

delicate instruments which they really are. Removing the cap never does the phones any good, and frequently prying fingers break the connecting wires. The diafram is bound to suffer from handling. Most important of all is to protect them from shocks. Dropping them on the floor, or even setting them down roughly on the operating table is hard on the mechanism, and causes the permanent magnets to lose their magnetism.

Telephone receivers cannot be expected to keep their sensitiveness if they are not accorded the proper treatment.

COUNTY RADIO CLUB ORGANIZED

A MEETING was held recently at the home of Merritt E. Gregory, on Pine Street, Morristown, N. J., at which the Morris County Radio Club was organized. M. E. Gregory was elected President, R. M. Lacey, Secretary, and M. W. Gilso, Treasurer.

The principal purpose of this Club is to better the condition of Amateur Radio in this vicinity and to act as a reliable link in a direct line of communication between cities. It is felt that with an efficient organization of this character relay messages can be more promptly handled. It is proposed to have at least one member stand watch at an official station of the Club every evening so that stations in other towns may be assured of a good route through this vicinity.

Another purpose of the Club is to co-operate with members in solving their individual radio problems, also to gather together for the benefit of the members such bits of news and knowledge as is of interest to the radio amateur.

At the meetings which for the present are held at the homes of members, it is expected to have from time to time speakers of note, or other features of peculiar interest.

The second meeting of the Club was held at the home of M. W. Gilso, 22 Early Street, at which time applications for membership were considered. Those desiring membership should apply to the Secretary, R. M. Lacey, 11 Mills Street, Morristown, who will furnish blanks and explain necessary qualifications for admission.

A radio broadcast concerning the Club's activities will be sent out each evening at 7.30 sharp (Eastern Standard time) from one of the Club's official stations which at present are 3 LY and 3 ABG.

The Experimental Station on Signal Hall, St. John's, N. F., picked up and heard without interruption the transmission of wireless telephone speech, as given by Chelmsford on the occasion of a wireless telephone demonstration to Denmark at 5 p. m., on August 3rd. The distance between Chelmsford and St. John's is approximately 2,673 miles.

Transatlantic Sending Contests

*Plans Are Now Well Under Way For
Communication Across the Ocean*

SINCE the first announcement of the Transatlantic Sending Tests, in the September, 1920, issue of EVERYDAY, the most gratifying interest has been shown by experimenters as well as manufacturers and dealers who are working to promote interest among the radio men in the contest.

The honors, as well as the prizes, make the position of the winner one to be envied. Quite a number of experimenters, however, have hesitated to register for the contest because they felt that, with their equipment, they would not have a chance. As a matter of fact, the first place may go to a "dark horse", for the more elaborate the station, the greater the possibility that some vital thing may go wrong at the very last minute. As for getting across—great confidence is felt in the high sensibility of the receiving equipment to be used. Mr. Coursey, of the *Wireless World*, will enlist the aid of a number of radio engineers in England who have unlimited resources in the way of apparatus. Since no restrictions are placed on the receiving sets, there will be some stations which will hear almost a whisper from this side.

Careful data on the equipment and results will be compiled, material of considerable practical value.

A list of prizes offered up to the time of going to press is given below. In addition, many others have been promised, but the conditions not decided upon. Those will be announced in the December issue. The total will be in the neighborhood of one thousand dollars.

Acme Apparatus Company—\$50.00 in gold to be given unconditionally to the winner of the tests.

Radio Distributing Company—Apparatus of the value of \$43.00. Either a complete set of Radisco coils, two variometers, one variocoupler, with dials, switches, etc., or a Radisco oscillation transformer and Clapp-Eastham 27,000-volt transformer, mounted, to be given unconditionally to the winner.

The General Apparatus Company, Inc.—\$50.00 in gold to be given unconditionally to the winner.

Atlantic Radio Supplies Company—Apparatus of the value of \$40.00 for first prize, consisting of two A-P electron relay, two A-P amplifier, and two A-P transmitter tubes, and one each of these tubes to the second and third place winners, to be given unconditionally.

American Radio and Research Corporation—\$100.00 in gold, to be given to the station winning the highest score with an Amrad quenched spark gap, provided that man owns his own station and is not connected in any way with

a manufacturer of radio equipment.

The C. D. Tuska Company—Apparatus of the value of \$28.00. A Tuska filter and inductance, to be given unconditionally to the winner.

Atlantic Radio Company—Apparatus of the value of \$130.00. A complete 500-volt, 200-watt motor-generator with field rheostat, to be given unconditionally to the winner.

These prizes generously offered by the manufacturers and dealers, total considerably over \$400.00, with many more to come.

The first registrations, received before October first, are printed below. Those received subsequently will be published in the December issue. Others, which lack of space requires postponement to next month, with those from experimenters who are not yet ready to register, will bring the total to twenty-five or thirty. There is, therefore, plenty of room in the schedule for newcomers.

September 14, 1920.

34 Hobart Ave.,
Summit, N. J.

Radio Editor, EVERYDAY ENGINEERING.

Dear Sir: I would like to enter your Transatlantic Sending Tests. The following information of my transmitter is:

1. Irving Romeon Groves.
2. 34 Hobart Ave., Summit, N. J. Call 2DX.

3. Set has just been completed and no distance has been attempted yet.

4. One kilowatt Thordarson 25,000 volt transformer, one Dublier .007 mfd. condenser, one 1 K.V.A. Amrad Quenched gap with a note of 240 cycles. One home-made oscillation transformer with 1½" ribbon on primary, 3¼ turns, and 1" ribbon on secondary, 8 turns, one Amrad resistance for regulating note of transmitter. Large eight-wire aerial 75 ft. long, 60 ft. high with wires spaced 2 ft. apart. Counterpoise with 10 wires running under aerial. Also large metal plate buried 6 ft. underground and about 12 driven pipes. Also connection made to water and gas pipes. The set is all connected up with 1½" brass ribbon and no lead is over 2 ins. long.

Hoping you can arrange a schedule for this station, I remain

Yours truly

I. R. GROVES.

October 9, 1920.

EVERYDAY ENGINEERING MAGAZINE,
New York City.

Dear Sirs: I wish to enter the Transatlantic Sending Contest. The information required is given below:

1. P. E. Fansler.
2. Noroton Heights, Conn. Call not assigned.

3. Set under construction.

4. 1 k.w. vacuum tube set, to operate on undamped waves. T-type antenna, with counterpoise ground.

Please let me know if this application is accepted, and the place I shall have in the schedule. I am intensely interested in this Contest, and I believe that experimenters who go into it seriously will be able to get across. Best wishes,

P. E. FANSLER.

(Continued on page 158)

TRANSATLANTIC TESTS

*(Continued from page 156)*Ann Arbor, Mich.
October 9, 1920.Radio Editor, EVERYDAY ENGINEERING,
2 West 45th St., New York City.

Dear Sir: I am interested in the Transatlantic Tests you are about to sponsor.

I wish to enter the contest and also to suggest that some sort of a handicap be placed on the men in different sections of the country. For instance: Men with stations 600 miles from the coast can hardly compete with men right on the coast.

The handicap should be a wavelength basis, in my estimation, as I am sure I could work almost as far with 700 watts as I could with a 1000 watt.

However, any sort of an arrangement which would place the east and west on about the same footing would be appreciated.

Information for registry:

1. Ross Gunn—Entire Charge.
2. Ann Arbor, Michigan, Station not yet in actual operation.
3. 1,100 miles over land in 1916.
4. C.W.

In closing I wish to express my appreciation of your excellent magazine.

Very truly yours,

ROSS GUNN,

426 Maynard St., Ann Arbor, Mich.
September 23, 1920.EVERYDAY ENGINEERING MAGAZINE,
New York City.

Attention of Mr. M. B. Sleeper.

Dear Sir: We desire to enter our names as contestants in the Transatlantic Sending Tests.

We note from the first condition of the contest that credit is to be given to the man who engineers the work. We wish to have an exception made to this rule in our case and desire that credit be given equally to each of us.

The following information is for your use in assigning us a place in the transmitting schedule:

1. M. B. Williams and S. S. Frizzell.
2. Station will be located at Duxbury, Mass. Call letters have not yet been assigned, but upon their assignment will be forwarded to you.
3. 700 miles on spark set.
4. The type of transmitter must at present remain secret. When our schedule is assigned we shall be at liberty to divulge the method we propose to employ for this transmission.

We trust that this information is complete and that you can accept our entry into this contest.

Very truly yours,

M. B. WILLIAMS
S. S. FRIZZELL.

The following letters, taken from communications from English experimenters, show the interest on the other side, and their readiness to hold up their end of the work.

25 Thirlmere Road, Streatham,
London. S. W. 16, England.M. B. Sleeper, Esq.,
Radio Editor, EVERYDAY ENGINEERING,
New York City.

Dear Sir: I notice from the "Wireless World" of the 18th of September 1920, that you are desirous of receiving the names of English Amateurs who are willing to co-operate with American Amateurs in an attempt to transmit from U. S. A. to the British Isles.

I shall be pleased to be one of those, on this side of the Atlantic.

My receiving set is sensitive. I have received Annapolis, and should be glad to see

if I can receive the American amateur stations. I am,

Yours faithfully,

JOHN N. COOPER.

Chateau d'Etroyes; Bourgneuf-Val-d'Or;
Saone et Loire.

Wednesday, Sept. 22, 1920.

Mr. M. B. Sleeper, Radio Editor,
EVERYDAY ENGINEERING MAGAZINE,
New York City

Dear Sir: Having read in the September 18th issue of the "Wireless World" that American amateurs wished to make some Transatlantic tests, I inform you that I would gladly co-operate with them in these tests.

I have a highly sensitive receiving station located at Villa des Hautes Roches, 55 Boulevard de Mont-Boron, Nice, France, where I will return early next month to stay until the summer and at which I get good signals from America.

I have been for the last two years of the war detached by the French High Commission in Washington to the Navy Department for Transatlantic radio work and I would be especially pleased to help in any possible way American radio amateurs in this interesting attempt.

In the hope of hearing from you soon at my Nice address, I am, Dear Sir,

Yours sincerely

LEON DELOY.

63 Strone Road, Forest Gate,
London, E. 7, Sept. 19, 1920.

Dear Sir: I shall be very pleased to co-operate with you in your efforts to achieve Transatlantic transmission by one of your Amateur stations and accordingly shall be very pleased to hear particulars.

I may state that I am credited with the possession of one of the finest experimental stations in England and can average to listen in on a 3-valve set, using stranded wire inductance coils and tuned high frequency magnification.

Thanking you in anticipation and with the very best wishes for the success of your most excellent project, I am, Dear Sir,

Yours truly

ALEXIS J. HALL,
Assoc. Inst. Radio Eng.Clifton House, Hartford, Cheshire.
September 18, 1920.M. B. Sleeper, Esq., Radio Editor,
New York City.

Dear Sir: Re-Transatlantic tests for amateur receivers. I am very pleased to see your communication in the "Wireless World" and will be pleased to try and receive our American amateur friends, if you will kindly supply the time (G.M.T.) for working, the wavelength and call letters. I possess a licensed receiving station, first obtained in 1913.

My arrangement at present for receiving consists of: A four valve resistance amplifier set, three Marconi V24 valves and one Q valve, De Forest honeycomb coils for tuning inductance, H. W. Sullivan Condensers, Weston ammeter and Fuller block accumulators.

The following are some of the long distance stations I have heard: Moscow, Budapest, Posen, Nauen, Lyons, also the Concerts from Chelmsford.

I have adopted for my call letter, HMH. I am employed as a chemical engineer on the staff of Messrs. Brunner-Mond & Co., Ltd., Winnington, near Northwick.

Yours sincerely,

H. M. HODGSON.

A TUBE SET OPERATED ON A. C. WITHOUT RECTIFICATION

(Continued from page 157)

in series with two turns wound around the antenna inductance.

Filament and plate meters, although they are not absolutely essential, are needed if many experiments are to be made. The radiation meter, however, is a necessity. When the set is ready for operation, the antenna clip should cut in about six or eight turns, with ten or twelve in grid and plate circuits.

If, upon closing the current supply switch, the radiation meter shows no indication, the switch should be opened at once. Because no current is taken from the tube circuit, it will be under a considerable overload. After juggling the clips, the circuit will oscillate. Then the problem is to obtain maximum output at 200-meters. The wavelength is determined by the antenna inductance. This circuit adjusted approximately, the grid and plate taps should be moved back and forth until, without causing the tubes to turn blue, or the plates to turn red, the radiation is highest.

HIGH-POWER TRANSMITTERS

If care is taken to keep the insulation high, vacuum tubes of greater capacity can be employed. There are no air condensers, leaks and other instruments which must be changed when the power is increased. A larger transformer, however, will be needed to supply the heavier current.

It may be found that the telegraph key is not of sufficient capacity to weaken the supply current, as should be done on larger sets. Then a relay, with silver dimes for contacts, will be required. Such an instrument can be made from an old telegraph sounder.

NOTES

This type of transmitter cannot be received readily with a crystal detector, but requires an oscillating audion. The range compares favorably with other vacuum tube or spark sets. There are numerous experiments which can be tried with audio frequency tone circuits to give an audible note when a straight detector is employed at the receiving end.

Experiments were made at the EVERYDAY ENGINEERING laboratory on a frequency doubler, but the results were not satisfactory. The frequency doubler does not actually double the frequency, but causes a distortion of the wave form which must be smoothed out by a filter circuit. It is practically impossible to predetermine the design of the transformer. Even those used in commercial stations are made by the cut-and-try method, and in some cases require water cooling to keep them in operation. Therefore, it is not surprising that the decision was reached that a frequency doubler was not a good project for the experimenters.