

U.S.S.Y. 76 Salisbury Street, Bedford, England.
 Ur Sigs were HRD here Sept 19, 1925 at 0620. GMT Sigs were. DRH R6.
 ORH 40A. QRB. R.B.C. QRN. R. B. QRM. NR.
 Remarks: Was 13th time when I get the air on by 0500 am
 O — 2GY! — Amateur, whose Q's I have heard, I beg of U to QSL. Obi pae send me a card. For if U do not answer, it will be for Ur worse. I'll call the wrath of Jupiter upon U in my curse. As Nelson said at Waterloo in 1802. "Up then Guards and Aton — as shall I say of U. — Straps and Electrons — and by the seven spheres — may the heavens bestir forth QRM. For Thy's own ears. May the sky be rent with lightnings, and the earth be rent with quakes, And Ur Aerial Must be stricken, so that every Guy Wire breaks; May Ur Radiation wether, and Ur Amps refuse to amp. May Ur Batteries all Disintegrate, and Ur Low Coils get cramp. May Ur Generator sizzle, and Ur Meters all go flat; Ur Condensers stop condensing, and Ur Tuning knobs get stuck. And so because you didn't write things all turn out so bad. When this wretchedness comes to pass, perhaps U'll wish U had However, if U QSL, or send a word at any, I wish U VY 73's and I raise my hat to U!
 DX HRD in 1925. Receivers: Reinartz with 1 A.F. 5 Meters to 600 Antenne. 5 Meters. 10' vertical wire. 10-50 Meters. 10' vertical and 10' vertical C.P. 60 upwards. R 40' hi 50' long.
 10 N.Z. Australia. 10 N.Z. Australia. Cuba. South Africa. 88 Countries. VT 73. F. CHARMAN, Int. B.S.C.

Radio 2 GY
 Ur 2 GY Sigs started Here on 9:00 PM CST. 9-14-1925
 Audibility R 6-7 QSB 20-F B Study QRM QRM led
 Receiver 2 tube
 NRRL type
 1200 tubes
 1200 volts
 150 volts
 Rdn 2.1 amp
 50 WATT COUPLED HARTLEY "S" TUBES
 Just saw "BRUTE FORCE" FILTER
 HOPE TO QSO OFTEN O.M.
 QRM let me know G. N. WITTING
 300 Kenedy Ave.
 ALAMO HEIGHTS
 SAN ANTONIO, TEXAS, U.S.A.
 QSL to this address
 73 60 days

37 SHAWMUT STREET
 RADIO 2GY UR Sigs. W.D. HR.
 AUD. R 6 QSB. RAC QSS.
 TRANSMITTER
 1-S W VT2 T. 100
 5000000 Hz input
 Cpl. Hartley OH.
 ANT. AMP. 3
 ANTENNA 7 Type 1 W
 COUNTER POISE vertical Type 2 W
 DE. 133 Miles 21 States 6
 REMARKS: Did to work on 2
 Cane about 10 ft
 QSL-QSR ALWAYS

ARRL 718 E. 2nd St. Cushing, Okla. ARRL
 "Home Of The World's Largest Tank Farm"
 Radio: a SADO
 Ur Sigs wrkd hr 9-2-25 at 11:30 PM CST
 Audibility: R 6-7 QSB 20-F B Study QRM QRM led
 Receiver: Low loss es 1 stage audio 8-200 meters Cannon Bulls
 Trans: 5 watts 120v 65v Volts CR C Ant. Car. Amps
 Antenna: 4 wire cage, 30 ft long 45 ft high Catpae, 7 wire fan
 DX: All Dist. 10 States.
 Remarks:
 Pse QSL Tnx fr crd Cal vy 73 J. M. Tubbs
 10 N.Z. Australia. 10 N.Z. Australia. Cuba. South Africa. 88 Countries. VT 73. F. CHARMAN, Int. B.S.C.

Short Waves—A New

When the Stations Come Rolling In Reception Is Renewed for the Broad
 privately Inexpensive—Learning the

By EDGAR

THE twirling dial has captivated the imagination of the world and the prophecy of the Arabian Magic Carpet has been more than fulfilled, as we flit from city to city, by a mere turn of our tuning control. The thrill of dx reception is still with us, but its captivating novelty, strangely enough, is already wearing off.

That the popularity of dx broadcast reception should occupy the center of the stage for so short a period in the interest of the average broadcast listener is surprising, when we consider the marvel of that scientific conquest. But it cannot be denied that those who have tasted a season or two of dx are to-day concentrating in the search for better quality of tone reproduction so that they may receive the local stations with truthful fidelity of recreation. The dx hound of yesterday is the stickler for high quality of to-day.

Not that we forget those proud moments "when the stations come rolling in," with the aid of a newly built receiver—when New York, Philadelphia, Pittsburgh, Cleveland, Chicago, Minneapolis, Atlanta, Hastings, Denver, Los Angeles, Seattle, Oakland, Montreal and Mexico City were heard all in one evening! But even such accomplishments may become commonplace.

To him, who would again enjoy these thrills, we say, take heart, for short wave amateur transmission and reception has brought us new fields to conquer, more fascinating than the old. There is no exhausting the novelty of amateur communication until we have established personal friendships in every corner of the

globe! The construction of a simple but efficient short wave receiver brings the whole world within range of the dial.

When the stations come rolling in on 7500 kc (40 meters), our magic carpet is not delimited in its journeyings to the confines of a mere continent. We begin at the remotest border of our broadcast dx range as the appetizer for an international evening. First, it's England, France, Belgium, Holland, Switzerland, Spain, and Italy. Slowly, we move on as the radio night advances, picking our way through myriads of American amateurs for the foreign stations to which our short wave receiver makes us host. Next, it is Brazil, Argentina, Chile, Alaska, Hawaii, as the shades of radio night advance westward. In the early morning hours, New Zealand, Australia, the Philippine Islands and Japan reward our zealous dial twisting. A diet fit for a dx king!

WHO "BOILED OWLS" ARE

NOR is it unusual, as the first inking of a fleeting time, to have the bright rising sun break into our international reveries and remind us that once more we must resume our daily tasks. For such is the lure of the new dx that its first tastes have led many a new recruit to sit attentive before his receiver the long night through. Such ardent devotees of the dial are rewarded with the honored title of "boiled owl"—a fitting designation for one whose long distance work has been unexpectedly interrupted by the rising sun. Increasing numbers of broadcast listeners are being intrigued into this fascinating field of

radio reception, permitting, as it does, a much greater scope for their dx abilities. The requirements to admission are few. The receiver used is of a much less elaborate type than that needed for good broadcast reception. Two tubes at the most are usually employed. Tuning is so sharp on the high frequency (short wave) amateur bands, that but one tuning circuit is required. Another control adjusts regeneration, which plays an important part in short wave reception. There is nothing startling in the way of special equipment needed.

It is needless to describe in detail a suitable receiver, because extensive experiments are under way, leading to the development of short wave receivers for the needs of new recruits to this new field. Simple receivers and small battery powered transmitters will soon be described in RADIO BROADCAST, and these can be built at costs ranging from \$20 to \$50, including vacuum tubes. These experiments are being conducted at the RADIO BROADCAST

I WAS talking to a chap in Australia last night" is not an uncommon report from a well equipped amateur radio operator in these days of short wave, low power transmitting. The Navy, in 1902 were gleeful over a record of established communication from Annapolis, Maryland to a ship off the coast, 50 miles away. But to-day, even the lowliest amateur would consider a 50-mile transmission as nothing. Of course all this short wave communication is accomplished by radio telegraph and one has to have a working knowledge of the Continental code in order to share the thrills of this long distance work. But learning the code is not



HOW SHORT WAVE HIGH POWER—
 A section of tape, part of a message received at the Broad Street offices of the Radio Corporation of America from station SAQ at Gothenburg, Sweden. The message reads: "Favor creditbank Oslo 2." The effects of static can be seen in several places appearing as a sharp pointed mark much narrower

S. PORTLAND, MAINE
0358 7:36M Time 7:17 1925
QRN. sig. QRM. sig. QRM. sig.

RECEIVER:
0 11
30 FL. Long. 30 FL. High
30 FL. Long. 30 FL. High
C. Dist. as before
Rodney L. Diarmore
OPERATOR RD

ELLWOOD, CITY, PENN.
416 Glen Avenue
Radio 2-GY. Ur. CW Sigs. WKO hr. 10 at 8:00A. M. 8-6-21 EST.
255 31/2hr 2RN PD 25B NEAR DC

TRANSMITTER
8GI uses 1-203
Watt Tube in Coupled
Hartley Circuit
800V CASC. volts. 200V on plate
Rad. 2 TCA.
The old bean wasn't working
Working of good 400V
This AM. got up for 400V
REMARKS: P. ONLY. Haven't done much good since changed
Aerial used to get better results with 2 swatters
Always glad to QSR for QSL
Every Body on 40 meters DX CRAZY Hard to move TRAFFIC

RECEIVER
1-BGF
LO LOSS
DNESTEP AF

75B - 1.H.R.U.
VIA RESEAU BELGE BELGIUM
TO RADIO H.C.L.S.
Huis de Meugne 53 rue Sahage 53 Jette Brussels
YOUR 24 SIGS RECD. GMT 0919 DATE 11-1-25
QRK 14 CRM QRM QSS QKH 20
RECEIVER USED 0-V-1 AERIAL one wave zone
TRANSMITTER USED circuit
VALVE TYPE LT V AND
HT V MILLI PLATE CURRENT METRES
AERIAL CURRENT AMP-W/L
BEST DX NEC BEST DX TRANS
REMARKS: I have you added 2 meters
WITH BEST DX AND CUL 755
Jan 9/19 25 Huis de Meugne

Paradise for the DX Fan

on Forty Meters the Thrill of Distance
cast Listener—The Apparatus Is Com-
Code Is Necessary But Not Difficult

H. FELIX

laboratories with the coöperation of the
National Carbon Company.

Amateur transmission is carried on
largely on a frequency of 7496 kc. (40 me-
ters). Some stations work on about 60,000
kc. (5 meters) and a great many others on
3750 kc. (80 meters). Another group,
employing radio telephony and continuous
wave telegraphy, work on 1666 kc. (180
meters). A 7496 kc. (40 meter) receiver,
however, gives ample opportunity for dx
work because amateurs in all countries of
the world where the contagion has spread
are permitted entrance to the ether on or
about this frequency.

WHO'S WHO ON SHORT WAVES

THERE are also other ethereal attrac-
tions available to the possessor of the
short wave receiver. Considerable com-
mercial transoceanic communication is
carried on by new experimental short wave
transmitters, which may some day sup-
plant the immense high power, long wave
equipments erected prior to the debut of

such a chore as it is commonly reported to be, and more than one broadcast listener, to whom DX reception is almost essential, is buckling down with key and buzzer to learn the code and take part in the fascinating short wave communication. We shall publish articles in later numbers, describing the construction of simple transmitters and receivers which will operate on these bands. We believe with many of our readers who have written us since articles about short wave communication have appeared in this magazine, that this is a fascinating new field to which many broadcast listeners will gladly come.—THE EDITOR.

the short wave. Among these stations are
Nauen, Germany, 2YT, Poldhu, England,
12,000 kc. (25 meters); LPZ, Buenos Ayres,
8333 kc. (36 meters); 1 XAO, Belfast, Ire-
land, 4997 kc., (60 meters); SFR, Paris,
France, 4614 kc. (65 meters); WCM, Rocky
Point, Long Island, 4000 kc. (75 meters) and
RDW, Moscow, Russia, 3614 kc., (83 meters.)

Another service, which lends enchant-
ment to the short wave territory, are
special rebroadcasting links used to inter-
connect chains of stations or to furnish
programs to permanent stations. The pro-
grams of WGY are broadcast on 8570 kc.
(35 meters); KFKX, Hastings, Nebraska,
5357 kc. (56 meters) and KDKA, Pitts-
burgh, 4838 kc. (62 meters.) Oftentimes
these programs can be heard with great
volume on the short wavelengths while
the broadcast receiver is incapable of
picking them up on their regular broad-
casting channel.

The MacMillan expedition also used
short wave transmission for code and radio
telephone communication, during its
recent exploration voyage. Short wave
enthusiasts were privileged to hear the
transmitters installed on the two prin-
cipal ships of the expedition.

The Navy Department has taken cog-
nizance of the possibilities of the short
wave in its recent Pacific cruise by the
installation of short wave station NRRL
aboard the U. S. S. Seattle, flagship of the
fleet. It selected Mr. F. H. Schnell, Traf-
fic Manager of the American Radio Relay
League, to take charge of the transmit-
ter. The extraordinary success of his
work is one of the most interesting chap-

ters of amateur short wave history, pro-
ducing as it did convincing evidence to
naval officials of the practicability of ex-
tremely long range transmission on low
power. The experimental station of this
magazine, 2GY, communicated with NRRL
while she was leaving Tahiti in the South
Pacific Ocean. Forty meters and five
watts of power were used at the Garden
City end.

Two difficulties of broadcast dx are not
encountered to a great degree in short
wave reception. First, interference is min-
imized because of the very much sharper
tuning on the high frequencies (low wave-
lengths.) Second, the difficulty of identi-
fying stations is greatly reduced because
amateurs sign their call letters frequently
and freely.

THE CODE: OPEN SESAME

ON THE other hand, the broadcast
listener must spend some patient even-
ings in learning the code, for amateur com-
munication is carried out by the dot and
dash method. Not that this is a tremen-
dous undertaking, although the first few
hours of code education are usually quite
bewildering. It is something like learning
to operate a typewriter. If you do not
know the location of a single letter on the
keyboard, your progress is very slow. But
as soon as you are familiar with the position
of a few letters, progress is quite rapid.

Amateur communication is carried on
at a much slower rate of sending than that
used in commercial traffic. By the use of
abbreviations, representing an efficiency
comparable only to that of short wave
transmission itself, the amateur compresses

1720 UNIVERSITY AVE. SAN DIEGO, CALIF.
Radio 2GY UR. 40 SIGS WKO. HR. APT. 2
AUD. 6:20 7 QSB. RAC. QSS. 7/11 QRM. QRM.

TRANSMITTER
10 W 2 Tubes
C. Healy Ckt.
ANT. AMP. 2

RECEIVER
B.T. tapped
30-150 Meters
Det. as 1
W.E. Fones

ANTENNA: Type Cops Wire 4 Ft. Long. 40 Ft. High. 40
COUNTER POSE: Fan Type Wire 4 Ft. Long. 30 Ft. High. 10
DI: 6000 Miles All States U. S. 9c C. Dist. as N.Z.
REMARKS: He sure got an awful punch. O.M. he
so need be glad on 6 ANT. 755 J. F. Schrader
PSE QSL—QSR ALWAYS OPERATOR

—RADIO MESSAGES ARE RECEIVED

than the characters of the code. The Radio Corporation maintains several short wave stations, some operating on frequencies as high as 15,000 kc. (20 meters), mainly as an adjunct to their long wavelength stations. German and Argentine stations are also using short waves for telegraphic traffic

into a few letters messages of considerable import and significance. A few samples of this esoteric language will serve to indicate the principles upon which it is founded.

First amateur:

CQ CQ CQ CQ CQ CQ UIAQR UIAQR
UIAQR UIAQR CQ CQ
CQ CQ UIAQR UIAQR UIAQR

Second amateur:

UIAQR UIAQR UIAQR G2BAO G2BAO
G2BAO G2BAO QRA?

First amateur:

G2BAO G2BAO G2BAO UIAQR UIAQR
UIAQR QRA WALTHAM MASS GE OM
U VY QSA HR BUT QRM FM U6CIX
WL WK U LATER HV 2 MSGS 4 CUL 73
OM

Second amateur:

R R UR SIGS GD BUT QSS CUL

This seemingly cryptic communication is pregnant with information and good manners. CQ is a general invitation to communicate. CQD, the predecessor of the now universally adopted sos distress call, is derived from CQ, the D being added to signify "danger."

UIAQR is the first amateur's official call. The letter prefix designates him as a resident of the United States. The figure 1 indicates his location in the New England district. The United States is divided into nine districts, each headed by a radio inspector. AQR are the letters assigned to this particular amateur by the Department of Commerce.

The acknowledgement of the second amateur consists of the first amateur's call, followed by that of the second amateur's.

The letter G—called in amateur parlance, the intermediate—indicates him to be a resident of the British Isles. The prefix A indicates an Australian amateur; B, Belgian; BZ, Brazilian; C, Canadian; CH, Chilean; D, Danish; I, Italian; J, Japanese; M, Mexican; O, South African; PI, Philippine Islander; R, Argentinian; Y, Uruguayan; and Z, New Zealander. The QRA? means, "Where are you located?"

The answer of the first amateur consists of the usual acknowledgement followed by, "My location is (QRA without question mark) New Britain, Connecticut. Good evening, old man (GE OM). You are very loud here (U VY QSA HR) but I am having interference from U6CIX an American amateur on the Pacific Coast (BUT QRM FM U6CIX) I will work with you later (WL WK U LATER). I have two messages for you (HV 2 MSGS 4 U). I'll see you later (CUL) Best wishes, old man (73 OM)."

The reply means: "I received your message satisfactorily. (RR) Your signals are good (UR SIGS GD) but they fade in and out (QSS). I'll see you later (CUL)."

Eavesdropping on short wavelengths has its fascination but almost invariably, it serves only as an introduction to the creation of a "dyed-in-the-wool ham." The term "ham" is used to describe the owner of an amateur transmitting outfit. Possessed of a transmitter, amateur radio becomes a personal and living thing. It is no longer an external world which you visit as an onlooker. You too can press the key and become a part of the international dot-and-dash whirl.

Those of you who have seen giant trans-

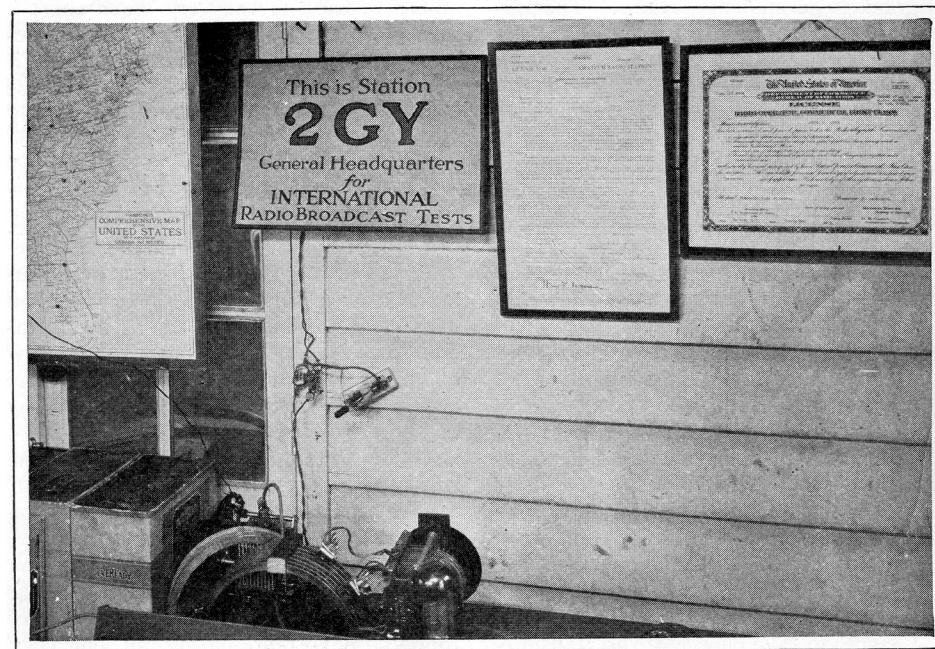
oceanic radio stations, with their immense and stately towers, overshadowing power houses, and buildings filled with transmitting and receiving apparatus, may hesitate to believe that tiny miniatures of these imposing equipments have sent their message half way 'round the world. But the remarkable feature of short wave transmission is the fact that only very minute power is required to set up ether waves which radiate for thousands of miles. Recently an amateur in British Columbia maintained a regular schedule of transmission and reception for fourteen successive nights with a radio-found friend in Australia, using only a five-volt receiving tube, powered by heavy duty B batteries, designed for use with receiving sets! Think of it, you owners of five-tube sets—one receiving tube, efficiently used, is capable of transmitting half way round the world.

SIMPLE APPARATUS IS USED

THE circuits used in these diminutive transmitters are very simple. The all-important thing is the correct arrangement and placement of high grade components. In a characteristic way, RADIO BROADCAST is leading the way to the new field, by collecting data and designing transmitters and receivers for the special benefit of broadcast listeners. As rapidly as the engineers conducting the RADIO BROADCAST-Eveready short wave experiments progress with their work, descriptive articles will be printed in the magazine, giving full details of construction and operation.

Although primarily a sport and hobby, there are serious aspects to amateur transmission. Feelings of sectionalism and nationalism vanish when personal friendships are built up between amateurs in the four corners of the globe. As the boundaries of friendship have been extended through the ages by means of easy communication and transportation, from tribe to community, community to state, and state to nation, we have gradually acquired a unified national consciousness. Tribes no longer fight tribes; rivalries between cities, as that of Carthage and Rome of old, no longer result in bloody warfare, as the telegraph, telephone, railroad and steamship have cemented friendships and demonstrated powerful common interests.

Now we have short wave, low power radio, producing the citizen of the world, with friends whom he calls by name through the radio night, in Melbourne, Paris, Tokio, and Rome! If short wave radio spreads as rapidly as has broadcasting during its first five years, international peace will have a recruit and ally of significant influence. Predictions seem visionary, but we need contemplate only the influence of the telegraph and telephone, which has lifted us out of community interest to a true national consciousness, to lend the color of realism to the hope that the seeds are firmly planted for a new recognition of international bond, established through the agency of short wave radio!



TWO ESSENTIALS FOR AMATEUR TRANSMITTING

The regulations of the Department of Commerce, the Bureau in charge of radio in this country, are that for a transmitting station capable of sending signals outside of the state in which the set is located, a license is necessary. The operator of the station must have a license also. The amateur station license is the long one in the center and the operator's license is shown at the right of that. There is no fee for either license and the examination is not difficult. Licenses are granted to those who can send and receive ten words per minute in the Continental code and who can pass a simple theoretical examination, dealing with the theory and operation of amateur apparatus.