

RADIO

Use of Wave Trap for Good Results

Part Is Serviceable Even in Loop Receiver, Radio Expert Says.

By JAMES H. CARROLL,
Associate, Institute of Radio Engineers,
in Radio World.

From all quarters of the compass come inquiries as to wave traps and their uses and as to what is the best type of trap to use for good results. Evidently there is a great interest in this handy little apparatus, especially under present conditions, and even when the air is eventually cleared a wave trap still will be a good thing to have around.

Take as an example the solenoid wave trap, as represented by the "WEB" model.

There are two main reasons theoretically for the success of this kind of trap and one is because of the solenoid winding which enables the electrical currents flowing through it to establish a more evenly balanced set of lines of force which concentrate themselves in the center of the tubing and upon the concentration point of the variable condenser. In this type of wave trap it has been discovered that this makes for efficiency and has a great deal to do with tuning.

Micrometer adjustment of interference elimination is necessary for retractor circuits. Therefore, when using a wave trap of this variety the condenser plates will be pressed very slowly or the operator will not trap out the unwanted station. This is a point in favor of such a trap.

Wave traps of this type can be effectively used in many different places. If you have been unfortunate in obtaining good results with a wave trap you may not have used it in the right place. In other words, you may have inserted it in your aerial circuit when it would give you the best results in your ground circuit or some other place, instead.

In the Aerial Circuit.
Let us first try the aerial circuit. Disconnect the aerial from your set and connect it to one of the posts on your wave trap. With a short wire connect the other post of the trap to the aerial post of your set from whence you previously removed the aerial. This is the simplest and most usual use of a wave trap, and it is a good one, but under certain conditions it will not prove the most effective. If by this method we do not succeed in perfectly eliminating an offending station on the lower wave lengths let us try inserting our trap in the ground circuit. This is done in the same way except that we substitute the ground wire for the aerial wire. This means is especially recommended for efficient low wave elimination but reports show that it also works equally well with the highest wave lengths and that also by this method additional stations have been tuned with a wave trap of the design we are discussing.

Now, if we are working with a loop, we can connect our trap in the grid circuit, the most approved method of eliminating interference in such a case and the only way of using a wave trap with a loop set. First locate your grid wire that goes to the tuning device in your set, either coil or condenser. Disconnect this wire at the point of contact with the grid post of the socket. Connect it to one end of a flexible wire about two feet long. Connect another piece of flexible wire of the same length at the place from which you disconnected the other wire and run these two wires outside your set to your wave trap, attaching one wire to one post of the trap and the other to the other post of the trap. You are now ready to eliminate interference. This method, even if it is a little more troublesome to try out, is well worth while, because it will make any set selective.

Another Means May Be Used.
Another means we may use is the aerial and ground shunt, which is one of the oldest methods known and among the most popular. All that need to be done to use this method of insulation is to run a wire from the aerial post of the set without disconnecting the aerial wire to one of the posts of the wave trap. Then run another wire from the ground post of the set to the wave trap. Although no tuning can be done with a wave trap used in this way it functions as an excellent trapping system and stations in the vicinity of the set can be dominated by this means.

Do not confuse a wave trap of this type with an apparatus such as the central short wave selector, which is what the name implies and not a wave trap. It fills a very definite function of its own and can be used very satisfactorily in conjunction with a trap of the type we have selected as the best.

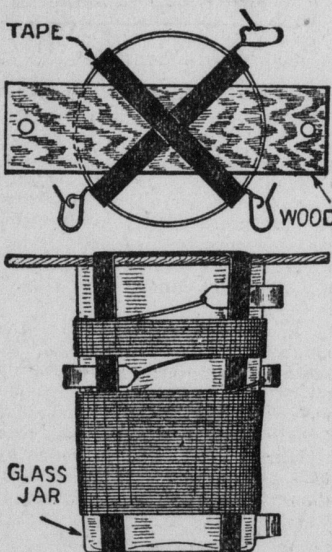
While our testing was being done and before this article was completed, a letter came to hand from a fan signing himself a Junior Radio Bug asking for practically the information given in this text, and among other things inquiring as to what became of the trapped station when it was captured, probably figuring that it remained in the trap ramping around and beating its waves against the

walls in a futile effort to escape. Well, Junior, you have staggered us here as we haven't the slightest idea as to what becomes of the invading station; our idea is that perhaps, getting its nose or its tail pitched in the trap, it tears away on the trail of other prey in the form of sets not protected by a beneficent wave trap. The earliest form of trap of any kind known to history was a pit dug in the ground by the caveman in front of his cave apartment. This was covered by twigs, branches and grasses so that it looked like a solid surface. Along came the marauding mammoth, in search of meat to vary his vegetarian diet, and tumbled in with a crash that shook the row of caves and dislocated every aerial in miles. Then, all that remained for Mr. Caveman and his tribe was to squat around the trap and sing and howl in chorus until they sang the threshing behemoth to death, in which case they became the partakers of meat. It is evident, then, that the inventor of the wave trap modeled it upon this efficient device, taking a hole, or a pit, as it were, enclosing it in bakelite, disguising it with a solenoid winding and adding the pinching condenser that squeezes the invading station until it howls for mercy.

An Easily Made Coil, Cheap and Efficient

Quite often in his experimenting a radio fan needs a coil that is easily made, cheap and efficient. The materials needed for this coil are an ordinary drinking glass, some No. 24 D. S. G. wire, a roll of tape, four Fahnestock clips and a piece of thin wood, such as may be obtained from a cigar box.

The wood should be cut to 1 1/4 by 4 1/2 inches and then placed across the middle of the open end of the tumbler. Double a piece of the tape and wrap it



Coil Wound on Tumbler Will Greatly Reduce Losses.

tightly across the glass and obliquely over the wood. Then double another piece of tape and place it over the glass and wood, so that it divides them into four equal parts. Bend the clips in the middle and round them a little so that they will fit against the curve of the glass. Slip the ends of the clips under the tape and to their end solder the wire. The coil can then be mounted by means of holes drilled in the wooden base. If the wire is wrapped tightly around the glass and tape there will be no danger of its slipping off, and the coil will be found to be an efficient one.—Radio News.

Used Aerial Lead Fish to Pick Up the Message

When the two-way radio apparatus failed, observers on the ground were perplexed as to how they could give instructions to occupants of an airplane during army maneuvers, says the Popular Mechanics Magazine. The problem was solved by tying the dispatch in a tobacco sack weighted with small stones and attaching that to a string about twenty feet long, which was held taut by two men. The pilot, informed by the panel signal to stand by for instructions, descended close enough to see what was going on, then returned presently with the radio antenna unrolled. As he approached the men holding the string, he throttled the engine, allowing the lead "fish" at the end of the aerial to hang more nearly vertical. It caught the cord and the message was hauled into the cockpit. This method is now in general use for communication in the air corps when the radio sets do not work and the panel signal will not give sufficient data.

Air Speeches Act as Tests for Receivers

It may be annoying to listen to an uninteresting lecture, but there are certain definite dividends to be derived from tuning-in on one. One of the best ways to check up on the efficiency of the set is to listen-in to some speaker and note how well the words come through.

Do not feel satisfied if the announcer's speech comes through in good shape. Announcers have a radio voice to begin with. They may be making an effort to speak plainly, no matter how unconscious this may be. The casual speaker, however, gives just a normal broadcast, thus enabling the radiolist to make an "average" test.

If the words sound "mushy" and indistinct, the chances are that the batteries are not up to par. Much of this mushiness is not so often noted in picking up music. Many just assume that it is some new orchestral effect.

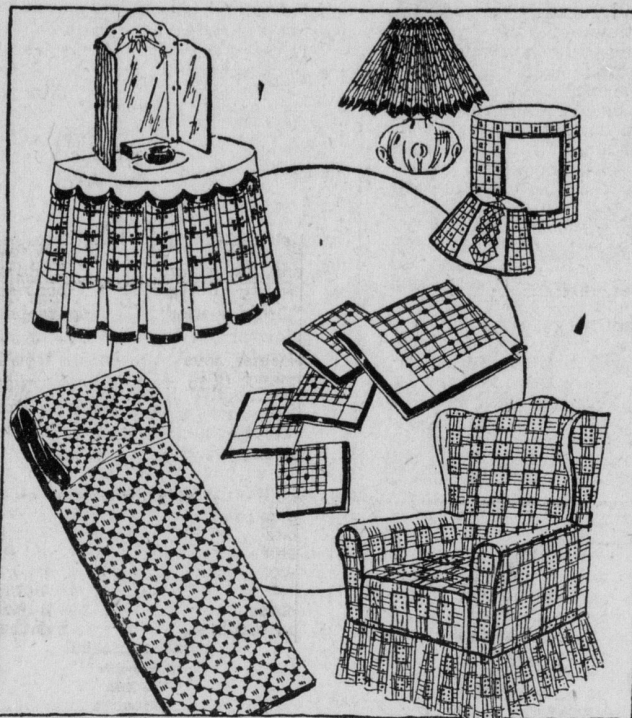
Pretty Things that are Made at Home

GINGHAM, most versatile of fabrics, has come into popular use for interiors as well as for the wardrobe. With the present peasant mode in interiors now sweeping the country, decorators are turning more and more to gingham. Some are even using it as a wall covering in place of paper with great success. It is shelled and can be kept clean with soap and water.

From the dresser drape to the tablecloth and napkins there is scarcely

a matter of fitting the chair. Some women pin paper to the chair and then cover a pattern for the gingham. For the chair shown, which is a fair-sized wing chair, it required nine yards of gingham.

From skull caps to brims of tremendous width—'tis the latest caprice of the millinery mode. Broad brims and short skirts, never!—so said some of our fashionists at some time or other in the past. In present-day modes, behold the theory dis-



SOME USES FOR GINGHAM

any interior decoration that lends itself to fabric that cannot be made from gingham. The dresser drape in the sketch may be made from any of the many beautiful colorful designs, and trimmed with plain gingham. The plains come in colors to match the predominating shade in the design. It will require about seven yards with three yards for trim.

The "lazy pad," as it is called, sketched just under the dresser, is for the beach, yachting, lawn or picnic, where one may like to take a siesta in the open. It is simply made from two strips of gingham of the width required. All gingham comes in 32-inch widths.

To make the tablecloth will require one yard and a quarter of the designed gingham and three-fourths of a yard of the plain for a five-inch border. The cloth will be about forty-one inches when finished. Each napkin requires one-fourth of a yard of designed material and an eighth of a yard of the plain.

The lamp shades are made from parchment with designed gingham pasted on with rubber cement. Rub-



HATS OF THE DRESSY TYPE

ber cement is better than glue, as it is not so apt to come through, and will permit the gingham to peel off easily in case of a mistake. The light shining through the parchment and gingham is beautifully softened and very effective. For a large lamp shade of about sixteen inches in depth it will require two and a quarter yards of gingham and a yard and a quarter of parchment. The strip of parchment and gingham when ready to plait is four and a half yards long.

The slip cover for the winged chair is a more difficult proposition. Still there are any number of women who make their own slip covers without the aid of an upholsterer. It is simply



"NO, HE'S NOT A GENIUS, BUT HIS NAME WILL LIVE!"
"SO I HEARD—IT'S SMITH."

Mother's Cook Book

A DAY WITH SAUCES

If you'd make life worth living!
Try these fish dishes worth while:
They're three, I'll sum 'em up as 'n—
Just love 'em' work 'em' smile.

A SAUCE as an accompaniment to a dish is as essential as the ordinary seasoning is indispensable to make a dish appetizing. A very ordinary dish with an appropriate sauce has made many a chef famous and gone down in history as a worth-while achievement.

Certain foods are best with certain sauces. The flavor of the sauce enhances the flavor of the dish. A lamb roast with mint sauce is taken out of the ordinary class. Pork roast needs apple sauce to make the pork more tasty and digestible. We like turkey and cranberry, mutton with capers, veal with tomato or onion, and so on ad infinitum.

Venison, a choice dish at all times, is greatly improved with a spiced grape jelly; duck with sliced oranges or a tart jelly.

Fish of any kind is always better served with a sauce, usually of some acid variety. Oyster sauce is a great favorite with fish. Bechamel and brown sauces are also good sauces as sauce tartare and tartar sauce.

Wildfowl is especially good with—
Ripe Olive Sauce.

Melt four tablespoons of butter in a saucepan, add one sliced onion and cook until slightly brown. Add five and one-half tablespoons of flour, a teaspoonful of salt and a little pepper. Stir to a smooth paste. Add two cups of brown stock gradually and continue cooking, stirring constantly. Cut the meat from a dozen ripe olives, cover with boiling water and cook seven minutes, then add to the sauce.

Green Pepper Butter.
Cut a slice from the stem ends of three or four green peppers, remove the seeds and all the white portion. Cook in boiling water until soft. Drain and chop fine, rub through a sieve; there should be two tablespoons of the pulp. Cream one-half cupful of butter and add the pulp, stirring until evenly mixed. Spread over planked fish, steaks or chops—it will enhance the flavor.

Lemon Butter.
Cream one-half cupful of butter, add lemon juice—about two tablespoons, drop by drop—stirring constantly. This is fine for any fish mixture, lobster or crab meat. This is a delicious sauce spread over a broiled fish, planked fish or cooked hot lobster.

Heidi Maxwell
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What Does Your Child Want to Know?

Answered by
BARBARA BOURJAILLY



WHY DOES STARCH MAKE CLOTHES STIFF?

The molecules which form the starch are very large and thick, and so they can't escape, but cling all through the cloth, and stick. (Copyright.)

SOMETHING TO THINK ABOUT

By F. A. WALKER

GROWING OLD

TWO things the human mind dreads—Old Age and Death.

Both of these we battle against and put off as long as possible—one because of the weaknesses and dependency which it entails, the other because we know not what is beyond.

The result of this is that very few of us grow old gracefully and attractively.

We strive to be young when we should be willing to be old.

We ape the tastes and fashions of youth when we have long been unsuited to them and make ourselves ridiculous when we might at least be interesting.

It is truer, perhaps, of women than of men that the appearance of a gray hair and the permanent establishment of a wrinkle is looked upon as a sort of individual disgrace, an indication that something has been left undone that should have been done or something done which should not have been done.

As a matter of fact, there is nothing more beautiful and nothing more interesting than attractive old age.

Wisdom, which comes only with years, should then reach its highest development.

Judgment which in youth is neither sound nor trustworthy, should then be dependable and worth while consulting.

The time to prepare for old age is before it arrives.

The time to prepare for the harvest is in the seed time, and youth is the seed time of our lives.

If every young man and young woman would keep the future in mind, plan for it, think for it, study for it, old age would lose half its dread and terror and we should look forward to it as the time when we should enjoy the results of a well-arranged preparation.

It is the old age which follows a lack of this preparation that is hollow and sad, the old age which has no memories but regrets, its future gone, its past a failure.

Addison, great poet and essayist, wrote: "He who would pass the declining years of his life with honor and comfort, should when young, become old, AND REMEMBER WHEN HE IS OLD THAT HE HAS ONCE BEEN YOUNG."

We have not yet learned to keep the body from growing old. The fairness of the skin will die. The hair will whiten and the wrinkles come. The knee will crook less willingly to the will and the back may bend with increasing years.

But the heart, the spirit, can be kept young.

The soul never grows old else the hereafter would lose its chiefest glory. Grow old happily. Grow old gracefully, accepting nature's decrees with a willing compliance to their requirements.

But think, as long as you may, young thoughts. Continue to learn. Continue to progress. There is much in old age that is beautiful. Shut your eyes to what is not.

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School Courses

The "6-3-3 plan" in schools is a plan of organization consisting of six grades above the kindergarten, constituting the elementary school, followed by a three-year junior high school, both the junior and the senior high school being considered in the field of secondary education. Completion of the high school in any one of these plans is marked by the granting of a diploma of graduation.

WE GET AS WE GIVE

By EVELYN GAGE BROWNE

IF YOU would be happy, make some-
body glad,
And the joy you are giving away,
The sunshine you bring to hearts that
are sad,
Will shine in your heart some day.
If you would be rich, then give of
your store,
Freely and joyfully, too,
And all that you give—with even
more—
Will surely come back to you.
If you would climb to life's higher
things,
Then help some unsatisfied soul
To reach the heights, and you'll find
it brings
Your heart to its chosen goal.
If you would be loved, then love all
men,
As your Brothers upon the earth,
And the love you give will come back
again
To the earth that gave it birth.
We get as we give—in equal amount—
Of love and everything true;
So give and give without measure or
count,
And it ALL will come back to
you!

(Copyright.)

WHEN I WAS TWENTY-ONE

By JOSEPH KAYE

At 21 Arthur D. Little Got the Hardest Job of His Life.

AT 21 I got the hardest job I ever had. A company in Rhode Island had set up a mill to make paper by the sulphur process, a process which had been taken over and developed commercially by the Swedes and the Germans. This mill was the first to use this process commercially in the United States, and was in charge of a Swedish inventor and a German engineer. The officers and board of directors knew nothing about paper making or chemistry. They ought to employ some one who knew a little about chemistry, and when I applied for the job the president offered me two dollars a day. He would not so far commit himself as to hire me by the week.

Almost coincidentally with my arrival the German engineer got into a row with the president and left the place flat. The board of directors held a solemn meeting and as I seemed to be their only resource, they called me in. I was only twenty-one and the youngest man in the plant.—Arthur D. Little.

TODAY—Arthur D. Little is one of the most celebrated chemical engineers in the country and is the head of the largest private laboratory in the world, located at Cambridge, Mass. He left the mill referred to above soon after he became the superintendent and, after a long struggle, established himself with a large clientele. He is an expert in industrial chemistry, and a pioneer in paper making by the wood pulp process. (© by McClure Newspaper Syndicate.)

How It Started

By JEAN NEWTON

CALLING HIM THE "PASTOR"

PASTOR" is a prosaic sounding word, and one in whose story we would look for the severe flavor of early religion rather than the element of poetry. Yet such is the perseverance of language. We rarely find what we expect. And in the origin of this term as it is used today as another name for the minister, we find no "thou shalt nots," theology but a poetic metaphor.

"Pastor" is derived from the Latin "pastor," which comes from "pasture," meaning to pasture or to feed. And who would not find poetry in the term which describes the minister as one who will feed us if we will but go to him? One may presume that it is hardly necessary to explain the metaphorical reference as spiritual feeding of his flock.

(Copyright.)

Do You Know

...??... That: ...??...

"WHITE FEATHER" or to "show the white feather" is an expression meaning to betray timidity or to back down or out; a sign of yielding.

Some years ago a bloody fight was raging between the Indians and the settlers of the backwoods of our country. A Quaker who refused to flee saw one day a horde of Indians rushing down toward his house. Thinking to pacify them, he hurriedly set food before the savage horde, and when they had eaten the chief fastened a white feather over the door as a symbol of peace and friendship. Though many hands passed that house, none ever violated the covenant, by injuring any of its inmates or property.—Anne S. Turnquist.

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Ori



GENERAL HERKIMER
Courtesy U.S.A.

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Visscher, and the fourth
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