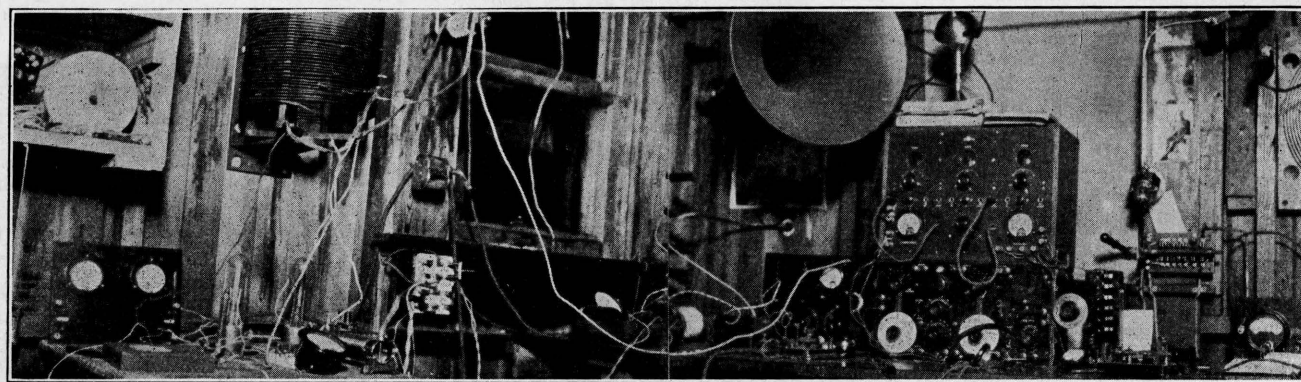


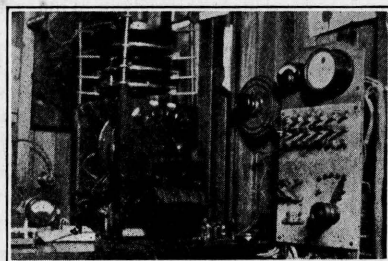
WITH THE AMATEUR OPERATORS



RADIO STATION 6ZE

Station 6ZE is owned and operated by Mr. D. B. McGown, U. S. Radio Inspector, Department of Commerce, at 1247 Forty-seventh Avenue, San Francisco, and is within a stone's throw of the Pacific Ocean. The larger picture shows the general appearance of the station's interior in a small, specially built radio-house, which is devoted to this exclusive service.

Starting at the left, we see the 100-watt tube set, which is connected with the reversed feedback circuit. This set is mounted on a separate table. A smaller set of 10 watts capacity is shown on the main operating desk, immediately next to the receiver. The latter is a specially built regenerative affair, the output of which is led to the three-stage audio frequency amplifier directly above the receiving set; waves between 50 and 1000



meters can be received on this apparatus. A Navy type SE 1420 receiver is also used for longer wavelengths, but is not shown in the photo. It is arranged to connect with the same amplifier as the short wave set. A loud speaker is attached to the output of the three-stage amplifier, although head receivers are used in most cases.

In the smaller photograph, we see the spark transmitter, which is a 500-cycle $\frac{1}{2}$ kw. quenched spark set, equipped with a wave changer, and adjusted to 200, 300, 375 and 600 meters, any one of which can be obtained by a simple manipulation of the wave-change switch.

The power panel is shown to the right of the spark transmitter, and controls the various machines used. The motor generators are located in a separate building, and all wiring is run underground to the radio station, through armored cable, with the sheath carefully grounded. A 500-cycle $\frac{1}{2}$ kw. motor generator is used for the spark transmitter, and a 1000-volt d.c. machine is used for vacuum tube supply, both for the large and small equipments. The 500-cycle supply is also available for use on either tube set, giving half wave, 500-cycle I.C.W., and in the case of necessity, 60 cycles can be used on the plates of the tubes, as well.

The normal radiation on the spark equipment is about 5 amperes, on both 200 and 375 meters, with an exceptionally low decrement

—averaging 0.07 on 200 meters. On normal operation, on d.c. supply, the 100-watt tube set puts about 4.25 amperes into the antenna, and on 500 cycles about 4.5 amperes. A maximum of about 7 amperes has been obtained, on tests, on 200 meters. Keying of the tube sets is accomplished by breaking the grid leak on d.c., and by breaking the transformer primary for 500 and 60 cycles.

Special transformers are used for filament lighting, in each case. The 10-watt set, with 100 volts d.c. on the plates, is used for local work, and radiates about 0.2 amperes. As this plate supply is pure direct current from a battery, it is exceptionally sharp, and no interference is caused to anyone, even if located within a very short distance from the station. The smaller tube set is adjusted to 200 meters only; the 100-watt set is arranged so transmission can be accomplished on 200, 300, 375 or 600 meters. The antenna system is composed of a 4-wire T type, flat top. The flat top portion is exactly 50 ft. long and 52 ft. high, with 9 ft. cross-arms attached to the poles, which serve in place of spreaders. Separate halliards are provided for each wire in the antenna, and any one can be lowered, and removed, without disturbing the others. Porcelain insulators are installed at the end of each wire.

For receiving, a conductive ground is used, which is made up of a large number of grounded pipes and strips. The transmitting set is connected to a counterpoise, suspended 8 ft. above the earth, directly under the antenna. This counterpoise is made up of ten 50-ft. wires, separated 2 ft. apart.

The natural period of this antenna (to counterpoise) is 160 meters, with an effective capacity of .00065 mfd. There are no data available as to the effective resistance. Reports covering the signals from this station, on either tube, or spark, or both, have been received from practically the whole Pacific Coast, and practically continuous communication was carried out with 6ZAC, while the latter was operating at Wailuka, T. H.

WITH THE AMATEUR OPERATORS

The call 6CES has been assigned to W. C. Thompson of No. 679 East Fourth street, LaVerne, California, who was formerly Radio 6ZH of Richfield, Utah. Please QSL if sigs are heard and will do the same. Transmitter is 15 watts, rectified ac.

6ATZ is now located at 522 Grand avenue, Oakland, Calif., and is operated by F. W. Morse, Jr., and G. S. Evans. Anyone hearing our 10 watt C. W.. 1 C. W. sigs pse qsl crd.

6XAS and 6BLV have moved from 1707 Camden Court, South Pasadena, Calif., to 1209 Cremshaw Blvd., Los Angeles.

A HAM OUTING

By PRESTON SHAFFTEN

Rotten roads, a ramshackle Ford of the vintage of 1912 or earlier, three CW fiends and a portable receiver are the how and wherefore of this tale. The funny thing about it is that it is all true. We had long been desirous of getting out in the open and roughing it. Being DX fiends we dragged along a little heap to pull in a few stns??? while we were out in the woods. We sure were tired the first night and as we had covered about 30 miles over country roads to the north of Sausalito after leaving the highway at a little past Manzanita. Fearless suggested we take that road as it looked the smoothest thing around the country except the smile on Hezekiah's face when he lamps a keen dame in Sausalito and wanted to get out and walk. We held him back. Women is to Hez what 110 is to the filament of a 5 watter. Simply a calamity.

The Ford is getting sore feet and it's getting dark when I think it about time to cast our freight for the night. We find a good place by the side of a little stream and Hez appoints himself as the official cook. I had not ever tasted his cooking and so when we sat down to eat what he called graveyard stew I had some misgivings. The first mouthful I took went out faster than it went in. And Acki simply bent over the creek and did what every self-respecting person does when he gets seasick. "Oh," says Hez, "I forgot to tell you. The potatoes and the kerosene got mixed up and I didn't think you would mind tho." When we finished with him he quit as cook, being slightly bunged up.

We opens a can of tamales after boiling it in the fire for 15 minutes and when Acki plunges the can opener into the hot tin there's an eruption of goo and tamale in liquid form that makes Vesuvius feel sick for shame. I feels we done something wrong as canned stuff never did that when mother opens it so we give up the tamale idea. It's dark now and the fire is about the only light we has. Hez says he'll drag out the heap and got something on the loop. I wish I'd get something on the stomach but it's so dark that I can't find the Ford so I lays down by the fire on a blanket and watches Hez fool with the lil heap. The set consisted of 1 variable, a honeycomb choke circuit copied from RADIO and a WD 11 and a dry sell. The sell part was that it only lasted about a week at the rate we used it.

On the loop Hez strains his milk listening for CW hams. All at once he gives a heave and yells, "Shh Hh keep still. 9DTM signing off qsahr, nm nw 73s." Well I know that lil heap pretty well but 9DTM in the middle of the woods on a one tube set on an empty stomach is too much and I grabs the

cans and strains my liver and holds my breath and sure enough theres the old familiar chirp and then 6ZH breaks in and tears off about 5 msg's to 5ZA. I couldn't get 5ZA come back tho. Well we took turns listening in and the following is the list of calls heard in one hour on that ramshackle outfit lost in the woods on an empty stomach.

6APL, 5ZAE, 6ZD, 6BSQ, 7ADP, 7AK, 7GE, 7OE, 7ABX, 6IK, 6JN, 6AOX, 6TI, 6CC, 6BUA, 5XB, 9WCC, 9DTE, 9US, 9UU, 9BRE, 9CUI, 9CAO, and a bunch of six stns fm around the bay that's handling traffic on CW.

It's getting late so we calls the party and turns in. The ground was hard so I waited till the rest got asleep then I hocked the seat cushions from the Ford after falling over about all the rocks and gulleys in Marin county I makes a mattress of these and falls asleep.

The next morning after Hez wakes us all up at 5:30 by pouring coal oil in my mouth and then sticks a piece of wood in Acki's mouth and yells in his ear. Acki jumps and the wood pokes the back of his tongue thru his throat and he almost chokes for we gets it out. Hez says he will make some pancakes. I has a misgiving again and says never mind, that it's my turn to cook and I mixes a nice batter and had the pancake all nice and brown ready to flip when Hez begs so hard to let him flip it that I takes heart and hands him the pan. I forgot to tell him the darn thing had a collapsible handle and therefore when he flips the batter the whole mess flies up and distributes itself all over his face.

When it comes to ruining meals that guy takes the cake. Well we ate finally and packs up and gets going again with the Ford hitting on all 4 like good old Havana. Well we tops a high ridge and stops and looks over the country below. We finds a sign that says, Longlys Garage, Bolinas, 7 miles. Well I remembers that about the biggest radio station in the world is at Bolinas so we hits it up and down we goes to the flat country around a small bay. We drives along the bay shore till we gets to a small town and we turns to the right and follows the road till we almost drops off suddenly on to a keen beach.

Hez goes off to explore. He sneaks back in a minute and says, "Sssh come here." We follows him and goes out onto a sort of a casino esplanade and he points down on the beach and WOW, there's about 5 of the keenest looking girls about 18 years old all in keen suits that mostly aint. Hez says he's gone to buy a lot and build heer if this is the population but the girls give him a cold stare and turn the other way and go on with their card game. They was playing cards on a big towel. Well we gets our suits on in a little house that is one of many bathing houses and we goes down onto the beach and lays down. There's an awful mob of aristocratic looking men and women playing indoor ball on the beach and then the girls went in swimming. They was hardly in the water when a chap in a green silk suit tears down from a hill nearby and dives into the water and starts out as if he was heading to San Francisco. When he gets out a quarter of a mile or so he turns over on his back and takes a rest then he swims in again.

The girls had come out and when this bird climbs out of the water he is surrounded by the whole mob of them. This drives Hez mad, and he says he's going over and get introduced. I says it aint his type of girls and to keep away but Hez hikes over and I sees him talk to the chap in the green suit and then to my surprise they leaves the girls and hikes up the hill together and disappears into a keen looking home on the top of the hill.

We repairs to our clothes and at 5 o'clock Hez returns. "Boys, I'm the luckiest chap

on this earth. I've got a permit to visit KET and KPH the big stations." Well it seems that the guy in the suit was our old CW pal on the air—6AOR and he's got us passes to see the joint. Well we sleeps at 6AORs joint all night. Hez says he cant get used to having a servant wait on him and said the guy grabbed his plate before he had time to take his knife and fork off so he could eat dessert with them. That's a dirty trick I'll say but the dessert was a shivery stuff in a high glass bowl that one had to be an expert to eat out of. Hez groans when it's brought on and thinks of home where he can eat with his fingers and AOR gets his custard down and digested while we were trying to coax ours to stay on the spoon. Well the next day we drives out to KET in the big car that AOR sports and we goes all thru the joint. I'll say there's neat work there in the wiring and I wish I had half the copper wire that was laying around the ground.

Well 6AOR sees our lil portable heap and insists we hook it on his aerial and stay another night and suffers torture every meal cause if we didn't make one mistake and grab the wrong salad fork or eat the cocoa with our saucers. Well, I never could eat and enjoy it the way some guys do.

That night we listens in again. We had a one wire aerial 70 feet long running east and west and absorbing all the 300 amperes from the Alexanderson alternaters at KET and the qrm from the fone set on 2200 meters we being only 2 miles from it. Then kph the old spark did its dirty work and we had some did to copy thru. The calls heard were, 4ag, 4ea, 4ep, 4fg, 4ik, 4me, 5za, 5po, 5kc, 5mb, 5me, 5ta, 5zaz, 8oi, 8om, 8tt, 8ll, 8sm, 8vq, 9ajh, 9aku, 9apw, 9et, 9ox, 9ei, 9aqr, 9amb, 9ark, 9ug, 9aps, 9bjy, 9bry, 9cfy, 9cip, 9cxv, 9exp, and a raft of sixes that we all hear every night on the air. Well 6AOR says that's pretty good for our hookup but that we ought to see the heap work he had in Berkeley and that it was a keen hookup. Well we drew this hookup and it was the same one that came out in February RADIO and was patterned after his. Well we sure laughed a lot I'll say and all agreed that it sure was some hookup and that we didn't need any more tubes than just one and we left for the trip back to San Francisco in a keen mood to rave radio to every one and so here I am. Only don't forget to always take some one who can really cook.

RADIO STATION 8BRL OF CRAFTON, PA.

Radio 8BRL, located at 35 Haldane St., Crafton, Pittsburgh, Pa., is owned and operated by Herbert W. Haberl (HW) and Allan L. Machesney (RU) and has been heard in 46 states, East and West coasts of Canada, Mexico, Cuba, and on the Atlantic and Pacific Oceans. It is a combined spark and CW station although CW is most always used.

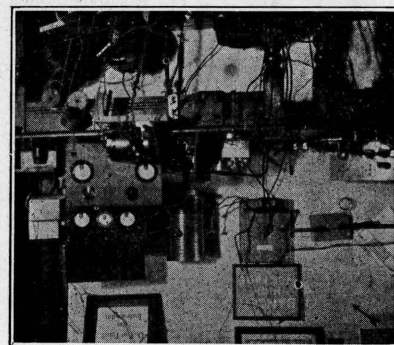
The antennae at 8BRL is a 6 wire cage, 65 ft. high and 70 ft. long with a cage lead in. The counterpoise, being 8 ft. from the ground, is a 13 wire fan, 75 ft. long and 80 ft. wide at the open end, a cage lead in also being used here. For receiving, a single wire 45 ft. high and 100 ft. long is used.

The receiver used is a CR-8 with 1 stage radio and 2 stages of audiofrequency amplification. A new Reinartz tuner is also being installed.

There are four transmitters used at 8BRL, two being spark and two being CW.

Transmitter No. 1 is a 1 kw. spark set using Amrad quenched gaps and oil condensers. The transformer is a pre-war Thor-darson. Radiation on this set is 6.7 amperes. Transmitter No. 2 is a ½ kw. 500 cycle Telefunken spark set with either rotary or quenched gaps. Radiation on this set is 3.2

amperes. Both of these sets are on 203 meters. Transmitter No. 3 is a 50-watt A. C. C. W. or sink rectifier set using a 2200 volt pole transformer for the plate supply. Radiation on this set is 3.2 amperes on a.c. and 3.6 amperes on sink rectifier. Trans-



Operating Room at 8BRL.

mitter No. 4, the smallest and best set, is 20 watts C W, chopper, buzzer, or phone and has been heard on the Pacific Coast consistently for nearly a year and a half. The plate supply for this set is furnished by a 500 volt motor generator set under the table. The filter system for this set consists of 6 mfs. across the generator and 2 audio chokes on each lead and 3 radio chokes on the plate lead. This eliminates all commutator hum as it cannot even be detected by the receiving set. This set radiates 2.9 amperes on CW., 2.7 amperes on chopper, 2.5 amperes on buzzer, and 1.7 amperes on voice. The voice has been heard as far as Cheyenne, Wyoming, a distance of about 1300 miles from Pittsburgh.

We admit that the wiring around the table could be neater but that is only one factor when you are after DX. The Hartley circuit is used on both CW sets with Heising's system of modulation on the phone set.

This is an official relay station and would appreciate a QRK on the signals of this station. All cards will be answered.

CORRECTION NOTICE

The advertisement of R. Mitchell Co., page 52, June issue of RADIO, describes the new No. 195 Amplifier Unit and the No. 211 Detector Unit. The illustration of these new units was omitted from the advertising copy in error and the cut of another manufacturer was inserted in its place. The correct illustration of the units will be found in this issue on page 47.

TRANSFORMER DESIGN CORRECTION

Attention is called to an error in the Transformer Design Diagram on Page No. 33 for the June issue of RADIO.

In the lower right hand corner of the page, figure No. 2, the number of layers for the ten-volt Secondary is given as 21. This should read, "10-Volt Secondary 2 layers No. 14 DCC Wire 10 turns per layer, etc."