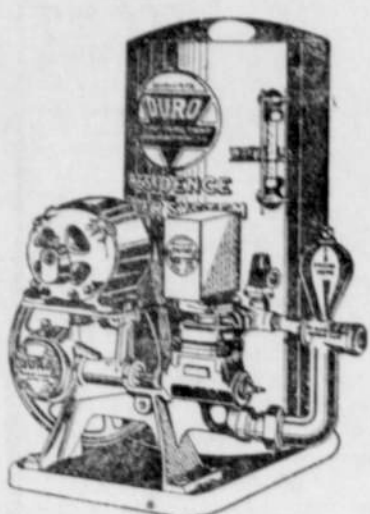


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RADIO

SIMPLE ANTENNA IS BEST FOR AMATEUR

Straight, Single Wire Type, Placed High, Is Preferable for the Receiving Set.

It is estimated that in one year's time from 700,000 to 1,000,000 new radio receivers were installed in the United States and from observation it would appear that there were almost as many different styles of antennae erected as there were sets installed. This, too, despite the fact that the country was flooded with literature telling each and every citizen how to build his own set.

These cage, flat-top, multi-wire, umbrella, etc., kinds of antenna were designed primarily for their sending characteristics. Remember that, in the beginning of radio, the man who wanted to hear wireless signals had to know quite a bit about practical radio. He had to know the Continental and Morse codes, and in addition to be a fairly decent sort of mechanic. He was, in short, the radio amateur, who wanted to send as well as receive. Therefore all this early literature was for the man who wanted to send as well as receive.

Since radiophone broadcasting was first started, there has grown up another army of radio enthusiasts, greatly outnumbering the pioneer amateurs, who do not want to send at all, but who do wish to receive. Therefore much of this early literature does not apply, or more correctly, all of it does not apply, to the new generation.

In building an antenna, remember that nothing is more satisfactory for

of fine mesh chicken wire in a moist spot and connect the ground lead to this, or drive a six-foot length of galvanized pipe or copper rod into the ground.

All outdoor receiving or transmitting antenna should be protected by some form of lightning arrester or switch, approved by the National Board of Fire Underwriters. This switch must have at least a capacity of 100 amperes, 600 volts, and must be supported at least five inches from the side of the building. The ground connection from the switch consists of No. 10 B. & S. gauge copper wire, also supported five inches from the building.

If the antenna is to be used for receiving only, any one of the numerous approved lightning arresters now on the market will be satisfactory. However, these cannot be used for a transmitting station, as the current put into the antenna by the transmitter is in effect a miniature lightning discharge and would escape to the ground through the arrester.

One of the most satisfactory antenna for short wave reception consists of a single wire, 100 to 150 feet long, supported at least 40 feet above the ground, with the lead-in taken from one end. This wire should be placed so that it is free from all obstructions, such as trees and houses. If power or high tension transmission lines are in the immediate neighborhood of the antenna, it should be placed as nearly at right angles to the power lines as possible, in order to reduce the 60-cycle induction.

No. 12 or No. 14 hard drawn copper wire, or copper clad or copper weld of the same gauge make a very satisfactory antenna. Furthermore, this wire is strong enough to support itself, and will stand up in weather of all kinds. Phosphor bronze wire or standard copper cable has a higher tensile strength than a single wire, and therefore long spans may be safely made, but the receptional qualities of these wires are not noticeably superior to the wires first mentioned.

If a single wire antenna were ro-

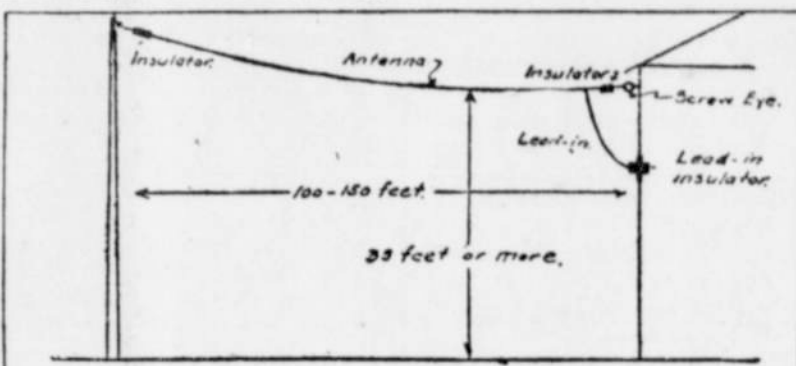


Fig. 1.



Fig. 2.

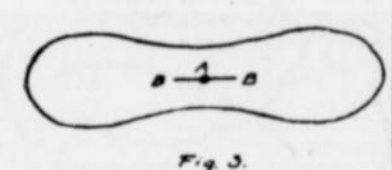


Fig. 3.

of the amateur than the straight, single wire antenna, as high in the air as it can be placed, and about 150 feet long. An antenna of this sort, will give better results, in most cases, than any other sort. It will take up less room, and will not cut so heavily into the owner's finances.

The function of the antenna for a receiving set is to absorb the maximum amount of energy radiated from a transmitter. This means that it must be so built and placed as to be as efficient as possible. The factors governing the type of aerial to be erected are as follows:

The amount of space available.

The amount of money which is to be spent.

The wave-length range which is to be received.

The distance from which signals are sent.

An aerial possesses both distributed capacity and inductance, which combined give it a definite period of oscillation. These oscillations will set up a wave motion the length of which is related to the capacity and inductance by a formula which can be closely approximated by multiplying the length of the antenna in feet, plus the length of the lead-in in feet, by 1.22. This will give the fundamental wave length of the antenna.

No matter what kind of antenna is used it must always be remembered that the lead-in should be as short and as direct as possible. In other words don't use up any unnecessary energy received in the antenna to force a way through a long lead-in to the receiver.

If a multi-wire antenna is used, have the lead-in consist of as many wires as are in the antenna. These wires should be wrapped together at a point a few feet from the antenna and brought into the receiving set as a cable. Where this cable passes through the walls of the building, it should be insulated with porcelain tube or standard electrose lead-in insulators.

Be careful to keep the lead-in as far as possible from electric light wires, telephone wires, etc. If this is not done, an objectionable 60-cycle hum may be heard in the phones, caused by electric light induction.

The ground connection should also be as short and direct as possible. Service water pipes or gas pipes make excellent grounds, and should be used in all cases where available. All connections in the ground lead-in should be soldered, especially the connection to the actual ground pipe. If this is not done, the ground resistance will so decrease the strength of the received signals as to make them almost inaudible.

If water pipes are not available for a ground, bury from eight to ten feet

tated through a complete circle, it would be noticed that a certain transmitting station would come in loudest when the antenna was in a certain definite position. That is, a single straight away antenna receives signals better from one direction than from others. This is illustrated in Figure 2, which shows the directional characteristics of this type of antenna. "A" shows the lead-in and "B" the direction in which the antenna is stretched.

If a transmitting station of constant power were moved around the receiver along the path of the curved line "C," the signals from this transmitter would come in with equal intensity at all positions. Conversely, stations from the direction "D" will be received over greater distances than those in any other direction. Keep in mind the direction of the transmitting station from which it is desired to catch signals and point the free end of the antenna away from the station.

If the lead-in is brought in from the center of the antenna, the fundamental wave length will be decreased, and its directional characteristics will be similar to that shown in Figure 3.

RADIO FLASHES

New York is to have a permanent radio fair.

A reformed burglar is broadcasting a talk on how to beat crime and criminals.

Sir Oliver Lodge hopes to cure protracted droughts in England by using radio to electrify the atmosphere.

A camper at Cayuga Lake, N. Y., with a makeshift aerial, was astonished to hear a concert broadcast at Louisville, Ky.

At a meeting of the Rotarians at Ithaca, N. Y., the proceedings were conducted by the absent president by means of radio.

If it is possible, incorporate in your detector circuit an eight or ten-volt meter for obtaining constant voltage operation of your detector tubes. The life of your tubes will be increased about three times by careful operation under this plan.

A system of wireless telephony now connects the Turks Islands and the Calcos Islands in the West Indies, the same installations being used also for wireless telegraph and for communication with ships. The distance covered by the radio-telephone circuit is about twelve miles.

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THE ACME CAFE

SUNDAY DINNER

JULY 22, 1923

SOUP

Cream Tomato
Ox Tail With Barley

FISH

Fried Salmon Steak 40c

ENTREES

Young Friend Chicken and Country Gravy 60c
Sauté Young Veal with New Peas 35c
Beef Stew with Vegetables 35c
Boiled Shoulder of Lamb and Bouillon Vegetables 35c
Boiled Ox Tongue and Pickled Sauce
Cold Boiled Ham with Potato Salad 35c

ROASTS

Prime Ribs of Beef Au Jus 40c
Leg of Pork and Apple Sauce 40c

VEGETABLES

New Mashed Potatoes
Green Beans en rue

DESSERT

Green Apple, Cream, Blackberry and Pumpkin Pie
Berries in Season
Ice Cream
Tea, Coffee, MILK, Ice Tea

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Josephine County Flour Mill

Retail Price List

Effective July 23, 1923

FLOUR AND CEREALS

| | |
|--|--------|
| Josephine's Best, (hard wheat flour) 49-lb. sack | \$2.00 |
| Clematis Flour, 49-lb. sack | 1.75 |
| Graham, 24-lb. sack | 90c |
| Whole wheat Flour, 10-lb. sack | 45c |
| Graham, 10-lb. sack | 45c |
| Wheat Hearts, 9-lb. sack | 50c |
| Corn Meal, 10-lb. sack | 40c |
| Rye Meal, 10-lb. sack | 50c |
| Cream Oatflakes, 9-lb. sack | 60c |
| Pastry Flour, 40-lb. sack | 1.40 |
| Health Bran 6-lb. sack | 25c |

GRAIN

| | |
|----------------------------------|--------|
| Wheat, per 100-lbs | \$2.25 |
| Shelled Corn, per 100-lbs. | 2.45 |
| Cracked or Ground Corn, 100-lbs. | 2.60 |
| Rolled Barley, 67-pound sack | 1.40 |
| Ground Barley, per 100 lbs. | 2.10 |
| Whole Oats, per 100 lbs. | 2.40 |
| Rolled Oats, 60-pound sack | 1.50 |
| Ground Oats, 100-lb. sack | 2.50 |
| Ground Wheat per 100 lbs. | 2.40 |
| Rye per 100 pounds | 2.25 |
| Ground Rye, per 100 lbs. | 2.50 |

MISCELLANEOUS

| | | | |
|--------------------------------|--------|-------------------------------|---------|
| Linseed Oil Meal, 100-lb. sack | \$3.60 | Alfalfa Meal, 100-lb. sack | \$ 2.40 |
| Soya Bean Meal, 100-lb. sack | 3.30 | Cocoonut Meal, 100-lb. sack | 2.15 |
| Calf Meal, 25-lb. sack | 1.35 | Cottonseed Meal, 100-lb. sack | 3.75 |

These prices are subject to change without notice

NEW ERA IN AVIATION IS BRITISH FORECAST

London, July 21—(A. P.)—A new era in air flying, that of cheap, safe, popular airplaning, is foreshadowed by the remarkable success attained by tiny British airplanes called motor gliders. One of these, a small monoplane fitted with a three horsepower engine, recently reached a speed of 53 miles an hour during tests near London. It climbed to 2,350 feet, and although in the air for an hour and twenty minutes, consumed less than a gallon of petrol.

French aviation experts also are perfecting similar "pocket-planes," intended for use by amateur aviators and sporting enthusiasts. At a contest soon to be held near Paris thirty of these diminutive planes will take part. In England a small "car with wings," capable of carrying its owner through the air at the speed of an express train with no more power than is required by a motor-cycle, has reached such a practical stage that orders are being booked for it by the public.

Rising out of small fields and being wonderfully controllable in the

air, these cheaply-run winged cars are to be made to alight so slowly that the risk of a crash on landing, even under adverse circumstances, will be practically eliminated. Furthermore, such machines will be so handy on the ground, and their wings will fold so neatly, that it will be possible to house them in ordinary motor garages.

It is expected that the owner of one of these machines will be able to make the trip from London to Paris and back, sweeping high over the Channel and escaping all the irritations and delays of each transport, for about \$5. A movement is now on foot to get motor-garage proprietors to set aside smooth-surfaced fields, marked clearly so they can be seen from above. In this way the drivers of little "air cars," when on week-end aerial rambles, will have points all over the country where they can descend and replenish their gasoline tanks, or make any necessary repairs or adjustments.

Cement for China.

Mix a cupful of milk with a cupful of vinegar, separate the curd from the whey and mix the whey with the whites of five eggs, heating the whole together thoroughly. When well mixed, sift in a little quicklime and stir until it is of the consistency of thick paste. With this, broken china, glass and cracks of all kinds may be mended. It dries quickly and resists the action of water and heat.



This brand

A New Pair FREE If They Rip

Made of special woven 9-ounce denim, indigo dyed, cut full and roomy, where the room is needed, fitted at the waist like tailor-made pants, requiring neither suspenders nor belt to keep them up.

Two-Horse Brand Copper-Riveted Waist Overalls

have the reputation of being the strongest, best fitting and longest wearing overalls on the market. Your dealer knows that our guarantee means exactly what it says.

Levi Strauss & Co., San Francisco

Reliable Merchandise since 1853

Makers of Overalls, Keep Kids Clean