



JOURNAL

DIRECTED TO BROADCAST ENGINEERS AND EXECUTIVES



Photograph by J. Wesley Conn, N.B.C. Television Engineer

Edgerton Speed Flash Lamp makes possible exposures of $1/20,000$ th second, and permits extreme action photos such as this, which shows what a "Guinea Pig" 12-inch Kinescope looks like instantly after being struck by an 8-pound hammer. (See Article on Page Six)

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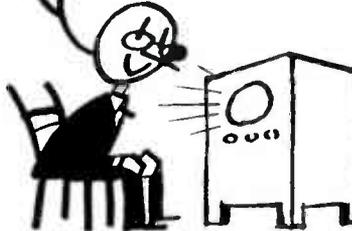
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March

Annual Amateur Edition

1941

I know what's
going on

130,000,000 X  = RADIO

Millions of Ears Perked for Vital Messages

24 hours are a lot of minutes — and not everybody can be expected to like every minute of radio's 24 hours a day.

Some people like what's on the radio at 11:15 or 12:30 or some other hour — and some get mad at it.

A certain amount of recognition of diversity of tastes is necessary on the part of anybody who runs a national broadcasting system for everybody. And a certain amount of tolerance, on the part of listeners, for the diverse desires of other listeners is necessary if America is to have a free and universal radio.

Remember that radio, along with its vast audience, is a pretty good thing for the nation to have on tap when serious matters need country-wide attention QUICK.

In recent months we've had a beautiful demonstration of the way radio rises instantly to occasions for the public good.

Overnight — in fact, almost in minutes — America (thanks to radio) became aware of her critical situation in regard to preparedness. In *hours* (where once it would have taken months) America's 130 millions were made familiar with all angles of the Government's preparedness program. America even accepted the prospect of increased taxes without a whimper because America knew, knew, knew, thanks to radio.

When you are inclined to be impatient with some of radio's shortcomings, or are moved to want it "all highbrow", bear in mind that radio has in its own way achieved a popularity with the people as a whole which gains their universal ear — which is mighty handy to have — when they must be made aware *instantly* of any inherently critical situation in our national life.

NATIONAL BROADCASTING COMPANY

The World's Greatest Broadcasting System

A Radio Corporation of America Service

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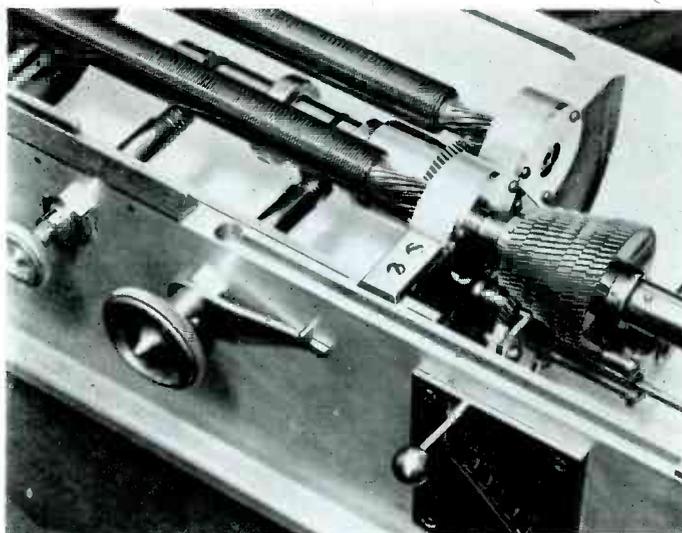
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My Dad—9YD, WCAJ, W9ZHP

By R. R. Jensen, S.E., Chicago

IN 1904, the hulk of the battleship Maine was still lying partially submerged in Havana harbor. It had been six years since a mysterious explosion had sent her to the bottom; the Spanish-American War was over, but the natives still were talking about time bombs, external mines, and the most curious of all, wireless. Could the bomb have been exploded by wireless? Along with the others, there was a young man out in Nebraska who really thought a wireless bomb could have been the cause. In fact, the whole idea of wireless intrigued him, so he decided to investigate.

This young man was John C. Jensen—I call him Dad—but the kids in the Beaver City High School looked upon him as the physics and mathematics professor. He liked teaching, but had always used his spare time tinkering around with electrical gadgets—experiments in the books that were too far advanced for the high school students—and ideas obtained from the various technical journals. The most interesting items of the day concerned Marconi and his “wireless,” so here was something new with which to experiment.

Our young teacher had been in town long enough to make friends with the Morse operator down at the Burlington depot, and the boys over at the local telephone office. The telegrapher was a source of supply for wire and relays, while the telephone men provided worn-out dry cells that could be rejuvenated by adding a solution of ammonium chloride. The depot agent was willing to give his spare time in the interests of science, so together they built a Marconi Coherer receiver and a spark transmitter. The transmitter was constructed from a spark coil, a few home-made condensers to make the spark a little hotter, and of course a goodly supply of the “made over” dry cells. The quarter inch spark was not exactly super power but it was enough to create quite a disturbance in the neighborhood. The Coherer receiver was most difficult to build because it had to be extremely sensitive. The Coherer was a simple device that really worked. Inside of a small glass tube, a couple of brass plungers compressed a small mixture of nickel and silver filings. The antenna and ground were connected across the so-called detector, and a battery and relay connected in series with the unit. When an impulse struck the

antenna, the filings would tend to weld together, thus closing the contacts on the relay. Any electrical device could be operated by the relay contacts, and later developments had the receiver exploding bombs, turning on lights, ringing bells, etc. This was a fine receiver, but had one drawback—the Coherer had to be given a slight tapping after each transmission to dislodge the filings for the next impulse. This obstacle was soon conquered by installing the works from a door bell next to the glass tube. The relay was connected to operate the bell, the clapper struck the tube and dislodged the filings, causing the relay to open contact and be ready for another signal. There were a couple of sad experiences when the bell clapper was a little too ambitious and broke the glass tube, but such was life with a wireless receiver in 1904.

This apparatus proved quite satisfactory and “messages” could be sent almost fifteen feet, but soon came the inevitable desire for more power. It was decided that a Toepler-Holz static machine was the answer, but the price of a ready made job was far beyond the \$10 a year allotted to the physics department, so the only answer was a home-made machine. The janitor was a willing helper and was put to work cutting window glass into circular sections as well as glueing tin foil to the plates. After a few weeks of construction the new super-power rig was in operation. With this outfit a signal could be sent entirely across a room.

By 1906, the apparatus was working so well that the public was clamoring to see it, just as they are interested in television today. With the idea of giving the natives the low-down on this new invention, Dad went from town to town giving demonstrations in schools and churches. His favorite story concerns the portion of the demonstration in which a “bomb” was exploded by wireless. He was at this point in the lecture and had just opened a window to lower the bomb outside so the smoke would not bother the pay customers. Seeing the open window, a curious gang of town lads, who did not have the price of admission, gathered around to see what was going on inside. About that time the signal was sent, the Coherer in the window operated properly, the fine wire heated, ignited the

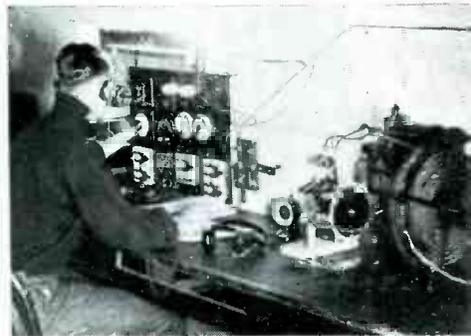
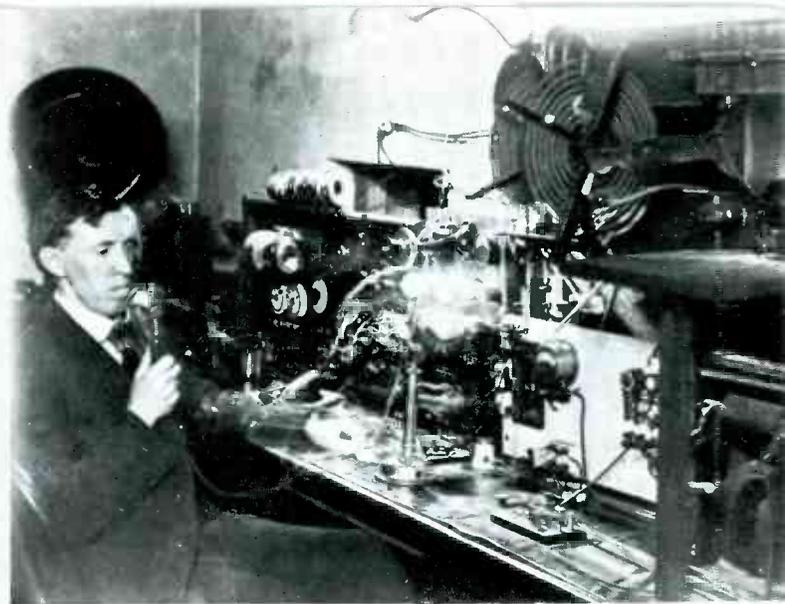
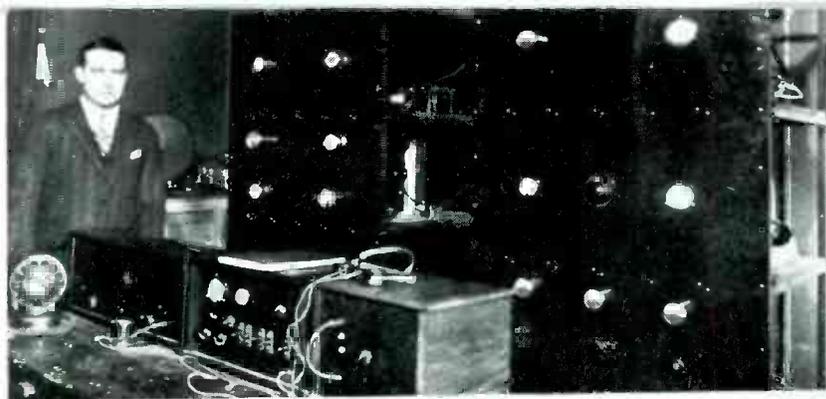
bomb, and the boys received the “impulse” in the seat of their respective trousers. During one of these demonstrations, the Superintendent of Exhibits at the Nebraska State Fair was in the audience. He was very impressed and practically demanded that the demonstration be brought to the fair the following summer.

It was at the Fair in the summer of 1906 that QRM made its first appearance. The apparatus had been acting very strangely, in many instances the “message” was received before the transmitter was operated. The sharecroppers thought it very funny and winked at each other with that “I-told-you-so” look, but the strange actions proved a real headache for the lecturer. Then, one noon while out on a little walk, we discovered the culprit. Just a short distance down the street was a lightning rod salesman with a big static machine and a little house he proceeded to burn down with “lightning.” Here, sure enough, was the source of the strange antics of the Coherer. Thus QRM reared its ugly head.

The State Fair exhibit won first prize for home-made apparatus, a diploma of merit, and best of all, a position as an instructor in Physics at Nebraska Wesleyan University in Lincoln. The position at the University was decidedly an advancement; it would allow further experiments in wireless as well as a greater fund for such research. Then, too, there would be interested students with which to work, and they in turn could help with the construction and operation of the apparatus.

It was now about 1910, and investigators in the East had announced that rectification resulted when contact was made between certain crystals and metals. Several crystals were obtained and the results were very gratifying. It was found that the old spark coil made a much better tone in the receivers and could be more easily heard than the static machines, so it was again put into operation. It was about this time, too, that “wavelengths” began to be of some concern, and resonating systems of one kind and another were devised. With the use of galena detectors, a variocoupler tuner and the spark transmitter, contact was not uncommon over a distance of fifty miles.

Then came the era of high powered



(Top Left): WCAJ-1927. J. R. Dunning, student operator with composite transmitter using 2-WE212D's as oscillators and 3-212D's as modulators. (Top Right): J. C. Jensen broadcasting market reports by phone and code, 9YD 1921. DeForest OT-20 in center. (Bottom Left): DeForest OT-20 as it appeared upon arrival, 1921. (Bottom Center): Dr. J. C. Jensen as he appears today. (Bottom Right): 9YD-1920. W. L. Tesch at operating position

spark transmitters, or "stone crushers" as they were aptly called. With the help of a couple of interested students, the first one kilowatt rotary spark transmitter was put on the air at Nebraska Wesleyan University early in 1914. The total cost was around \$50, excluding the inductances and condensers which were home-made. The power transformer delivered 28,000 volts to the spark gap, and at that time, the ultimate in transmission equipment had been reached. To go along with the transmitter, one of the new "DeForest Audion" tubes was purchased and the first tube detector or at the station came into being. The filament on the audion was not very permanent, so a switching arrangement was devised whereby the crystal detector could be put into operation at once if the tube failed,—and it did, more than once. This spark transmitter was operated for two years before being licensed as 9YD on March 15, 1916. With this rig it was not uncommon to work stations as far as 800 miles distant and to hear transmissions of even greater distances. NAA, Arlington, Virginia, was the favorite listening station, as their signal came through in fine shape.

9YD went along merrily for nearly a year, then all of a sudden a presidential order stopped all amateur transmissions in the United States, as the country was about to go to war. Most of the amateurs of that time were called into active service in the signal corps of the army, and Dad was made an instructor in the War Training Unit of the University of Nebraska. Although 9YD could not go on the air during this silent period, it was used for training purposes and thereby not put on the shelf to gather dust. Several of the students at Wesleyan had already gained enough knowledge from the operation of 9YD to qualify in the Navy Signal Corps. W. L. Tesch, at present with RCA in Camden, was one of the early operators of 9YD that went into the Navy during the war. R. C. Gorham, now assistant professor of electrical engineering at the University of Pittsburgh, was another of the group. The ban on operation was not lifted until October, 1919, but as soon as the calls were re-issued, 9YD was back on the air. Equipment had greatly improved due to the stress of war conditions, and wireless transmissions were being used commercially both on land

and sea as a dependable means of communication. The war brought forth the general use of vacuum tubes for both receiving and transmitting, and radio-telephone was beginning to be heard of.

In line with the progress in the art, 9YD became a phone station in October, 1921, with the purchase of a DeForest Type OT-20 transmitter. The rig was rated at 20 watts, consisted of a four tube self-excited oscillator with grid modulation. The sale price was \$400, but not bad for those times. There was definitely much to be desired, but it would put out a signal, and the public, such as it was at that time, actually heard the broadcasts regularly over a 100-mile radius. The biggest headache was the tubes. The four VT-5's would load down to their 5 watts, but when they did the plates would suddenly turn to a molten mass and drop to the bottom of the tube. The proper operating point was, then, just under the melting point. The power supply for the outfit was a motor-generator delivering 500 volts, and the filaments were heated with 8 volts of storage battery. A single button carbon mike served as the speech equipment. 9YD had now risen from an amateur station to a broadcasting sta-

tion, contacts were no longer made with other amateurs, but a regular broadcast schedule went into effect. At first, the periods of broadcast were few and far between, due to operating cost and lack of program material, but it was not but a few months until the State Bureau of Markets requested the use of the station to disseminate market reports. Each day's operation would start with Weather and News reports at 8:50 A. M., News at 12:15 P. M., and Markets at 4:00 P. M. Evening programs averaged about an hour a day, and would vary between recorded music and lectures. During the day, the news and market reports were first sent out with the spark transmitter and then followed by the radiophone. Listeners for the area, upon request, were sent market report forms to be used in receiving the markets and many copies were thus sent out. The music pickup from the phonograph did not exactly reach perfection as the mike was simply mounted in front of the horn on the spring driven phonograph, but at least there was music on the air, and the crystal set customers wrote for more.

By 1922, the government had overhauled the radio laws and was assigning "W" calls. The call WCAJ was assigned to the University station in April, 1922, and thus it became a full-fledged broadcasting station. All broadcast stations were assigned to operate on one wavelength, 360 meters, although some stations, WCAJ included, could operate on 485 meters for weather forecasts and other government information.

In April, 1923, a new stunt was tried,—broadcasting from a remote city. After considerable negotiations with the telephone company, a noted speaker was lined up to give a talk from Chicago. The lecture came by telephone wire to WCAJ where it was put on the air, with great success. It was the first time that such a thing had been tried in that part of the country, and little did the operator of WCAJ and the officials of the telephone company realize that in a few years, the same procedure would be carried out but to more stations and under a new name of "network" broadcasting.

The year 1923 marked another step forward in Dad's radio venture. Word came that there was a DeForest OT-201 transmitter for sale in Independence, Kansas, for a very reasonable price. The rig had been purchased by a big promoter to sell radio sets. The radio sets worked OK, but the transmitter did not, so it was for sale, too. Here was

a chance to get some needed parts and possibly a complete transmitter, so he made a trip to see, and later purchased the rig. It was installed on the lower floor of the physics building and the 1,500 volt motor-generator placed in the adjoining power plant. This outfit was rated at 500 watts, used two 2Q5 DeForest Oscillation tubes, rated at 250 watts each. When it arrived it was a self-excited Colpitts oscillator with grid modulation, but this was immediately changed to Heising modulation, using UV-204's as modulators. When the outfit went on the air it worked quite well, with one exception,—there was considerable generator ripple. All of the filter condensers and chokes in the physics department were connected to try to get rid of the ripple but it was still there. Then the factory who manufactured the generator was consulted, but they could give no help. Finally, through some strange source, it was learned that this machine had been built by prison labor under poor supervision. The directions for winding an armature, evidently, were to put on turns until it looked like there were enough, the result being that the various segments contained different amounts of wire,—result a permanent ripple. Ripple or no ripple, WCAJ continued to carry on its broadcast schedule with this outfit for four years. The noise was not particularly bad, but could be heard faintly during lulls in modulation.

In 1927, it was decided that the DeForest outfit had served its purpose, so a complete new composite transmitter was constructed on the top floor of a campus building. With the assistance of H. L. Hull, a student and assistant operator, (at present Research Engineer with Sperry Gyroscope), the new transmitter and studios were put into operation late in 1927. The new outfit used two WE212 D's as oscillators and three WE212D's as modulators in a Hartley-Heising circuit. Speech equipment was also constructed with adequate switching facilities. This same outfit was rebuilt the following year with the installation of a crystal control unit. A student, John R. Dunning, (who recently has gained world-wide fame with the Cyclotron at Columbia University), assisted in the design and construction of the crystal unit and buffer stages. Later, one more revision was made in the transmitter to make it a modern 1,000 watt outfit, although it operated on 500 watts at half power.

During the period of development of WCAJ, commercial stations had been

growing also, and air rights were at a premium. WCAJ could not sell time since the school depended upon the general public for its support, and it was felt that there would be adverse criticism from the constituency if certain types of commercial programs were carried. So a ban on all commercial programs was decided upon. Due to an unfortunate arrangement by the Radio Commission in 1928, the station was forced to divide time with a commercial station, an arrangement which was unsatisfactory from the beginning, due to the inflexibility of the commercial station's programs. The final result of the arrangement was a suit for full time by the commercial interests. This case was lost in favor of the college station. It was taken to the Court of Appeals, again lost, and the commercial station was forced to purchase the college station outright to gain the full-time allotment. So, on July 31, 1933, WCAJ signed off for the last time.

During the growth of WCAJ, Dad had become very well known in college radio circles and in the radio industry as a whole. His knowledge of the problems of educational stations resulted in his election as president of the Association of College and University Broadcasting Stations in 1929, after having been secretary-treasurer of the same organization the preceding year. His greatest award for his efforts came on February 4, 1933, when he was appointed by President Hoover to the Federal Radio Commission to fill a vacancy created by General Charles Saltzman. There was only one hitch, the Democratic Senate was not taking action on any of the Hoover appointments, so by being of the wrong faith he lost his position on the Commission.

Today, Dr. J. C. Jensen is still teaching radio in connection with his duties as Professor of Physics and Astronomy at Nebraska Wesleyan University. His commercial ticket has expired, but he still holds a First Class Amateur ticket with which he operates W9ZHP, a 100 watt phone transmitter located in the physics department. He still listens to NAA, but on a modern commercial receiver, not to test out a new galena crystal but to check the clocks in the new Rose Memorial Observatory, constructed under his efforts. He is proud of the record of his former students, many of whom are actively engaged in the radio industry today. Experts still disagree as to how the Maine was blown up, but Dad proved to his own satisfaction and that of many others that it *could* have been done by wireless.

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High Speed Photography—With 2,000 Volts!

By J. Wesley Conn, W2MSC

Television Engineer, National Broadcasting Company

A LOT of hams are also shutter-bugs and are torn between the two hobbies because they have no apparent common ground. A device which combines the newest in photography with a ham's knowledge of electronics is indeed something to tie the two hobbies together.

The recently developed "speed ray flash lamp" or "Kodatron Speedlamp" is a three element gas-filled bulb which produces a flash of intense brilliance for a very short period of time. A flash of 1/10,000 second is slow stuff for this lamp, while speeds up to 1/100,000 second may be obtained. This makes it ideal for taking pictures of fast action which would be impossible with the regular run of cameras having the usual 1/1,000 second maximum shutter speed. Even cameras having less expensive shutters can produce stopped action pictures because shutter speed becomes unimportant with this lamp. The lamp may be synchronized to go off during the relatively slow shutter opening, or it may be flashed while the camera is on "time" if the room is completely dark.

The best part of this flash tube is that you don't throw it away after one shot—not by any means. It can be used again and again for about 5,000 pictures. However, at least 10 seconds must elapse between pictures to allow the power supply to charge up again.

The tube contains a grid, plate, and cathode. Two thousand volts are applied between the plate and cathode. When the tube is fired a high voltage pulse is applied to the grid, thus ionizing the gas and causing the 2,000 volts to flash across. The duration and the intensity of this arc are dependent on the energy available, which is stored in a condenser or bank of condensers in the power supply.

The unit described here is a home constructed affair and uses a power supply of more or less conventional ham design. It consists of a high-voltage power transformer giving about 2,000 volts, which is rectified by an 879 tube. The output of the rectifier charges a condenser. This is not the usual brand of ham filter condensers, however, for it should be at least 25 mfd. at 2,000 volts. Two or more of

these brutes will give a faster and more intense flash, but the unit shown uses only one and gives good exposures at ten feet with f 8 (using film rated at Weston 100 daylight). The duration of the flash using one of these condensers will be at least 1/10,000 second. When greater distances are to be covered, at least two condensers are recommended.

The flash tube itself is triggered by a smaller stroboscopic tube, the General Radio Co. 631-P1 cold cathode type tube such as used in their "Strobotac." This tube is located in the power sup-



Joseph Wesley Conn
A.T.C. Journal Staff Photographer

ply case and its purpose is to produce an instantaneous pulse which is in turn stepped up by means of another transformer and applied to the grid of the big flash tube located in the reflector, thus causing the gas to ionize and the tube to flash as described before.

The triggering tube is fired (and hence the flash tube) by grounding its grid. This may be accomplished by means of a momentary push-button switch located near the camera. This method required the shutter to be open on "time," the lamp fired, and then the shutter closed. This is all right if the room is completely dark, but since it usually is not, a better method is to synchronize the light with the Compur shutter operating at 1/200 second, which is usually fast enough so that no exposure results from regular room light. The only exposure is that caused by the speed lamp, which

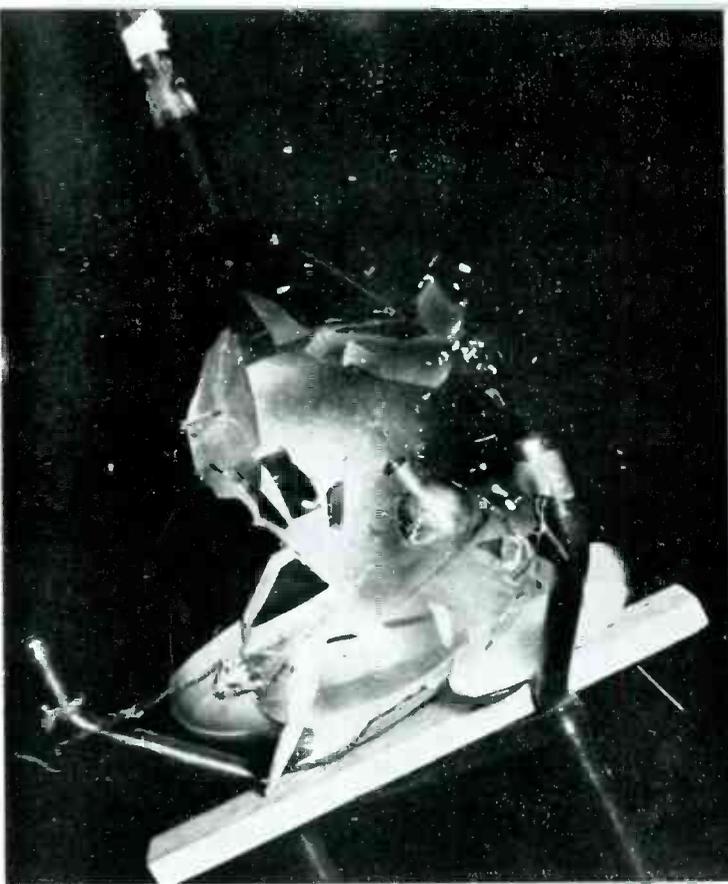
is synchronized to go off during the 1/200th shutter opening.

One way of accomplishing this synchronization is to build a set of light spring contacts near the "cock" on the Compur shutter so that the cock closes the contacts as it flies back. The flash lamp is observed through the lens of the camera as it is fired by these contacts. A star shaped pattern means the lamp is firing too late or too early. The contacts are adjusted until the entire circle of the lens is seen.

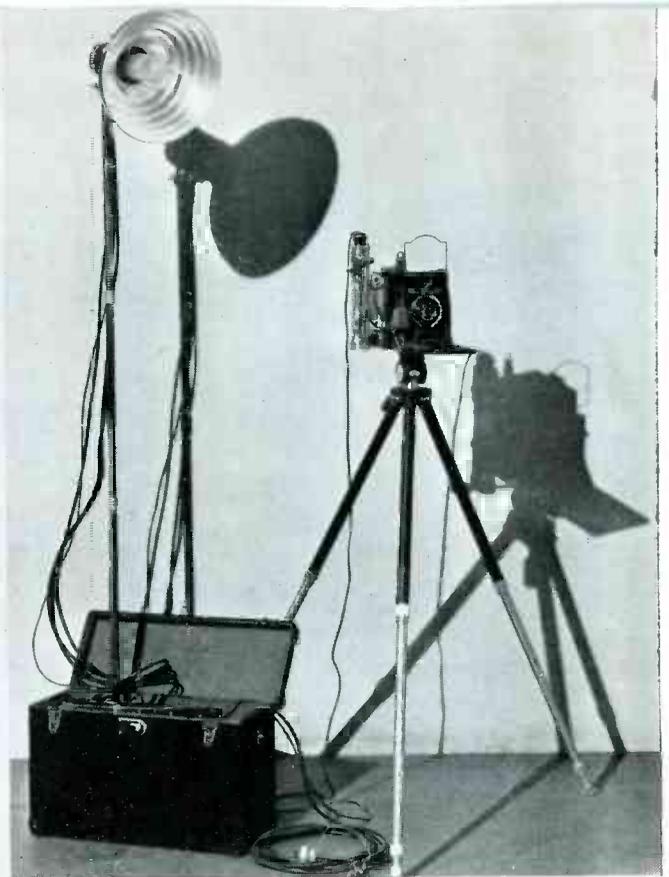
Such a method limits the lamp's use to the camera which has these spring contacts built on it. The unit shown can be used with any camera having a regular flash bulb synchronizer attachment or "speedgun." To obtain this, a relay is used to ground the grid of the triggering tube instead of the spring contacts. This relay operates from the batteries in the speedgun case and plugs in the top of the case where a regular flash tube normally would be plugged in. When the button on the speedgun is pressed, the regular speedgun relay trips the shutter and the second relay fires the speedlamp. This second relay is adjusted to delay the firing of the speedlamp until the shutter is open. Synchronizing adjustments are made on the gap of this second relay and the procedure is the same as with the spring contacts. It is adjusted until the full circle of the lens is seen.

The photo shows the lamp set up in its carrying case. The reflector is of shallow aluminum and is not as efficient as a large parabolic one would be, but in this case efficiency was sacrificed in the interest of portability. The stand is made of 3/8 inch pipe cut into 18 inch lengths and fitted with screw couplings so that it may be taken apart and stored in the carrying case. The leads running up to the flashlamp are insulated for 7,000 volts for safety, since they are exposed to wear and tear in moving it about.

All possible precautions and safety factors in insulation must be used because the high voltage involved makes this instrument very dangerous. Many hams use higher voltages on their transmitters but it must be remembered that this unit will be used around non-technical persons, not versed in high voltage behavior and even the operator



Another Kinescope — and a ten-pound brass ball. Remnants of the tin-foil triggering circuit can still be seen in the foreground
(Photos by J. W. Conn)



The Edgerton Lamp, Speed Graphic, and carrying case, containing high voltage and vacuum tube triggering equipment

himself is in danger for it is surprising how forgetful one can become about danger when worrying about other things, such as focus, depth of field, exposure, etc. A ground lead is provided at all times for grounding the metal parts and a $\cdot B$ lead to a real earth ground. Since the charging voltage is

left on at the time of firing, the condenser immediately charges up again so that even after taking a shot the instrument again becomes lethal. The method of getting rid of this charge is to disconnect the AC and fire the tube again. An interlock switch is provided so that the power supply cannot become

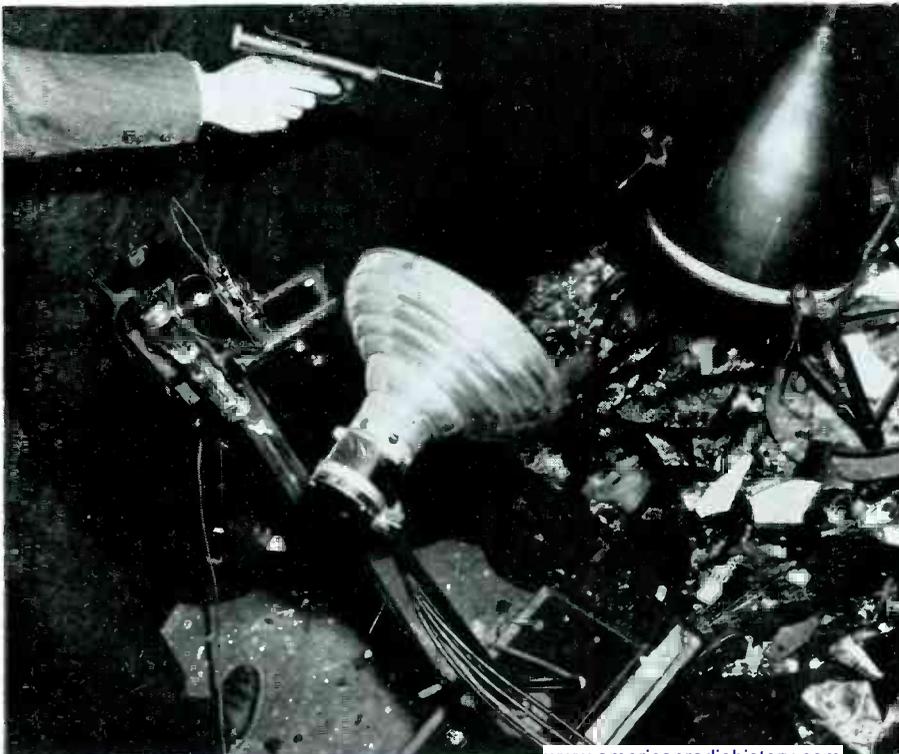
accessible without shorting the condenser. The entire unit when packed in its carrying case weighs 35 pounds.

The duration of the flash was roughly computed by taking a picture of an electric fan. A contact print showed no blurr, even at the point of maximum velocity—the blade tips, but an enlargement of 20 diameters showed a movement of about $1/16$ inch (scaling the proportions from the enlargement). Knowing the RPM of the fan, the linear speed of the blade tip was computed. Since $1/16$ inch was the distance moved during the interval that the speedlamp was on, and knowing the linear speed of the blade tip, the speed of the lamp was computed. With the model shown, the speed was well over $1/10,000$ second.

The pictures of the exploding Kinescope show how even violent action may be stopped by the speed lamp. Obtaining these pictures presented many interesting problems. Since one of these big 12 inch Kinescopes is very dangerous when exploding, due to their high evacuation, the entire operation had to take place with no human present. A small room without windows was obtained and the camera and light set up. To cause the shutter to trip and the light to fire *after* the Kinescope was well exploded, a delay mechanism

(Continued on Page Eight)

While breakage of Television kinescope tubes is not a common occurrence, and the author found it difficult to break these "guinea pig" tubes, these photos should remind us to exercise more-than-normal care when handling and/or transporting them



An All Band Low Power Transmitter

By Dawkins Espy, W5CXH/6*
Engineering Department, KFI-KECA

AT ONE time or other we have all wanted to build a portable transmitter. Retaining all the advantages of portability and yet affording fone and c.w. operation on all bands is not a simple task. Either the set-up consists of a number of separate units which must be connected to attain operation, or a single unit must be necessarily bulky and awkward.

To begin with, an a.c.-d.c. receiver type voltage doubling circuit is used, eliminating the power transformer; further, modulation is applied directly to the oscillator making a power amplifier unnecessary. By using a coil and crystal for each band, operation is obtained on all frequencies from 10 to 160 meters. The unit is built on a 6 x 8 inch chassis, and has a power input of approximately 8 watts on both fone and c.w.

An idea of the layout of the transmitter can be had by referring to Figure 1. The a.c. and send-receive switches are located on the left and right sides of the chassis near the front panel. The left hand dial is the microphone gain control, the center dial the antenna tuning condenser, and the right hand dial the oscillator tuning condenser. The microphone plugs into the left jack, and the right jack is for the key.

Still looking at Figure 1 we can see in the front left hand corner the 6SJ7 speech amplifier tube. Immediately behind it is located the 25B6G modulator tube. The multi-match modulation transformer is in the center, while just

to its right is the oscillator coil. Between the modulation transformer and the oscillator coil a small light globe, which protrudes through the chassis, is used to indicate the antenna current. Along the rear edge of the chassis the series filament dropping resistor, the 25Z6 voltage doubler, the 6V6G or, as shown in this photograph, a 25B6G oscillator tube, may be seen. The crystal is hidden by the coil, and the antenna connections are along the right edge of

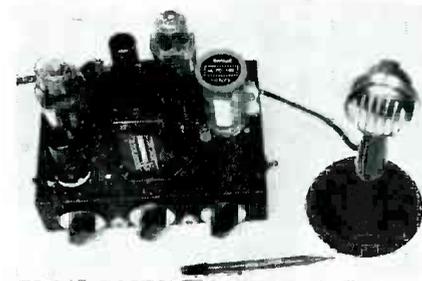


Fig. 1

the chassis. The filter choke and the filter condensers are located on the under side of the chassis.

A block diagram of the circuit is shown in Figure 2. Due to its high input capacity, the 25B6G tube did not oscillate properly on 10 meters. When desiring to include 10 meters in the range of the transmitter a 6V6G tube is used as the oscillator. Consideration is made of the difference in filament current of these tubes.

Six prong manufactured coils are used

in conjunction with a 140 mmfd condenser to tune the oscillator. These coils have, in addition to the plate winding, a winding which can be used to resonate with zepp and similar type antennas, and a winding which may be used to link couple to an antenna tuner. By merely moving the clips provided from one tube prong to another, three types of coupling to the antenna become available, namely, condenser, resonated inductance, and link.

The audio section provides enough gain so that several watts of audio energy may be realized when it is driven with a high level output crystal microphone. The plate voltage under a load of about 100 mills is approximately 135 volts.

With fone operation on 75 or 160 meters no frequency modulation whatsoever is noticed, and with careful adjustment it will be almost unnoticeable on 10 and 20 meters. The modulation capability of this transmitter is from 70% to 80%.

Although the power of this transmitter is small its versatility, high audio quality, and extreme compactness make it desirable to own and operate. Successful contacts have obtained on all bands in a manner comparable to that of more expensive, more elaborate, and more powerful transmitters.

A more complete article including a circuit diagram and constructional details appears in a current issue of RADIO magazine.

High Speed Photography

(Continued from Page Seven)

was arranged. A small band of tinfoil was cemented around a large portion of the tube. Connections were made from either end of this band to a circuit containing a battery and a relay. The band of tinfoil completed the circuit to keep the relay energized, but when the walls of the tube started to disintegrate, the circuit became disrupted and the relay released, thus grounding the grid of the triggering tube and causing the lamp to flash and the shutter to operate. Naturally many rehearsals were required in order to time the operations successfully, and since the

supply of old Kinescopes was limited, large incandescent light bulbs were used as "guinea pigs." The final pictures were obtained by purposely smashing four 12 inch Kinescopes which were "defunct" electrically and had to be broken up anyway.

The physical problem of breaking the Kinescopes was more difficult than anticipated, since the tubes themselves turned out to be far from fragile. At first they were fired at through a hole in the door with a .22 calibre air pistol, but the lead slugs merely bounced off the glass envelope. Then, weights of increasing mass were made to bounce against the tubes by means of a wire pendulum perpendicular from the ceiling. It finally took an 8 pound hammer to break the tubes by this method. The

weight was held outside the door, then released, and the door closed. The pendulum carried the weight against the tube and $KE = MV^2$ did the rest.

The Eastman Kodak Company offers this lamp in a commercial model for studio work. It is much larger than the unit shown here, since it is not intended for portable use. It utilizes a bank of four large condensers in its power supply, thus producing a much more intense light. This larger model also uses a parabolic reflector, thus utilizing the available illumination more efficiently. It is a fine addition to the portrait photographer's equipment as well as for speed work, since the duration of the flash is so short that the subject's eyes remain perfectly natural and free from reaction to glare.

* 1939 N. Wilcox Avenue, Hollywood, Calif.



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NATIONAL COMPANY, INC., MALDEN, MASS.

The York Radio Club

W9NST

W9GY

*Oh, what is so rare as a day in June,
When York Field Crews adjust and tune
Receivers and transmitters six,
Eliminating thumps and clix?
Both near and far in this broad land
You'll hear their sigs on every band.*

IF YOU took five broadcast engineers, five telephone men, one movie operator, one bank teller, a woolen salesman, an insurance investigator, a rubber molder, a police officer, two public service men, a drug clerk, and the city electrician, you might be gathering a collection of prospects for the local draft board. But if you took this same mess and qualified the lot as possessing considerable enthusiasm for amateur radio—you would be calling the role of the York Radio Club of Elmhurst, Ill.

Truly a heterogeneous group of culprits if there ever was one, yet as a unit they comprise one of the hottest radio clubs in the country. They have consistently bitten off more than they could chew . . . and then have chewed it.

Steeped in the belief that a radio club's only reason for existence is that of encouraging its members to greater activity and accomplishments in the field of radio, this club has successfully promoted a variety of inter-member activities. York Club has consistently tried to provide programs of an educational nature at their meetings; have arranged automatically for the membership to be 100% A.R.R.L.; and at times, when interest seems to lag, someone can always

be depended on to try to amend the constitution or attempt some other equally radical move, and the ensuing battle always brings the attendance back up to a high point immediately. While the club is run more or less on a "Swastika" basis as far as the governing end of it is concerned, everybody seems to thrive under the regime . . . and blitzkrieg was not a new word to this group. Taking a cue from the RCA "Magic Key," demonstrations are staged for various groups such as American Legion posts, P.T.A. and Red Cross organizations.

With the first signs of spring, all else is forgotten save the problem of dragging one of Henry's early mechanical mis-carriages out into the woods and pumping varying quantities of alternating current into the transmitters and receivers comprising the York Radio Club Field Day Group. Beseet consecutively by bees in the best antenna trees, heart-patients' gasps from adjacent cabins, torrential downpours, phone flapping bursts of static, wet and broken feeder lines, and oil-bathed spark plugs—this bunch of "wackops" has consistently threatened national honors and on the side have definitely annihilated all similar groups in this area.

By this time you may have gotten the idea that this is quite an outfit, but if we further infringe on the fact that you dear readers have nothing better to do than peruse this article and assuming that if you have gotten this far your sensibilities are so dulled that anything else

we say will most certainly be held against me, we would like to take the group apart. In doing this, we believe it will immediately become apparent that the individual qualities of the members are equally astounding.

We all know that at Valley Forge it was George Washington; at Manila it was Dewey; but on that fateful morning in the rain when the spark plugs in the prime mover had carbonized all the oil they could possibly handle, it was Ray Bierman W9CQI who so ably stepped into the breach and, defying rural electrocution, removed, revived and replaced all of the spark plugs—without once stopping the motor. (It is admitted, however, that the voltage did vary slightly while Doctor Bierman was administering relief to the iron-bound patient.)

Besides possessing what is possibly the largest collection of souvenirs in the country (all gathered through contacts made by Amateur Radio), Roy McCarthy W9KA, chairman of the Chicago Area Radio Club Council, retired QSL manager of the ninth area, worker of all the DX there was to be worked, is one of the group. As an added bit of novelty, if the foregoing achievements were not enough, he successfully wooed and won the first licensed YL operator in the ninth district, whose call W9BA lists above his in the call book and in all other relations thereto.

You will also find in this roster the DuPage County Emergency Co-ordinator, W9JO, also a retired QSL manager; chairman of the American Legion radio committee, W9PAE, formerly one of Minnesota's Minute Men in the old spark days under the call W9EFD.

On closer inspection you will find
(Continued on Page Eleven)

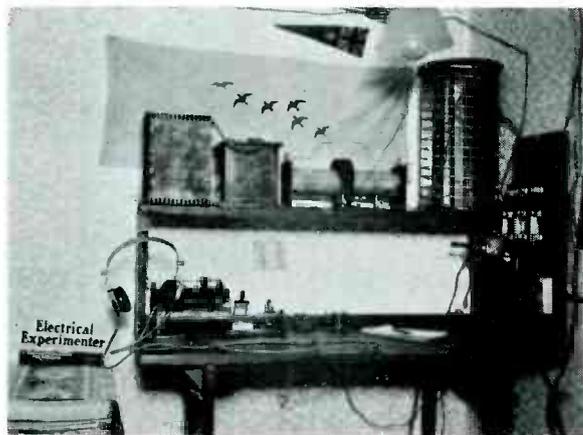
J. L. Hathaway

J. L. Hathaway, author of a recent A.T.E. Journal article on A.A.G.C. amplifiers which caused such widespread and "we-want-more" comment, is a member of NBC's Engineering Development Group and an ardent "ham" at heart.

The photo shows his first transmitter and receiver shortly after the lifting of the amateur ban following World War I. He operated 9AMB, a 1 kw spark rock crusher, until installing one of the first c.w. and phone outfits in the Rocky Mountain region. He lists among his ham contacts 47 States, Europe, South America, Australia, and New Zealand. His storm rescue work in 1922 between Denver and Casper, Wyo., was dramatized on an NBC Blue Network program entitled, "Blizzard on Rails."

Since devoting himself to development work, his ham activity has been curtailed—but for a good cause. His contributions to modern, "taken-for-granted" present-day broadcasting are many and varied, and in future issues we hope to

present them to our readers throughout the Western Hemisphere.



Robert M. Morris

Leaves Engineering Department to Become Business Manager of NBC's Radio Recording Division

Robert M. Morris is a native of Washington, D. C., where he lived until 1920. After attending Western Reserve University and the Case School of Applied Science, Mr. Morris was employed in the installation and testing of



Robert M. Morris

machine switching telephone equipment by the Western Electric Company. He became a member of the operating staff of Broadcasting Station W E A F in 1924 and was located from then until 1927 at the radio transmitter then operating at 463 West Street. Since 1928, when the NBC development laboratory was established, he has been in charge of all technical ex-

perimental and developmental activities of the National Broadcasting Company. This has included administration of television activity, which has been on an experimental basis up to the present time, as well as of the laboratory and its many functions. Mr. Morris is a member of the Acoustical Society of America, the Institute of Radio Engineers and the Society of Motion Picture Engineers.

Robert E. Shelby

Engineering Department Veteran of Twelve Years, Now Heads NBC's Development Lab in Addition to Former Duties

Robert E. Shelby was born at Austin, Texas, on July 20, 1906. He attended the University of Texas from 1923 to 1929, where he received the B.S. degree in Electrical Engineering and B.A. and M.A. degrees in Physics. In 1929 he joined the Engineering Department of the National Broadcasting Company, where he has specialized in television, UHF, and frequency modulation in the Development Group. From 1931 to 1935 he was in charge of the experimental television and UHF station in the Empire State Building and since 1935 has filled successively the positions of



Robert E. Shelby

Television Supervisor and Television Operations Engineer. In addition to his position in charge of the technical end of television, on March 11, 1941, he assumed the duties of Development Engineer. Mr. Shelby is a member of Tau Beta Pi, Phi Beta Kappa, Eta Kappa Nu and Sigma XI, and holds memberships in the Institute of Radio Engineers, American Institute of Electrical Engineers and the Society of Motion Picture Engineers.

The York Radio Club

(Continued from Page Ten)

W9GY, Jim Platz. Although a man of his size should be easily found, Platz is alleged to be the only member of the fraternity who has successfully taken a kilocycle apart, determined its contents, and put it back together again. A vague rumor has it that one of those kilocycles didn't get put back together in just the right shape and has been heard at random spots and times trying to find its way back home.

As hereinafore mentioned, blitzkrieg was nothing new to Y.R.C. and our "fuehrer" is none other than Dick Paige, W9NST. Judging by the ruthless elimi-

nation of all other Chicago area clubs in ARRL and local contests, Dick must have some fine points up his sleeve which Adolf might do well to investigate.

Whatever credit is due for the accomplishments of Y.R.C. must be apportioned among many who have worked in the interest of the club. It would be a gross injustice not to mention the memory of loyal, hard-working "Lefty" Robinson, W9MMU. Always on deck to climb the tallest trees, work on the mobile unit or put in long hours of operating, with modest wants and a great thankfulness for the few good things of life that came his way, Lefty's death in a highway accident added a name to the "silent keys" and left a vacant spot in

the York Radio Club that will not soon be filled.

Looking into the future we find, in addition to the Field Day preparations, an increasing interest in general emergency operation centering on a working agreement with the American Legion whereby the facilities of the York Radio Club will be available for use by the Legion in their nation-wide emergency relief program. By this means, the Legion has secured the use of a 2 kw portable generating plant and several complete portable stations which can be moving toward the scene of an emergency with a minimum of delay; thus . . . Ham Radio has taken another step forward in its service to the general public.

Who's Who In Chicago

(The Fourth of a Series)

By Tom Gootee

THE high school at Everett, Massachusetts, was built on a hill overlooking the long Atlantic coastline. And from the east windows—on any clear day in 1918—one could see countless ships of every description heading out from Boston to the four corners of the world. It was a sight that easily inspired a fifteen-year old boy to dream of far-off places, and resolve to some day visit those distant lands.

And because of all this, the life of one, Ralph Sterling Davis, was directed toward a long and successful career of travel and adventure—a life work of radio operating that carried him some 300,000 miles over water to almost every port on earth.

Ralph was born in 1903 at Chelsea, Massachusetts, and attended school there and at nearby Everett. He first became interested in ham radio late in 1914, but due to the high cost of radio paraphernalia his first complete transmitter was not on the air until a month before this country entered the war. Equipped with a one-inch spark coil and a galena detector, the rig operated under the call: 1-HU with a ten-mile working range. It took him a year to save enough money to buy the gear—selling papers, running errands—only to have it all stopped when the government banned amateur radio at the outset of the war.

But Ralph had the radio bug, and he still had a great desire to travel. So when he finished high school in June of that year he went to Boston and enrolled in the Eastern Radio Institute. Five months later he obtained his first Commercial Operator's License, and in December, 1919, set out to see the world.

The first job out of Boston was aboard the coastwise Clyde Line steamer, S.S. *Lake Ellenorah* — a 2,800 ton vessel that plied between Boston, New York and Jacksonville, Florida, with a general cargo. The radio equipment—under the call: K-E-P-P—consisted of a conventional 2 kilowatt Lowenstein Spark Set with the usual rotary and quenched gap. The receiver was a Marconi 106D crystal set, operated without benefit of vacuum tubes.

Ralph spent fifteen months on the ship, and the first "newness" of his

work soon resolved into daily routine. There was little to be done, aside from the usual weather reports, time signals, and occasional compass bearings—and nothing of a very exciting nature occurred during those fifteen months.

Realizing that he wasn't seeing very much of the world between Boston and Florida, Ralph quit the ship when it returned to Boston in February, 1921, and joined a freighter bound for South America.

The S.S. *West Jaffrey* was an 8,000 ton vessel on a regular run between New York and the west coast of South America. Ralph spent a year on this ship, and in that time managed to visit every western port of that continent: from Panama to Guayaquil, Ecuador,—



Ralph S. Davis

Callao, Peru,—Iquique, Antofagasta, Valparaiso and Arica, in Chile.

The freighter was equipped with a Lowenstein 2 kilowatt spark set under the call: K-O-C-X, but there was very little operating to be done and Ralph had more spare time than anything else. The ship carried a general cargo south, and hauled nitrates back to this country. With at least a few days shore leave in every port while cargo was loaded, Operator Davis missed few sights of the towns and cities visited. He recalls spending a very cold Fourth of July off Antofagasta, Chile, covered by a mid-winter blizzard of ice and snow—and a few months later at Lima, Peru, while watching a bullfight he was shaken up by a local earthquake. But aside from

such weather and geological disturbances, his trips to South America were more or less uneventful, though interesting.

By the spring of 1922 Ralph had seen enough of the south. He left the freighter at New York and joined the S.S. *Waukegan*, an old army transport that had been converted into a freighter for European service at the close of the war.

The ship was equipped with another Lowenstein 2 kilowatt spark outfit, and the first legal tube receiver: a Navy 501A. Prior to this time most of the operators had their own "tube adaptors" to use with the crystal receivers—and it was a relief to be able to "legally" use a tube receiver on the high seas.

Ralph made three complete round-trips with the *Waukegan* on its regular schedule; from New York to La Havre, Dunkirk, Rotterdam, Hamburg, and back to New York—a trip that would be a little hazardous in these days. Eight months later he quit this berth, and went to Massachusetts.

Out of Boston Ralph made his shortest trip—thirteen days on a fishing trawler. He signed on the S.S. *Tide*, made the fifty mile trip out to the Grand Banks and back—and then quit. That was all the fishing experience he needed for the rest of his life!

Then followed a year of work on oil tankers. Ralph first signed aboard the Standard Oil boat S.S. *Argonne* at Providence, on a regular run to Los Angeles by way of the Canal. The tanker was equipped with an old Marconi 2 kilowatt transmitter of some ancient vintage, and Ralph has since forgotten the call letters. Later he signed on the Gulf tanker S.S. *Swiftlight*, which ran between Providence and Tampico, Mexico. Ralph made two round trips, and the only thing he remembers about the *Swiftlight* is that it was equipped with a "Wireless Specialty" transmitter—one of the so-called "Fire-engine Sets" with a rotary gap in the antenna circuit, and a varying questionable power of one kilowatt.

In the summer of 1923 Operator Ralph Davis—with three years of varied experience under his belt—quit the tanker at Providence, and went down to New York in search of more exciting work. And for the purpose of this chronicle, it

should be noted that he definitely found the excitement he sought!

The S.S. *Mahomet* was a 9000 ton freighter with a long record of successful trading between New York and the Far East. Owned by the United American Lines, it carried a general cargo under a crew of forty men. Something about the ship must have appealed to young Operator Davis, for he signed on the freighter with visions of really "seeing the world"—which he did.

The radio shack housed his own bunk, and a 2 kilowatt Lowenstein spark set under the call: W-T-U-U. The receiver was a regulation Navy 501A type.

Thus equipped, Ralph made two complete trips around the world on the freighter *Mahomet*. Sailing east from New York the ship touched at Gibraltar, at Genoa, Italy, at Beirut, Syria, and at Port Said; then through the Suez Canal and the Red Sea to Aden, down the west coast of India to Ceylon; then due east to Java and Sumatra, and north to Singapore and Indo-China; then out across the Pacific, through the Panama Canal, and back to New York. This same round-the-world cycle was completed again in the fall of 1923.

A third trip was made over the same route as far as Singapore in the early winter of 1923, but the freighter returned to New York by way of the Mediterranean and the Atlantic. And then the memorable fourth trip was begun—but never completed.

On the last voyage of the S.S. *Mahomet* the freighter left New York and made the long trip to Singapore without incident. The ship returned by way of the Suez Canal and the Mediterranean, and its last port of call was Gibraltar. There the *Mahomet* took on supplies for the cold journey back across the Atlantic.

It was late in February, and the entire North Atlantic was rocked and swept with cold blizzards and the worst winter storms of many years—a hazard to ships much bigger and stronger than the *Mahomet*. But the freighter plowed into the maze of stormy confusion on schedule.

About 300 miles southeast of Newfoundland the ship ran into the worst of the storms, and the freighter rolled back and forth through the pounding sea with more and more effort. It was a bad blow—but the crew had been through other storms just as rough, or even worse. It was all a part of their job. And then the unexpected happened. One or two of the steel plates opened up along the water-line—broken up and smashed by the ceaseless pounding of

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The attenuation controls are constant impedance, zero insertion loss networks each having 10 steps of attenuation. The Daven Series 6900 Impedance Matching Networks ("plug-in" units) may be obtained in a wide range of impedance and loss.

TYPE	Z	RANGE	CIRCUIT	PRICE
T-690-A	500	0-110 Db. in step of 1 Db.	"T" Network	\$60
H-690-B	500	0-110 Db. in step of 1 Db.	Balanced "H" Network	80
T-690-C	600	0-110 Db. in step of 1 Db.	"T" Network	60
H-690-D	600	0-110 Db. in step of 1 Db.	Balanced "H" Network	80
T-692	500	0-111 Db. in steps of 0.1 Db.	"T" Network	80
H-692	500	0-111 Db. in steps of 0.1 Db.	Balanced "H" Network	100
T-693	600	0-111 Db. in steps of 0.1 Db.	"T" Network	80
H-693	600	0-111 Db. in steps of 0.1 Db.	Balanced "H" Network	100

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the waves. Then there was some excitement! Pumps were set up below-decks, and part of the crew stayed below to keep the holds from flooding.

But the *Mahomet* wallowed through the steep swells with the water beating and hammering on its steel hull—and soon more of the plates opened up.

Operator Davis, alone in the radio shack, was not entirely aware of the seriousness of the occasion. It was all he could do to keep loose equipment and his own belongings from sliding back and forth across the tiny cabin.

Then the Captain came off the bridge to the shack, left the exact position of the ship, and ordered Ralph to send an emergency "stand-by" message. Out on the 600-meter wave went the W-T-U-U "stand-by" call, and almost immediately came replies from other ships—most of them hundreds of miles away.

The nearest answer to his call came from the British liner *Caledonia*—180 miles westward. With a somewhat nervous hand, Operator Davis established communication with the operator, and the *Caledonia* hove to and awaited further word from the stricken *Mahomet*.

Two long hours went by like two centuries. Ralph stood by at the transmitter, while the crew battled the intruding sea below decks. But it was a hopeless task. More and more plates opened up under the battering impact of the sea—and holds were rapidly flooding.

When the ship began to settle, the Captain ordered Ralph to send out the long-awaited S-O-S call. Immediately there was a cessation of traffic on the 600-meter band, as Operator Davis carefully tapped out the position of the sinking *Mahomet* and the urgent call for help.

The *Caledonia* answered his call almost before he had finished. She was putting about in the rough sea to come to their rescue!

Ralph took down the last message from the *Caledonia* through a barrage of static, and then sent a brief acknowledgment back to the British vessel.

The events after that now seem like a confused nightmare to Ralph, and he only vaguely remembers what happened. The *Mahomet* rolling back and forth—and settling lower every minute—made walking hazardous on the wet deck. The crew was manning the two lifeboats—twenty men in each boat. Then the ship's power and lights went off. The two boats were hoisted down the side of the settling, sliding *Mahomet*—and then they were free of the stricken vessel!

But the open sea was even rougher and more cruel to the two lifeboats.

They were tossed around in the angry swells like matchboxes, and the heavy spray quickly froze on everything. Through the spray and snow they watched the *Mahomet* gradually sink beneath the storm-tossed surface of the water—and then they were quite alone.

The men gave little thought to the *Mahomet*. They were mainly occupied in keeping themselves from freezing—and wondering if the *Caledonia* would find them in the darkness of the storm. Their clothing froze under the spray that continually drenched them, and the men could only sit and wait.

Hour after hour dragged by, and Ralph confesses that most of the men and himself doubted if they would ever be found in such foul weather on a rough sea. But eighteen hours later the huge liner *did* find them, close by the spot where the freighter had sunk.

The men were hoisted aboard the British ship one by one—their clothing frozen stiff, they were unable to move by themselves. Aboard the *Caledonia* they were immediately hospitalized—and gradually thawed out. Only two of the crew died of pneumonia.

A few days later the *Caledonia* docked at New York—and young Operator Davis found himself a hero! The New York Times carried his picture and a long write-up of the disaster on its front page. But Ralph was more interested in getting his feet back on terra firma—and he resolved then and there that he was through with the sea! Enough was enough, and he knew when to quit!

But exactly three weeks later an operator named Davis signed on board the United Fruit boat S.S. *Zacapa*—and Ralph's good intentions were all shot to pieces! The *Zacapa* was on a regular fruit run between New York, Havana, Kingston and Central America: Puerto Barrios, Guatemala,—Tela, Honduras,—and other United Fruit stops.

Ralph made just three and a half round-trips on the *Zacapa*. In June of 1924 he left the boat at Puerto Barrios, in Guatemala, and took a job at the United Fruit land communications station there—his first job at a fixed radio station. And there he spent two years—operating the 20 kilowatt 2800 meter station: U-F. There were six other operators working at the Puerto Barrios station, due to the large amount of traffic handled there, so Ralph was far from lonesome—and usually very busy. The station worked duplex with the big United Fruit station in New Orleans, and relayed a great deal of traffic for all of the other stations in Central and South America.

But his feat of working there for two years makes Ralph Davis eligible for a heroism medal indeed! Puerto Barrios is a tiny scrubble of decadent civilization surrounded on one side by miles of impenetrable jungle, and on the other by backwash from the Caribbean. It might best be described—by one who has been there often—as an ignominious, purulent growth on a reasty swamp bordering the sea.

However, Ralph apparently enjoyed the whole venture—even when he and another operator, Ray Booth, were lost for two days in the jungle several miles from Puerto Barrios. It was there, incidentally, that young Mr. Davis passed his twenty-first birthday—lost in the wilds of Guatemala.

In 1927 he was transferred from Guatemala to Florida—at his own request—where he was an operator for the Tropical Radio station W-A-X, near Hialeah. Ralph worked there for over a year, which probably accounts for his interest in horse-racing—being that close to Hialeah Park. In 1928 he weathered the famous Florida hurricane of that year without particular incident. He was on duty at W-A-X during the "blow"—but the only damage done to the station was the destruction of one of the towers in the high wind.

Ralph pulled up his Florida stakes and headed for Chicago late in 1928, and worked several months as a Radio Service Instructor for the American Bosch Company in the middle west.

But after a few months he decided to return to radio operating. With visions of South and Central America urging him on, he decided to head southward again. Before leaving Chicago, however, he visited the broadcast station K-Y-W, then in the Congress Hotel, and took a liking to the work. After an interview with Manager Wally Evans and Chief Harold Randall, he accepted a position with K-Y-W and worked there for two years.

Shortly after the National Broadcasting Company opened its first studios in Chicago, Ralph Davis came to N.B.C., where he has since remained—worked up from a studio operator to Recording Supervisor.

He no longer dreams about distant lands and far-off places—as he once did in a schoolroom back in Massachusetts. Having achieved some measure of success as a world traveler and vagabond, Ralph Davis now thinks about such things as gardens, "a little place in the country," raising two boys, a happy married life—and amateur radio.

K. B. Warner's Annual Message on Behalf of the A.R.R.L. to the 'Hams' in the Broadcast Industry

TO YOU, who are amateurs as well as professionals, it is a matter of satisfaction for me to say that in the present national defense training effort the amateurs are again rendering an excellent account of themselves.

Of course, to a considerable extent this was expected. We have always insisted that the amateur body constituted a great reserve of trained communications personnel, ready and waiting for any civil or military need. There was a time at the beginning of our military training program, however, when certain of our training officers were inclined to dispute the adjective "trained." At best, they said, amateurs were semi-trained; even the best of them required special training before they could be turned loose on vital military communications jobs. In fact, some of them said, it takes an average of two months to put the finishing touches on the ordinary amateur who joins the service, while we can take a raw recruit from behind the plow or factory bench and turn him into an operator in little more than twice that time. Was the vaunted superiority of the amateur as great, then, as we had claimed?

We replied "Yes," and we believe that time will prove that we are right. Certainly our information on the experience in the Canadian Signals indicates the value of the amateur. The Canadian training officers have discovered that there is more to radio operating than sitting down at a practice table and putting down on paper perfect code as it comes from an oscillator. They have found that the exigencies of actual operation in the field impose further demands of training and experience that greatly lengthen the required training time for the new recruit. They have found that it takes another couple of months to instill in a new operator the ability to follow a wandering signal around the dial with the left hand while pecking out the copy with the right. And it takes still more months to develop the concentration necessary to dig out one weak signal in the middle of murderous QRM and hang onto that signal like grim death and piece together what it says.

The amateur—even the fellow with relatively short operating experience—knows these things inherently. He encounters them every day in his ordinary operating experience. He is accustomed to digging weak signals out of vicious QRM and to handling traffic under conditions seldom if ever encountered in ordinary commercial service. These are the qualities that make him so valuable in military work—where weak signals and interference through enemy "jamming" will be part of the regular radioman's diet.

Even though we expected this to be the case, it is none the less gratifying to find it proved so conclusively by actual experience. You can be proud of the fact, too, for, just as you have shown that hams make good broadcast engineers, our fellows in the services can be counted on to show that they will make good operators on behalf of the national defense.

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- Broadcasting station WCAF (3rd unit) and erection of antenna towers, Port Washington, Long Island
- Broadcasting station WJZ (1st unit), Bound Brook, New Jersey
- Broadcasting station WJZ (2nd unit), Bound Brook
- WJZ studio renovation, 33 West 42nd Street, New York
- Removal of old WJZ towers from roof of 33 West 42nd Street
- RCA Technical and Test Building, Van Cortlandt Park South, New York
- RCA receiving station, Belfast, Maine
- RCA tuning coil and mast foundations and anchors, Tuckerton, New Jersey
- RCA short wave station and cooling pond, Rocky Point, Long Island
- Foundations and erection of towers and masts, Rocky Point
- RCA community house addition, Rocky Point
- Additions and alterations, administration and development buildings, Rocky Point
- RCA receiving station and additions, Riverhead, Long Island
- RCA alterations, Bush Terminal, Brooklyn, N. Y.
- Mast erection, roof of 30 Broad Street, New York
- Mast erection, roof of 65 Beaver Street, New York
- Alterations, RCA Communications Building, 66 Broad Street, New York
- Erection of NBC television antenna on dome of Empire State Building, New York
- Design and erection of television relay tower, Hauppauge, Long Island
- WABC guyed tower erection and foundations, Mountain View, New Jersey
- American Radio News tower erection and foundations, Carlstadt, New Jersey
- WEVD mast erection and station alterations, Brooklyn, New York
- Research laboratory for Major Edwin H. Armstrong, Alpine, New Jersey
- F-m Tower (design and erection) Station W2XMN, Alpine

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The Photos

show some of the A.T.E. 'Hams' and their calls. Refer to the 'Ham' Directory starting on the next page for their operating frequencies, etc.



KFI-KECA NEWS

By H. M. McDonald

MARCH again and another "Ham" Edition. A checkup indicates that there are sixteen licensed amateurs among the twenty-eight Engineers here, one less than last year, and that only ten of them are active.

We lost one of our most active amateurs when Ray Walling, W6OMN, was called to active duty in the Naval Reserve. And he'll be missed by that group of ex-Navy and Merchant Marine men who get together every Wednesday night at 7:30 on 3890 kc. to chew over experiences back in the Teens and Twenties. If you care to swap stories, listen for W6BP, W6AK, W6AV, W6KTQ and W6BIH.

Pete Dilts, W6BH, replaced his ECO with the old reliable 7152 kc. crystal and is stayin' put. Says every time he used the ECO to answer a DX call he found a thousand others there with him and became fed up with the jamming.

Clarence Seamans, W6GP, after working half the world with his three (3) watter, has once more lost interest in hamming. When he feels the bug is about to bite he pulls out the mill and copies press until the spell has passed.

Ray Moore, W6ARX, has constructed his own television camera and is putting pictures out on 112 mc, 10 watts.

Harold Christensen, W6KLU, very active when time permits, has just sold his 101X and is about to yield to the RCA ad in the Journal and purchase an AR-77.

George Tokar, W6LXS, is a member of the American Legion (Dept. of Cal.) net. They drill nightly, starting at 8 P. M., on 2040 kc. Each member must check in at least once a week and about fifty do so every night. Tokar says they're very good on mobilizations and in emergencies, such as the quake in Imperial Valley two years ago.

When Dawkins Espy, W5CXH/6,



comes on the air it is usually for the purpose of testing another new transmitter or antenna. A brief description of his efficient low power transmitter, which can be built for \$25, mike and all, appears elsewhere in the Journal. Espy won the Hiram Percy Maxim award for 1939. The award, a trophy and \$100 in cash, is made annually to the amateur under twenty-one who has made the outstanding record for the year in amateur radio.

Seymour Johnson, W6OE, devotes much of his spare time to the Sheriff's Communication Reserve, a unit of the County Sheriff's Department, organized to render service in event of any major disaster or other emergency. Members of this volunteer organization, now five

years old, are licensed amateurs operating their own portable mobile transmitters, all identical, on a special frequency in the police band just below ten meters. At the monthly field days, disaster conditions are simulated and communication problems solved. They have rendered valuable service at forest fires, Army air-raid maneuvers, and many other events. The membership, now numbering fifteen, is to be increased to twenty-five. If any of the Hollywood men are interested in this type of civic work, Johnson will be glad to have them attend one of the monthly meetings to learn further details. Buzz him.

See you at the VWOA Dance in Los Angeles, April 18th.

A.T.E. 'HAM' DIRECTORY

Call	Name	Bands	Phone		Power
			CW		
W1PL/2	H. H. Wood Freeport, L. I.	75	Ph.		
W1ZL	Carl Warren Bridgeport, Conn.	10,20	Ph.,CW		50
W2ABD	Carlos Clark Rockville Centre, L. I. (Rebuilding)				
W2ADD- W2LVX	Paul Reveal Jersey City, N. J.	20	Ph.		250
W2ADL	R. W. Pickard East Orange, N. J.	10,20,40	CW		300
W2ADQ	Jim Shannon Sunnyside, L. I.	20	CW		750
W2AEB	Irving C. Grabo Glen Ridge, N. J.	20	CW		100
W2AID	M. D. Holland Bellmore, L. I.	20,40	Ph.,CW		75
W2AIS	H. P. Miller Mamaroneck, N. Y.	10,20,40	Ph.,CW		100
W2AK	Raymond F. Guy Englewood, N. J.	20,40,80	Ph.,CW		200
W2AKQ	S. L. Peck Freeport, L. I.	20,40,80			
W2ALB	G. M. Sellar Queens Village, L. I.	20,40,80	CW		300
W2ALD	Ray O'Neil	5,80	Ph.,CW		
W2AMG	Paul Gallant Rockville Centre, L. I.	20	Ph.,CW		
W2AMQ	Fred Walworth Flushing, L. I.		Ph.,CW		1kw
W2AMS	Henry Treger Westfield, N. J.	10,20	Ph.,CW		1kw
W2ARB	John J. Kulik Clifton, N. J.	20	CW		300
W2AUR	Ed. Stolzenberger Richmond Hill, L. I.	20	Ph.,CW		120
W2AWU	J. H. Gullans Plainfield, N. J.	2½	Ph.		20
W2BIH	A. A. Walsh West Englewood, N. J.	5	Ph.		150
W2BRR	T. J. Buzalski Cranford, N. J.	20	Ph.,CW		
W2BNL	Edwin C. Wilbur West Englewood, N. J.	All Bands	Ph.,CW		300
W2BWT/6	R. F. Schuetz Hollywood, Calif.				
W2BXY	Ed Gundrum Union, N. J.	20,40,80,160	Ph.,CW		500
W2CEF	Walter E. Mullaney Woodridge, N. J.				
W2CHG	J. A. Wies Jackson Heights, L. I.				
W2CRA	A. J. Waddell Yonkers, N. Y.				
W2CSX	Harold P. See St. Albans, L. I.				

(Continued on Page Nineteen)

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Phil Falcone Joins Armed Forces

IT HAS BEEN said that the mills of the gods grind slowly but exceedingly fine. The mills or wheels we are referring to particularly are those which started turning last October when the National Draft Lottery was held. These wheels reached another high point on March 7 when Phil reported with a

group of selectees for military training for a period of one year under the terms of the Selective Service Act.

Falcone joined the NBC on June 28, 1929. He served as a page and later as office assistant in Mr. Hanson's office. In July, 1934, he was assigned as an apprentice in the Engineering Department.

After making the rounds of the various groups of the New York Division of the Engineering Department he was assigned as a full-fledged Studio Engineer on July 21, 1935. Since that time he has been one of the most popular and valuable men on the evening watch, handling a representative group of commercial programs. His absence will be felt by his associates as well as those having regular business during the evening hours.

Prior to his induction, an impromptu farewell party was tendered him by a group of his associates in Engineering. The party was held after the close of business March 5, at Reilly's Tavern on 52nd Street. Yep, the same one made famous by song and movies. The affair started at 1:00 a.m. and wound up at the legal closing time in New York State, 4:00 a.m.

The entire back room was taken over and a fine time was had by those present. Cold cuts and refreshments were served. Chairman Sellar, with a flair for detail, started out by marking them up on the table-cloth. Got up to 4 and then switched from a pencil to a fork. In this manner they didn't stand out. Says Gerry, "It looks better this way." Butler performed acts of wizardry by snatching food out of the air, making the seals up in Central Park look like mere beginners. Many short speeches were made lauding Phil and wishing him the best. Frank Williams did a little judicious bragging, but his friends prevented him from going out on a limb by applauding loudly as soon as Frank got up to make his little boasts. Official photographer for the occasion was Ted Hahn, who had to be helped down from the chandelier after making the group shot.

The comic relief shot shows Walworth and Rojas after a successful foraging trip for food to toss to Butler as a test of his skill on larger items. Those things on his forehead were called "Corned Beef Detectors" by Rojas, and apparently they helped.

President Horstman graced the occasion with his presence, and later entertained a large group in his hotel room, after swearing an oath that his guests would not make enough noise to disturb the sick person that lived three floors away. A time check at this time indicated 5:20 a.m. The sleuths did not return.

The party was a success, and Phil left with the heartfelt best wishes of all and with the assurances that he will be welcomed on his return. Overheard by this reporter was the cryptic comment, "We should have these more often and without any particular occasion." 73's Phil.



(Photos by T. G. Hahn)

(Lower Right): Starting at the lower right and progressing counter-clockwise — Dickson, Waddell, Reid, Markle, Pawlek, Butler, Rojas, Sellar, Falcone, Bauer and Hiller

(Center Left): Rojas, Butler and Pawlek. Intelligent expressions no doubt caused by the refreshments which appear in this picture

(Top Right): Walworth, Hiller. Harry is telling a tall one. So tall he can't repress himself

(Present but not in pix: Bowman, Coleman, Shultis, and Prez Horstman)

(Lower Left): Rojas and Walworth. The successful hunters

(Top Center): Waddell, Dickson, Williams in foreground

(Top Left): Bauer, Falcone, Sellar. There was a lull in the joint

(Center): Phil Falcone

(Center Right): Glasscock and Fraser. Photographic proof that there are some of us with our heads in the clouds

A.T.E. 'HAM' DIRECTORY (Continued)

Call	Name	Bands	Phone CW	Power
W2CTQ	R. H. Davis Dumont, N. Y.	10,20	Ph.,CW	100
W2CUZ	Don Whittemore Yonkers, N. Y.	2½,5,10	Ph.,CW	90
W2DCB	J. J. Lombardi Baldwin, L. I.	20,40	CW	550
W2DEL	H. C. Mosher Schenectady, N. Y.			
W2DHA	W. J. Kelly Flushing, L. I.	20	CW	50
W2DIT	J. M. Flynn Wantagh, L. I.	20,40	CW	75
W2DWS	Hollis Young Yonkers, N. Y.			
W2DZR	H. L. Grelck Brooklyn, N. Y.	20	Ph.	600
W2EGD	C. A. Snell New York, N. Y.	20	Ph.	140
W2EOA- W2HXQ	Chas. Kibling Rye, N. Y.	All Bands	Ph.,CW	1kw
W2EP	Arthur C. Holub Union, N. J.	20	Ph.,CW	100
W2EYQ	Vic. U. Trevola Mamaroneck, N. Y.	40,80	CW	500
W2FED	J. V. Coleman Brooklyn, N. Y.	5,10,20	Ph.,CW	2
W2GSY	F. G. Connolly Bronx, N. Y.	5		
W2HAT	B. F. Fredendall Manhasset, L. I.			
W2HEJ	M. A. Lewis Ridgefield, N. J.	5,10,80	Ph.,CW	50
W2HIO	P. F. Falcone New York, N. Y.			
W2HJG	L. R. Tower Maplewood, N. J.	80	Ph.	150
W2HJY	Jim Carter Hollis, L. I.	20,40	CW	350
W2HVQ	Harold Bauman Elizabeth, N. J.	20	Ph.	150
W2HZO	Ralph J. Reid New York, N. Y.	10,20,80	Ph.,CW	200
W2ICX	R. A. Schlegel Manhasset, L. I.	10,20,40,160	Ph.,CW	750
W2IFO	Edgar C. Kahn Jackson Heights, L. I.	20,80,160	Ph.,CW	20
W2IGB	Robt. Massell Hempstead, L. I.	20,40,80,160	Ph.,CW	250
W2IHI	John N. Fricker Union, N. J.	20,40,80	CW	1kw
W2INB	Rod. D. Chipp			
W2IOX	R. G. Johnston Massapequa, L. I.	5	Ph.	10
W2IP	C. H. Campbell Mt. Vernon, N. Y.	All Bands	Ph.,CW	150

(Continued on Page Twenty-one)



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 5-meter experimental work — October, 1924
 the single-control superheterodyne — November, 1924
 the skip distance theory — April, 1925
 link coupling — May, 1925
 the Zepp antenna — June, 1925
 the single-wave-fed-antenna — July, 1925
 screen-grid tuned r. f. amplifiers — December, 1927
 high-C oscillator circuits — August, 1928
 100 per cent modulation — April, 1929
 the Class B r. f. amplifier — April, 1929
 dynatron frequency meters — October, 1930
 the matched-impedance doublet — December, 1930
 super-regenerative 5-meter receivers — July, 1931
 Class B modulation — November, 1931
 electron-coupled oscillators — January, 1932
 electron-coupled oscillators in superhets — April, 1932
 the Single-Signal superheterodyne — August, 1932
 high-efficiency Class-C amplifiers — September, 1932
 m. o. p. a. 5-meter transmitters — May, 1933
 the Tri-tet circuit — June, 1933
 Pi-section antenna couplers — February, 1934
 suppressor-grid modulation — March, 1934
 u. h. f. directive antenna arrays — October, 1934
 controlled-carrier modulation — January, 1935
 resonant-line u. h. f. oscillators — February, 1935
 "air-wave" u. h. f. propagation theory — June, 1935
 super-infra-generator receiver — November, 1935
 successful noise-silencing circuits — February, 1936
 inductive neutralization — July, 1936
 the Heterotone — November, 1936
 the see-saw noise silencer — July, 1937
 the wide-range crystal filter — September, 1937
 radio control of model aircraft — October, 1937
 infinite i. f. rejection — November, 1937
 amateur television data — December, 1937
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 the co-axial vertical radiator — January, 1939
 the Hetrofil — September, 1939
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THE AMERICAN RADIO RELAY LEAGUE, Inc.
 West Hartford, Connecticut, U. S. A.

SAN FRANCISCO NEWS

By Lee Kolm

DURING February illness struck the San Francisco group with full fury. Mrs. Guy Cassidy spent five days in the hospital with a serious sinus infection. Maintenance Supervisor Berg's wife likewise had an unpleasant stay in Providence Hospital, Oakland, and at this writing is still in a serious condition. Pneumonia took George MacElwain from work for a period of nearly three weeks, but at this writing he's up and around and in a few days should be as full of life as ever. We are sorry to report the passing on of Jim Summers' father. Frank Barron, the "silver fox of Burlingame," who was afflicted with an intestinal trouble, is just getting ready to leave Mills Memorial Hospital after a miserable three weeks. Both the Jefferson and the Kolm children picked up the smallpox, the aftermath of the children starting school.

The very practical Dan Williams, FE, is saving time these days by shaving while driving his car to work. A receptacle on the dashboard of the car is connected to a bank of "B" batteries to furnish the necessary current. . . . After a recent Saturday incident, J. A. O'Neil, Ref Reding, can qualify as an expert on sewage disposal. It seems he was the go-between from his basement's geysering floor drains and the street sewage lines for a two hour period. After about two hundred and fifty trips with a bucket he had the situation under control and, with the city sewer workers aiding, the clogged lines were reopened. This has nothing to do with his moving into a new home in about four weeks. . . . Don Hall, ME, reports that the new son, Donald Finch Hall, has caused but few sleepless night. It's all in the training, says he. . . . New Car Dep't: George Irwin, KGO, flashing by in his new Oldsmobile sedan. . . . Could a certain young lady be the reason Jim Summers, CS, is looking at new homes in the San Francisco side of the bay? Could be. . . . Harry Jacobs, SE, plans quite a celebration when the "Nemo" is christened. Refreshments and everything. Invitations should be forthcoming shortly. . . . San Francisco is plenty proud of KGO receiving the GE plaque. We don't believe any station has beaten the record of "Shorty" Evans and his crew, who kept the station on the air throughout 1940 with a loss of only thirty-one seconds. . . . The studio vacation list appeared early in February; the selections



More Top-Notch
A.T.E. 'Hams' that help
to make
American Broadcasting
the finest in the world



W2JJ

W2KBA

have stalled temporarily, with "nicotine Al" (George) Greaves, FS, holding up the line. . . . Reports have it that "Red" Sanders, FE, is not much of a pinochle player. For financial gain he should stay with poker, particularly baseball—twos and threes wild—if he wants our advice. . . . This column wishes to announce that Senator Thomas "Q" Watson, SE, has been appointed staff correspondent at O'Farrell and Taylor Streets. His first report reads, quote, ground-breaking sign removed from premises and a new sign indicates construction to start immediately, unquote. . . . We hear that Warren Andresen, SE, has just purchased a 4x5 Speed Graphic. The camera has everything on it but the

kitchen sink. Without a doubt, he has the most complete photographic layout in the SF Chapter. . . . Eddie Parkhurst, ME, is readying his house for sale. Looking for a larger place now that the twins are growing up. . . . Mark Dunningan, SE, had his problems during the recent rains. Water from his hillside backyard took a short-cut through his basement on the way to the Bay. Result was knee-deep mud around the furnace. Aided by a strong back, he hopes to have a drainage system in by the next rains. . . . Guy Cassidy, SE, boasts of a mineral well on his peninsula farm. I would say the iron content of the water was due entirely to the lost tools dropped into the well during the digging process.

A.T.E. 'HAM' DIRECTORY (Continued)

Call	Name	Bands	Phone CW	Power
W2IPG	W. T. Pooler Astoria, L. I.	5,20,40	Ph.,CW	800
W2IUU	G. R. Butler Brooklyn, N. Y.	40,80	Ph.,CW	100
W2JDZ	F. R. Rojas Malverne, L. I.			
W2JJ	J. B. Knight, Jr. East Orange, N. J.	20	Ph.,CW	1kw
W2JRY	H. E. Wheeler Schenectady, N. Y.			
W2JTB	Don Hale Woodside, L. I.	20	Ph.	100
W2BKA	V. S. Barker Great Neck, L. I.	20	CW	600
W2KDF	S. K. Heffernan Kew Gardens, L. I.	10,20,40,80	Ph.,CW	200
W2KJI	R. J. Plaisted	40	CW	400
W2KJJ	Geo. Riley	All Bands	Ph.,CW	10
W2KGO	Jim O'Connor Kew Gardens, L. I.	20	Ph.,CW	100
W2KP	N. Hagmann Plainfield, N. J.	2½	Ph.	60
W2KPG	Howard Donniez Maplewood, N. J.	20	Ph.	100
W2KSC	Alex Stanford	40,80,160	Ph.,CW	30
W2LEJ	Dick Dorrance New York, N. Y.	20	Ph.	
W2LPK	Wm. H. Glasscock New York, N. Y.	20	Ph.,CW	300
W2LV	Robert M. Morris Millburn, N. J.	10,20,80	Ph.,CW	800
W2LXR	Paul Anderson Scotch Plains, N. J.			
W2LZD	Ed Scatterday Sunnyside, L. I.	20,40	CW	400
W2MMS	Wm. K. Storrs S. Plainfield, N. J.	10,20,40,80	Ph.,CW	200
W2MSC	Joe Conn New York, N. Y.	20	Ph.	100
W2MTT	Wm. States Jackson Heights, L. I.	20	Ph.	200
W2ND	Chas. A. Younger Hillside, N. Y.			
W2NAZ	Lenore Kingston Conn New York, N. Y.	10,40,80	Ph.,CW	100
W2NX	Ed. Costello Baldwin, L. I.	10	Ph.	150
W2SH	Herman Berger Irvington, N. J.			
W2SJ	R. K. Strong Scotia, N. Y.			
W2VI	Arthur Giomatteo Bellmore, L. I.	40	CW	75
W2VY	George W. E. Shields Merrick, L. I.	10,20,40	Ph.,CW	750

(Continued on Page Twenty-five)



**FM/AM Reception
by a Turn of the
Bandswitch With
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A NEW 1941 Hallicrafter designed FM/AM Tuner with the No. 1 band covering all frequencies used by amplitude modulated broadcast stations and the No. 2 band covering frequencies used by high fidelity modulated broadcast stations. The model S-31 Tuner combines both circuits and changes from FM to AM with the bandswitch. 8 tubes, power output 130 milliwatts undistorted, power consumption 120 watts, operates on 115-124 volt, 60 cycle AC. Model S-31 Tuner complete with 19" x 8¾" rack panel, metal cabinet and tubes, \$69.50.



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Designed for use as a companion to the FM/AM Model S-31 Tuner. Delivers 25 watts of high fidelity audio power to either speaker or 500 ohm load. 6 tubes, fidelity 2 DB from 50 to 15,000 cycles gain, channel No. 1, microphone (high impedance) 96 DB, channel No. 2, phone (low impedance) 60 DB, power output 25 watts, power consumption 120 watts, output impedance No. 1, 500 ohms; No. 2, 8 ohms; No. 3, 4 ohms. Dimensions: Panel 19" x 8¾" x 10". Complete with cabinet and tubes \$49.50.

Washington News

By A. R. McGonegal

WASHINGTON'S greatest radio event, the Fifth Annual A.T.E. Dance, passed out into history (accompanied by numerous engineers) on the night of February 21. The affair was held this year at Washington's smartest hotel, the Carlton, with music by Jack Minevitch and the NBC Dance Orchestra. Practically everyone in Washington NBC was present, as well as representatives of the engineering departments of the other Washington stations, New York's television group, and the Long Lines Department of A.T.&T. Starting at 10, the dance broke up around 2 a.m., giving WRC and WMAL engineers and announcers a chance to get in a rhumba or two after those stations had signed off. Most of the crowd gathered for breakfast afterward at a local hamburger emporium.

Allen T. Powley, Washington Chapter Chairman, and S. E. Newman, Secretary-Treasurer, were unanimously re-elected to office at the regular monthly

Chapter meeting, March 13. Dorson A. Ullman, Control Supervisor and past Chapter Chairman, was appointed Washington Journal Correspondent by Chairman Powley. Powley and Newman have done a fine job during the past year and Washington is fortunate in having their services for another term. Mr. Ullman has my best wishes and heartfelt sympathy.

Transfers involving almost 25 per cent of the engineering staff were announced on March 1. John Rogers, WRC-WMAL transmitter man, and Bob Chapman, Maintenance, exchange places. Clarence Allen, of Maintenance, goes to Studio, and John Stetson, of Studio, to Maintenance. Bill Simmons, of WMAL transmitter, is transferred to Studio and your ex-correspondent takes his place at WMAL.

Washington's new recording installation was completed during the past month, with the exception of dubbing tables scheduled for later delivery. Two

Presto 8-A tables and two Scully Master Recorders are fed by ND-45 and 46 amplifiers, with program feed controlled by relays and switching equipment similar to that used in New York Recording. Spare recording amplifiers, dubbing amplifiers and playback equipment complete the layout. Installation was handled by Beverly Fredendall and Elmer Mead of New York Audio Facilities, assisted by the local Maintenance group.

The directional array at WRC transmitter is in the final stages of tuning and should be ready to take the air on 980 kilocycles, WRC's new frequency, when the general frequency change takes place on March 29. Messrs. Duttera, Fitch and MacMillan of New York Radio Facilities Group have been in Washington for the past month, handling the tuning and field-strength measurements.

On the other side of town at WMAL transmitter, the finishing touches are being put in. Landscaping is going forward, odds and ends of painting and wiring are being done, a railing now divides the main room into operating space and visitors space, and a spare-tube display case lighted by fluorescent lamps has been installed. Operation at the station, now in its second month, has settled into a regular routine. WMAL is one of the fortunate few whose frequency remains the same after March 29.

Walter Godwin, the car-a-year man from the studios, is looking at Chryslers this time. If he falls, that will make six Chryslers in Washington Engineering. And Dorson Ullman, who will write next month's Washington News, is driving a Lincoln that is so long it costs ten cents to park at a parking-meter.

The Saturday night skating parties which furnished so much fun for Washington engineers last season have been organized again. The first of this year's groups skated at Chevy Chase Ice Palace on March 1, afterward visiting Eddie and Anne Burg's for hamburgers and highballs. The second party was held March 15 and was entertained afterward by Waddy and Judy Wadsworth. Some unexpected skill on the ice was displayed by several members of the crowd, and remarkably weak ankles by one or two others.

This is the last column your reporter is to write, after nearly two years of doing Washington Notes. It's been hard work at times, but a lot of fun, too. Your new Washington Correspondent, D. A. Ullman, is in an excellent position to gather news, and is an unusually capable writer. I know he will do a fine, thorough job; that is the way he does everything. Lots of luck, Dorson.

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natural bass . . . crisper, cleaner highs. Pre-emphasized high frequency response reduces surface noise well below audibility. Output of the 88-A is 50 watts with 1½% distortion. Gain is 85 db. Noise level is 45 db below zero (.006 W). Use the 88-A in place of your present amplifier. You'll notice a tremendous improvement in your recordings. Your present Presto 1-B or 1-C cutter can be calibrated with an 88-A amplifier at a nominal charge. Catalog sheet on request.

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The Feminine Touch

By W2NAZ

RADIO WIDOWS are getting fewer and fewer. Many an XYL in the background has in self-defense exchanged the title of "QR-EMMA" for a licensed call and is now giving the OM a run for the rig. The growing number of YL operators has become known through the organization of the Young Ladies' Radio League, which has already celebrated its first anniversary by an energetic QSO party. The YLRL is a result of the overwhelming response to Ethel, W7FWB's wondering letter published in QST as to how many feminine fists there were on the air. Enthusiasm unleashed and the YLRL burst into existence. Now it boasts 205 members in the U. S. and possessions . . . with the ninth call district leading, there are fifty-four YLS there. Five VE's by correspondence let



W2NAZ

us know that amateur radio is very much in their thoughts, if not on the air.

The monthly paper, a lively publication called the YL HARMONICS (edited by W9NBX the first year, now W9DBD) shows that a large percentage of the membership prefer CW to telephonic chatter. High traffic scores should suggest to scornful OM's that the gals take their operating seriously.

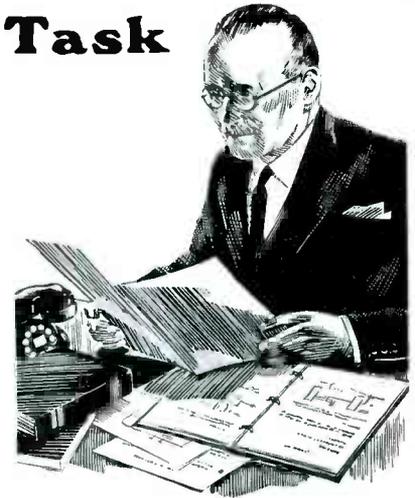
The club is highly active, sponsoring many contests, several in conjunction with the Forty Traffic System. Each band has its own YL net, where seek-

ers of WYLAS are learning to find the ladies of elusive states. Several operators are clamoring for such certificates to be printed up. Each district has its chairman, and in the larger cities local YL clubs have started—object, to help other young ladies to get their tickets, as well as to increase their own code speed and technical knowledge. The Cleveland Chapter is leading a movement to organize with the Red Cross for emergency work.

It's true that many of the girls enjoy building their own rigs, but as many of them have skillful OM's, there has been no requirement that the gals handle a soldering iron next to the egg beater. If you ask a CW operator if she be OM or YL (cuz her name is mighty peculiar) she'll tell you she's a YL . . . and probably explain that the YLRL calls all its members that, whether they wear pig-tails or have six grandchildren. The title XYL is for the unlicensed wife of an OM, and makes a nice distinction. Present ambition is to encourage as many XYL's as possible to go down for a ticket of their own. And if you hear thirty-three tossing around on the air, don't send it to a YL or you'll be thought a sissy. Thirty-three is their own special term of friendship between the members, and there is much cause to use it. Many fine friendships have been made through the YLRL, and it is highly probable that some of the best chocolate cake recipes in the making have been sent from East to West just in time for the OM's dinner. The one OM who joined the YLRL was found out in a hurry, and they want it strictly understood that this club is for "Ladies Only." However, you'll find them very willing to meet the boys on the air and report the latest doings in the YLRL circle. The girls plan to meet in person next September in Chicago for the first YLRL Convention. News of this will probably be sent to the amateur world by W8TAY . . . the most efficient publicity director of the club.

Countless dinners may be scorched and many bridge tables deserted, as it seems the YL's have gone serious. They want it known that they are ready, willing and able to do their part for Amateur Radio . . . their slogan is QRV—I am Ready. 73.

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WJZ, Bound Brook

By Charles (Joe) Colledge

THE recent sleet storm raised havoc with our short wave operations. In spite of the heavy coating of ice and our long open wire feedlines, the only material damage was one fallen antenna, that was slated to come down anyway. We managed to keep the transmitters on, but it was a case of 50 KW out and 50 watts in the antenna—maybe. Incidentally, the new 50 KW WRCA transmitter went into service about the first of the year with excellent results. Our other two 35 KW transmitters are rapidly being converted to 50 KW by Carl Dietsch and his gang despite the difficulty of getting orders filled. Dan Stair, Station Engr., is around supervising the job and making sure Carl doesn't get any ideas about borrowing parts from JZ.

Art Lindstrom, who is always in love, and going some place but never getting there, just had a flock of payback days off with elaborate plans to visit Florida. (I hear he bought a sun lamp.)

Johnny Gullans will soon be moving into his new house. When the bids came in, Johnny figured he had better quit fishing long enough to save some cash by

wiring the place himself. The result is he has an outlet every place you look and plenty you can't even see plus enough conduit going to his ham shack over the garage to run a couple California (Lorenz) kilowatts.

Speaking of wiring, Henry Treger talked a couple of the riggers into erecting a tower for his new super de luxe beam. Hurricane Henry, who won fame but not much fortune by climbing the stack of the S.S. Dixie to rig an SOS antenna when she was blown on the Florida reefs, is out working on the boys again to rig up the beam, but it seems the riggers ain't drinking them suds these cold days.

The boys in New York may not know where Bound Brook is, but the stork does—evidenced by the fact that Stanley Crabtree and "Dan" Danielsen are the proud Pa-Pas of two baby boys—named Jefferies and Robert. Stanley is thinking about buying himself a house, and Dan, who built one last year on an acre near the station, is pondering on the purchase of a cow.

After calling his landlord a lot of nasty names for five years the guy got mad and sold the house, so Willie Storrs is going to build one of his own. To date the architect has submitted three sets of plans, but none of them suit Bill.

William has definite ideas about that bar in the basement, so the architect had better design something over it.

Dan Stair, Stanley Crabtree and myself recently gave way to boyhood desires by buying ourselves 22-cal. repeating target rifles with peep sights et al. We haven't had much good weather for practice, but ready to take on all comers in a little feudin'.

Nick Hagmann alternately quits ham radio for photography and vice versa, but is now hot on 2½ meters. Incidentally, will someone in New York interrupt Whittaker's transmissions with the Ethereal long enough to get him to shift his frequency? It seems as how the local boys are getting a lot of QRM muttering about pat rummys.

If any of youze guys got any old stamps you don't want, please send them here to Paul Anderson and perhaps he'll stop marking up our mail. Every time we get a letter there's an arrow pointing to the stamp with a question mark and the initials P. A.

Larry Alexander, watchman, general handyman, etc., keeps himself busy cussing out the RF gang for mudding up his nice clean floors.

Flash: Tom Bolger just got himself a car that will go from here to Philadelphia (100 miles) on seven quarts of oil!

Mounting the Portable in the Car

THE ham who is interested in portable mobile operations, or the station engineer whose duty it is to listen in on his station even when on the road, is usually faced with quite a problem when it comes to short-wave mobile reception. Unless the receiver is to be tied up exclusively for this service it is usually simply placed on the seat beside the driver and likely to take a nose-dive onto the floor in the event of a sudden traffic stop.

The stunt for which provision is made in the Hallicrafters "Sky Traveler" portable communications receiver, which permits it to be slung under the dash or removed in a few seconds, is therefore worthy of special note.

The mounting accessories supplied include a metal strap and two screw hooks. This strap is about 1½" wide, and 18" long and has a series of holes drilled in it to facilitate permanent mounting on the bulkhead behind the dash. At its lower end it is bent out at a right angle to provide a mounting foot on which the rear end of the receiver rests. In the center of this foot

is a keyhole-shaped hole into which a stud (in a home-made equivalent this stud might be a bolt with its head held



out from the receiver base by locknuts) on the bottom of the receiver slips and locks.

In the front edge of the top of the receiver two screw eyes are mounted and correspondingly spaced screw hooks are screwed into the bottom edge of the dashboard. Once these

accessories have been installed in the car the receiver is slipped into position by seating its rear stud in the slot in the mounting strap, then engaging its screw eyes in the mounting hooks on the dash. This three-point suspension is sturdy, it places the receiver in an operating position convenient to driver or passenger, and it permits the one receiver to serve as the car radio as well as in the home "shack", or to be transferred from one car to another (if one is lucky enough to be a two-car man).

The accompanying illustration shows the "Sky Traveler" mounted in this manner with the exception that "S" hooks form an extension link between the screw eyes and screw hooks. This is made necessary by the fact that it is mounted beneath the glove compartment in this case and space had to be allowed for the receiver's carrying handle. Mounting on the right side of the car brings the built-in speaker (its opening is on the side of the receiver) toward the driver and the antenna plug close to a cowl antenna mounted on the same side of the car. The antenna lead is seen plugged into the receiver at the

(Continued on Page Twenty-eight)

A.T.E. 'HAM' DIRECTORY (Continued)

Call	Name	Bands	Phone CW	Power
W2WY	G. R. Windham Jackson Heights, L. I.			
W2XEJ- W2XER	See W2CUZ			
W2ZA	G. O. Milne Woodridge, N. J.	10,20,40,80	Ph.,CW	800
W3ANJ	W. L. Goodwin Washington, D. C.	20,40,80	Ph.,CW	125
W3AOH	Henry J. Geist Stamford, Conn.	10,20,80	Ph.,CW	1kw
W3BST	B. E. Stahl Washington, D. C.			
W3CEJ	Frank Fugazzi Washington, D. C.	40	CW	
W3CKH	W. L. Simmons Washington, D. C.			
W3ESL	R. W. Chapman Washington, D. C.	5,80	CW	200
W3HAP	C. P. Sweeney Chatham, N. J.	20,40,80	Ph.,CW	300
W3HIH	Jon Larson Princeton, N. J.	20,40,80	CW	200
W3HN	S. E. Newman Washington, D. C.	20,40,80		1kw
W5CHX/6	W. D. Espy Hollywood, Calif.	All Bands	Ph.	500
W6ACX	James Ball (KGO)	20,40,80	Ph.,CW	350
W6ADI	J. W. Summers San Francisco, Calif.	160	Ph.	700
W6ARX	R. M. Moore	2½	Television	10
W6BH	K. V. Dilts Los Angeles, Calif.	40	CW	60
W6CBK	G. W. Curran Los Angeles, Calif.	10,20		
W6CFQ- N6CFQ	F. Fullaway San Francisco, Calif.	40	CW	150
W6CRO	Henry Dutton (KGO)	20,40	Ph.,CW	350
W6DO	G. B. McIlwain San Francisco, Calif.	10,20,40	Ph.,CW	600
W6DOE	L. M. Jones Los Angeles, Calif.			
W6DSC	C. R. Estep Los Angeles, Calif.			
W6DZP	Earl Sorenson Hollywood, Calif.	20	CW	500
W6EVG	Myron D. Case (KGO)			
W6FHO	J. L. Smith Los Angeles, Calif.			
W6GIS	J. A. O'Neil San Francisco, Calif.	10,20,40	CW	500
W6GP	C. W. Seamans Los Angeles, Calif.	20	CW	3
W6GVE	R. O. Brooke Los Angeles, Calif.		CW	250

(Continued on Page Twenty-seven)

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Ham Radio, Circa 1915

By Tom Gootee

THIS might well be an almost-forgotten memory of the First Days of Amateur Radio—the trying days of rotary gaps and plate-glass condensers, the historic days of haywire experimentation, the days when radio had no status as a profession.

The three photographs shown represent just a few of those many early attempts to “talk on the air”—which in time led to the radio art of today. The three persons shown are still very much active on the radio scene—all now with N.B.C. in Chicago.

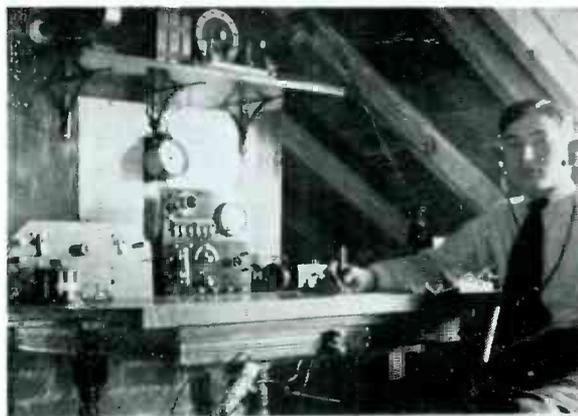
Ralph E. Brooks, in a picture taken of himself early in 1915, operated a rig in Indiana under the call 9-LD when he was still in high school. Of particular interest is the fact that every piece of equipment shown, with the exception of the Crystal Detector and Brandes' Phones, was made by young Mr. Brooks!—including the rotary gap, tuning coils and the condenser of plate-glass. And despite its haywire appearance, it served efficiently in its time, blasting the ether on 2,500 meters with a power probably not exceeding 10 watts.

The picture of Robert R. Jensen at his father's ham rig, 9-YD, was taken when young Robert was just three years old, in 1915. Partly visible in the background is part

of the one kilowatt rotary spark equipment. Tuning coils for the receiver are shown in the foreground. Robert is pressing a telegraph key, and seems to know what it's all about—even at such an early age. Coming events cast their shadows before!

The third picture shows T. E. Schreyer at his rig, 2-TS, at Staten Island, New York—taken several years later, in the spring of 1920. Familiar equipment to the older hams are the huge variable tuning-coils, and the Bunnell Gap.

And from such small beginnings as these three—thanks to the radio amateurs—came modern radio communication and broadcasting. It is hard for most of us who have lived and worked through this great era of development to realize that we have actively participated in the history of a great art, Modern Radio.



(Top): T. E. Schreyer, 1920

(Center): Ralph E. Brooks, 1915

(Bottom): Robert R. Jensen, 1915

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A.T.E. 'HAM' DIRECTORY (Continued)

Call	Name	Bands	Phone CW	Power
W6HSC	M. O. Smith N. Hollywood, Calif.	20	CW	250
W6HYB	W. E. Swartout San Francisco, Calif.	10,20,80	Ph.	150
W6IY	E. L. Parkhurst San Francisco, Calif.	40	CW	300
W6IX	F. W. Everett Los Angeles, Calif.	10,20	CW	800
W6JD- N6JD	C. W. Mason Los Angeles, Calif.	40,80	CW	20
W6JJ	A. E. Eldredge (KGO)	20,40	Ph.,CW	1kw
W6KIP	W. H. Alexander Los Angeles, Calif.	10,20,40	CW	500
W6KL	H. M. McDonald Los Angeles, Calif.	40	CW	3
W6KLM	F. L. Barron San Francisco, Calif.		CW	350
W6KLU	H. S. Christensen Los Angeles, Calif.	10,20,40,80	Ph.,CW	420
W6KM	W. H. McAuley (KPO)	20	Ph.,CW	50
W6KO- N6KO	E. C. Callahan San Francisco, Calif.	40,80		15
W6LXS	G. W. Tokar Los Angeles, Calif.	10,40,160	Ph.,CW	50
W6MY	E. E. Jefferson San Francisco, Calif.	20,40	CW	50
W6NAD	C. Peck San Francisco, Calif.	40,80	Ph.	200
W6OE	S. F. Johnson Los Angeles, Calif.	All Bands	Ph.,CW	1kw
W6OMN	R. Walling Los Angeles, Calif.	20,40,80	CW	225
W6OSH	Al Korb Hollywood, Calif.	10,20	Ph.,CW	200
W6PC	L. W. Packard Los Angeles, Calif.			
W6PHS	R. T. Parks (KGO)	20,40	CW	800
W6PKA	Carl Lorenz Hollywood, Calif.	10,20	CW	1kw
W6PBU	L. E. Fritzing Los Angeles, Calif.	20	CW	50
W6QED	Ted Hediger Hollywood, Calif.	10,20	Ph.,CW	300
W6RMW	L. L. Roe Los Angeles, Calif.			
W6SQ	K. G. Morrison San Francisco, Calif.	10,40	Ph.,CW	150
W6VH	James Brown Hollywood, Calif.		CW	200
W8CMY	F. C. Everett Brecksville, Ohio	80	Ph.	60
W8DBC	Grant Makinson Bedford, Ohio	10,20,40,80	Ph.,CW	1kw
W8DHF	A. B. Stewart Independence, Ohio	20,40,80,160		500

Call	Name	Bands	Phone CW	Power
W8DUC	C. S. Bidlack Cleveland, Ohio			
W8FOP	Lewis P. West Lakewood, Ohio	2½	Ph.	5
W8FP	Frank E. Whittam Cleveland, Ohio	20,40,80	CW	1kw
W8GLX	A. M. Butter Brecksville, Ohio			
W8GTG	T. C. Cox Cleveland, Ohio	20	Ph.	300
W8LEX	H. B. Caskey Cleveland, Ohio	2½		5
W8LJM	S. E. Leonard Cleveland Hts., Ohio			
W8LLG	J. D. Disbrow Bay Village, Ohio			
W8QUC	J. F. Hackett Berea, Ohio	20	Ph.,CW	700
W8RU	J. A. Cheeks Cleveland, Ohio	20,40,80	Ph.,CW	200
W9AFA	Ralph Brooks Downers Grove, Ill.			
W9AL	T. G. Bombaugh Downers Grove, Ill.	10,20	Ph.,CW	125
W9AT	E. A. MacCornack Wheaton, Ill.			

(Continued on Page Twenty-nine)

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KPO NEWS

By Morton Brewer

ONE active ham KPO boasts of is William H. "Bill" McAulay, W6KM. Bill's rig is novel in many respects, so much so, in fact, that we believe a brief description of his station will be of interest to the A.T.E. ham fraternity. Bill's location would make any ham green with envy—a two-story Colonial house sitting on top of a high knoll with a clean sweep to the four corners of the earth, and with space available to erect almost any kind of antenna. An upstairs corner room serves as the operating room. When conditions are bad and making contacts is slow, hard work, you can entertain yourself with the lovely view from the shack windows.

The RF portion of the transmitter is in the operating room, and consists of the conventional crystal oscillator and exciter, an Eimac 35T driver, and two Eimac 100TH's in push-pull in the final, all housed in a beautifully constructed metal cabinet, open all around except for the front panel. The RF ammeters in the transmission line are mounted on a sub-panel that is mounted behind the front panel and are viewed through a glass window in the front panel, giving the transmitter that old commercial appearance. Operation is on either 'fone or CW—600 watts input on 'fone and 1 KW input on CW. The modulator and power supplies are located in the attic. Both power and modulation transformers are home-made. The modulator

unit recalls the good old days. It uses four W.E. 212-D's in push-pull parallel running in class 'A and furnishes enough audio power to fully modulate the 600 watts input to the final. The microphone is a home-made condenser mike constructed many years ago and is still giving a good account of itself. In all fairness, it should be stated that the modulator and power supply in the attic are just as haywire as the rest of the station is orderly. We hope the fire insurance people never see the equipment in the attic!

The receiver is a home-constructed super, using plug-in coils. The dimensions of the cabinet are approximately 9" x 12" by 3 ft.! It is hard to believe that there is only one receiver in that box. The receiver was constructed back in 1930, but has been modernized several times to take advantage of new tubes, etc.

Bill's chief interest has always been in DX contacts, of which he has made many, and with plenty of them on 'fone, too. Working South Americans was a pet hobby, so a five element beam was erected for 20 meters that covers South America and the Orient. Since foreign contacts have been forbidden, a beam was erected to cover Honolulu and the Eastern U. S. Both are bi-directional. Rag chewing and traffic handling are carried out on 80 meters. The 80 meter antenna is a Marconi, vertical, and is suspended from a 70' pole. This antenna works against a radial ground system and has been found to be the best of several 80 meter antennas tried.

We believe that most anyone can go out and buy the parts for a ham station

and put them together and make them work, but it takes real ability and ingenuity to put together and make work a station like Bill's.

The receiver bug has bitten Robert Barnes, KPO transmitter engineer. He has recently purchased a Hallicrafters Model S22R all-wave receiver of which he is very proud. Incidentally, this is a very handy receiver for anyone wishing to listen on 600 meters occasionally. Bob is even threatening to get on the air!

Mort Brewer, KPO transmitter engineer, after many long months, has completed his home-built super and got on the air with a low-power rig long enough to work enough stations to renew his ham ticket.

Mounting the Portable

(Continued from Page Twenty-four)

extreme right. Because this receiver has its batteries self-contained there are no other connections to be made when the receiver is placed in position in the car.

The distance from bulkhead to dash varies with different cars and the rear mounting strap is therefore best anchored to the bulkhead by two bolts in its upper half. This allows the lower part to spring out as the receiver is drawn forward to engage with the front mounting hooks.

For the ham who has a suitable receiver but goes out "portabiling" only occasionally, or for others who have occasional use for short-wave receiving equipment in the car, this simple arrangement will be found just about ideal.

Engineering Chapter, New York

By R. A. Isberg

GREETINGS to all the hams and ex-hams from Engineering Chapter. Nearly all of our members are or have been amateurs; many were pioneers on the 200 meter band during the spark era.

The development group, until recently headed by Mr. R. M. Morris, W2LV, (who is alternate director of the the Hudson Division, ARRL), and the television group vie for honors for having 100 per cent amateur background. The television boys claim the greatest number of active stations with Knight, W2JJ; Barker, W2KBA; Sweeney, W3HAP; of the Empire State group, Conn, W2MSC; and Bauman, W2HVQ, of Radio City group, and Wilbur, W2BNL; Plaisted, W2KJI; States, W2MTT; of the telemobilers. The radio and audio facilities men seem to be too engrossed in their work and their travels to work more than the "legal three" every now and then. Morris, W2LV, and Wilder, W2KJL, are the chief torch bearers for the development group. Since Wilder is, relatively speaking, a new comer to our group, it might be

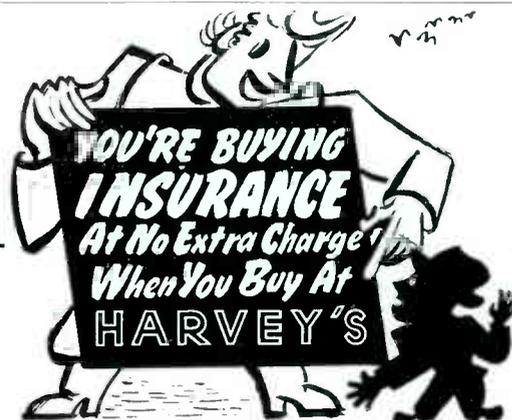
well to introduce him via this column. He has been a ham since 1924, attended RCA Institutes and got his commercial ticket, then attended M.I.T. and Berlin Technical High School in Germany. (Berlin Tech to study German needed at M.I.T. and to drink beer, hi!) Operated pre-Hitler D4CJ on 40 while in Germany. He was employed by Short Wave and Television Company in 1932, was associated with an electron optics development concern in New York, was chief Television development engineer for Kenrad, later heading the television tube development at National Union. Before coming to NBC was employed by American Television Corp., designing signal generators and receiving circuits. He is the author of quite a series of television articles in QST and in Electronics and represented ATC before the FCC in last year's fateful television hearings.

For several months since Conn, W2MSC, has been living in an apartment on Sixth Avenue near Radio City he has requested reports of broadcast receiver interference, giving his telephone number on the air. For as many months no one complained, but last week his luck changed. The person on the other end of the line said, "This is the NBC News Room. We are trying to hear DNB (Germany) on 15.2 megacycles. All we hear is W2MSC." The Conns are now observing quiet hours for Hitler!

A.T.E. 'HAM' DIRECTORY (Continued)

Call	Name	Phone		
		Bands	CW	Power
W9BG	Paul Clark Niles Center, Ill.			
W9BGI	Vern Mills Bellwood, Ill.	20	Ph.	150
W9BU	W. K. Cole Niles Center, Ill.	10,20	Ph.,CW	50
W9CIU	F. C. Shidel Elmhurst, Ill.	10,20,40,80	Ph.,CW	400
W9CP	J. R. Miller Hammond, Ind.	20,40	Ph.,CW	500
W9CQI	Ray Bierman Westchester, Ill.	20,80	Ph.	750
W9CTN	C. V. Corliss Homewood, Ill.	20,40,80	Ph.,CW	350
W9CZR	Frank Nelson Denver, Col.	20	Ph.,CW	150
W9DBT	R. B. Whitnah Chicago, Ill.	40,80	CW	125
W9DEJ	Andy Forgach Downers Grove, Ill.			
W9DQ	Homer Courchene (WENR-WLS)			
W9DQM	R. R. Jensen Chicago, Ill.	10,160	Ph.	25
W9DSD	Al McClellan Denver, Col.	10,20	Ph.,CW	400
W9DVW	W. T. Anderson Chicago, Ill.	20,40	Ph.,CW	450
W9EYN	Joe Rohrer Denver, Col.	20	Ph.	200
W9FKQ	Garland Dutton Denver, Col.	20	Ph.,CW	200
W9FQ- N9FQ	Wilbur Cummings Chicago, Ill.	20,40,80	Ph.,CW	250
W9GG	R. D. Wehrheim Winnetka, Ill.	10,20	Ph.,CW	200
W9GN	R. S. Davis Oak Park, Ill.	10,20	Ph.,CW	100
W9GY	J. H. Platz Elmhurst, Ill.	10,20	Ph.,CW	500
W9IAH	A. L. Hockin Elmhurst, Ill.	20,40,80	Ph.,CW	450
W9IHY	W. F. McDonnell Downers Grove, Ill.			
W9IT	E. A. Holm Chicago, Ill.	10,20	Ph.,CW	200
W9IWW	M. W. Rife Chicago, Ill.	80	CW	200
W9IVD	Gale Swift Chicago, Ill.	20,40,80	Ph.,CW	200
W9JIR	G. E. Webster Park Ridge, Ill.	20,40	Ph.,CW	200
W9KQS	M. J. Wilson Bellwood, Ill.	20	CW	100
W9LEP	H. T. White Evanston, Ill.	10,20	Ph.,CW	400

Call	Name	Phone		
		Bands	CW	Power
W9MV	Paul Moore Arlington Park, Ill.	10,20,40	CW	750
W9PI	Harold Austin	10	Ph.	70
W9QKW	Russ Thompson Denver, Col.	20	Ph.	70
W9RDE	H. R. Rawson Downers Grove, Ill.			
W9RUK	M. H. Eichorst Glenview, Ill.	20	Ph.,CW	600
W9SBC	T. E. Schreyer Des Plaines, Ill.	20,40,80	Ph.,CW	150
W9SGM	Jules Herbuveaux Wilmette, Ill.	20	Ph.,CW	600
W9TPJ	H. D. Royston Chicago, Ill.	5		35
W9UXZ	Bill Williams Denver, Col.	5,10		25
W9VNW	Rex Maupin Evanston, Ill.	20,40	Ph.,CW	325
W9WC	W. O. Conrad Elmhurst, Ill.	10,20	Ph.,CW	150
W9WRB	R. A. Limberg Highland Park, Ill.			
W9WS	R. B. Sturgis Highland Park, Ill.	10,20,40	Ph.,CW	160
W9FA- N9FA	Glen Glasscock Denver, Ill.	40,80	CW	500



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NEW YORK NEWS

By Ted Kruse

FOUR days to Florida and back is the record claimed by Loyal Lane, Master Control. Loyal made the trip in a brand new Chevrolet bought through the Keech Service at a saving of two hundred dollars. Finding himself with some extra "legal tender" in his pockets, LL decided to buy a two hundred dollar camera, which he claims does not take any better pictures than his old Brownie. Now that he has been bitten by the photographic bug, we are sure Loyal will find out that it will cost him many times the initial investment before he is through with photography.

The morning mail brought cards and letters from the following: A. T. Williams is stationed at Randolph Field, Texas. He is at present Assistant Post Communications Officer, while attending flight instructors school. Buddha Whitaker is basking in the sun at Miami with the General Electric "ALL GIRL" show.

Jon Larson and Don Whittemore sent a card from Van Horn, Texas, reporting good warm weather. Note their expressions of contentment in the photo herewith.

Bob Ward's imitation of a seagull's cry is so realistic that it almost caused his being ejected from the Sportsman Show at the Grand Central Palace. On a recent visit to the show, which featured a live collection of animals, Harry Hiller, Pete Narkon and Doc Dickson heard a commotion coming from the third floor. Rushing there, they found Bob in the midst of bears growling, birds flapping excitedly

about, etc. It took some fast talking and a couple of broadcast tickets for the guard before Bob could continue seeing the show. Harry Hiller had his handwriting analyzed by a Graphologist, but we can't report what the findings were, as Harry will not show the chart to anyone. Why, daddy!

This being the Ham issue, we include the following reports and gossip on A.T.E. amateur activities: Nick Hagmann, W2KP, really has taken to the ultra-highs with a vengeance. His collection of gear for 112 mc contains such things as two 955 "pot" oscillators for calibration purposes, a super-regen and a super-het type receiver both on the same



Fort McClellan, Anniston, Alabama. WHMA Interview, January 23, 1941. (L. to R.): Back to camera, Col. Ayres; with mike, Allen Brown, mgr.; Don Whittemore and Jon Larson, and Capt. M. O. Bidwell

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chassis with provision for switching the input and output of each for comparison purposes. Add to all this a nice sounding 50 watt transmitter which puts a good signal into both Philadelphia and NYC on 112 mc.

S. K. Heffernan, W2KDF, has been working the 6th and 7th districts with a new 75 watt ninety per cent band switching portable Xmitter, after licking 807 parasitic troubles on ten meter phone.

Hank Treger, W2AMS, has his 1 kw transmitter hooked to a new three element rotary beam antenna perched atop an also new 35 foot tower. We understand he peeks out of his bedroom window every night at 4 a.m. to see that all is well with the beam. After figuring the cost of the antenna it is possible that, come warm weather, Hank will suspend swing type chairs from the ends of the beam with rides at ten cents per. The least we can do is to keep Hank happy with R9 plus reports from New York to California.

Ed Costello, W2NX, is busy at present revamping his rig for 10 meter operation. After trying several receivers Ed recently bought an RCA AR-77. (It pays to advertise!)

Paul Anderson, W2LXR, has his gear well salted away pending the release of enough time from his many diversions to get it on the air. These include: being a local special gendarme, a year old daughter, a new home, local politics and sundry other assorted activities.

Harold Bauman, W2HVQ, recently purchased a new Hallicrafter Skyrider receiver and can be heard with an ECO on 20 meter phone. Bill Storrs, W2MMS, bought his transmitter for a good reason. When the rest of the gang is wondering why their rigs don't do this or that, in accordance with the noble handbook, Bill just smiles and reminds us that his job is really designed to work equally well on all bands

because the book that came with it guarantees that it will. If it's a good chew about old times that is wanted, just listen for Bill.

Art Holub, W2EP, is putting the finishing touches on a 40 watt band switching exciter. Art is making use of Bud band switching coils.

Johnny Gullans, W2AWU, will in a very short time find himself with a brand new W3 call by the simple expedient of moving to his new home some two miles distant from his present location. Johnny would like to know how to move a call area just a mile or two in order to keep his present call letters. The new location will be at quite a higher altitude, thus providing more opportunity for emphasis on ultra-high work. With all kinds of concentric and other pipe equipment necessary for good stability, Johnny might be seen at any time studying the gentle art of plumbing.

Charlie Younger, W2ND, just purchased a new, shiny RCA AR-77 receiver. (Who said what about advertising in the Journal?) At present Charlie is on the air on 20 meter CW with a single 6L6. Ed Gundrum, W2BXY, located three miles away, reports an R9 plus signal from W2ND.

CLEVELAND NEWS

By J. D. Disbrow

THE annual election of officers in the Cleveland Chapter was held February 15th but in atmosphere slightly different than in past years. The retiring chairman started the ball rolling for a dinner and all hands showed up except those on duty. Dinner was held in the main dining room of Hotel Hollenden with Mr. S. E. Leonard, Engineer in Charge, as guest. After the eats everyone retired to a private parlor on one of the upper floors where a short informal talk was given by the boss. The next three hours were consumed in a general "bull" session and along about midnight the "Chief" shoved off and the business of the Chapter began. The outcome of the election



was as follows: H. V. Brandt, elected Chapter Chairman, with F. E. Whittam as Secretary-Treasurer. The eats were good, the "oil" was fine, and everyone there had a good time.

The photo shows part of the members seated at dinner. Left to right: Pruitt, Clark, Butler, Bidlack, McMahon, Hackett, Disbrow, Walker, Mr. S. E. Leonard, Brandt, and Cheeks. Other members present at the table but not in the picture were: Caskey, Francis, Makinson, and "Barney" Pruitt, retiring chairman.

C. S. Bidlack—SE, called to active duty in "Sam's" army. "Bid," as he is known around the studios, came with

NBC from WOSU in April, 1938. A First Lieutenant in the Signal Corps Reserve, he has been assigned with the First Armored Division at Fort Knox, Kentucky. March 31st is the day when he parks at Uncle Sam's table. Sorry to see you go, "Bid," but lots of good luck.

The "R. F. Peddlers" at WTAM have been making all possible use of the hours between sign off and sign on. Checking, testing and adjusting for the new frequency of 1100 kc. After one of their night sessions it is a mad scramble to get the job "re-nooted" back on 1070 before Old Sol sticks his head over the hill and the daily broadcast grind begins.

Do You Remember?

Kneeling, Ben Grauer. Behind him, Carl Lorenz. With the axe, Henry Meyer, and in back of Henry, Jake O'Kelly. It seems that in the course of network switching, announcers would, once in a while, make operating errors. The boys would go to New York Master Control, where the picture was taken, to get sympathy and help ease the pain of confession. In this case it seems that trouble is being had getting Ben Grauer to come across and tell Master Control "what happened."



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HOLLYWOOD 'HAMS'

By Ray Ferguson

Al Korb. Al is one of the Maintenance Group who is about as apt at fixing things as anyone. Al's first Ham license was in Boston in 1921. His call then was W1BDM. His California call is W60SH. He uses 802 to drive Bi-Push exciter; this drives final amplifier, an Eimac 100TH, 200 watts input on 10, 20, and 75 meter fone. The antenna is a single section 8JK for 20 meters and is rotary. Al's mic is an RCA dynamic into a 6F5 pre-amp which works into the speech amplifier consisting of two stages of 57s as triodes into a pair of 2A3 drivers. The modulators are a pair of 809s in Class B.

Al uses a Hallicrafter SX25 for a receiver; including a pre-selector on 10 meters, the pre-selector using an 1851 with regeneration control in the screen.

Mort Smith. The best natured guy you'd want to work on any frequency! Mort told us he got started in 1916 with an antenna with sixteen foot spreaders, four wires of No. 4 iron wire to swipe out of the air whatever came along. His receiver, in those dear, dim, precious days, was a tuning coil on a rolling pin. The wire was spaced with string. Now, get this, fellows; the detector consisted of a needle suspended across sharp carbon edges with potentiometer and a 75 ohm receiver. Who wants to go back any further?

Mort's transmitter was 1 inch Rhomkoff spark coil, with antenna and ground across spark gap terminals operating from six-volt dry cells. The range was five miles. You could give Mort your message, or tie it on a rabbit! Anyhow, he says he could hear fifteen miles, with the wind blowing in the right direction. This wonderful rig was located in Locust Valley, between Glen Cove and Oyster Bay. From this amazing contraption, Mort went to coherer and de-coherer, then to crystal detector. Now, with all this vast wealth of amateur experience, Mort's present call is W6HSC. The present receiver is a Hammerlund Comet-Pro. The present transmitter has 500 watts input and is custom built. See what a needle dangling across a couple of pieces of carbon can do?

Jim Brown. One of the most dextrous network switchers in Hollywood Master Control. Jim says he hasn't been on the air steady for about six years. That's why you haven't

heard W6VH for that long. However, Jim has a transmitter which can be put on the air in a comparatively short time, even though the rig isn't up to date. Power on 7005 KC is 160 watts input. Jim doesn't brag much about his receiver, but promises to get back on the air when he moves to a better location for ham work in all directions!

Jim started in ham radio when still in high school in 1920, just after the war. Jimmy started out, like everyone, with first a spark and then graduated to tube transmission with a couple of UV202 on 200 meters.

Carl Lorenz. Carl started in 1924 with a Hartley 202 transmitter on C.W. all over the band. Carl's first call was 2AFA. Now it is W6PKA. The receiver is a Hammerlund Comet-Pro with two stages of pre-selection ahead of it using an 1851. The transmitter is a band-scooter, electron-coupled oscillator. There is a single 250TH in the final and uses 1 K.W. input C.W. The antenna is a 2 H-Beams at right angles for almost complete coverage. Carl uses 20 meters.

From his present location, in San Fernando Valley, ten miles from Hollywood, W6PKA has worked, to begin with: ZB1J, Malta! SU1SM, Cairo, Egypt; seventy-two countries and twenty-nine zones for the Marathon from January 1, 1939, to May 15, 1939. All this from Hollywood, boys. Say, do we get around; but with Carl's able assistance, of course! We understand that when he is on the air, one can see a blue haze over the Valley broken intermittently with flashes of lightning!

Frank Hicks. One of our whizz recording engineers, had the original call of 8UD; is ex-W9MR, new call is W6SPV. Has fone on 20/40 (250 watts) meter band. Has a rotary beam antenna in mind. Frank's receiver is a National FBXA, regenerative, pre-selection. At the moment he is building a house and feels that, what with one thing and another, his call should embrace the letters FHA, somehow.

Frank says that right after 1918 he had a 250 watt rotary Bernwood Lindsey spark gap which nightly roared out into the night air. The receiver used a two filament Christmas tree audio. The antenna was one of those famous four-wire beauties with fifteen foot spreaders. With a smile, Frank remembers how the range of that old cannon was 150 to 200 miles, on rare occasions. The boys, then, used to pick their own wave lengths and have at it.

We feel it only just and fitting to include one, whose activities in the Ham world have gained her a well-earned reputation of being so keenly interested in amateur doings.

Mrs. Bert Capstaff, wife of one of our tallest and blondest Hollywood engineers. The reason we feel Mrs. Capstaff is justified in honorable mention here is because she is using 2 watts on 40 meters—and 40 watts fone on 160 meters.

Mrs. C. is Sixth District Chairman of YLRL. On top of this, she modestly boasts all states and Hawaii on that mighty 2 watt peeper, which apparently can peep its dainty way here, there, and we hope you're listening!

"MiV" Adams. Miv started out in Ham radio in 1908, using a Mesco Manhattan Electric Supply Corporation three-slide tuner, silicon detector and Murdock Fones. Now, Miv is Hollywood's Field Supervisor. Great have been his strides in radio. In 1908, Miv wasn't sure just which was positive and which was negative. 1941 finds Miv with NBC transmitters and receivers working in Flying Fortresses; figuring out and setting up every single last engineering phase of NBC's west coast Navy's show, which was heard around the world! Now, it's just a snap for Miv to plan the technical operation of the biggest commercial shows, which might originate at Catalina or even from Palm Springs. All this from a three-slide tuner, and a one-inch spark coil.

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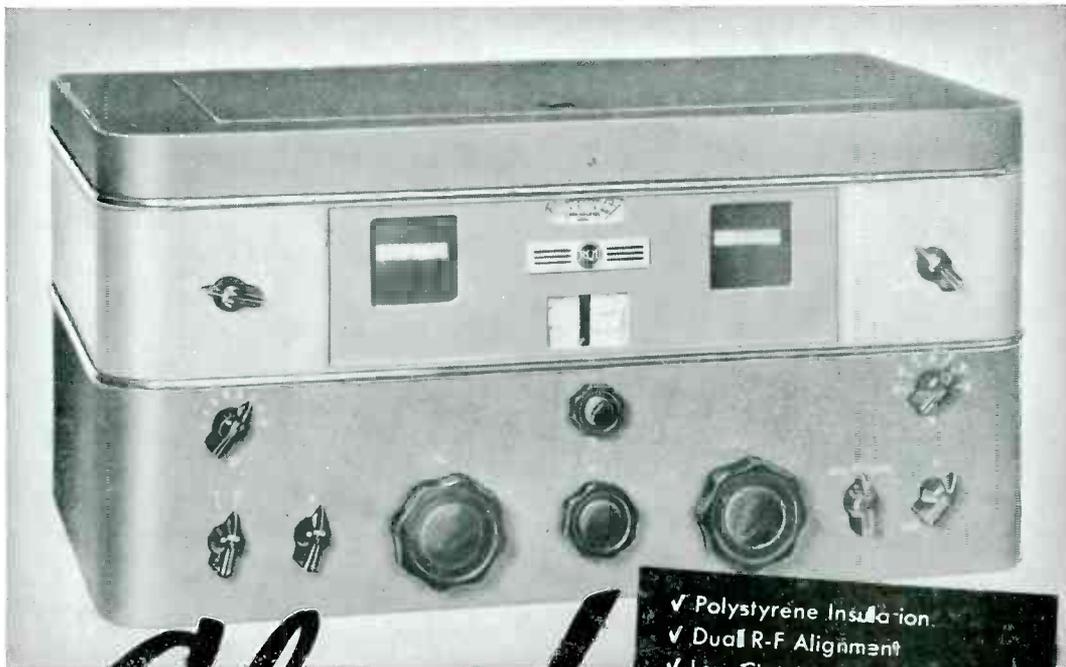
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