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Vol. 1

OCTOBER, 1931

No. 8



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## DEVOTED ENTIRELY TO THE INTERESTS OF COMMERCIAL RADIO OPERATORS

CQ is published monthly by The CQ Publishing Co. and is the only publication  
OF, BY and FOR licensed commercial radio men.

M. R. RATHBORNE, Jr.  
EDITOR

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### TABLE OF CONTENTS

EDITORIAL .....	2
THE HAUNTED TUG—Gilson Vandever Willets.....	3
SERIES AND PARALLEL CIRCUITS—E. H. Rietzke.....	5
PIONEER RADIO OPERATORS—Dr. Lee de Forest.....	7
BREAKS—The SKIPPER .....	8
LIMERICK CONTEST .....	9
CORRESPONDENCE SECTION .....	10
UP WHERE THE NORTH COMMENCES—L. S. Henderson.....	12
TIME TICK SCHEDULES.....	15

### THIS MONTH

In the November issue, we shall publish a full-page picture of Dr. Lee de Forest and an announcement which will be of interest to all commercial operators and a pleasant surprise to members of the C.R.P.A.

Bill Breniman, author, editor and sole owner of "The Rock Crusher," has been busy building the new Airways Station at Big Springs, Texas, and has not been able to find time to prepare copy for this issue. Bill asks us to pse QRX until November, when he will again be on the air with increased power!

On page five of this issue will be found the first installment of "Series and Parallel Circuits," a series of excellent and clearly written technical articles by E. H. Rietzke, President of the Capitol Radio Engineering Institute and a Member of the Institute of Radio Engineers. In these articles the theory of series and parallel radio frequency circuits, and their practical application in radio work, are explained in a manner that commercial operators having a limited knowledge of higher mathematics can clearly understand.



# EDITORIALS

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Twenty-five years ago there were less than twenty American "wireless" stations, six of these were on ships. The total number of persons employed in the radio industry was less than 100.—Today, radio ranks among the ten largest industries of the nation; more than 200,000 persons are employed in the manufacture, distribution, operation and repair of various radio devices. On June 30, 1931, there were 3918 commercial radio stations and 10,761 licensed professional operators. Practically all this growth has taken place since the end of the first post-War depression in 1921, the year in which broadcasting first became popular.

During this period of development there has been a growing demand for trained men to design, construct, operate and repair the various and complicated radio devices which have been flowing from inventors' workshops in an increasing number. To supply the demand for operators and technicians a large number of radio schools have been established. While a few of these institutions have made a sincere effort to turn out properly trained and efficient men, many others have been nothing more or less than "rackets"—operated only with a view of producing a maximum profit for their owners. By exaggerating the "opportunities"—"rich rewards"—"adventure"—"thrills" to be found in radio in lurid full-page advertisements, published in leading radio periodicals and fiction magazines of the cheaper type, these institutions have led prospective students to believe that there are "hundreds of new radio jobs, paying from \$50, \$75, \$100 to \$125 per week" going begging from lack of trained men to fill them. Several schools offer—to quote one advertisement—"A complete course in radio instruction—No Books—No Lessons. All practical work," which they claim the average student can complete in from six weeks to three months. Upon completion of such a course a student is given an impressive diploma, large enough to paper the wall of an average sized room, informing "To Whom It May Concern," that he has completed the proscribed course of study at the..... Institute in a satisfactory manner and is now a "Certified Radio Technician, Technician, Obstetrician, or what have you, and is capable of holding any position from designing vacuum tubes to sweeping broadcasting studios. It is utterly impossible for any school or college, no matter how specialized its courses may be, to transform the "average" student—a person with a high school education—into a radio expert in three months' time. It usually takes a beginner at least four months to master the fundamental principles of radio, to say nothing of the more advanced phases.

As a result of the tactics employed by the "racketeering" type of radio schools the commercial operating field has been flooded with a host of poorly trained and inefficient men, many of them willing to take jobs at almost any wages in order to gain experience or to complete their training. Despite the constant influx of newcomers there has been, until 1929, a surplus of jobs for commercial operators and technicians. Because of the rapid expansion taking place in the radio industry it was an easy matter for an operator who did not like a ship or station to quickly change to another. Jobs were plentiful and wages fairly high; commercial operators, apparently imbued with the belief that these conditions would last forever, followed the line of least resistance and made no efforts to maintain the standards of their profession, which were gradually being beaten down by the ever increasing influx of "cheap labor." The result of this lack of foresight was brought home to commercial radiomen in a convincing and forceful manner when the depression hit the country in the fall of 1929. Too late, they discovered that there were entirely too many licensed operators, a surplus of schools and a deplorable lack of understanding and co-operation among radiomen. Many were thrown out of employment, and instead of attempting to find a solution to their problem, became radical or attributed their plight to a bad "break" and dismissed the subject with a shrug.

The status of the commercial radioman has never been clearly defined; at sea he is not always considered an officer; his duties are many and varied; he is made to perform all sorts of extra work without extra pay, including swabbing decks, steering the ship and stenographic or clerical duties. Ashore he is required in many stations to work overtime without pay, maintain a car to run to remote control stations, do announcing and clerical work and serve as a "general utility man." He is expected to accept wage cuts and additional work without a murmur.

Reducing unemployment, by adjusting the supply to the demand, and definitely fixing the duties of commercial radiomen are two projects which CQ and the organization it is sponsoring are attempting to carry out.—M. R. R.



# The Haunted Tug

By GILSON VANDERVEER WILLETS

In static rooms from Boston to Jacksonville, in fact, wherever wireless operators gathered in 1916, the chief topic of conversation along the Atlantic seaboard was the ghost of the *Astral*.

The gossip was not only confined to verbal discussions on shore. It first reached my ears during the night watches at sea on a crack Cuban mail liner en route to New York. When traffic was light, wireless men from Key West to Bar Harbor cut down the power of their transmitters and swapped the latest news concerning the *Astral's* mysterious ghost. I intercepted several such conversations every night. By the time we reached Scotland Light Ship I had the hebbie jebbies.

As soon as our ship docked, I hastened into shore clothes and took a taxi to the Marconi office on Duane Street. There I found a lugubrious gathering of wireless men who ordinarily would be singing songs and making merry.

The minute I entered the static room I sensed that something was amiss . . . a cold chill of premonition swept over me and somehow I anticipated that the looks of dolorous import cast upon me by my brethren had something to do with the *Astral*.

I looked into old and familiar faces, but nobody spoke. These, my friends, pals of many a voyage, avoided my eyes. What could be amiss? Then Becker, a stanch old comrade, announced:

"The boss wants to see you. . . ."

"Yeh, what of it?" I asked. "I have to report in every trip, don't I? What's all this gloom about?"

"He wants an operator for. . . ."

"The *Astral*!" I finished for him. "OK, I'll take the job if he insists."

I turned and entered the marine superintendent's office. My seniority rights on the big mail liner precluded, I thought, any possibility of being transferred to the *Astral*.

"You!" snapped the boss. "Give me your abstracts. Never mind checking up. Take this: here, hurry over to Long Island City and report aboard the tug *Astral*. She's at the oil docks."

I guess I looked dumb. The unwritten law of the company was that to refuse an assignment, especially a special rush assignment like this, meant instant dismissal. The boss was a good fellow at heart. . . . He leaned back in his chair and explained:

"You know Simmons? Well, he deserted the *Astral* in Norfolk. She came back to New York without an operator. The oil

company is up in the air. They said to send the best man we have. . . . a young fellow who isn't superstitious. Are you?"

"No, I'll go."

"And listen, I just heard that the whole crew deserted when she reached New York. There must be something funny about that tug . . . and you are to stay aboard her until something is explained. Hear that!"

When I re-entered the "static room," a score of curious faces turned my way. They saw a slip of paper in my hand. It was an official assignment to the *Astral*. Some one snatched it from me, read it and handed it back. I expected them to say something. On the contrary, the men about the room became strangely silent.

I gathered up my bags and started to leave. They all followed me to the elevators and there bade me farewell in such a lugubrious manner that I could not help feeling that some unknown fate awaited me aboard the famous tug.

On my way to Long Island City, I mentally reviewed all I had heard concerning my new job. The *Astral* had been launched some years before to tow barges laden with oil from port to port along the Atlantic coast. She was an enormous two-stacker and unquestionably sea-worthy. Ill luck had followed her since the day she first floated.

On her maiden voyage a wireless operator had been washed overboard. The man who relieved him was hit by the frayed end of a steel towing hawser that snapped during a storm. Then three men succumbed to malaria, undoubtedly contracted when the big tug anchored off the marshes near Georgetown, South Carolina. A year after that the real trouble started. Both officers and men reported seeing a ghost on board.

On the voyage the ghost was first seen, the tug was bound for Brunswick, Georgia. When she arrived there half the crew deserted without their pay. When questioned by company officials the captain admitted that strange things had happened, but he could not give any plausible reasons for them.

A new crew was shipped and the *Astral* continued down the coast to Jacksonville. It was only a short trip, but the new crew deserted as soon as she reached port. Again men were recruited and the *Astral* steamed up the coast to New York. Upon arrival the whole crew, including the chief engineer and captain, asked for discharges or transfers. These were granted because the

(Continued on Next Page)



owners knew that it is useless to argue with men who have branded a ship as haunted.

The tug was next manned by a crew of hardened oldtimers who were accustomed to the strange things one encounters at sea. They stuck with the **Astral** for a round trip to Norfolk and back. As soon as she reached New York they also quit, but the wireless operator and messman had already deserted in Norfolk.

My spirits rose. By the time my taxi reached the oil docks in Long Island City, I was tingling with anticipation of what promised to be a delightful adventure.

I was greeted by the Captain, a burly character who had picked his own crew. Every man was an experienced and efficient seaman.

The old chief engineer was a former shipmate of mine. We had signed on a freighter together in 1912. In the old days we often discussed psychic phenomena. I could see by the twinkle in his eye when I reported aboard that he was anxious to test out some of our theories concerning spirit manifestations.

By mid-afternoon everything was in readiness. Small tugs hauled up our tow. We got in between four big barges and steamed up the river and through Hell Gate. As soon as we were out in Long Island Sound, we let the barges go and they were soon trailing behind us, four of them as indicated by four lights on our masthead.

"Seen any ghosts yet, Sparks?" asked the old Chief at supper.

"No, and I don't expect to see any," I replied with a wink at the mate.

"Well, Sparkie, don't be too cocksure about it. The crew that quit this tug in Bayonne were not the quittin' kind. There must have been some good reason and we're all goin' to discover it, or . . . or . . . or . . ." he looked around the table, but no one concluded his sentence. The messman rattled his pots in the pantry and the mate choked on his coffee. I let out a big laugh and exclaimed:

"Rubbish!"

We were passing Baron Island at the time, and the stench of its steaming dumps was at this moment wafted through the mess room door.

A combination of the world's largest dump and my remark broke the spell. Every one guffawed, but with the return of hilarity, also went our appetites. (I defy anyone to eat a meal in smelling distance of Baron Island.)

Darkness fell as we steamed on through the Sound. I sat before the radio equipment in the cabin that served as a stateroom for the mate, chief engineer, captain and myself as well as a radio room and master's office. I copied wireless press

news from the **New York Herald** station. When the skipper came off watch he read this while the old chief engineer and I played rummy. Finally the captain climbed into his bunk and turned out the lights, leaving the chief and I to sit and watch the oily black water outside. It was a clear, cool night and a chill breeze soon caused us to close the cabin door.

We had just started to undress when a shrill, agonized screech caused us to grab each other. Captain Mugan tumbled out of his bunk like a thousand devils were pursuing him, and stood shivering between the chief and me. Together, we three surveyed the door, momentarily expecting some frightful apparition to burst in through it.

"What was it?" whispered the skipper.

"You got me," I replied.

Outside, silence, absolute silence prevailed.

We turned on the lights and opened the door. On the deck we found the prostrate form of our messboy. Blood was streaming down from a wound in his head.

We picked him up and brought him inside. There was a deep gash across his temple. The skipper poured a "shot" between his teeth and he came around in a jiffy, stared at us a moment and screamed:

"Ghosts!" Then he started for the door. It took three of us to hold him down.

When we had quieted him and his incoherent mutterings gave place to a detailed account of what had happened, we learned that he had been aft with the crew and decided to come forward for coffee. As he walked along the narrow deck outside our cabin he heard us close the door, then over the side of the tug, directly before him he claimed to have seen a monstrous white form rise up from the water. Two huge arms reached for him and the thing emitted a horrible shriek. He turned to flee, bumped his head against something and remembered no more until he came to in our cabin.

"This sounds interesting!" announced the captain. We sent the trembling messman to his quarters and then turned in ourselves. I doubt if anyone slept much that night. The strange noises were not repeated.

The next day while we were hauling our tow past Fischer's Island the strange cries were heard again. This time they were shriller than the night before. There was nobody on deck when the incident occurred, but for sometime afterwards everybody on board ran about the tug looking for everyone else.

That night we had some rough going and our speed was diminished until we were scarcely making any headway. No one saw or heard the ghost.

The next day I was instructed to get a

(Continued on page 14)



# Series and Parallel Circuits

By E. H. RIETZKE

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

## PART 1.—THE SERIES CIRCUIT

In this series of articles the writer will attempt to show, in a practical manner, the relations between resistance, capacity, and inductance, as various combinations of these values are used in radio frequency circuits. A thorough understanding of these relations is essential if the radioman expects to intelligently design and get the most from a circuit under given conditions. For example, a transmitting choke coil and a parallel trap circuit to eliminate a certain undesired signal are fundamentally similar circuits; they are handled with exactly the same form of mathematical processes; both are parallel circuits and both are used to prevent the passage of certain frequencies; yet the design and the construction of the two circuits, even for the same frequency, are exactly opposite. Why?

In the following study of these circuits the use of some mathematics is essential. This is limited, however, to vector analysis and the mathematical processes are carefully explained. We shall first study the relations between E, I and Z, (Voltage, Current and Impedance), when the circuit constants, L, C and R, (Inductance, Capacity and Resistance), are in series across a source of alternating voltage. In this discussion values such as those commonly encountered in radio frequency work will be used.

In its simplest form, in radio frequency work, impedance is the vector sum of reactance and resistance, that is,  $Z = \sqrt{R^2 + X^2}$ . The reactance, X, may be that of a capacity,  $X_C$ , or of inductance,  $X_L$ , or the effective reactance of a capacity and an inductance in series. In a simple series circuit consisting of inductance and resistance,  $X = \sqrt{R^2 + X_L^2}$ ; if the circuit consists of capacity and resistance, the equation becomes,  $Z = \sqrt{R^2 + X_C^2}$ .

In the case of the inductive circuit the current will lag behind the voltage, the angle  $\theta$  depending upon the relative effects of the reactance and the resistance. This is expressed mathematically,  $\text{Tangent } \theta = X_L/R$ . This means that the Tangent of the angle of lag is equal to the value of the inductive reactance divided by the value of the resistance. Assume that  $X_L = 50$  ohms and  $R = 50$  ohms; then  $\text{Tangent } \theta = 50/50 = 1$ . A table of Tangents shows that a Tangent of 1 corresponds to an angle of 45 degrees. Thus in this circuit at the specified frequency the current will lag 45 degrees behind the voltage.

In a capacitive circuit the condition will be exactly reversed. The current will lead the voltage, the angle of lead  $\theta$  again depending upon the relative effects of reactance and resistance. If  $X_C$  is 50 ohms and R is equal to 50 ohms,  $\text{Tangent } \theta$  will again equal 1 and the angle will again be 45 degrees. This will now be an angle of lead however and the current will lead the voltage.

In a purely inductive circuit, that is, one having zero resistance, (an impossible condition), the angle of lag will be 90 degrees and  $X_L = 2\pi FL$  where  $X_L$  is expressed in ohms, F in cycles, and L in henries. In a purely capacitive circuit, (also an impossible condition), the angle of lead will be 90 degrees and  $X_C = 1/2\pi FC$  where  $X_C$  is expressed in ohms, F in cycles, and C in farads. It will be seen that  $X_L$  varies directly as the frequency and  $X_C$  varies inversely as the frequency. Thus an increase in frequency causes an increase in  $X_L$  and a corresponding increase in  $X_C$ .

We shall now consider the case of a circuit composed of inductance, capacity and resistance in series; see Diagram 1.

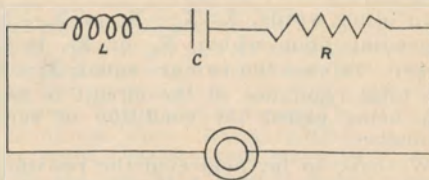


Diagram 1

In studying inductive circuits we find that the effect of inductance itself is to cause a current LAG of exactly 90 degrees. Capacity has the effect of causing a current LEAD of exactly 90 degrees. These effects are 180 degrees out of phase or in exact opposition. One therefore cancels an equivalent amount of the other, and the total reactance of a series circuit is the difference between  $X_L$  and  $X_C$ . In a condition such as this the smaller always counteracts an equivalent amount of the larger and the remaining reactance takes the characteristics of the larger. For example, if we have an inductance and a capacity in series, (temporarily neglecting the resistance), and the frequency is such that  $X_L = 40$  ohms and  $X_C = 20$  ohms, the total reactance will be equal to  $X_L - X_C$ , (40—20, or 20 ohms). This remaining 20



ohms of reactance will be  $X_L$  and the circuit would be called an inductive circuit. This condition is shown in Diagram 2 (a).

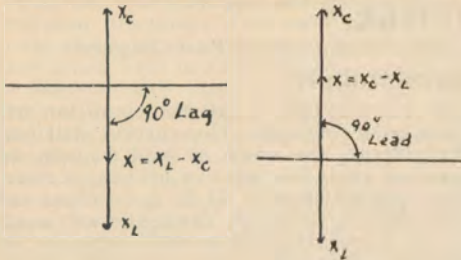


Diagram 2(a)

Diagram 2(b)

Diagram 2 (b) shows the reverse of this condition where the frequency is such that  $X_C=40$  ohms and  $X_L=20$  ohms. The total reactance is now equal to  $X_C-X_L$ ,  $40-20$  or 20 ohms. This reactance is of the same value as that previously obtained but in this case the resulting reactance is  $X_C$  and the circuit is a capacitive circuit.

It may be stated that **THE TOTAL REACTANCE OF A SERIES CIRCUIT IS EQUAL TO THE DIFFERENCE BETWEEN THE INDUCTIVE REACTANCE AND THE CAPACITIVE REACTANCE AND THE RESULTING REACTANCE TAKES THE CHARACTERISTICS OF THE LARGER REACTANCE.**

In other words,  $X=X_L-X_C$  or  $X_C-X_L$ , depending upon which,  $X_L$  or  $X_C$ , is the larger. In case the two are equal,  $X_L=X_C$ , the total reactance of the circuit is zero, this being called the condition of series resonance.

We have so far neglected the resistance of the circuit. This however cannot be neglected, particularly in radio frequency circuits where the circuit is practically always worked at or near a condition of resonance.

Assume that in the circuit considered above the resistance is equal to 40 ohms. The effect of the resistance is to bring the current in phase with the voltage. It is therefore plotted on the base line 90 degrees from both  $X_L$  and  $X_C$ . Assume that the frequency is such that the reactance portion of the vector is as in Diagram 2 (a).

The impedance of any series circuit is equal to  $\sqrt{R^2+X^2}$ . The total reactance in this case is equal to  $X_L-X_C$  and is therefore equal to  $40-20$  or 20 ohms of inductive reactance. The equation,  $Z=\sqrt{R^2+X^2}$  can then be enlarged to  $Z=\sqrt{R^2+(X_L-X_C)^2}$ , or  $Z=\sqrt{40^2+20^2}=\sqrt{1600+400}=\sqrt{2000}=44.6$  ohms.

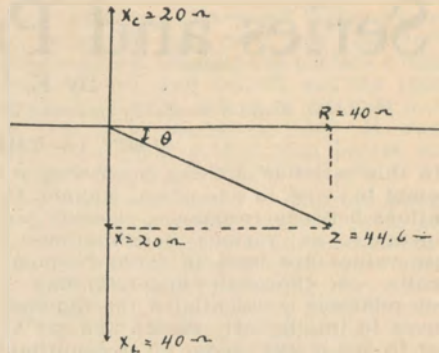


Diagram 3

Diagram 3 shows the condition of the circuit with  $X_L$  equal to 40 ohms,  $X_C$  equal to 20 ohms and  $R$  equal to 40 ohms.

Any series circuit can be solved in this manner, the only difference being in the case where  $X_C$  is larger than  $X_L$ ; in this case the equation would become  $Z=\sqrt{R^2+(X_C-X_L)^2}$  and the result would be a leading current.

In the problem as solved above, the current would meet with a total opposition of 44.6 ohms, the component parts of which are  $X_L$  and  $R$ . The  $R$  tends to bring the current in phase, the  $X_L$  tends to cause it to lag 90 degrees, the result being a lag somewhere between 0 degrees and 90 degrees; and since  $R$  is greater than  $X_L$  it will be nearer 0 degrees than 90 degrees. The exact angle may be found by solving for the Tangent of  $\theta$ .

$$\tan \theta = X/R = 20/40 = .5.$$

An inspection of a table of trigonometric functions will show that a Tangent of .5 represents an angle of 26.5°. In this circuit at the frequency specified the current would lag 26.5° behind the voltage. If the frequency was lowered to such a point that the condition of the reactance was as expressed in Diagram 2 (b) and the resistance remained at 40 ohms, the total impedance would still be 44.6 ohms but the angle  $\theta$  of 26.5° would be an angle of LEAD. This is shown in Diagram 4.

In this problem the resistance was found to be large compared to the reactance. In most radio frequency work, except at a condition of resonance where  $X_L=X_C$ , the resistance is comparatively small compared to the values of reactance encountered. For example, we will assume a circuit composed of a condenser of 400  $\mu\text{F}$  capacity, an inductance of 100  $\mu\text{H}$  and resistance of 5 ohms distributed throughout the circuit. See Diagram 5.

(Continued on page 16)



# Pioneer Radio Operators

By Dr. Lee de Forest

(Continued from September)

Sir Thomas Lipton had arranged with the A. P. to route all his press news and business cables direct from the Erin, anchored or cruising in New York waters, to Coney Island throughout the entire period of preparation and the regattas. Operator Vosburg was sent to the Erin to relieve the heroic Horton, and he lived aboard that summer as one of the crew.

Vosburg was another tried and trusty veteran of the first "Old Guard," one of the early few still in the game. The year before he had gone down to the lone sand spit near Cape Hatteras with my Yale classmate Barbour, our construction engineer, a schooner load of lumber, a donkey oil engine, some glass plates, a transformer, antenna wire, and twenty-five square yards of copper plate for ground, to erect the first commercial station on the Atlantic Coast. They lived like beach combers with such Carolina crackers as those desolate dunes afforded—lazy and shiftless, knowing nothing of wireless or electricity, and caring less. God only knows how Barbour and Vosburg ever erected with such aid that tall four-square timber tower, which for many years thereafter was a seagoers' land mark off Hatteras.

"It's dogged as does it," said the old British skipper who captained their schooner south, and that motto inspired their discouraging labors until at last Coney Island could exchange faint calls with that lonely Carolina outpost.

It was a merited reward therefore that put Vosburg into the luxury of a sleepless post on Lipton's fine yacht off Sandy Hook. Soon Vosburg and the boys at Steeple-Chase park were handling Lipton's and A.P. messages Phillips code as if a cable connected them. Two of them knew Continental as well as American Morse, and delighted to talk slowly to the Limey on the Cunarder "Lucania" when she was in port, then increasing their speed until "Sparks" and his coherer-relay outfit was completely lost, above fifteen words a minute. Just a meaningless rattle of the relay above that speed for Sparks, while our Yankees copied merrily on. I believe Coney Island was the first station in the world to copy wireless on a "mill." That was nuts for Easton or Horton when Vosburg speeded up "on board S. Y. Erin."

While Shamrock III and the defenders were tuning up for the America's Cup races I took Barnhard, who had just completed

installing the first press wireless station on earth, at Point Judith, R. I., for the "Providence Journal," to Block Island to put in the other end of that first press route. Daily communication was speedily opened up, and for the first time in newspaper history daily news items hot from the mainland began to appear in an insular journal, published on Block Island.

Shortly after this auspicious opening, significant augury of what the world was soon to win from wireless other than for ship-service, a terrific storm levelled the Block Island mast. I had just returned to New York for the first race of the Regatta, received the sad news and at once returned to Block Island; in deep doubt as to what could be done in a hurry to restore the service on which the Providence Journal had built up such supreme hopes. On arrival, Barnhard met me at the dock with anything but gloom written on his sallow features.

He showed me copies of messages received that morning from the mainland, but declined to explain until we reached the nice new shack, so recently equipped. There he pointed to the telephone line, supported on fifteen-foot poles, extending in a bee-line across the Island towards Point Judith. The tuner and detector he had disconnected from the original antenna then lying flat on the earth, and had hooked to the phone line where it entered the instrument on the wall. Rhode Island's signals were coming in over this directional, horizontal antenna (the first such in wireless history) with much greater intensity than ever before from the vertical aerial.

That was indeed a discovery, and a joyful one under the tempestuous circumstances. I warmly complimented Barney on his ingenious resourcefulness; and with renewed faith all hands went to work to speed the re-erection of another mast for the transmitter antenna. For we all knew better than to attempt to use that telephone line as part of our spark transmitter!

The new mast was considerably shorter than its predecessor, better guyed, and stayed aloft. Thus with less than a week's interruption, the two-way service was restored; but the Block Island newspaper had been only one day without its press service from Providence.

(Dr. de Forest's account of the early days of "wireless" will be continued in the November issue.)

*How it was done...*



# BREAKS

by  
THE SKIPPER

Excuse it, please, if you find a number of foolish and frivolous jottings in my column this month. A spirit of optimism and good cheer pervades CQ headquarters. The "depression expressions" have been replaced by broad, cheerful smiles. Our magazine is growing like Jack's famous Beanstalk; last month alone orders for 600 additional copies per month were received from radio stores and newsstands. E. H. Reitzke, President of the Capitol Radio Engineering Institute, has sent us a series of splendid technical articles, and advertising prospects are excellent. In addition, operators have greeted our organization with enthusiasm and delight; each mail brings a flood of requests for information and membership blanks, or offers of assistance. Do you blame us for being light-hearted, gay and otherwise elated?

\* \* \*

I have often been told that commercial radio operators are a hopeless bunch of morons, lazy, and interested only in three meals a day and a place to sleep at night; that any attempt to organize them would be so much effort wasted. I want to tell the lugubrious gentlemen who go around making such statements that they are full of the well-known boloney, also applesauce, hot-air, tripe and man-made QRN. Radio operators are as fine a bunch of fellows as one can meet anywhere and they are backing our campaign for improved conditions in a manner that defies criticism. I have always believed that, once you fellows were convinced of our sincerity, it would be an easy task to obtain your co-operation and support. Results have proved my faith to be justified. Isn't a great sensation to have a pet theory or belief confirmed?

\* \* \*

Did you hear the one about the lad who called KOK and started to send a TR? Anyway, he did, and KOK broke him with, "QRX, QRL short-wave." The boy replied, "Sorri, OM, no short wave here. Why can't I send it on 600?"

\* \* \*

Famous last words: "I couldn't get the weather report tonight, Captain, the static was too heavy."

\* \* \*

Is there any good reason why I should have to make up all the jokes for this

column? There must be lots of you fellows who know some really good ones. Why not send them in?

\* \* \*

What has organization to do with the lowly banana? Ask Bill Breniman and he'll tell you, "Remember the banana, boys, when it leaves the bunch it usually gets skinned."

\* \* \*

Suggestions for improving CQ are in order. Just as soon as our advertising increases and the C. R. P. A. is well under way, we intend to include a number of new departments. Several of our readers have suggested that we add the following: A Broadcast Operators' Page, A Joke Section, An Old-Timers' Page, Station Descriptions, A Question and Answer Section, and a department containing news of the radio industry. What are your suggestions? Please do not forget that CQ is a co-operative venture; its continued success depends entirely upon the support received from commercial operators. We need personal items, technical notes, jokes, station descriptions, news items of interest, operating and shipping notes, schedules and letters for the Correspondence Section. CQ is your magazine, it's up to you to keep it supplied with interesting and worthwhile material. I am willing to bet that there are hundreds of you fellows who "have been intending to write to CQ" but have never got around to it. Come on, gang, QSL with suggestions, criticism and material.

\* \* \*

When writing to CQ, please be sure to put your mail address at the beginning or end of your letter. Many operators either omit an address altogether or include only the name of their ship and the port from which the letter was written. We cannot spare the time to look through our subscription list for missing addresses.

## PERSONAL ITEMS

KPH's enviable reputation for clean-cut, snappy and efficient operating is now being maintained by Frank Geisel, chief; Wayne Helfer, George Wood, O. Antrim and Operator Brockway. The mail address of these operators is: General Delivery, Marshall, California.

\* \* \*

At the KOK receiving station, Lindley Winsler, chief; Ben C. Springer, W. M. McGeorge and F. E. Beaulieu (relief operator), keep the Morse and two radio circuits hot. KOK is located at 1855 Reposal Street, Los Angeles.



A. V. B. Kennedy (KY), for many years chief operator on the "America," has quit the U. S. Lines for work ashore. Vernon Reed, formerly second, is now chief.

\* \* \*

Walter Koch has left the "President Harding" to go yachting. The present staff on the "Harding" is as follows: "Red" Rogers, chief; "Bill" Vogel, 2nd; and Charles Sheblak (ex-"Republic"), 3rd.

\* \* \*

The staff on the "Leviathan" now includes Stanley Young, chief; Al Jackson, asst. chief; and watch operators Von Thun, "Pop" Locher and John F. Smith, Jr., (formerly of WCC).

\* \* \*

Yes, GCK still uses a rock crusher, so does GLD. The QRM in the English Channel is unbelievable. GKR, GNF and GNI have recently replaced their sparks with CW.

\* \* \*

"Bill" Vogel of the "Prexy Harding" kept hearing short-wave signals that had gone around the world two and three times so he made an "echo suppressor," connected it to the receiver and found that only "square dots" would come through. Send me the dope on that gadget, Bill; I can make a fortune by installing one on each of our famous West Coast steamers. I know several skippers who would pay a bonus to radio operators who can make dots look like two-by-fours.

\* \* \*

William E. Fleck, an old-timer and formerly on the "California," is now second on the "President Roosevelt," KDWS. FL complains that the girls in Hamburg are too persistent and won't leave him alone with his pipe and lager. Tough life, OM.

\* \* \*

The Naval Radio Station, NBA, at Balboa, Canal Zone, is again handling traffic with ships and the Tropical Radio Telegraph Stations, RXA, at Almirante, Panama, has broadcast the following CQ:

"Effective immediately until further notice, Almirante RXA will not handle any traffic for points in the Republic of Panama or Canal Zone except Almirante and Bocas del Toro. Messages for points outside of Panama will be accepted as before."—RXA.

\* \* \*

Why couldn't NPG send the "general situation" weather bulletin and forecasts before the coded groups? This would eliminate a great many requests for repeats on the lightship broadcasts. At the present time the two schedules are run off at about the same time.

## LIMERICK CONTEST

When we first went to sea we were  
"Sparks";  
With the code and key we were sharks—  
But voice transmission,  
And code omission—

### AUGUST WINNERS

Charles A. Wright, Box 17, Haverhill, N. H., was awarded first prize in the August Contest. Mr. Wright's prize-winning last line is given below:

A young lass learned the fireless game  
Then to sea she went to find fame—  
But some of the crew—  
And passengers, too,  
Tried to meter and transformer name.

The five one dollar prizes were awarded as follows:

F. K. McKesson, Radio Supervisor, Wash Radio Corp., Frankfort, Michigan—

"Found that she was a QRU dame."

(QRU is an International radio abbreviation meaning, "I have nothing for you.")

Miss Annabell Post, 238 No. Cornell Ave., Villa Park, Ill—

"Tried to change both her game and her name."

Thomas J. Ruffin, 511 Holcombe Ave., Mobile, Ala.—

"Saw her painting her face when a hurricane came."

Miss Bernice C. Bowne, Room 709, 140 New Montgomery St., San Francisco, Cal.—

"Said, '... 's a girl!' and — — for the dame."

(Said, "Dot's a girl!" and dashed for the dame.)

Mary C. Cornelius, Box 45-A, Rt. 3, Birmingham, Ala.—

"Started 'sparking' when 'Sparks' was a dame."

### CONTEST RULES

A \$5 cash prize will be given for the best line submitted for the limerick published each month.

\$1 prizes will be awarded for the five next best answers.

Contestants must submit answers not later than the 15th of the month succeeding date of issue of the CQ containing the limerick prize for which they are competing.

No correspondence will be entered into regarding the contest and no contributions will be returned.

In the event of a tie, the full amount of the prizes will be awarded to each tying contestant.

The Editor of CQ will be the sole judge of the contest. The contest will run for six months, ending in the January, 1932, issue.



# 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:

Your kind invitation extended to me to contribute an article for your splendid magazine is deeply appreciated and certainly most welcome, since it affords an opportunity to appraise your readers of some of the experiences encountered by organized Canadian radio operators in their struggle to improve conditions under which they work.

The first active organization of Canadian radio operators, according to existing records, was undertaken in 1916, at which time the pay was as low as \$30 a month. A group of marine operators got quietly together and struck in protest against general working conditions. The effort was most successful and caused the employing company no little embarrassment at a time when adverse publicity was calculated to do the greatest harm. The men concerned felt sufficiently satisfied for the time being to let their organization work end there, but in a few years, with constantly rising cost of living, they decided to reorganize and endeavor to continue the improvements so well begun in 1916.

It was felt at that time that in order to wield a greater economic force, radio operators should be in the same organization as land line telegraphers and as the latter were already organized within the Commercial Telegraphers' Union of America, an organization with headquarters in Chicago, Illinois, it was only a matter of time until the radio men were also included in that body. As time went on it became more and more apparent to thinking men that the craft form of organization sponsored by the American Federation of Labour, of which the C.T.U.A. was an affiliate, was quite unable to meet changing conditions of industry resulting from larger and larger mergers. Attempts were made by delegates to conventions to bring the union to see that this was so, but without avail. The efforts of these men were overridden by an autocratic executive board that ignored the constitution in its desire to maintain craft unionism.

This resulted in a breakaway of a large portion of the Canadian membership, both telegraph and radiotelegraph operators, and since 1925, Canadians have had their own national industrial union, the Electrical Communication Workers of Canada. It

goes without saying, of course, that the C.T.U.A. did not stand idly by and watch its Canadian membership dwindling. Resort was made to all sorts of vile propaganda in order to try and discredit the new organization, the principal part of which was that the leaders of the national organization were "red," whatever that means. It had little effect and the Electrical Communication Workers of Canada has done more for radio operators during the five and a half years of its existence than was done at any time previously. True enough, the land linemen gradually went back to the C.T.U.A., but they have no reason at all to feel glad that they did so.

The Electrical Communication Workers of Canada is an industrial union. It is not limited by craft jurisdictions, but can enroll every worker in the communication industry. Only in this way can the workers meet the new and gigantic forms of industry on anything approaching equal terms. Affiliations may readily be formed with national bodies in other countries, but for the present these affiliations are valuable principally as a means of exchanging information, except in those industries governed by international regulations, where they can form a very vital connection in the matter of bringing about uniform regulations for the proper protection of the workers. The communication industry is one of these.

Trade unionism has given place to industrial unionism in most countries of the world and the gradual wane of the American Federation of Labour can be easily traced to its impotency to meet modern industrial conditions with craft organization and non-participation in the government of the country. The strike weapon, once so effective, is rapidly losing its force and in craft organizations it is not unusual to find one section of the organization filling the gap created by a strike of another section.

Labour's hope is in direct participation in the government of the country. We, in Canada, already have our representatives in parliament and few though they be, most of the social legislation in existence today is directly attributable to their untiring and unremitting efforts. The central body of Canada's national unions is the All-Canadian Congress of Labour. Its function is to co-ordinate the activities of the unions and assist in securing a voice in parliament for labour.

This is the form of organization we strongly urge upon our fellow radio operators of the United States. Do not make



the mistake of affiliating with the American Federation of Labour lest you find in it the graveyard of all your hopes. A period of general depression like the present offers the greatest incentive to the workers to become strongly organized to compel their fair share of the wealth they create. This can only be done through industrial organization and a voice in the government of the country. We, your fellow workers, stand ready to assist you in every possible way towards the attainment of this end. Fraternally,

H. A. HOOPER,  
Secy-Treas., Electrical Communication  
Workers of Canada.

#### Editor CQ:

I am going to take a load off my chest that I have been carrying around some time. I have watched, heard, and seen attempts to bring radiomen together in an effort to secure the things that you hear so much griping about. Every time the ball starts rolling the fellows seem to quit pushing. Where's the trouble? You can't accomplish an aim without putting an effort towards it. The present radio system is chaotic, no system, no regulation. Too many operators. But what kind of operators? Good, bad, better, and worse. Yet, all are qualified licensed men. The license means nothing. There must be more grades and classes of licenses and the holder of a license should represent to some degree what the license indicates. The real solution could best be accomplished by the Department of Commerce.

Allow me to propose the following changes: Operators' licenses should be divided into four grades. Namely, Marine, Aircraft, Broadcast, and Press. These licenses should be divided into four classes—Third, Second, First and Master. Master licenses shall bear ratings as A, B, C, on point of service on a Master license. The more technical examination should be for Broadcast Grade, then Aircraft, then Marine, and least technical, Press Grade. The examinations should be strict and thorough and cover the equipment in each distinct field. I believe there is a need for such a grade as Press Grade. I propose this as the license for the non-technical man, the crack telegrapher, those who have no occasion for technical work but who handle large volumes of traffic daily. The trouble with the present licenses is that there is a lack of specialization. I favor allowing a man to qualify for as many grades as he desires. He then becomes more versatile in the field of radio but it should be a most difficult matter for one to hold first-class tickets in each grade because of experience demanded in each class on each grade. All present issue licenses should be called in and everyone made to take the new exami-

nation for whatever "ticket" they need. Then will many "bozos" floating around on an eight-year ticket snap out of it and offer something more basic for the better pay, less hours cry than so many years on tubs. Then only can you draw a wide line between the "guy" just out of school and the experienced man. The difficult problem will be determining what class license the present holder rates. A capable inspector should examine the status of the present licenses, their proof of experience, and then determine what class examination to give.

All this seems rather steep and drastic but such a step must be taken and will be taken eventually. If not by the Department of Commerce, then an organization shall sanction such determining procedure and oust out the non-participants.

As regards servicemen, men who service broadcast receivers, speech equipment, etc., I believe they should also be licensed under the Department of Commerce. I propose a technician's license bearing the four classes and A, B, C ratings. Such a procedure would protect the public and also aid the serviceman.

I would like to hear from other fellows on this subject. These are merely suggestions to be criticized or improved. But let's push these things beyond print—push them into actuality and then can we secure the things we want,—secure them through organization. Through an organization such as CQ is trying to build up.

Fraternally,—R. E. LEE.

#### Editor CQ:

Since the RCA News (formerly *The Wireless Age*) has discontinued publishing operator assignments it holds the same interest for the average operator as a flashy circular describing the merits of some fast-selling curling iron. It is now the opinion of every operator interviewed that the logical place for publishing assignment reports in is the columns of CQ. Owing to lack of space, this may not be possible at present, however, it is a task that CQ should tackle in the near future. Several methods are proposed for compiling this information, among them are: that each operator fill out a standard coupon or post card, giving the desired data. Another is that the information be solicited from the various radio companies employing operators. I should like to learn what the rest of the gang think of this proposal.

—M. C. R.

KOK repeats the 8:00 a.m. weather reports of Point Arguello "NPK," Point Hueneme "NCA," and Pt. Fermin "NPX" at 8:48 a.m. Operators missing the above broadcasts at 8:00 a.m. can standby for KOK.—C. R. W.



# Up Where the North Commences

By L. S. (SPUD) HENDERSON

S.S. Derblay, Point Hope, Alaska

## Howdy Gang!

I thought perhaps a report of reception and general information on the run "North of the Circle" would be of interest to the boys in the Sunny South. So here goes.

This yacht is a combination freight and passenger steamer of the Alaska Steamship Co. It is Mackay controlled and carries freight and passengers from Seattle to points in the Bering Sea, Norton Sound, St. Lawrence Island, Kotzebue Sound, and the Arctic Ocean. R. L. "Dick" Sadler, an oldtimer who has been out of the game for some time, and myself, taking turns at manipulating the rock crusher and cussing dead spots up here on the "roof." We sailed from Seattle June tenth and are due back—eventually.

Nothing of interest occurred on the run to Unalaska; reception was very good and short-wave stations were found on every point of the dial. After leaving the pass and galloping north through the Bering Sea, we started to lose some of the Eastern short-wave stations but KUP and KTK remained reliable on their evening schedule until in the vicinity of Nome. From then on, due to about twenty-three hours per day of sunshine, we had to wait for the early morning press schedules.

Our first call on Norton Sound was Golovin, where we anchored several days and lightered cargo. Not much of interest there except that it is a large reindeer station. Some of the boys made a collection of antlers and spent several nights with the sandpaper and shellac—also thinking up yarns of, "When I shot this speciman, etc." After leaving Golovin, we went to Bluff, Nome, St. Michael, Unalakleet, and back to Nome. Nothing startling happened en route except that someone opened up and greeted us via spark coil, keeping his "QRA" a secret. Nome is pretty dead now, about one-fourth of the buildings being occupied. The residents spend their time spinning yarns about the good old days. Tex Rickard's old resort is now a grocery store and most of the other highlights of the gold rush days are dimmed accordingly.

There still is plenty of "ruby sand" around Nome and a person with enough ambition and time can easily make wages panning it out. Many of the oldtimers perch in the sun alongside their tar paper shacks and turn out six or seven dollars

a day, so it's there all right. (I could say more but will let it go at six or seven bucks per, because I never wrote advertisements for a radio school.)

Went from Nome to Savoonga, which is on the north coast of St. Lawrence Island. It is an interesting place. The island is run on a co-operative basis; everybody chips in and all hands get a split on the returns. They have a large herd of reindeer, which they take turns herding. Uncle Sam credits them with so much per head and this, along with what they can gather in the line of furs and money from old ivory peddled to an occasional white man, gives them a fair income. Due to the fact that ice carries away everything that is carryable up here, there are no docks north of Unalaska. Ships anchor out in the bay, anywhere from three to fifteen miles offshore, and all freight and passengers go ashore via barge or gas boat. The Bering Sea and Arctic waters are very shallow, generally. In Savoonga, the natives did the lightering; they have skin boats powered with outboard motors to do work with. The skins of fur seals are blown full of air and used for fenders alongside. All in all, the Savoonga crowd were very efficient and discharged cargo in nearly nothing flat. We had bad weather there, which slowed them up a bit.

From Savoonga, we went to Gambell, on the northwest tip of St. Lawrence Island. From Gambell, the mountains in Siberia loomed up very plainly. There was considerable drift ice and very little loafing was done on the weather side of the ship.

The whole island is more or less of a co-operative affair. The men from Gambell came to help discharge at Savoonga, so we had to haul them back with us. Believe me when these natives travel—they travel—bag and baggage. We had a fine assortment of natives, sleds, kyaks, outboard motors and sled dogs aboard, and evidently we were as interesting to them as they were to us; at least much curiosity was shown as to how the ship was run, and the crew didn't seem a bit bashful getting the dope on native life in the Far North.

From Gambell, we went to Teller, running through quite heavy ice en route. Teller is a reindeer station. There is also some mining and fox farming. A person can buy Arctic (white) fox here.

From Teller, we went to Wales, right



across the straits from St. Lawrence Bay, Siberia. We weren't there long on account of bad weather. The Siberian coast loomed up very prominently on the horizon from here. Next in line was Deering, in Kotzebue Sound. We crossed the Arctic Circle and rounding Cape Espenberg, recrossed it southbound en route to Deering. We lay offshore at Deering and discharged freight. Nothing out of the ordinary here. We went from Deering to Keewalik, which is on Kotzebue Sound, south of Kotzebue and east of Deering. While at Keewalik the S.S. Arthur J. Baldwin was at Elephant Point, about ten miles away, and we had great sport trying to determine who could hear Nome on schedule—generally it was a game of "button, button, who's got the button," only we used "WXY" instead of a button. But we were lucky and both of us cleared every schedule. Keewalik is a VERY dead spot.

From Keewalik the next hop was to Kotzebue. We ran through large fields of ice and had great sport running into blind leads. Getting close enough to lighter (15 miles out), we stayed in Kotzebue two weeks and some of us got ashore to see the village. I was lucky and was stormbound (no not from the local panther fizz either!) ashore for a week. The populace consists of about 300 natives, 30 whites, 1500 sled dogs and one Ford truck. The natives were in, laying up a winter supply of fish. The main street was lined with salmon and various parts of animals being dried in the sun, to be made into chow-chow; clothing, boats, houses and even the intestines of whales and walrus were being dried to make transparent windows.

Next in line was Kivalina, where we had a snowstorm on July 31st! From Kivalina we went to Point Hope, which is above 68 north latitude. After taking a look out of a porthole and getting a whiff of the local zephyrs, I came to the conclusion that it's about four miles north of the North Pole.

While at Savoonga, the Union Oil tanker Cathwood (KURC) came up to Nome. When I first heard his call up in this neck of the woods, I thought we were off KFS, (of course we still were inside the city limits of Los Angeles), but at the same time I glanced out of the shack and saw an iceberg wedged under the gangway, so knew we hadn't drifted that far south.

All traffic up in this end of the "stratosphere" is handled through U. S. Signal Corps stations; WXY at Nome is the most reliable station. We wish to thank Winships, at Candle (WXN), and Dowd, at Kotzebue, (WXW), for being right on the job and giving us much dope on ice, the weather and various aids in handling cargo.

Kotzebue and Candle are small one-man stations in line between Nome (WXY) and Point Barrow (WXB), and handle all communications from this region.

Worked three schedules with Nome, where Durant and "KID" Burroughs did their stuff, fishing our weak signals out of the mess of Russian sparks and pops of QRN. The boys certainly were reliable and did fine work. We were never forced to hold any traffic over from one schedule to the next, and they were always on the minute—except when round-the-world flights were THE thing, during these flights, Nome was kept busy handling news flashes, etc., but even so, the operators always found time to take our TR and messages between take-offs.

We are leaving Point Hope this morning—maybe that explains the strains of "St. Louis Blues" mingled with "California Here I Come," drifting up past the radio shack from the galley—two months between docks gets to be quite a drag on a person's sense of humor.

Signals on 600 are as scarce as honest politicians, up here. The country starts to get a person down after a while. A month or so of watching the sun run circles overhead throughout the twenty-four hours and you finally get wise to yourself and go to bed—no use waiting for it to get dark to turn in because if you do it's a case of staying up until October. This midnight sun is a balmy proposition any way you look at it—it isn't right.

We would have been completely out of luck if it hadn't been for our short-wave receiver (Aero adapter). All news, weather reports and time signals were fished out of the various parts of the globe. For time signals, we had to depend on Los Banos, P. I., (NPO), at 3:00 a.m. Nome time. We held NAA and the USA stations for weather and time until the ship entered the Arctic Ocean, from then on it was impossible to read short-wave stations from the States before midnight. KTK at 5:00 a.m., and KUP at 1:00 a.m., are reliable, however, and KAA, Manila, at 8:00 a.m., is O.K., but his press is old. There are many dead spots for 600, and short-wave signals fade. Russian broadcasting stations on short-wave are FB.

I picked up an SOS from the Russian ship "Tchoukotka" (RAFU), QRB 200 miles, July 31st, but he gave all his troubles in Russian—of which language I only know two words, "vodka" and "dobrii wecher," so his distress call didn't do anybody much good. He signed off the distress call in English, however, saying "so for now, goodbye radio fans"—hi—wonder who that program was sponsored by?

(To Be Continued)



## THE HAUNTED TUG

(Continued from page 4)

wireless weather report from Boston Light Ship. It informed us that there was a thick fog off Cape Cod, so the *Astral* scurried into Vineyard Haven, arriving there at dusk.

Every man on board, except the engineer and myself, went ashore. We two sat on the top deck smoking our pipes and discussing the ghost.

"Yes, Sparks, there's somethin' strange about this tub," admitted my companion, "but 'taint ghosts! I think it's. . ."

A horrible, prolonged screech, like a woman in death agony, interrupted him. I became rigid and chills crept up my spine. My pipe dropped from my teeth when I beheld a wraith-like cloud rising over the top deck rails. My companion, with an oath, lunged towards the apparition.

His arms met nothing. He tripped over the rail and plunged overboard.

The white cloud seemingly drew apart when he plunged. It appeared to follow him right down to the water.

Every nerve in my body was tingling. I was very frightened. Duty compelled me to approach the rail and peer down into the swirling waters.

What I saw completely unnerved me. The white thing was there . . . shrieking and wailing like ten thousand mad demons. About the spot where the chief had fallen, the white mass had divided itself into scores of long tentacles. These stretched out over the water, flattening to the surface.

Suddenly, through the wraith I saw a hand, a clutching hand raise . . . it seemed to be beckoning to me. I vaulted over the rail and let myself down to the maindeck by a scupper. As I reached the deck the white cloud arose from the water and enveloped me . . . I was terrified!

I waved my arms to get rid of it . . . it encircled me still closer. It had a peculiar odor . . . in some ways strangely familiar. At the time I could not place it.

"I'm coming chief . . . where are you?" I shouted, leaning over the rail and peering through the ectoplasmic body of that thing. I wondered how it came that although it enveloped me, I was not harmed.

Above the continuous blood-curdling screeches that seemingly came from the surface of the water I thought I heard the booming voice of the old chief. . . .

There was nothing else to do . . . I leaped overboard into the chill waters. It seemed that the instant I touched the surface some invisible force commenced propelling me away from the tug. The howling of the monster was right in my ears . . . it was deafening.

"Chief, chief, where are you?" I shouted with all the lung-power I could command.

The noise was terrific. I could not have heard a cannon if it had been right near me. I strove to swim towards the ship and something, almost like steam, blinded me and pushed me backwards.

I nearly died of terror when something grabbed my foot. I shouted "Help," and the next minute was fighting an invisible opponent who wriggled from my grasp and shouted:

"Dammit, Sparks! Cut it out . . . it's me!"

The chief's voice. He beckoned me to follow and we swam between the piles under the dock. Presently we waded ashore.

The chief gave me a dirty look when we reached the glow of a single electric light that lit our Haven dock:

"You're a great dampfool!" he remarked.

"For what?" I demanded angrily.

"Being scared of ghosts. I told you there ain't no ghosts. When I hit the water I discovered what our ghost friend was. . . ."

"Well, spill it!"

"There's a leaky steam valve on an exhaust line that ends just under the *Astral's* rolling bilges on the port side. See, there it is!"

We were approaching the tug and he pointed to a white cloud that arose from her sides. As we looked, it disappeared.

"She's all blown-off, son," he explained. "You see, I swam around down there in the water and discovered what it was. That valve only lets off steam at a certain pressure. It shoots up under the rolling chocks where some barnacles have formed a sort of cup. The result is just like a steam siren. I'll fix it tomorrow and this here company won't have to be employin' any new crews on account of haunts."

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**TIME TICK SCHEDULES**

GCT	CALL	KC/S	METERS	LOCATION
2355-0000	NPM	26.1	11490	Honolulu
		106	2828	
2358-0001	DFY	16.61	18060	Nauen, Germany
0055-0100	XDA	51	5800	Mexico City
		7790	38.5	
0255-0300	NSS	17.6	17040	Annapolis
	NAA	12045	24.9	Arlington
		8030	37.34	
		4015	74.7	
		113	2653	
0355-0400	NBA	46	6518	Balboa
0555-0600	NPB	42.8	7005	San Francisco
		66	4543	
0755-0800	NAA	8030	37.34	Arlington
		113	2653	
0756-0800	FLJ	9231	32.50	Issy-Les-Moulineaux
	FYL	15.87	18900	Bordeaux
0926-0930	FLE	113	2650	Eiffel, Paris
0955-1000	GBR	16.01	18740	Rugby, England
1158-1201	DFY	16.61	18060	Nauen, Germany
1655-1700	NSS	17.6	17040	Annapolis
	NAA	12045	24.9	Arlington
		8030	37.34	
		4015	74.7	
		113	2653	
	NAR	106	2828	Key West
	NPL	30.6	9798	San Diego
		102	2939	
1755-1800	GBR	16.01	18740	Rugby, England
1855-1900	XDA	51	5800	Balboa, C. Z.
		7790	38.5	Mexico City
	NBA		6518	
1955-2000	NPB	42.8	7005	San Francisco
		66	4543	
1956-2000	FLJ	9231	32.50	Issy-Les-Moulineaux
	FYL	15.87	18900	Bordeaux
2226-2230	FLE	113	2650	Eiffel, Paris

**Notice to Mariners—Hydrographic Bulletin**

**TIME SIGNAL BROADCASTS**—Beginning October 1, 1931,— Washington (Arlington and Annapolis) Radio stations will broadcast time signals in conformity with the following schedule:

G.M.T.	75th Meridian	Frequency (kilocycles)							
0800	0300	17.8	113	4015					
1700	1200	12615	16820						
		12615	16820						
2100	1600	17.8	16820						
2400	1900	8030							
0300	2200	17.8	113	690	4205	8410	12615		
0500	2400	17.8	4015						

The 17.8 frequency is to be added when Annapolis arc transmitter is replaced by a modern type (within 6 months).

**RADIO COMPASS STATIONS**—Pacific Coast—Commencing October 1, 1931, the Point Hueneme (NCA) and the Ft. Stevens (NZR) Radio Compass stations will be discontinued.



## Series and Parallel Circuits

(Continued from page 6)

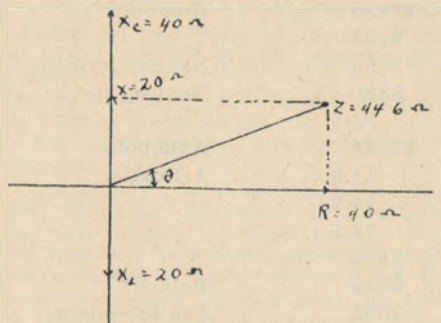


Diagram 4



$L = 100 \text{ MH}$   
 $C = 400 \text{ MUF}$   
 $R = 5 \text{ ohms}$   
 F of incoming  
 signal = 700 KC/s  
 Z at this F = 129.09 ohms

Diagram 5

We wish to connect this circuit across a source of 700 KC/s supply, (in this case the incoming signal from a distant transmitter), to find the impedance at that frequency. See Diagram 1 for the equivalent electrical circuit. We must first find  $X_L$  and  $X_C$  at this frequency and then combine with  $R$  to find  $Z$ .

$$R = 5 \text{ ohms.}$$

$$X_L = 2 \pi FL.$$

$$2 = 6.28 = 628 \times 10^{-2}.$$

$$F = 700 \text{ KC/s} = 700,000 = 7 \times 10^5 \text{ cycles.}$$

$$L = 100 \text{ } \mu\text{H} = 10^{-4} \text{ Henry.}$$

$$\text{Therefore, } X_L = 628 \times 10^{-2} \times 7 \times 10^5 \times 10^{-4} =$$

$$628 \times 7 \times 10^{-1} = 439.6 \text{ ohms.}$$

$$X_C = 1/2 \pi FC.$$

$$2\pi = 6.28 = 628 \times 10^{-2}.$$

$$F = 1 \times 10^5 \text{ cycles.}$$

$$C = 400 \text{ } \mu\text{F} = 4 \times 10^{-4} \text{ Farads}$$

$$\text{and } X_C = \frac{1}{628 \times 7 \times 4 \times 10^{-2} \times 17584} = 568.6 \text{ ohms.}$$

$$R = 5 \text{ ohms, } X_L = 429.6 \text{ ohms, } X_C = 568.6 \text{ ohms.}$$

## "CQ"

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**WANTED**—Copies of all back issues of CQ. Our supply of the March, April, May, June and July numbers is completely exhausted. Will pay 15 cents for copies in good condition. MRR, care CQ.

**WANTED AMATEURS** to practice code at home; nothing to pay. Also buy good, cheap receiving set. Write: F. Parkinson, 734 Towne Ave., Los Angeles, Calif.

$$Z = \sqrt{R^2 + (X_C - X_L)^2} = \sqrt{5^2 + (568.6 - 439.6)^2}$$

$$Z = \sqrt{5^2 + 129^2} = \sqrt{16666} = 129.09 \text{ ohms.}$$

$$\tan \theta = X/R = 129/5 = 25.8. \theta = 88^\circ \text{ Lead.}$$

Since  $X_C$  is greater than  $X_L$ , the current LEADS the voltage and since  $X$  is very large compared to  $R$ , the angle is large, almost  $88^\circ$ . This is shown in Diagram 6. Under this condition where  $R$  is very small compared to  $X$ , the  $R$  may be neglected when computing  $Z$ . This would be the case in a radio frequency circuit tuned to a frequency considerably lower than the frequency of the impressed voltage; in a receiver circuit this impressed voltage would be the incoming signal. A total opposition of 129.09 ohms would be offered to the signal of 700 KC/s by this circuit and very little current would flow in the circuit.  $I = E/Z = E/129.09$  amperes.

(To Be Continued)



## Up Where the North Commences

(Continued from page 13)

Don't pay too much attention to this epistle, four years in Asia and a few seasons up here will do this to anybody. I have been spending my summers, for the past three years, vacationing up in the great north countree—just grazing among the mountain sheep and caribou in South-western Alaska. This year, because civilization has wiped out our last frontier (and has increased the price per quart) I came a little farther into the frigid regions. We are three hours behind coast time up here, but that isn't so bad when you stop to consider that all our time is shipped up from Ketchikan by dog sled. In the olden days (daze?) they were four or five days behind—in fact, sometimes Tuesday of one week wouldn't roll around 'til between Thursday and Friday of the following week many's the time there would be two Sundays in forty-eight hours. As it is, we have 27 hours each day; because, after it is midnight in Ballard, we still have three hours more watch to stand before we can add an "x" to the calendar.

Ye Arctic is getting entirely too crowded, too modern; in fact, things are moving too fast for us old sourdoughs (a'hem). One expects, almost, to find a traffic cop at each street corner (providing there was a street corner to be found). A few years ago a feller could spend a nice quiet summer up here, unmolested. You could relax, meditate and grow whiskers. Those days are gone, blotted out along with the dodo bird and vacancies for sea-going operators. Now, just about the time you get your face all fixed for an enjoyable siesta some trans-Pacific aviator drops down 'longside to borrow a quart of oil, pack of Chesterfields—or to find out if there's any truth in the rumor that Seattle won a ball game. Nope, Alaska ain't what she used to was; not with all these round-the-world fliers, trans-Pacific non-stop, non-refueling, non-take-off boys hopping around, or threatening to hop. We've even rigged an awning to keep the Graf Zeppelin from dumping dish-water on us—and some of the boys have slep, for weeks, with one eye open, calmly expecting Sir Hubert's "Nautilus" to pop up under our bow and offer us a case of Johnny Walker. Wouldn't be surprised to see an eider duck overhead, flying with one wing and carrying a parachute under the other. Everything's gone air-minded up here. Sled dogs used to turn 'round-and-'round packing the snow before they'd lie down—not any more, no siree, if they can't make a neat three point landing they'll stand up all night!

Mosquitoes? Oh yes, we have one or two up here. You can realize after seeing an Arctic mosquito why there aren't more of

them—because of their size, there isn't room for many. One night one hovered around the ship, shutting out the sun for several hours. He finally decided the doors were too small for him to get in, so he left. Don't try to fool an Alaska mosquito—you may do it once, but never again—when that "skeeter" left the ship he returned an hour or so later with a little one in tow (the young one was only about the size of a scouting plane). The little fellow would go in the rooms and bite a member of the crew, then he would squeeze out the door and the other mosquito would bite him! Their fur is prime in Sept-ober in this district.

You should hear the harmonics when four or five hundred of these huskies start howling!

Speaking of beat notes reminds me; we were troubled with induction, at first, but soon overcame that with the aid of a brain-storm and a correspondence course in radio engineering. We found the induction was steady, loud and extremely reliable throughout the twenty-four hours, so why waste it? We don't—we use it for an oscillator—converting the "de Forest special" into a heterodyne by mixing the incoming signals with the induction (which the engineers are so thoughtful in supplying). We then read the resultant "beat note," and it beats most folks to see how we do it. (They don't know we learned radio in 30 days without lessons, without books, without even an alibi—and then spent months turning down b-i-g p-a-y jobs by the thousand.) The only drawback to our super-boloney-dyne receiver is it is a complicated affair, taking two men to operate it. One operator is busy adjusting the gap in the lead-in + to keep the signals from getting too loud; the other man has to "QRX" every few minutes to empty the drip pan under the grid leak.

Nome using four kilowatts kicks out about 25 amps on 600, but his signals after being pushed over 300 miles of tundra and icebergs and strained through our one-tube anti-flareback, triple expansion, non-tunable receiver causes a pulsation in the phones almost equal in volume to a bee's sneeze. Durant and Burroughs, however, are gentlemen and scholars, never once have they failed to tell us the little white lie—"QSA FB"—'tis a blessing there are some good reliable fibbers left on the globe.

We were off Savoonga over the Fourth of July. They melted the ice out of the Lyle gun and had fireworks, but we had to fire it in the engineroom—in order to hear it—otherwise, the sound would have frozen before it reached the muzzle.

Well it's time for "KUP" now boys—so QSK and 73 'til next time.

Ye Fellow-sufferer—

L. S. (SPUD) HENDERSON.

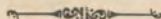


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Offenbach Electric Co.,  
1452 Market St.
- LOS ANGELES—Radio Manufacturers Supply Co.,\*  
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- SAN PEDRO, Cal.—H. I. Corning & Co.,  
305 Avalon Blvd. (Wilmington)
- BOSTON, Mass.—Ben's Tremont Electric Supply Co.,  
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- NEW YORK CITY—Blan, The Radio Man,  
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- PHILADELPHIA—M. & H. Sporting Goods Co.,  
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\*CQ Circuit Diagrams on sale in stores marked with asterisk.



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- CALGARY, Alta., Canada—Alberta News, Ltd.,  
108 Sixth Ave. W.
- MELBOURNE, Australia—McGill's News Agency,  
179 Elizabeth St.
- WELLINGTON, New Zealand—Te Aro Book Depot,  
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- AUCKLAND, New Zealand—Johns Ltd.,  
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