coast. The ship became disabled; rockets were shot off to no avail; signals of all kinds were used in an effort to secure aid. Mr. Finch at the time knew little or nothing about radio; the captain, however, heard that Finch had been a telegraphist during the World War. He summoned Finch and asked him to try to get off an SOS. Finch after 72 hours' continual working, managed to get the set working and sent an SOS, which was answered by the arrival of the rescuing ship

sometime later. His work while an unlicensed man resulted in the saving of 40 lives. "Strange as it seems, Finch's first radio message was an SOS."

The Seventh Annual Banquet of the Veteran Wireless Operators' Association was the "Best Ever."

Information relative to disasters at sea, in which the radio operator courageously mans the key will be appreciated by the Association. Anyone "in the know" concerning current disasters should communicate with the Veteran Wireless Operators' Association, 154 Nassau St., New York, N. Y.

California Senator Pledges To Support Commercial Operators

We are in receipt of the following telegram from Senator Samuel M. Shortridge of California.

ACKNOWLEDGING YOURS OF MARCH 12 I SHALL CONTINUE TO GIVE EARNEST AND SYMPATHETIC CONSIDERATION TO IMPORTANT MATTER IN WHICH WE ARE INTERESTED AND WILL ENDEAVOR TO BE OF FURTHER ASSISTANCE TO YOU AND YOUR FELLOW WORKERS KINDEST REGARDS

SAMUEL M SHORTRIDGE

Here is positive proof that the efforts of A.R.T.A. members and others, who wrote to Senators and Congressmen, calling their attention to the outrageous conditions prevailing in the marine wireless service, have not been in vain. It should indeed be a sign of great encouragement to commercial radiomen, when men like Senator Shortridge come forth to champion their cause and should serve as a reminder to those of us who have been backward in supporting the A.R.T.A. in its drive for better conditions, that it is possible for men to help themselves by co-operation and concentrated effort.

Senator Shortridge has been in correspondence with us for several months and has carefully investigated the various issues relating to marine wireless conditions, which we have laid before him. It is now up to us to co-operate with and support him in his efforts to help us. We urge every commercial operator to write to Senator Shortridge, thanking him for his sympathetic attitude, and assuring him that we will stand behind him to the finish. Write to other Senators and Congressmen also, for they are sure to see the justice of our cause and respond accordingly. Tell your relatives and friends about the consideration and sympathetic interest we are evoking at the capitol, and urge them to write letters of appeal and appreciation as well.

Pioneer Radio Operators

By Dr. Lee de Forest

It is safe to say that never in the annals of telegraphy had any service performed a more faithful work at a critical time than did the DeForest system on board the Times boat Haimun on that morning far out in the Yellow Sea.

Cruising all about the Yellow Sea, from Chemulpo Harbor, 240 miles away, and even when at Nagasaki to coal, Pop kept always in touch with Brown at Wei-Hai-Wei. One notable war message of 800 words flashed over this distance at twenty-five words a minute, without a single error. And that, remember, was in early 1904, when wireless over such distances and for swift press purposes was an absolutely untried experiment. Nothing whatever today—true. But those two lads made wireless history. Made such significant history that after the first six weeks of war, during which period Lionel James and his wireless continued consistently to scoop the press of the world, the Japanese military authorities suddenly revoked his permit, and summarily dismantled his tug, forcing him thereafter to resume the tedious, time-honored methods of his competitors. "It ceased because the system proved to be of far greater excellence than was believed by the Japanese to be possible; far superior to their own military and naval wireless system of communication." These were the exact words of Capt. James at a banquet given in November, 1904, in London, in honor of him and the Americans who had amazed the newspaper world by the astonishing efficiency of our wireless in war journalism.

It had proven indeed a lucky chance that Horton and I had caught the ship at Liverpool, which carried Lionel James to our shores. But it was a sore disappointment to both Horton and Cornish that neither could accompany to the Orient the wireless gear which they had so brilliantly broken in across the Channel of St. George.

Other tasks more prosaic, but more in the line of practical experimentation and perfection to commercial needs, awaited these two. It had been decided to attempt, also for the first time in wireless history, commercial communication over 180 miles of frozen land and ice-jammed lake-shore—between Cleveland and Buffalo. Mac went to Nottingham, a few miles east of Cleveland, where Barbour, back from Hatteras, was erecting two 210-foot masts and a fan antenna.

Cornish and J. A. Wallace, summoned

from his work on the old Toronto-Hamilton wireless circuit, met me at Bay View, a frozen desolation west of Buffalo. Three contractors were erecting a station similar to Cleveland's.

I'll never forget the icy dreariness of that lonely location, where we toiled through the bleak winter months of 1904—installing a huge goliath of a recalcitrant oil engine, which Wallace called "The Cow," and which required all of us, and any tramps in the neighborhood, to stand on its fly-wheel spokes, to start her going. Nor the agony of raising again and again that fan aerial after sleet had piled it and the stiffened hemp halyards an inch thick in ice.

Nor the multitudinous trenches radiating from and surrounding the shack, for the first ground system of its type—in ice-locked earth, the broken window panes in the road-house where we slept congealed beneath a foot of blankets, the wash pitcher frozen solid each morning, the leathery flapjacks which "Butinsky" used to fry for supper—so consistently tough that I pasted postage stamps on one and mailed it to New York. And meantime, Horton and Elmer Bucher, a young cub op he had picked up at Cleveland, toiled and suffered similarly. While we tested and tried, wire-telegraphed and tested, back and forth, tuning and re-tuning, puncturing glass-plate condensers in icy oil, thrown wholly on our own resources; for New York sent us little of apparatus, and less of money.

But at last, when it seemed that our wireless efforts must end before that endless winter terminated—we began to exchange messages occasionally, and then with gratifying regularity—a new World's Record.

At last came the day of formal opening; exchange of greetings by the two mayors, press representatives present, concocting all imaginable tests to determine whether or not this new thing, wireless, was genuine, or a clever fake worked over a wire concealed under the Lake Erie ice.

I think it was the following morning when the newspapers of Cleveland and Buffalo carried in bold-type the announcements of this "Marvelous success" that Horton was taken to the hospital for an emergency operation—appendicitis. E. E. Bucher, now one of the managers of the R.C.A. Photophone Corp, whose career in

(Continued on page 307)

Series and Parallel Circuits

By E. H. RIETZKE

President, Capitol Radio Engineering Institute; Member, Institute of Radio Engineers

Part 2

THE PARALLEL CIRCUIT

Circuit "P" is connected in series with the antenna circuit as shown in Diagram 9, and tuned to the frequency of the interfering signal, F_2 . The result is shown in

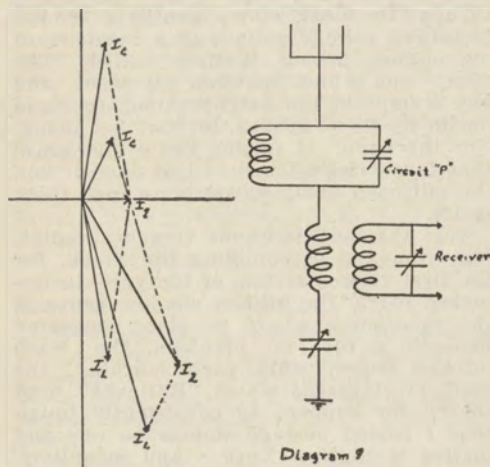


Diagram 8

Diagram 8, in which the current I_1 is the current flowing in the external circuit. (Antenna and receiver circuit), due to the incoming signal. This current is small and the impedance of the parallel circuit at this frequency is high. The interfering signal at frequency F_1 is therefore practically shut out of the receiver. The desired signal at frequency F_2 is of a higher frequency than the resonant frequency of Circuit "P." At this higher frequency, X_L is higher and X_C lower than at resonance. The current through L is therefore smaller than the current through C and the vector sum of these currents I_2 is much larger than I_1 and is easily tuned in in the receiver circuit.

It is apparent that the parallel circuit consisting of capacity only in one branch and inductance only in the other branch, (both circuits of course containing some resistances losses), will offer the highest impedance to the impressed frequency at which $X_L = X_C$, i.e., at the resonant frequency of the circuit. At this frequency, if no resistance was present in the circuit, the impedance would be infinite. This condition is of course impossible to attain but

it is not particularly difficult to design a parallel circuit in which the resistance in each branch is so low compared to the reactance that the angles of lead and lag are only a few minutes less than 90° and the resulting impedance of which at resonance is equal to many thousands of ohms. In this circuit the impedance of each branch will be, of course, only a small fractional part of this impedance of the entire circuit.

One particularly important point is brought out in Diagrams 2 and 8. An inspection of these diagrams will show that when the inductive reactance is LESS than the capacity reactance the greater current will flow through the inductive branch and the RESULTING CURRENT WILL LAG the applied voltage; the circuit therefore acts as an inductance. The reverse would be true if the frequency was such that X_C was less than X_L ; in this case the current through the capacity branch would be greater and the resulting current would LEAD the applied voltage, the circuit therefore acting as a capacity.

Now in order that X_L shall be smaller than X_C and the resulting current a lagging current the frequency must be LOWER THAN THE RESONANT FREQUENCY. At resonance, $X_L = X_C$. As the frequency is lowered, L and C remaining constant, X_L decreases while X_C increases; the current through L therefore increases while through C it decreases. The resulting current will lag and the circuit has the characteristics of an inductance.

As the frequency is INCREASED above resonance, X_L increases while X_C decreases; the current through the inductance decreases while through the capacity the current increases. This causes the resulting current to lead the voltage and the circuit assumes the characteristics of a capacity.

Probably the best way of showing this is by means of a "Susceptance" curve. While we decided early in this lesson to study the parallel circuit from the viewpoint of current instead of admittance or susceptance, if we neglect the effect of resistance the susceptance curve shows, better than any other means the characteristics of the parallel circuit at resonance and at frequencies above and below resonance.

Such a curve is shown in Diagram 10. In this curve, we plot S_L and S_C in place of X_L and X_C . We know that the suscep-

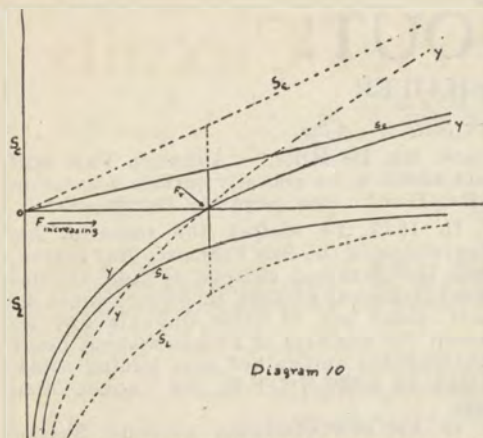


Diagram 10

tance S is the reciprocal of the reactance X and has the same relation to X that G , conductance, has to R . Thus the S curve indicates the ability of the parallel circuit to pass current.

If this curve is compared with the reactance curve shown in the preceding article, it will be observed that these curves look very similar. The principal differences that will be at once apparent are: S_C varies directly as the frequency thus varying in the form of a straight line in contrast to X_C which, varying inversely with the frequency, varies in the form of a curve; S_L varies inversely as the frequency thus varying in the form of a curve in contrast to X_L which varies in a straight line because it varies directly as the frequency. Another difference will of course be observed, viz., that S_C increases with an increase of frequency while X_C decreases with a frequency increase; and S_L decreases with an increase of frequency, while an increase of frequency causes X_L to increase.

Resonant frequency is indicated by the point where $S_L = S_C$. However, this point indicates zero susceptance or a zero ability to pass current through the parallel circuit. This would, if thought of in terms of impedance or resistance, indicate infinite impedance at this particular frequency. Since S_L and S_C are equal at resonance, the circuit will be neither inductive or capacitive but will act rather as an infinite resistance.

As the frequency is decreased below resonance, the circuit is plainly an inductive circuit due to the preponderance of S_L . At frequencies above resonance, S_C predominates and the circuit acts as a capacity.

This curve can also show the manner in which the selectivity of the parallel circuit can be increased. Since S_C varies directly as the frequency it also increases directly as the value of capacity. Thus for a larger capacity the S_C line will rise more steeply. In the same manner the variation of S_L for a given frequency variation will be greater

if the value of L is decreased. Since the selectivity of a parallel circuit is a function of the variation of S_L and S_C for a given frequency variation, it can be seen that by increasing the value of C and decreasing the value of L the selectivity of a parallel circuit can be increased. This is shown by the dotted lines in Diagram 10.

A reference to the characteristics of a series circuit will show that the parallel circuit characteristics are just the opposite to those of a series circuit:

At resonance the parallel circuit offers a maximum impedance; the series circuit offers at resonance the minimum impedance.

At a frequency lower than resonance, the parallel circuit acts as an inductance; the series circuit acts as a capacity.

At a frequency higher than the resonant frequency the parallel circuits acts as a capacity; the series circuit acts as an inductance.

At resonance, both parallel and series circuit act as resistances, the series circuit as a very low resistance, the parallel circuit as a very high resistance.

At resonance adding resistance to the series circuit increases the resulting resistance while at resonance the effective resistance of a parallel circuit is decreased if a limited amount of resistance is added to each branch.

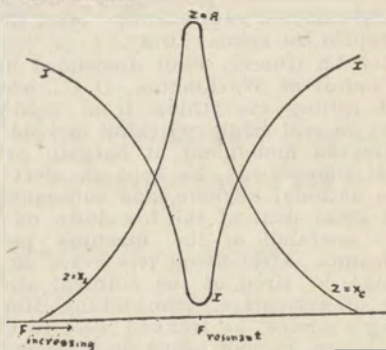


Diagram 11

Diagram 11 shows the relative values of current and impedance at resonance and at frequencies above and below resonance. A comparison of this diagram with the equivalent diagram for the series circuit will show the difference between the characteristics of the two.

As in a series circuit, these curves could be sharpened by decreasing the losses in the circuit and broadened by increasing the losses. It is shown in Diagram 10, however, that with normal values of resistance the selectivity of a parallel circuit depends mostly on the ratio of L/C . The LOWER

(Continued on page 25)

LOOK OUT!

FOR PAUL SHAILER

You fellows, sailing into San Francisco, who aren't as yet A.R.T.A. conscious, had better stand by to repel boarders, for Paul is cruising up and down the Embarcadero every day now, with the A.R.T.A. battle flag flying at his mainmast, and his decks cleared for action. He has recently been appointed Official Representative of the A.R.T.A. and CQ in the San Francisco Bay region, and has established his base of operations at 3525 Fruitvale Ave., Oakland, Calif. Already, he has rolled up a splendid record of membership and friends among the operating fraternity and claims he is just getting started.

Shailer is an old Navy man, and has a line of World War reminiscences on tap, that will match anything you ever heard in a static-room rag-chewing contest. During that little fracas, he was engaged in Naval Communication work, out of the Port of Philadelphia. Perhaps some of you old-timers, who sailed into Philly during the war, remember him, for he probably boarded you on more than one occasion, with a detail of salty bluejacketed hay-hands, sealed your wireless, swapped a yarn or two and sampled your cognac. Most likely he sampled the cognac first!

After La Guerre, Paul descended upon the Capitol at Washington, D. C., where, whilst selling everything from Real-silk hosiery to real estate, (I think he sold the Washington monument at bargain prices several times also), he kept an alert ear at the national keyhole, and consequently has a great deal of the low-down on the modus operandi of the machine politic americanus. After about five years on the Potomac, he tired of the political atmosphere of the place. So, taking Horace Greeley's advice, he trekked west to California, where he had heard that "Thar was gold in them thar hills."

Arriving on the shores of the Pacific, he made the startling discovery, that there was gold in them thar hills, and immediately started selling them in acre tracts, for good Iowa and Kansas gold. For three years, he laid seige on the citadel of Los Angeles, bombarding the grim defenders of that fair city with sales talks, organization campaigns, lectures and manuscripts. (Yep, he's an author, too.) Between drives he invaded Hollywood, disguised as a scenario writer, and actually succeeded in crashing the gate on ol' Cecil B. himself. He had a pen and a contract in the old gentleman's hand before the conversation had progressed beyond the state of the weather, and "What a nice studio you have

here, Mr. De Mille," Although Paul will not admit it, he actually carried a spear in "Ben Hur." Boy, page Mr. Barrymore!

In 1927, he shifted the scene of his operations to the San Francisco Bay region, and the harassed citizens of Los Angeles were relieved to find that they could at last, come out of their dugouts and go about the business of living, without being buttonholed and talked into joining something by S-H-A-I-L-E-R, the Yankee Menace.

In his new stamping grounds, Shailer did not allow any grass to grow under him, but plunged with new zeal into the task of organizing the backward proletariat, into workers' associations, co-operative societies, back-to-the-soil movements, and educational groups. This work, while right up his alley, as the saying goes, was more or less unlucrative, and Shailer's healthy six-foot carcass insisted on three good square meals daily. But this was no problem for Shailer. On the side, he continued to punch doorbells and hold toe-in-the-door interviews with housewives, whilst explaining the virtues of sundry patent elixers, magic polishers, and collapsible can openers. He was on the go, day and night, doing three men's work and getting a tremendous kick out of it. Later, he quit part-time selling and joined the advertising staff of the *California News* and handled the advertising of five district newspapers, while laboring eight or ten hours a day at his organization and propaganda work. Today, he is president of the Golden West Co-operative Brotherhood, advertising manager of the *Oakland Free Press*, and a staff writer for the same publication. In the *Free Press*, a well-known Oakland political sheet, you may read his interesting weekly column of political comment, entitled "Washington Days."

And still he finds time to talk organization to operators, advertising to prospective CQ advertisers, and CQ subscriptions to everyone he meets. He is a glutton for punishment, if you ask me. But that is his problem, and our good fortune.

The writer of this thumbnail sketch of Paul Shailer has known him intimately for a good many years, and unhesitatingly vouches for his integrity and squareness. He has the confidence of A.R.T.A. officials and the staff of CQ, as well as that of the many operators who have already met him. You will find in Shailer, a sociable man's man who is well informed on the problems of organization, and who wants to meet

(Continued on page 25)

ANNOUNCING

The **American Radio Telegraphists’ Association, Inc.**

(Incorporated in the State of New York)

A New

NATIONAL PROFESSIONAL ASSOCIATION

of, by and for

**Licensed Commercial Radio Operators
a Consolidation of**

**Commercial Radiomen’s } —and— { The American Radio
Protective Association } { Telegraphists’ Ass’n**

The American Radio Telegraphists’ Association is headed by:

Dr. Lee de Forest, “FATHER OF RADIO,” Honorary President
Mervyn R. Rathborne, President; **James J. Delaney,** Secy.-Treas.
Edward A. Vosseler, General Counsel

CQ has become the official organ of the A.R.T.A.

**Join the A.R.T.A. and help obtain improved conditions for yourself
and your fellow radio operators.**

For further information, address nearest office:

Eastern Office
215 West 49th Street
New York City

Western Office
203 Pashgian Building
Pasadena, California

Objects of the American Radio Telegraphists' Ass'n

(Article I, Sections 1 and 2 of the A.R.T.A. Constitution)

ARTICLE I.

Name and Purpose

Sec. 1. This organization shall be known as the American Radio Telegraphists' Association, Inc.

Sec. 2. The objects for which this Association has been established are as follows:

- a. To raise and maintain the social and economic status of the American Commercial Radio Operator.
- b. To protect the interests of American licensed commercial radio operators by:
 1. Attempting to secure legislation and publicity favorable to commercial radio operator;
 2. Co-operating with employers and bringing to their attention the value of radio and radio operators in protecting and saving lives, and the advantages to be gained from employing properly trained and experienced radio operators in positions of responsibility. Representing commercial radio operators at conferences with employers, for the purpose of attempting to secure higher salaries and improved conditions for commercial radio operators, or for arbitrating disputes regarding salaries and working conditions.
 3. Co-operating with existing organizations of commercial radio operators in the United States and foreign countries.
 4. Maintaining a monthly publication, to be known as the official organ of the American Radio Telegraphists' Association, Inc., for the dissemination of technical knowledge, employment information and news of interest to the members of the Association. This publication to be of an editorial and literary character calculated to promote the general welfare of the Association and the moral and intellectual character of its members.
 5. Combatting unfair methods and/or misleading advertising sponsored or used by radio schools or institutes, and providing for the dissemination of reliable

and accurate information regarding conditions existing in the commercial radio field among potential commercial radio operators.

6. Performing any other service which may assist in raising the standards of commercial radio work or in securing improved conditions for the American commercial radio operator.

GET THE SPIRIT

By James J. Delaney
Secy.-Treas., A.R.T.A.

Every radio operator who has been operating for a year or more must have discovered the crying need of the profession. He has found that he is an isolated creature and in an unenviable position as to rank and recompense. A complaint, no matter how justifiable, usually brings little favorable response. "If you don't like it, you know what you can do," has been heard by more than one operator. There is only one answer—to "like it." There are a hundred others on the beach waiting to take any job that becomes available.

Today, we have an answer for this situation. **We have organized.** We have done more than simply organize. We have given the operating profession a unique Association. To the best of our knowledge, it is, because of its democratic nature, the first and only one of its kind. Perusal of the Constitution will assure anyone that nothing could be fairer to all concerned.

Now that we have our organization, it is the duty of every radio operator to put his shoulder to the wheel and give it the support it needs and deserves. **Now** is the time that support is needed most—while our Association is in the formative stage, with many obstacles to hurdle. Every man making a living in radio, or trying to, should immediately join the A.R.T.A. and aid it by active, enthusiastic support in our new membership drive.

(Continued on page 18)

A Message to American Radio Operators

From Dr. Lee de Forest, Honorary President, American Radio Telegraphists' Association

As one who trained and employed the first American radio operators, I have taken a keen interest in the progress of the operating profession during the thirty years of its existence. I have watched it grow and have noted with pride the establishment of its splendid traditions. I have lamented the loss of the twenty-three brave operators who sacrificed their lives so that others might live, and recall with pride that none hesitated between duty and love of self.

It is with regret that I learn that certain interests, who apparently take little interest in heroism, tradition, or the safety of human life itself, have succeeded in demeaning the radio operating profession until its unique usefulness, its very existence, is threatened. In the last ten years, radio operators have lost many of the rights they acquired in the early days. Wages have been reduced until skilled and long-trained operators receive little more than laborers. The twelve-hour working day, which was discarded by other industries along with whale-oil lamps and stagecoaches, has been generally adopted by steamship companies for radio operators on passenger ships. Inadequate radio laws permit ships to go to sea with inexperienced youths as operators, with obsolete equipment, built and installed before the World War, and, further, fail to provide adequate and proper radio protection for the lives of passengers and seamen.

For the sake of saving a few miserable dollars, certain American shipping concerns have failed to equip many ships, those carrying less than fifty persons, passengers and crew, with radio. They have compelled operators to perform clerical duties and other tasks which prohibit them from maintaining radio watches as efficient as those kept on vessels of other nations.

And now, for the sake of greater economy, these shipping interests are sponsoring a certain vicious, inhuman and selfish piece of legislation brazenly aimed to abolish radio operators on coastwise vessels, protection of human life being apparently a minor consideration.

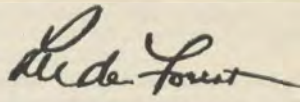
It is, therefore, with sincere satisfaction that I have learned of the movement, sponsored by CQ and the American Radio Telegraphists' Association, for the noble purpose of regaining for operators the rights and privileges that are justly theirs, and providing for those "who go down to the sea in ships" the protection provided by modern scientific inventions.

I am convinced that every operator worthy of the name should support this undertaking and join the Association, of

which I am Honorary President.

I know that the men who founded CQ and who are now the active heads of the American Radio Telegraphists' Association are sincere and interested only in promoting the welfare of their fellow operators. I know that they have worked for more than a year without financial reward to accomplish this purpose, and I believe that the determination and persistence of these men will lead to success.

The only means by which operators can secure economic security and uphold the glorious traditions of their profession is by carrying on that spirit of "all for one and one for all," which characterized the pioneers.



CONSTITUTION OF THE A.R.T.A.

(Continued from page 6)

ceive traveling expenses. He shall receive also, reasonable living expenses, not to exceed ten dollars per day. He shall submit vouchers for such expenditures, other than railroad, airplane or steamship travel.

ARTICLE V. Secretary-Treasurer

Sec. 1. The Secretary-Treasurer shall be elected by a majority vote of all Active Members and shall hold office for two years.

Sec. 2. It shall be the duty of the Secretary-Treasurer to keep an accurate record of the proceedings and transactions of all sessions of the membership, and to preserve the records and papers of the Association, and to perform such other duties as may be designated by the Constitution.

Sec. 3. He shall receive all moneys due the Association from whatever source. He shall preserve the records and shall have charge of the official seal of the Association, and all books, papers and property of the Association. He shall keep his accounts in such a manner as to show the financial condition of the Association at all times.

Sec. 4. He shall in all respects perform the duties of the President in his absence, or when incapacitated.

Sec. 5. He shall receive all applications for charters to establish subordinate units, and when accompanied by the required fee, he shall forward such applications to the President and shall attest all charters when granted, with his signature and the seal of the Association.

Sec. 6. He shall keep a record of subordinate units, with the dates of their organization, their time of meeting, the place of their location and the names and addresses of the officers and members thereof.

Sec. 7. He shall conduct all necessary correspondence of the office and shall attest all official documents with his signature and the seal of the Association, and shall provide

(Continued on page 30)

GET THE SPIRIT

(Continued from page 16)

We have tolerated a steadily declining status for a decade. Today, taking advantage of our unorganized state, many steamship lines have made the radio operator one of the lowest paid persons in the crew. When, and if, a turn for better economic conditions comes, we must be in a position to fight for the rights we have been deprived of for so long. An operator should not hesitate to join the A.R.T.A. His fear, rather, should be in remaining out, lest the Association fail due to lack of support. This is our opportunity, we must make the most of it.

No one is to blame for existing conditions, so much as the radio operator—the unorganized radio operator. Today, we must face facts, quit whining about circumstances, and manfully endeavor to find our proper niche. Let's get our stomach in, chest out, chin up, and parade with the A.R.T.A. toward the spot in the sun that is so justly the right of the professional radio operator!—J.J.D.

In response to the demand by service men and radio experimenters for a compact, inexpensive and reliable resistor kit, the International Resistance Company, Philadelphia, Pa., announces its metallized resistor replacement kit. A handy box with sliding cover contains twenty 1-watt resistors of the most used resistance values from 500 ohms to 3 megohms. By following the instructions packed with each kit, thousands of resistance values may be obtained to meet precise requirements. The factory seal applied to this certified kit insures new and genuine resistors of the indicated values.

Pioneer Radio Operators

(Continued from page 11)

wireless and radio there began, carried on efficiently in Mac's absence. That early Cleveland station stood for years in sight of the Lake Shore trains, and gave to countless big business men of New York and Chicago their first concrete idea that "Wireless" was an actuality and could some day play a vital part in their own business communications.

Universal Microphone Co. Moves

Increasing sales and an enlarged line of products have necessitated the removal of the plant and offices of the Universal Microphone Co., Ltd., from 1163 Hyde Park Blvd., Inglewood, California, to their new three-story building at 424 Warren Lane, Inglewood, California.

The Universal Microphone Company was established five years ago by Jim Fouch, its president and general manager. During this time a complete line of microphones and microphone accessories were developed and are now being used and sold in every part of the civilized world.

"It has been evident for sometime," said Mr. Fouch, "that our old quarters would soon be inadequate for our steadily growing volume of production. The new plant, with its 10,800 sq. ft. of floor area, gives us approximately four times the space of the old plant. A very decided advantage is the fact that our new plant is designed to meet the exacting needs of microphone manufacture."

"Each of the three floors is provided with ample window area, insuring the light needed for precise manufacturing conditions and the constant ventilation and even temperature necessary in assembling our products. Acids are stored and electroplating is done in another building because of the need for preventing the presence of gases in the presence of microphones and microphone parts.

"The three floors provide ideal manufacturing and storage space, enabling us to offer the trade microphones that are the best that modern manufacturing methods can produce. There are completely equipped laboratories for testing the products before they leave the plant. Experiment rooms have been provided for the development of new products and for perfecting improvements in design and refinements of manufacture.

In addition, a duplicate of a broadcast station and recording studio has been installed. Here, microphones are tested out under conditions simulating those of actual use."

*Now rather
To Record*

SUBSCRIBE TO CQ

"The Commercial Radio Operators Magazine"

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THE GLASS ARM

By Walter H. Candler

President, the Candler System Co.

It must be understood at the outset that there are many things which contribute directly or indirectly to the weakening of the telegraphers' and writers' arms. Medical authorities are fairly unanimous in the opinion that the principal cause is a toxic condition of the system resulting from some focal point. These infections, usually of such minor importance they escape notice, poison the blood-stream, superinducing inflammation of the nerves and muscles at the weakest point. With the telegrapher, bookkeeper, clerk or anyone doing much writing, the weakest point usually is his arm.

Now, the question arises: Why is the telegrapher's or writer's arm his weakest point? What about the arms of athletes, laborers and others, skilled and unskilled? They become stronger with use. Did old Mother Nature fail to make such bounteous provision for the arms of the telegrapher and penman? We are inclined to believe this when we consider that their arms, wrists and fingers become weaker and less responsive with continued use, rather than stronger and faster.

The condition, diagnosed as **Vocational Neuritis**, which sometimes yields to medical treatment, is one thing, whereas the condition recognized as "Glass Arm" is another. The symptoms often are similar—with one ever-present exception, namely: In true neuritis there is inflammation or soreness; in true glass arm there is neither. At first there may be sensitiveness, but this soon subsides and the arm gradually loses its erstwhile *snap* and responsiveness. Dot letters are difficult to send correctly with the customary speed. The operator soon is aware that something is wrong—he cannot send the fast, accurate stuff he once did; others with whom he works tell him his sending is rotten. He is easily fatigued and is subject to various forms of nervousness, headaches, insomnia, loss of appetite; is easily excited and discouraged; he develops what psychologists term an **Inferiority Complex** which, among other things, greatly increases the nervous strain of telegraphing; in some instances to an alarming degree.

When this condition is caused or helped along as a result of some infected area, it is accompanied by pain in wrists, forearms, neck and back; frequently headaches and dizziness, irritability and various other disturbances. When the condition has been cleared up by medical treatment, these symptoms may disappear but the arm is

ever afterwards weak; the old *snap* has gone out of it. Hence, you will observe that toxæmia, causing neuritis primarily, contributes secondarily to the condition. To be more specific: its after-effects are manifested in the well-known malady—"Glass Arm."

But there are other causes for this condition. Consider, if you will, the unnatural position of the arm in telegraphing, which interferes with normal circulation, causing muscle and nerve strain in writing and sending; long confinement which lowers residual energy or body-tone; undue and prolonged pressure upon the table with the under part of the arm; and last, but by no means of the least importance, the ever-present negative suggestion that ultimately the arm is doomed to fail.

Suggestion is a powerful factor. Young operators hear old ones complaining of the weakened condition of their arms and it is suggested to them inadvertently that **it's only a matter of time** until they, too, will have **Glass Arm**.

When a weak arm has been neglected, there is danger of the muscles and nerves becoming atrophied, resulting in paralysis. It has not been so long ago that the seat of all forms of paralysis was found to be in the brain—that the paralyzed arm or other member was but the result of such brain condition. This is not always applicable to telegrapher's paralysis, but when found so in isolated cases, even then there remains much doubt unless the diagnostician is as familiar with Psychology as with Physiology and capable of differentiating between Brain symptoms on one hand and Mental on the other.

To go into this subject thoroughly would entail an exhaustive discussion of **reflexes** which limited space prohibits. Suffice it to say, however, that every muscular action is in response to a mental impulse. For example: The impulse of dots, dashes and spaces in certain proportions is sent out along the nerve corridors by the brain; the hand on the telegraph key, aided by normally functioning nerves and muscles, responds—does what the mind commands; then, by virtue of many repetitions, the Conscious Mind gradually places its responsibilities onto the Subconscious Mind. Habit is formed. Habit is anything we can do without conscious thought; that is, writing, sending and receiving a message while thinking of something else. Skill in doing

(Continued on Next Page)

RADIO KGPL

(Continued from Page 7)

buffer amplifiers, and two type 504 Audions as radio-frequency power amplifiers.

One type 545 speech amplifier, and one type 520-M water-cooled modulator.

The use of a water-cooled modulator tube allows the use of high-level modulation with full 100 per cent modulation capability. Water-cooled Audion 520-M has an undistorted audio output of well over 500 watts when operated under the conditions in the KGPL transmitter (Class A modulator with 3500-volt plate). The two 504 radio-frequency power amplifiers are operated at under normal plate current, and as Class C modulated amplifiers, to give a carrier output of 400 watts.

Speech energy enters the transmitter proper, from the separate speech amplifier unit, through a 500-ohm line terminated in a line-to-tube transformer. A type 545 low-impedance Audion is used as a speech amplifier, impedance-coupled to the grid of the water-cooled modulator.

Speech Channel and Audio-Amplifier

Standard two-button carbon microphones are used for police broadcasts over KGPL. The speech level from these microphones is amplified through three stages of impedance-coupled speech amplification before it is sent over the 500-ohm line to the transmitter.

This three-stage speech amplifier uses two Audions, type 427, and one type 445, and it is mounted on a standard audio relay rack. The amplifier is all A.C. operated, using one type 480 full-wave rectifier for the plate voltages, A.C. on the filaments, and cathode dropping resistors to supply the grid bias voltages through voltage drop along the plate current return to the tube cathodes.

A rectifier-type audio-frequency voltmeter is used across the speech amplifier output line to read signal level.

Water-Cooling System

Perhaps the final point of interest at KGPL is the system for cooling the modulator tube.

This tube is of the copper-glass seal type, with its tubular copper plate directly in contact with cooling water. The tube is mounted in a water-jacket nearly four inches larger in diameter than the tube plate, allowing a body of water two inches thick surrounding the plate of the tube.

Water flows through this jacket from an inlet and outlet pipe connected to the jacket with approximately twenty foot lengths of rubber hose. The jacket is, of course, insulated for high voltage by being mounted on isolantite standoff insulators, because its metal surface is alive with 3500 D.C. volts. The water columns within the rubber hose complete the insulation of the

THE GLASS ARM

anything indicates that we do it subconsciously, particularly is this true of telegraphing; that's why it is so hard to learn, especially the receiving end of it.

When the Subconscious Mind sends out an impulse for six dots and the hand falters, making four dots space, two dots or five or eight dots, the Conscious Mind jumps in and endeavors to make the correction. Trouble ensues here which I shall not discuss now. A repetition of this conscious interference causes an unbalancing of the mental and nerve system which interrupts co-ordinative work. The result is that the operator puts forth more effort to make dots and dashes correctly. This is a strain, and the "up-set" or "nervous" operator soon is working against himself, like one trying to swim up a swift stream.

While telegraphing, the arm is in an unnatural position. The blood cannot circulate freely to the extremities as if it were being used in swinging motions. Pressure on the table not only retards circulation but interferes with nerve functioning, after the manner of anything interfering with a grid, sounder or line circuit. The muscle and nerve tissues become impoverished and their vigor and elasticity diminish. Capillary circulation becomes weak and, in advanced cases, ceases altogether. The hand usually is cold, clammy, and while there may be no pain to speak of, the victim is aware of an uncomfortable feeling from the tips of his fingers to his elbows.

Now, the question of a remedy arises. Will exercises help?

If the condition is true Neuritis, and only a capable physician can determine this, exercises of any kind will do more harm than good. Exercises should not be taken until the cause has been cleared up; then, certain exercises will help to build and develop the small muscles of the arm, which, in time, if followed properly under the direction of a physician or one who understands the condition, restore it to its normal state where it will respond readily to the mental impulse. It must be understood

(Continued on page 27)

tube plate and jacket, as the water used is of high specific resistance, to form a high resistance path for the D.C. to ground.

At KGPL, the water is circulated in a closed system by a rotary electric pump, hot water from the tube jacket flowing out and through a cooling radiator similar to that of a motor car, and through which a blast of air is fanned. Distilled water is used in this closed system to obtain the high specific resistance and lower the rate of scale formation upon the modulator tube plate.

IMPORTANT SHORT-WAVE SCHEDULES

0000 TO 0300 GCT — 7:00 TO 10:00 P. M. EST — 4:00 P. M. TO 7:00 P. M. PST
 P = Press W = Weather T = Time Meters in Parenthesis

GCT	Station	Wave	Sked	Location	Remarks
0000	GBR	8640 (34.72)	P	Rugby, England	Official British Wireless News
.....	EAM	9072 (30.70)	P	Aranjuez, Spain	Spanish and World News, in Spanish
.....	DAN	11340 (26.45)	T	Norddeich, Germany	
.....	PPE	8720 (34.40)	T	Rio de Janeiro, Brazil	
0030	KUP	16700 (17.96) 11340 (26.45)	P	San Francisco (S. F. "Examiner" Radio)	Financial Survey, daily except Sat., Sun. and holidays.
0050	DIS	10150 (29.55)	P	Nauen, Germany	German and World News, in German
0100	KTK	16740 (17.92) 11280 (26.60) 6400 (46.88)	P	Mussel Rock, Cal. (Dollar Radio, San Francisco, Cal.)	Dollar World News and Stock Reports
.....	WRH	8360 (35.89)	P	Carlstadt, New Jersey (American Radio News Corp.)	Hearst World News and Stocks
.....	VAS	4920 (60.98)	P	Louisburg, Nova Scotia	
.....	DIH	19947 (15.04)	P	Nauen, Germany	German and World News, in German
.....	EAJ	6835 (43.90)	P	Aranjuez, Spain	Repeats 0000 GCT press schedule of EAM
.....	PLO	11440 (26.23)	W	Malabar, Java	Hydros and Storm Warnings
.....	XDA	7790 (38.50)	P	Mexico City	Mexican and World News
0140	GBR	8640 (34.72)	P	Rugby, England	Paid press to S/S "Olympic"
0255 to 0300	NAA	8030 12225 (24.50) (37.40) 4015 (74.70)	T	Arlington, Va.	First-order Time Signals, direct from Naval Observatory, correct to 1/10 of a second.
.....	NPG	12885 (23.28)	T	San Francisco	Rebroadcast of NAA Time Signals
.....	NPO	17744 (16.90) 8872 (33.80)	T	Cavite, P. I.	First-order Time Signals from Manila Central Observatory (U. S. Navy)
0300	KUP	8350 (35.93) 6440 (46.58)	P	San Francisco	U. S. and World News, S. F. "Examiner"
.....	WPN	8690 (34.52) 6410 (46.80)	P	Garden City, N.Y. Dollar Radio	Dollar World News and Stocks
.....	NAA	12225 (24.50) 8030 (37.40) 4015 (74.70)	W	Arlington, Va. U.S. Navy Radio	Marine Weather Bulletin. Station and ship reports, pressure synopsis, fore- casts, storm warnings for Atlantic Coast and Ocean

Short Wave Schedules for 0300 to 0600 GCT will be published in the next issue of **CQ**.
 Marine operators noting omissions or errors in these schedules are requested to notify the
 Editor.

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listing from 2000 to 60,000 KC, thousands of commercial land and ship stations that are to be heard near the various amateur bands. Each AMATEUR band is indicated in large type, for quickly locating stations heard at your station. No other list published can even compare with this section for accuracy and completeness.

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BREAKS

by
THE SKIPPER

H. R. 6385, described in another section of this issue, reveals a legislative trend toward the elimination of licensed radio operators in commercial radio stations. How convenient it would be for steamship companies and owners of commercial radio stations if messmen, sailors, office boys and janitors were permitted to operate radio transmitters! H. R. 6385 constitutes a real threat to the economic security of every licensed operator. If it becomes a law it will only be a matter of time before similar measures to abolish radio operators in other classes of stations are brought before Congress. There is only one way to fight H. R. 6385—organized effort. I have been pointing out the necessity for organization for the past year. Now, I hope you fellows realize that nothing except a powerful Association can protect you against such measures as H. R. 6385. If it were not for CQ and the A. R. T. A., many of you would have never heard of this bill, until it became a law and abolished your jobs.

At the present time, the A. R. T. A. has a membership of slightly less than 500. The money collected from members is barely sufficient to pay running expenses. The A. R. T. A. cannot conduct a campaign against H. R. 6385 unless additional members are enrolled. No one can expect 500 to fight the battles of 11,000 apparently indifferent and satisfied operators.

* * *

A number of steamship companies operating ships on the Great Lakes are writing to their operators, informing them that radiomen will be signed-on as Able Seamen next season. Operators will be required to obtain AB certificates and perform deck work if they wish to sail on certain Lake steamers this summer. Last season, deck-hand-operators were compelled to work from ten to fifteen hours per day. They were signed-on as deckhands at \$66 per month and required to perform radio duties in "spare" time. No extra pay was allowed for radio work.

* * *

PERSONAL MENTION

Woodrow M. Cook of Seymour, Indiana, is training for the world's championship code speed contest, which is scheduled to be held at the Chicago World's Fair, in 1933. Cook, who is a student of the Candler System Company of Chicago, can send

UNIVERSAL MODEL "BB" 1932 VALUE—NEW DESIGN

No other 2-Button microphone can give such superlative value for such a low price. Extra large size. Extra rugged construction. Extra excellence of performance. Built especially for voice pick-up, public address work and amateur broadcasts. 24 kt. Pure Gold Spot Centers. Duralumin Diaphragm. Frequency range to W E L L over 4000 cycles.

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424 Warren Lane, Inglewood, Cal., U. S.

53 words per minute on a hand key for three minutes, 45 wpm at a steady clip. He can receive 68 wpm, plain language, on a mill and 58 with a pen, staying about six words behind. When he started taking the Candler System Courses, a year ago, Cook could send and receive at the rate of 15 words per minute. Operators interested in preparing for the contest mentioned above should communicate with Walter H. Candler, 6343 South Kedzie Avenue, Chicago.

* * *

Notes from the Capitol Radio Engineering Institute Bulletin:

Bob Lee, Pan-Am. Airways operator, has been assigned to the Headquarters Division at Miami. Bob was formerly with the Carribean Division.

Geo. W. Shuman, Airways operator, has been transferred from Atlanta, Ga., to Jacksonville, Fla.

Stephen Kovacs is now on the "Beaconlight" on the West Indies run.

Bruce H. Ratts, WOWO, Fort Wayne, Ind., has recovered from a serious injury and is now back on the job. 73, OM.

Roy C. Fell is now Maintenance Engineer with American Airways at Burbank, Calif. Roy is busy designing and building new aircraft transmitters and receivers.

Michael H. Duggan is at WLWL, NYC.
John M. Baldwin is Ch. Eng. at KDYL, Salt Lake City.

Russell Ostrander can be found at WHK, Cleveland, Ohio.

* * *

Joe Gately, well-known Boston op, is now on the Munargo, which was transferred back to RMCA, as will be all Munson vessels when they arrive in NY.

Mike De Martino and W. Donald Thomas, recently of the Munargo, are taking short vacations. Thomas is visiting his family in Boston.

Edward F. Rocks sailed as junior on the Excambion. A. B. Swarts is senior.

(Continued on Page 27)

GOODWILL **CQ** ADVERTISING

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Hang On, OM
We'll Make It.

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and the
C.R.P.A.
from
Edmund Russek—"WJCY"

73 AND
GOOD LUCK
Bill Wallace—"WFDN"

— 73 —
to
CQ and the A.R.T.A.
"CL"
K F T J

A Friend in Rhode Island

Let's Keep Going
— 73 —
L. G. DE Merritt
"KODQ"

Help Keep CQ on the Air
by purchasing a "Goodwill Ad."
Special rate for "Goodwill Ads."
only, \$2.50 per tenth page.

ASSIGNMENTS

(Operators are requested to notify the Editor of changes and additions to this list.)

Name	Ship
Adams, Walter B.	Santa Rita
Agriello, Jas.	Axtel J. Byles
Ahrens, Geo. W.	Robert E. Lee
Ahrens, Geo. C.	Tydol No. 2
Alken, Russel N.	West Imboden
Ainslie, Gordon D.	Gulf Point
Aird, John E.	Oakmar
Aleison, Nils A.	Mt. Utowana
Albrecht, Fritz	Dirogo
Alderman, Thos. J.	Munplace
Allman, Fred A.	Munindies
Allwein, Clarence	Coahoma County
Amendolra, Patrick	Yoro
Anderson, Anton B.	Beacon Star
Anderson, Christian F.	+ Exilona
Anderson, Dudley	Ancon
Anderson, Harold	Steel Maker
Anderson, James C.	Exchester
Annett, Robt. W.	Sagaporack
Arbachiansias, Anthony	Jonancy
Arkinstall, J. Randolph	T/S Newport
Arcuelo, Wm.	Carabobo
Ashley, Frederick W.	Pricilla
Athey, Leon M.	Amer. Merchant
Ault, Thos. C.	M/Y Savarana
Austin, Burton H.	Earch
Avery, John M.	M/Y Thallia
Avitable, Carroll	Pennsylvania (Texas Co.)
Azzopardi, Alession	Exmoor
Baarslag, Karl	M/Y Queen Anne
Babinerau, John E.	Standard Arrow
Bacon, Carelton W.	Jefferson Davis
Bahles, William C.	Delaware Sun
Baine, Harvey	West Harcuvar
Baker, Thos. D.	Henry S. Grove
Ball, Howard	Cliffwood
Bamberg, Julius	Yorba Linda
Bangert, Burton H.	Southern Cross
Barbaro, Henry	Carplaka
Barbee, Ernest W.	Magmeric
Barber, Donald	Doris Kellogg
Barkley, Charles	Gulf Trade
Barnard, T. A.	Arizona
Bartless, Marshall C.	Ormes
Barnes, W. E.	West Hilsa
Barton, Morris C.	Olean
Bass, Noble T.	Effna
Beaumont, Bennett F.	G. Harrison Smith
Beck, Donald	Coelleda
Beck, Ernest	E. J. Nichols
Beck, Niel J.	Plymouth
Beckerman, Benjamin	Jefferson
Begelman, Albert	Steel Maker
Bell, Harry W.	Gulf Stream
Benetez, Joseph	Virginia (IMM)
Benson, Edgar W.	Schenectady
Berger, Charles C.	M/Y Vagabondia
Bergeron, Elmer H.	Examalia
Bergman, Joseph	Malang
Berman, Isador	Steel Trader
Bernier, Edward F.	J. L. Luckenbach
Berry, Burlie P.	Artigas
Berry, Clifford L.	Howard
Best, Marvin L.	Liberator
Best, Ernest G.	S/T Brant
Bezanson, Ralph E.	Gulf Land
Biersack, Robert H.	Caracas
Bismarck, Clarence	James McGee

Barnett, Harry L.	Loraine
Blackburn, L. J.	Deer Lodge
Blakely, Kenneth F.	Atlas
Bland, Louis D.	Amer. Banker
Bloomenthal, James	Providence
Blum, Morris H.	Munsono
Bodeman, C. S.	West Kyska
Bogut, Frank	Santa Inez
Bonnabel, Eugene B.	West Zeda
Boone, Harry	Allegheny
Borchardt, Ralph E.	Japan Arrow
Borsos, John	Chester Sun
Bourgeois, Albert	Marozan
Boyer, Earl L.	Collingsworth
Bracht, Leon E.	Mohave
Bradley, Ralph W.	Nishmaha
Brandfon, David	Concord
Braidwood, Thomas	M/Y Caroline
Braswell, Kindred	Gulf Light
Breedlove, Bernard	Steel Age
Brown, Harry E.	Bannack

WHAT TO DO ABOUT H. R. 6385

(Continued from page 4)

(6) Do you know that inexperienced minors (and aliens) are permitted to assume the responsibility of protecting and saving, in time of disaster, the lives of seamen and passengers on American ships?

(7) Do you know that the twelve-hour working day, which was discarded with whale-oil lamps and stagecoaches in other industries, is in effect for radio operators on a large number of American passenger ships?

(8) Do you know that present radio laws fail to provide adequate and proper radio protection for the lives of passengers and seamen on vessels of the United States?—M. R. R.

SERIES AND PARALLEL CIRCUITS

(Continued from page 14)

this ratio, the greater the degree of selectivity of the circuit. This is just the opposite to the condition in a series circuit.

If the circuit contained NO resistance, I would be zero and Z would be infinite at resonance. The addition of a limited amount of resistance would increase the value of I and decrease the value of Z at resonance.

LOOK OUT FOR PAUL SHAILER

(Continued from page 12)

you for a friendly half-hour or so, to talk over the very important problem of how operators can help themselves to maintain a decent standard of working conditions. Meet him half way in his efforts to contact you. Introduce him to your brass-pounding friends, and tell others about him, and thus co-operate with a man who is trying to help you. You owe this to yourself as well as to the A.R.T.A., which was formed and is working in your interest.

CORRESPONDENCE SECTION

Signed communications only will be accepted for publication in this section, names of correspondents will be withheld on request. The publishers of CQ assume no responsibility for statements made herein by correspondents.

☆ ☆ ☆

Editor CQ:

I did not reply to your criticism of last October because I felt there was no reason to enter into a controversy at that time, when nothing could be done without destroying thousands of catalogs I had on hand.

However, in making up my new catalog, I had your letter and criticisms before me. Many of your comments were well founded. A few however, I felt were not. Those that I felt were, I used, changing my catalog accordingly.

Now, I'm sending you a copy of this new catalog. I am also sending you one of the old ones.

Now, if you feel you care to take the time, I would be glad to have you go through my new one and let me know what you think of the changes I've made.

Now, with my new catalog, do you feel you care to carry my advertisements in the future? If you feel the changes I have made justify my advertisement in your paper, let me know.

If on the other hand you do not feel that it meets your requirements, I will not bother to schedule your magazine in my future placings.

Yours very truly,

(Signed) H. C. LEWIS,

(President, Coyne Electrical School,
Chicago, Illinois.)

Editor CQ:

I received the C. R. P. A. Bulletin of March 10th, also the ballot regarding the proposed merger between the C.R.P.A. and the A.R.T.A.

Yes, I am in favor of the merger. We need all the organization we can get. I have had some experience in soliciting membership in the C.R.P.A., and I know how hard it is to enlist support for the movement during these times. I have approached several operators in Cleveland and in the Lakes region, and I am surprised at the lack of "guts" among them. Most of them take a "Chamber of Commerce" attitude toward organizing. I do not like to say this, but it is a fact. Most of the sympathy toward organization is to be found among marine operators and the few men working for semi-independent concerns. I approached an operator in one of the larger broadcasting stations here, explained the purpose of the Association

and gave him a few copies of CQ. I told him to "think it over" and that I would see him later. I also asked him to see if he could interest other operators. When I returned I was surprised at his timidity and the reasons he gave for his unwillingness to join. He stated that the chief operator was a strong "company man" and was opposed to any attempt to organize his operators. The literature was returned to me with apologies. This operator is a very nice young man, and a capable one, too.

Other operators that I have visited, principally in airways stations, seem to have the idea that they had excellent jobs and that they were already assured of lifetime work. They displayed the "Why in H—L should a 'crack' operator worry about organization" attitude. I know a lot of "crack" operators who can do all the "cracking" they know how to do, but they are still out of jobs. I remember when chief operators on ships such as the "Leviathan," "America," "George Washington" and other U. S. Lines trans-Atlantic liners were getting \$150 per month for eight hours' work. Now these same men are being paid anywhere from \$90 to \$115 for twelve hours' work a day on the same ships. Perhaps a strong and progressive organization would have helped them.

I recently received a letter from the steamship company that employed me as a radio operator on the Great Lakes in 1930 and 1931. The letter informed me that the company would not be able to carry radio operators on its vessels this season, due to the business outlook, and that if operators were carried they must have Able Seamen's Certificates and do the work of Able Seamen in addition to radio work. I do not know where these concerns, who intend to carry Seamen-Operators, are going to get them if operators must have AB papers. Perhaps they can "fix them up" through fictitious deck experience claims. I don't know a single operator who has had a year's experience on deck. This is the time necessary to qualify for an AB's certificate.

I once was offered a job on a Lake vessel as a Seaman-Operator. I asked the superintendent of the radio concern about the requirements for AB papers, as I was not familiar with deck work. I was told, "Just go to any Steamboat Inspector's Office and tell what a sea-anchor is and how it is used; how a lifeboat is launched and rowed; describe the difference between a Bos'n and a Second Mate when they have their caps on; define such nautical terms as 'hard o' port, steady as she goes, scup-

(Continued on page 28)

THE GLASS ARM

(Continued from page 20)

however, that just any kind of exercise will likely do more harm than good. As with medicine, so with exercise: "What will cure one will kill another."

I have had occasion to interview many celebrated musicians, artists, and others doing work that necessitated the free, easy action of their hands, arms and fingers. In every instance I found that the "right kind" of exercise constituted part of their daily routine.

How necessary then are corrective exercises for developing the telegrapher's arm? He needs certain exercises to promote free circulation to his finger tips, to rebuild broken down cell tissue and carry off the dead cells. He needs other forms of special exercises to develop the small muscles as they should be developed in a telegrapher's arm, not like those of a blacksmith, laborer or strong man, to promote uniformity, rhythm, normality, speed, accuracy—skill.

A muscle-bound arm cannot send on a telegraph key. Many cases of so-called cramps of various forms, verging on paralysis, in some instances, are muscle-bound conditions brought on by the wrong kind of exercises. I say positively, and any physician will bear me out, that indiscriminate exercising frequently does irreparable harm. The antiquated methods of certain well advertised physical culturists may give a telegrapher large, beefy arms that are useless for sending or writing.

The wrestler and prizefighter need different systems of exercise. The ball player, sprinter, distance swimmer, walker and tennis player—all, must take specific exercises to develop certain muscles in the right proportion to meet their requirements in muscular control and reflex co-ordination necessary to skill and perfection. The champion wrestler of the world would be helpless in the prize ring with a Jack Dempsey. He has great, bulging muscles, it is true, but they have been trained to pull, tug, twist and hug—not to strike a blow; and what would Dempsey do in a tennis court pitted against a Tilden or Wills? He could hit the ball with greater force than either, but they soon would easily defeat him because their muscles have been not only properly developed, but trained to co-ordinate in playing the game. Their minds, muscles and nerves function together.

That the Mind and its proper functioning plays the most important part in telegraphing, no one can question; hence it is quite obvious that many cases of **Glass Arm** can be traced to improper methods and a lack

Breaks

Julius (Mickey) Bamberg recently landed the Yorba Linda, his fourth ship this winter.

After long stays on the beach, Willard Bliss and Joe Belliza have landed berths on the Martinique.

Duncan Curry of the American Farmer is taking a vacation with his family in Boston. Dunc recently won 800 of Uncle Sam's best Iron Men on the ponies. He should take a vacation.

Gordon R. McCallum is to be congratulated on the excellent work he did when the collier F. H. DeBardleben was lost.

Freddie Gritzner has been warming the bench at 75 Varick for some time. I hope he soon makes connections.

Jimmy Ball, well-known Pacific Coast op and holder of one of the prized "pink" tickets, is on the beach in SF after a short stay on the Yale.

Arthur Harding and Fay Stoddard are still on the Emma Alexander.

Bill Kirchoff is at WMCA. No more ships for Bill, he says. I wonder!

A.V.B. Kennedy is at WSL.

Alex Vadas is on the Yacht Fortuna, at \$180 per. Am I jealous?

Henry B. von Thun, formerly of the "Levi," nailed the Hussar.

F. F. Rebb is on the Yacht Rene and I. Margolis landed the Yacht Lyndonia, which negotiation for a new suit of clothes in a tailor shop.

Kenneth Peterson, ex-Siboney, is now code instructor at 75 Varick.

* * *

The American Merchant Fleet is now 100 per cent A.R.T.A., both ships and operators. The U.S. Lines has 100 per cent membership in ships. Other lines nearing the 100 per cent goal are Munson, Clyde, Dollar, Admiral, and Luckenbach.

73, CU next issue—The SKIPPER.

of mental and muscular co-ordination. At another time I shall be glad to discuss this phase of the subject and pass along the benefits of my experience in handling many thousands of cases during the past 20 years.

"C Q"

CLASSIFIED ADVERTISING

CQ will accept classified advertising from licensed radio operators and persons employed in allied services at the special rate of five cents per line.

(1) Advertising shall pertain to radio and shall be of interest to professional radio operators.

(2) No display of any character will be accepted, nor can any special typographical arrangement such as all or part capital letters be used which would tend to make one advertisement stand out from the others.

(3) The rate for advertising of a commercial nature is three cents per word.

(4) Remittance in full must accompany copy, closing date for classified advertisements is the first of the month preceding publication date. Provisions of paragraphs (1) and (2) apply to all advertising in this column, regardless of which rate may apply.

BAKELITE PANEL ENGRAVING—Radio and technical; finest workmanship. Established five years. Request price lists. A. L. Woody, Engravers, 19 South Wells Street, Chicago, Ill.

OPERATORS—If you have a bug, mill or relay to sell; if you want to obtain parts for an amateur station, advertise in the Classified Section of **CQ**. Special rates to commercial operators.

GUARANTEED MICROPHONE REPAIRS—Any make or model—24-hour service. Stretched diaphragm double button repairs, \$7.50. Others, \$3.00. Single button repairs, \$1.50. Write for 1932 catalog, with diagrams. Universal Microphone Co., Ltd., Inglewood, California.

FOR SALE—Kennedy Universal, 180 to 20,000 meters, without amplifier. Leach Break-in Relay, 6-volt. Jack Cline, 4006 Somers Ave., Los Angeles, Calif.

FOR SALE—Radio Model Vibroplex, heavy contacts, \$12.50. Weston meters, transformers and other amateur equipment, write for list. M.R.R., care CQ.

WANTED—Long-wave receiver, such as Kennedy Universal, IP501A, SE143, SE1420, or what have you? Have 15 dial Omnigraph in excellent condition with 15 Morse dials and 15 radio dials, will trade or sell. Fred F. Hall, Crown Point, Indiana.

FOR SALE—Teleplex with 5 rolls radio tape, 7 rolls Morse. Cost \$33, will sell for \$15. M.R.R., care CQ.

WANTED—Late Model Portable Royal Typewriter, Capital Keyboard, good condition. Gerald Mathison, 1009 Eastman Road, Midland, Michigan.

SHORT WAVE RECEIVERS—200 to 11 meters, employing UY236 detector and UY238 audio. Encased in sturdy shield can, size 9x6x6 inches. Price \$20.50, complete with tubes and coils. Hugo A. Bondy, 123 Phelps Road, Ridgewood, N. J.

CORRESPONDENCE

(Continued from page 26)

per, marlin spike, forward, astern, athwartships, bilge, etc.' " I was also told that it was necessary to know how to box the compass. By the time we returned to Milwaukee the next trip, I had memorized all this information. I went to the Steamboat Inspector's Office and told him to give me an AB's certificate. Before I had a chance to demonstrate my knowledge of things nautical, he began asking me questions, among the first was, "Have you had a year's experience on deck?" My answer disqualified me, as I was told that I would have to show proof of deck experience. After replying that I did not have my service record and discharges with me, which was true enough, I apologized for disturbing him and left. Anyhow, I still know how to box the compass.

If the same regulations are in effect at the present time,—where are the operators coming from who can qualify? I do not know any operators who hold AB papers. I believe that we had better communicate with the Steamboat Inspectors and ask them to look out for "faked" discharges. I am going to find out more about this and bring it to the attention of other Lakes operators.

The outlook on the Lakes is not at all promising. I've been in Cleveland all Winter and have not heard anything that inspires optimism. According to reliable reports there are more than 200 applications on file with the Cleveland Office of the Radiomarine Corporation. There is little chance for any vessels being commissioned before June first.

Financially speaking, I'm in a worse position than I have ever been since I became an operator; however, I'm just as enthusiastic about organization as ever.

With best wishes for success to all supporters of our Association.—C. McD.

The "How" and "Why" of radio clearly explained in non-technical language that the average radioman can understand, that's **Modern Radio**, edited by Robert S. Kruse. When RSK announced this publication we expected something out of the ordinary and we were not disappointed. **Modern Radio** is indispensable to the commercial operator who likes to "tinker" or the man who wishes to keep posted on the newest developments in the radio field. This magazine is devoid of sensational announcements of "revolutionary inventions," as well as old ideas dressed up in new clothes and presented as "startling new discoveries," with which contemporary contemporary publications are filled. Publications are filled.—M.R.R.

The I. F. R. Bulletin No. 15

Certificates—

The Washington Convention of 1927 lays down new regulations for the issue of Radiotelegraphists' Certificates as well as rules governing the exchange of old certificates for new ones. These regulations have become obligatory as from the 1st of January, 1932. It appears, however, that certain governments have no intention of following these rules, which their duly authorized delegates have agreed upon. In a great number of cases, operators with the old first-class certificates are allowed to carry on, and even operators with the 1912 second-class certificate, speed test of 12 words per minute, are allowed to continue as radiotelegraphists, although their ability leaves much to be desired.

If it is the wish of the governments that their signatures to international agreements shall command universal respect, this position can no longer be tolerated. The terms of the international Radio Convention must be maintained, otherwise it is absolutely useless and a waste of public money to arrange great international conferences. It is high time that the highest authorities should issue the appropriate instructions to their executive administrations concerning the strict adherence to the Washington Radio regulations.

In the meantime, information has reached us that the administrations in certain countries, which have conscientiously carried out the terms of the convention, are inclined to take action against any station which is manned by an operator holding the old certificate in each and every case where such station gives cause for complaints. This state of affairs is very unfortunate and does not give promise of progressive work at the next Radio Conference. Many of the decisions at international conferences are reached by a compromise between divergent opinions; therefore, the nations having the very best intentions to improve conditions are often obliged to abide by the claims put forward by reactionary States.

The action of some of the governments that signed the Washington Convention shows that these countries do not wish to collaborate to improve the Radio service at sea; therefore, the work to be accomplished by the members of the I.F.R. before the Madrid Conference is very important.—J. Madsen.

* * *

A. I. O. M.—

On the 19th of January and following days, the International Mercantile Marine Officers' Association held their Sixth Congress, at Antwerp, Belgium. Through a regrettable misunderstanding, the officially appointed Delegate of the I.F.R., Mr. C. F. G. Nelck of the Dutch Association, was prevented from attending the Congress, but in the last moment, Mr. O. Becu of the Belgian Association accepted the duty of acting as our representative.

The report of the meeting has not yet been issued, and the following information is an extract of the reports compiled by the Secretariat of the A.I.O.M. and submitted to the meeting.

The A.I.O.M. is at the present moment composed of 35 organizations, in 14 different countries, and the I.F.R., with a total of 35,000 members. The Board of Direction has

held six meetings during the past two years, since the last congress met, and these meetings have all had a number of important questions on the Agenda. Propaganda has been and is continually in progress in order to extend the action of the A.I.O.M. to all seafaring countries, but it is to be regretted that the organizations of Great Britain are not yet affiliated.

Negotiations with the League of Nations and the International Labor Office, as well as with a number of governments, have been undertaken with regard to several questions of interest, either to special groups or to the seagoing mercantile marine officers as a whole. Of special interest is the question of regulating the hours of work on board ships, but unfortunately, the final decision in this matter has been postponed at least until 1933.

Through the A.I.O.M., affiliated organizations have agreed to open their offices and social rooms in various ports to members of other affiliated organizations, and this measure has already proved to be of great assistance to a number of members.

We shall very shortly give a further resume of the decisions adopted at the Congress.

I.R.F. CIRCULAR No. 14—Mar. 31

According to the propositions made up by Berne, from the resolutions passed by the various governments in connection with the proposals of the International Radiotelegraph Conference at Madrid, a very large majority of the governments concerned are pressing for a reduction in the examination for the Second Class certificate established by the Washington Convention. The proposals are; that the plain language test of 20 words per minute should be abolished, and that the only code test required would be, "Correct transmission, and correct reception, by ear of code groups (mixed letters, figures and punctuation marks) at a speed of sixteen groups per minute. Each group must comprise five characters, each figure and punctuation mark counting as two characters."

In the Safety of Life at Sea Convention, it goes further and states that if the International Radiotelegraph Conference finds itself unable to approve of the proposals, it is their considered opinion that a new certificate with operating qualifications as set out in this circular should be authorized to deal with public correspondence in ships of the third class, as defined by the International Radiotelegraph Convention of Washington, 1927.

Should either of the two proposals be carried, it is clear that the speed test of twenty words in plain native language would be abolished and after giving this matter serious consideration, the Secretary and the President of the Federation are of the opinion that an official protest should be sent by each national organization affiliated to the Federation to their respective governments, pointing out that it is absolutely necessary from the safety of life at sea point of view that the twenty words native plain language should be retained in the test for the 1927 second class license.

T. J. O'DONNELL, Secretary, I.F.R.

CONSTITUTION OF THE A.R.T.A.

(Continued from page 17)

himself with all the books and stationery necessary to conduct the business of his office.

Sec. 8. He shall have charge of the funds of the Association, pay out the same in liquidation of legitimate indebtedness of the Association, and shall be prepared to exhibit receipts and/or vouchers for all expenditures.

Sec. 9. He shall employ such clerical help as is necessary to conduct the business of his department and shall pay such salaries to employes as are due, subject to a limitation of thirty-five (\$35.00) dollars per week for any employee. Any higher salary shall be determined by the membership upon recommendation of the Secretary-Treasurer.

Sec. 10. He shall furnish a bond of at least \$5,000, subject to increase at any time, according to the state of the treasury and the decision of the membership.

Sec. 11. He shall furnish annual membership cards, such cards to be issued direct to the members upon receipt of sufficient remittances from individual members.

Sec. 12. He shall receive as compensation for his services to the Association a salary to be fixed by the membership.

Sec. 13. The books of the Association and a list of the names of the Active Members shall be open to inspection by any member in good standing at all reasonable times, at the headquarters of the Association, and it shall be the duty of the Secretary-Treasurer to produce the same for inspection accordingly.

Sec. 14. When absent from his office in the interests of the Association, he shall receive reasonable living and traveling expenses as outlined for the President.

ARTICLE VI. Vice-Presidents

Sec. 1. Vice-Presidents shall be elected by a majority vote of all Active Members and shall hold office for two years.

Sec. 2. It shall be the duty of Vice-Presidents to assume the duty of Chairman at meetings of the Association in the absence of the President.

Sec. 3. Vice-Presidents shall be designated by rank of First to Fifth, according to their ballot strength at election.

Sec. 4. When more than one Vice-President shall be present at a meeting, it shall be the duty of the senior Vice-President to act as Chairman in the absence of the President.

ARTICLE VII. General Council

Sec. 1. The General Council shall be elected by a majority vote of all Active Members and shall hold office for two years.

Sec. 2. It shall be the duty of the General Council to advise the officers and members concerning the legal aspects of proposed measures of the Association and to represent the Association in all litigation.

Sec. 3. He shall draft all agreements and/or contracts between the Association and other parties and endeavor to secure legally, the greatest benefit to the Association.

Sec. 4. He shall receive as compensation for his services to the Association, a salary to be fixed by the membership.

ARTICLE VIII. Rights and Duties of Members

Sec. 1. It shall be the duty of all members to attend regularly the meetings of the Association whenever possible.

Sec. 2. Members shall render all assistance possible to fellow members in securing work.

Sec. 3. Associate Members shall be accorded all the rights and privileges of Active Members except the right to vote, hold office, and to attend closed meetings. (A closed meeting shall be understood to mean a meeting for Active Members only.)

Sec. 4. The names of all members, Active, Honorary and Associate, shall be placed on the subscription list of the official publication of the Association and a copy of said publication shall be mailed to each member upon payment of the subscription fee.

ARTICLE IX. Administration

Sec. 1. Aside from the regular duties of administration as outlined for the officers, the Association shall be governed as far as is practicable by Committees.

a.—Each Committee shall be comprised of twenty members, of which number five shall constitute a quorum at committee meetings.

b.—Members shall volunteer for duty on the various committees, after which, their names shall be presented at a regular meeting of the Association. If such members are favorably endorsed at three consecutive meetings, they shall be considered elected as Committee members.

Sec. 2. Administrative Committees shall be FINANCE, MEMBERSHIP, WELFARE, EDITORIAL.

a.—Duties of the Finance Committee shall be to examine the books from time to time and to report their findings to the membership at regular meetings. This committee shall also act in the capacity of a Ways and Means Committee should occasion require. All bills in excess of twenty dollars, not of a routine nature, shall be endorsed by at least five members of the Finance Committee prior to payment.

b.—Duties of the Membership Committee shall be to examine all applicants for membership and their references, and to make their reports to the membership through the Secretary-Treasurer. This committee shall have the power to reject any applicant. A rejected applicant may appeal to the membership through the Secretary-Treasurer.

c.—Duties of the Editorial Committee shall be to edit and publish a monthly magazine or bulletin. The Chairman of this committee shall be a permanent resident of the place of publication and shall be titled Editor of the official publication of the Association.

d.—The duties of the Welfare Committee shall be to investigate and endeavor to relieve notable cases of distress among the membership. This committee shall be formed when the Secretary-Treasurer announces assets of five thousand dollars to the credit of the Association, with no bills outstanding.

ARTICLE X. Subordinate Units

Sec. 1. All subordinate units will be under the direct supervision of the national body.

Sec. 2. In order that the Association may be in closer contact with its members, secretaries will be elected for the various districts.

a.—To qualify for nomination as a District Secretary, the member shall first have served in the district specified as an Active Delegate.

ARTICLE XI. Reserve Fund

Sec. 1. For the alleviation of sickness or distress among the members, any moneys in excess of five thousand (\$5,000) dollars in the treasury may be used to aid worthy members, as determined by the membership or a committee elected by the membership or act in the capacity of a Welfare Committee.

ARTICLE XII.

Constitutional Amendments

Sec. 1. This constitution may be amended by a majority vote of the Active Members.

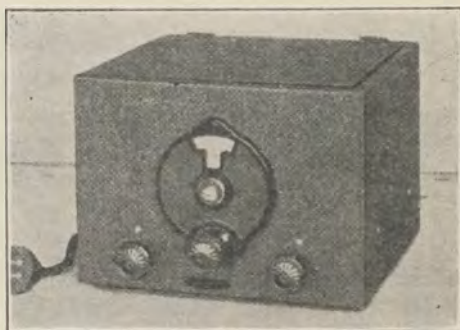
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