



Reception O. K'd by Music Critics

Improved Audio Amplification Elevates Radio to Higher Plane.

By JOHN F. RIDER in Radio World

The cause of the objections voiced by musicians against radio as a medium of musical entertainment has been removed. Simultaneously, with the same stroke, the goal of engineers interested in the development of audio-frequency amplification has been attained. This step was accomplished by one who has made many noteworthy contributions to the science of radio transmission and reception—H. P. Dornie, the eminent physicist and engineer. His patents cover such well-known items as the alkaline vapor tube, better known as the sodium tube; the spiderweb coil, and many gas content tubes used in radio. The audio-frequency achievement is the development of a new system of such amplification known as triphonic, utilizing new electrical principles of operation. The electrical phenomena utilized for the energy transfer between the circuits in this system is not to be found in existing systems and is the development of the inventor.

**Timbre Kept Constant.**

The greatest objection voiced by musicians against radio as a medium of conveying music has been that the reproduction was not natural; that is, it was either low pitched or high pitched. Furthermore, that the relationship in amplitude of the fundamental and harmonic frequencies when reproduced was not the same as that of the signal when transmitted into the microphone. A variance in this relationship changes the timbre of the sound, and a soprano sounds like a contralto and a violin like a cello. They also claimed that due consideration was not accorded by the receiver engineers to the electrical laws and physical laws pertaining to the conversion of sound into electrical energy, and the reception of this electrical energy and its re-conversion back into sound. Musicians agreed that when these laws are given consideration and the proper relationship maintained between the fundamental and the overtone frequencies, the reproduction in the home of the fan will be natural.

**Impartial Amplification.**

This new system fulfills the requirements and consequently nullifies the objections. The frequency range of the triphonic coupling units is from 37 to 10,000 cycles, with a practically flat curve between 80 and 10,000 cycles. This means that the amplitude relationships between the frequencies of a complex wave within this band will be retained without any accentuation or attenuation. In other words, if a soprano sang a 1,200-cycle note, which contained for the sake of argument the third, fifth and seventh harmonics with amplitude relationship of respectively 30, 5 and 2 per cent of the fundamental, they would be amplified uniformly and the amplitude of the fundamental and the harmonics would vary in the same proportion. This would make possible natural reproduction. If the fifth and seventh harmonics were attenuated, the timbre of the soprano's voice would be altered, and the reproduction would not be natural.

Another salient feature of this new system is the minimization of phase angle distortion in the coupling unit and tube combinations. This form of distortion is very seldom considered in the design of the average audio-frequency amplifier, and is extensively present in many cases.

**How System Works.**

The operating principle of this new system of audio-frequency amplification is the attainment of energy transfer through a medium of balanced electro-magnetic coupling and capacitive coupling, a system dissimilar to existing systems of audio-frequency amplification. The system is non-oscillating and adaptable to average conditions without necessitating any special equipment. The standard tubes used for audio amplification are satisfactory.

The design of the units comprising an individual coupling unit differ as much physically from conventional audio-frequency coupling units as does the principle of operation from any conventional system. The balance between the electro-magnetic coupling and the capacitive coupling is automatic within each unit, as to frequency and the amount of power passed into the system.

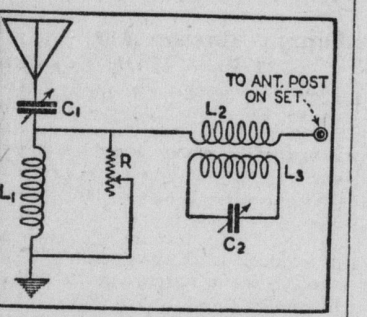
**Rejuvenating Tubes**

The success of rejuvenating tubes depends upon the equipment used as well as the ability of the operator to use it properly. Many make a mistake in overloading the tube without following it up with a gradual period of overloading. In some cases just the reverse is the situation, as, for instance, where the operator decides to give the old tube a 20-minute period of just moderate overloading, failing to give it a good shot of power at the outset.

Wave Trap Eliminates Station Interference

A filter, or wave trap which will eliminate station interference is shown in the illustration. Its construction is fairly simple, there being only two parts, although the adjustment of this filter is somewhat complicated. However, once adjusted, it needs no further handling or dial twisting. The parts necessary for this wave trap are as follows:

- 1 variable condenser, .001-mf. low-loss type;
- 1 variable condenser, .0005-mf. low-loss type;
- 1 variable resistance, 0-25,000 ohms;
- 2 bakelite tubes, 3 inches in diameter, 4 1/2 inches long;
- 1/2 pound No. 22 DSC wire.

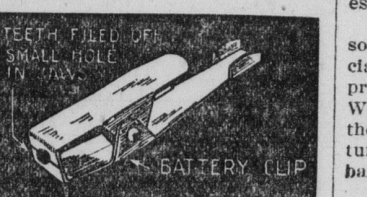


Efficient Wave Trap Which Can Be Constructed at Low Cost.

In resonance with the interfering station, will absorb almost all of the energy received from that station. The energy is received from coil L2, which is closely coupled to L3, and is also closely coupled to L1. In this way signals of other stations will be allowed to pass through, but that of the interfering station is dissipated in the absorption circuit. The resistance across L1 and C1 serves as a static leak, and is variable to obtain the best adjustment possible.—Radio News.

Wire Skinning Device Made From Battery Clip

In using the popular rubber-covered stranded hook-up wire, considerable trouble was experienced in skinning the ends for connections until the following simple tool was devised. It consists of a large battery-connection clamp, the teeth of which are filed smooth. A small notch in the jaws,



Insulation Remover That is Made From a Battery Clip.

roughly the size of the skinned wire, is also made with a file. With this little tool you can do a neater job in a fraction of the time necessary to skin this type of wire with a knife, and there is no danger of cutting the fine strands of the wire.—Radio News.

Leaky Transformer Put All Sets to Humming

One of the most bothersome things to an owner of a radio set is the location of a leaky transformer in his neighborhood. Radio owners of Walterboro, S. C., recently had so much trouble with their sets that the sale of radios decreased considerably. A radio dealer expert on the job, who spent a whole day going over the city trying to locate the trouble, but it was not until evening, when the electric lighting lines were used, that they found it. It all was centered in a leaky transformer. As soon as it was repaired the buzz-sawing that had annoyed the radio fans disappeared.

Positive Phone Cords

Head-phones, generally speaking, operate the best when the positive side of the phones is connected to the positive lead of the "B" battery. Some phone cords are marked with a red stripe to indicate the positive cord of the phones. But if the phone cord clips are not marked try them connected one way and then reverse these connections. The positive side will be indicated by the connection that gives the clearest and loudest signals.

Make New Radio Tube

Production of a radio tube which embodies the elements of three ordinary tubes together, with two stages of amplification, is reported to have been accomplished in Germany. This tube is only slightly more expensive than other types, it is said, and radio development is expected to be materially advanced by this invention. At present crystal and one-tube sets predominate in that country.

PARIS SAYS VELVET HANDBAGS; FROCKS OF ALL-OVER LACE

COMES now another thrill into the scheme of summer accessories, both beautiful and fashionable—the velvet hand bag. These chic envelope purses and hand bags, styled of velvet in all-black or in enchanting pastel shades, lend an entrancing note to the midsummer costume. It was a stroke of genius on the part of an artist-born creator of things lovely, who one day in Paris set the fashion of carrying a black velvet hand bag with the summer beflowered



A MESSAGE FROM PARIS

frock. And now there is every promise of a lue and clamor for velvet hand bags throughout the fashion centers of the world—and the vogue is only at its beginning.

Elegance is the keynote to the velvet bag which has become a part of the summer ensemble. These new envelope purses and hand bags are 100 per cent exquisite even to the slightest detail of their finely wrought metal furnishings. And their linings! To see within one of these soft-shirred bags is like looking into the heart of a flower so dainty is its coloring and all that goes toward achieving an esthetic effect.

The vogue for matching the bag to some detail of the costume and especially to millinery is charmingly interpreted with velvet as the medium. With the sheer midsummer frock there is nothing prettier than the picturesque pastel-colored crin capelines banded with velvet ribbon of the same



TWO PRETTY AFTERNOON FROCKS

color, the velvet hand bag repeating the identical shade.

A combination extremely flattering to the lace or chiffon frock is that of the velvet hand bag matched to the velvet shoulder flower. Other clever accessories sets include a velvet sleeveless jacket with a velvet-banded hat. Recently narrow pastel velvet belts have made their appearance.

The importance of velvet as a summer item is very apparent. According to the prophecy of fashion seers, its present favor is but a prologue to the prominent part which it will play in autumn styles.

JUST HUMANS By GENE CARR



"GO ON, SADIE, GO AS FAR AS YOU LIKE. HAVE TWO OF 'EM!"

Mother's Cook Book

If you were busy being glad, And cheering people who are bad, Although your heart might ache a bit You'd soon forget to notice it. —Rebecca Foresman.

THE IMPORTANT GARNISH

IT WAS a little New York city school girl who raised her hand in the cooking class when the teacher asked, "What is a garnish?" and all the rest of the class looked dumbfounded. "I know, teacher," piped Yetta. "It's parsley."

There are a good many women like Yetta, who think that parsley is all there is to the entire subject of garnishing foods to make them more attractive. Parsley and lemon are the housewife's stand-bys for garnishes, because they are always obtainable, twelve months out of the twelve. The housewife who has no access to large markets can grow her own parsley in a pot on the kitchen window sill. Of course, lemons are always to be found in every well-stocked kitchen, and there is scarcely a day when it is not needed for something. Fish, whether canned or fresh, is one meat which seems to demand a few drops of lemon juice to bring out its flavor, and for such garnishes the lemon should be cut into sections lengthwise, six sections from one lemon. These long sections are much easier to use than slices are, though slices are decorative.

Cold meats look very tempting when carefully arranged on a large platter garnished not only with parsley, but with other decorative foods as well, such as slices of firm red tomato, each with a slice of olive in its center, disks of carrot or cucumber, rings of sweet green pepper or onion, or tiny dices of sliced sweet pickles. Tiny red radishes, either plain or cut into buds, and whole olives are always good looking, either on a platter of cold meats or decorating a salad.

In garnishing salads and desserts, nut meats and candied or maraschino cherries are a pretty garnish. Stiff jelly may be cut into tiny cubes with a sharp knife, or scooped into balls with a vegetable scoop. This little tool is very useful, in making balls of apple, banana, watermelon, beet, etc., to rim up various dishes. Capers and tiny pickled onions are also piquant as well as attractive garnishes.

Nellie Maxwell

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THE YOUNG LADY ACROSS THE WAY

The one thing is to be sure you are doing something. Either go ahead or retreat.

Don't try to be a stand-still soldier. There is often quoted a truism that a rolling stone gathers no moss. But moss is not a very valuable asset and nobody need count himself a great failure if he dies without ever having possessed any.

A well-polished diamond is the most valuable of the mineral family, and the value comes to that only after a good deal of rough contact with things harder than itself which shape and brighten it.

Go ahead all the time if you can. But if you cannot go any further ahead on the line you have chosen don't be afraid to "back up" and try another road to success.

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The Pity of It

"My objection to real life," says the heroine of a Scotch novel, "is that it isn't true to the moving pictures."

SOMETHING TO THINK ABOUT

By F. A. WALKER

FIGHTING — RETREATING

A GOOD many battles have been lost because the commanding general in learning how to fight, neglected to learn how to retreat.

In the battle of life it is quite as necessary to know how to extricate yourself from a difficulty as it is to know the principles of getting ahead. The man who confines to attempt what has proved impossible of accomplishment may have admirable courage but very poor judgment.

The one thing that a good general does when he is retreating is to KEEP FIGHTING. If you keep fighting hard enough the retreat itself may be the means of eventual victory.

A young man who has chosen the wrong occupation, who has undertaken a job for which he is not fitted, will gain in the end if he retreats and gets into a new and better position.

Most of us are best fitted for one thing. If we try to be more than that or other than that we sacrifice results, and results are the only things that count.

There are very few Michelangelos who can be equal successes as sculptors and painters and architects. It is only once in ages that there is a man like Leonardo Da Vinci, who was perhaps the wisest man that ever lived. He attained eminence as an artist whose masterpieces "The Last Supper" and "Mona Lisa," have been reproduced more than any other two pictures ever painted.

He was a great engineer, a wonderful inventor, a musician of merit, a botanist, a chemist, an astronomer, a geologist, an explorer and geographer and on all of these subjects he was a voluminous and entertaining writer.

He was one general in a million—he never had occasion to retreat.

Conduct your retreat in an orderly manner. Cyrus the Great, who won many victories to have his head cut off by the woman, Queen Tomyris, to whom he lost the last battle he fought, said of retreating: "When an army must retreat, let the retreat be managed in the safest manner and not in the quickest."

Don't be in a hurry about changing your work. Don't be impetuous and throwing down your tools, or your books or whatever you work with, walk out with a "to h— with that job."

Conduct your retreat in a safe, sane way, fighting as you go, fighting to find the right thing and the right place where you will be worth most to yourself and therefore most to everybody else.

YOU

By EVELYN GAGE BROWNE

THERE'S nothing to fear—you're as good as the best, As strong as the mightiest, too; You can win in every battle or test— For there's no one JUST LIKE YOU!

There's only one YOU in the world today, So nobody else, you see, Can do your work in as fine a way, You're the only YOU there'll be!

So face the world and all life is yours To conquer and love and live, And you'll find the happiness that endures, In just the measure you give.

There's nothing too good for you to possess, Nor riches where you cannot go; Your power is more than belief or guess— It is something you have to KNOW!

There's nothing to fear—YOU CAN AND WILL, For you're the invincible YOU! So set your feet on the highest hill— THERE'S NOTHING YOU CAN NOT DO!

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WHEN I WAS TWENTY-ONE

By JOSEPH KAYE

At 21—Tom Masson Was a Traveling Salesman.

AT ABOUT this time I was a traveling salesman, and I believe, one of the worst salesmen that ever happened.

I was always ambitious to edit a humorous paper and I particularly wanted to edit Life, but I did not take any aggressive action. I contributed very frequently to the paper when it was started by Mr. Mitchell and it happened that occasionally some of my items were misplaced, or something else would happen, and then they would send for me to come to the office to straighten things out.

One day, after such a visit, Mr. Mitchell asked me to edit the paper. I asked why he had thought to offer me the position when I had not asked for it and he replied that I had shown such a readiness to locate the little troubles regarding manuscripts, and such ability to get things right that he decided I had the type of mind to keep the office going smoothly.—Thomas L. Masson.

TODAY: Mr. Masson bears the enviable reputation of being America's premier jokesmith, having written literally thousands of jokes. He was the editor of Life for over a quarter of a century and has produced many books on humor. As a creator of the jokes you read in newspapers and magazines he has few peers in the world.

SAWS

By Viola Brothers Shore

FOR THE GOOSE—

I THINK you oughta learn kids from the beginning to speak up for their rights and pipe down about their wrongs.

Do'n' little things yourself ain't no savin' if you could be usin' the time for big ones.

If there wasn't no bad friends, there wouldn't be no good ones.

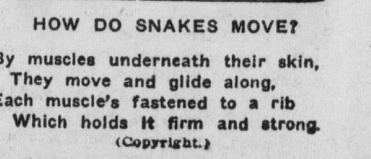
FOR THE GANDER—

Women don't like conversation. It gets in the way of their talkin' about themselves.

A silent woman might not keep the conversational ball rollin', but at least she won't swaller it and start off in a rubber of solitaire.

What Does Your Child Want to Know?

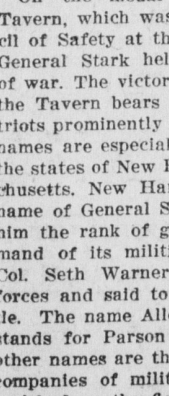
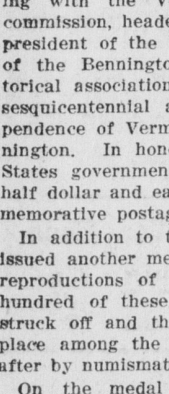
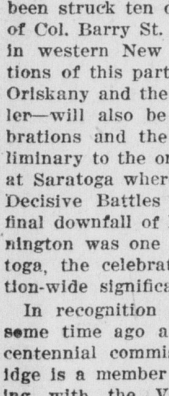
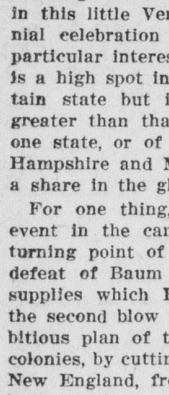
Answered by BARBARA BOURJAILY



HOW DO SNAKES MOVE? By muscles underneath their skin, They move and glide along, Each muscle's fastened to a rib Which holds it firm and strong.

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The appearance