The McMURDO SILVER TIMES

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THE SIREN SHRIEKS!—BUT THERE'S NO FIRE —IT'S ANOTHER HOMER IN TOKIO

"Homi, homi, HOMI!" screams the excited sports announcer over short wave JVN in Tokio, Japan. Nippon's "king of swat" is circling the bases for another home run in one of Japan's major league baseball games. Coming in clearly on your MASTERPIECE V you almost see the crowd over there in the Meiji Shrine Stadium go wild with excitement. And you do too, for you're right there to hear every word of the excited little announcer. You are amazed that you can understand his description of the game until someone tells you that there are no Japanese words for baseball terms—so the announcer uses English. You hear his excited breathing, the roar of the crowd, and again the "crack" as the bat drives the ball way out with a smack that would make Babe Ruth proud. And the fire siren shrieks again, for it's a Japanese custom to signalize each home run with the siren's shrill scream.

Now it's "one strike, two balls," so clearly you almost forget that this game of one of baseball-mad Japan's seventy-three major teams is coming to your ears over thousands of miles of sea and land. As you follow the exciting "series" day after day, you forget in your sportsman's thrill that it is brought to you without fading, without noise, every word and syllable clear and distinct as though you were in the announcer's booth. So perfect is your reception that you forget the agency that makes it possible. Your MASTERPIECE V, truly custom-built for you, gives you results that let you forget it, and enjoy sports, music and news from the world over. It's just as though you were actually in twenty countries spread over five continents, all in a single day.

IN JAPAN THE HUDDLE'S BASEBALL, NOT FOOTBALL

Japanese baseball players use the huddle system to talk things over when a pitcher goes in the air, or a change of strategy seems needed. That is—when there is nobody on bases. The markings on the players' backs are their numbers.

AT JAPAN'S "WORLD SERIES"
A view of the players warming up, and part of the 60,000 spectators at Meiji Shrine, Tokio.

Under *favorable* conditions, any one of many fine radios would give you such reception. But you unquestionably don't have those theoretically "average" reception conditions at your home that are every engineer's yardstick in building and adjusting radios. That's where the MASTERPIECE V stands supreme. It is not built by the thousands or hundreds for those theoretical "average" conditions that are *not the same* in any two homes in the world. No indeed, *your* MASTERPIECE V will be truly custom-built especially for *you*, for *your* needs, for *your* own particular home and reception conditions. As you take a minute off between innings of the Keio vs. Waseda University game over JVN, you realize that this at last is the perfect reception you've always dreamed about. This is truly the magic carpet carrying you around the world at your instant command. Although you've tested many radios, spent much money, you've never gotten this before. But now, in this, your own MASTERPIECE V *built especially for you*, you get results your friends struggle for. They envy you because they cannot get them. You have the finest radio in your community. Your millionaire friends can do no more than share one with you, no matter what they pay.

When JVN signs off, with another game played and Japanese batting averages being revised, an easy turn of the knob, the "magic eye" registers perfect tuning, and you listen clearly, free of noise the fading, to London's news bulletins. From this, the least censored news in the whole world, you get the real facts on world developments. What is happening in the "putsch" on the Free City of Danzig; in Russia, France; Germany, Austria and the "anschluss"; Italy;

Ethiopia, London, all is brought clearly, understandably and without censorship to your ears. You even get a new perspective of the New Deal, and our own American scene as it is analyzed by the lucid voices of the foreign news commentators.

Then like Charles Steinway of Steinway Piano fame, who also uses a MASTERPIECE to bring him real music, or like Charles Hackett of the Metropolitan Opera, you turn your dial to bring you the Detroit Symphony and its music that is *now* life-like and thrilling as you listen to it through your MASTERPIECE V. As you turn your expander knob, you leave the old, impaired tone of radio far behind, and gradually, smoothly you inject into this glorious music all the full bodied warmth and life of the great Wagner back into the soul stirring climax of immortal "Tristam and Isolde."

As you turn this little knob, the shivers dance up and down your spine, for here, right in your own home, you are at last getting this gorgeous music as it was *written*, as it *is* played by a great orchestra—music that thrills you to the core of your very being as it comes to you purely and uncompressed —as only the MASTERPIECE V in all the world can bring it to you.

All this and much more besides, all that your grandest dreams ever envisaged, is now yours to whole-heartedly enjoy for years to come. It is yours to amaze your friends with. Today you can begin to enjoy this triumph of science bringing the *full* life and music of the world to your easy chair.

All you need is to have your MASTERPIECE V truly custom-built for you, and use it with a simply erected aerial that will pick up the signals of the stations you desire—it will do the rest!

With your MASTERPIECE you join the "Royal Families of Radio," and yet cost is no barrier, for the specially built and planned MASTERPIECE V costs little in comparison to the ringside seat to the billion dollar show of world wide radio it gives you. And even this little can come out of your regular income, easily and comfortably.

1940's LOUD SPEAKER—YOURS IS HERE!

It is so self-evident as to be axiomatic that the tone of a radio can be no better than is possible to the loud speaker used with it. The loud speaker is the "bottle neck" of any radio—no matter how perfect the sound fed to the loud speaker, the final tone can be no better than the loud speaker itself allows.

For many years engineers have been disgusted with even the best available loud speakers. Who wouldn't be disgusted after designing a fine radio, to then be forced to use a loud speaker on it that was only 5% efficient—to get only one-twentieth of the power of the radio out through the loud speaker? Yet that was exactly the situation with respect to all available dynamic speakers—they average only the staggering electric-to-sound conversion efficiency of 5%! Radio engineers have had to build twenty watt audio amplifiers to get just one watt of acoustic sound power out of available loud speakers for you to hear!

We and our associated research organization, Glens Patents and Holdings, Ltd., have been increasingly "fed up" on this bottle-neck of radio, having been doing much work on improving loud-speakers, and have a long string of patents issued and applied for, all leading to improvements in loud-speakers, the most inefficient part of radio today.

This and other work now results in the Super-Giant speaker, 700% more efficient than the speakers available with other radios, and capable of tone quality even more superior. The tremendous and startling improvement that the Super-Giant brings to the MASTERPIECE V is in part explained by its 18" size, its 70 lbs. of weight, and its new daul cone (G.P.H. Patents pending). But these salient new inventions are as naught without their perfect co-ordination and thorough engineering into what is the finest loud-speaker ever built—truly a loud-speaker worthy of the superb MASTERPIECE V it so perfectly complements.

This rear photo of the Carlton installation gives some idea of the size of the Super-Giant speaker.

The 700% greater efficiency is explained by the great size and weight of this extraordinary loud-speaker. Size alone is not the answer—a light fifteen or twenty pound 15" or 18" loud-speaker would be no better than a smaller speaker of the same weight. Weight

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MILWAUKEE NEWSPAPER EDITOR BUYS A MASTERPIECE—AND MAKES A RECORD

Upon May 1st, 1936, Walter A. Jasiorkowski, short wave editor of the Milwaukee Journal, and winner of a recent big short wave reception contest, terminated his examinations and tests seeking the finest radio he could obtain for his editorial duties. He bought a MASTERPIECE IV, after thorough analysis had convinced him it was the best to be had.

Early in June he visited us with a report. It is too long to print here in full, but *what* a report it is. Using only an ordinarily small antenna at his home in Milwaukee, he logged 195 short wave stations in 45 different countries in exactly seven days between May 1st and 7th, 1936! During the month of May Mr. Jasiorkowski increased his log to 293 stations in 55 countries, not counting the U. S. and Canada in either record.

We congratulate Mr. Jasiorkowski, and his excellently and completely edited short wave department in the Milwaukee Journal. We are proud of his selection of a MASTERPIECE which is giving him the same fine results it gives its hundreds of owners the world over.

THE NEW "APEX" BAND

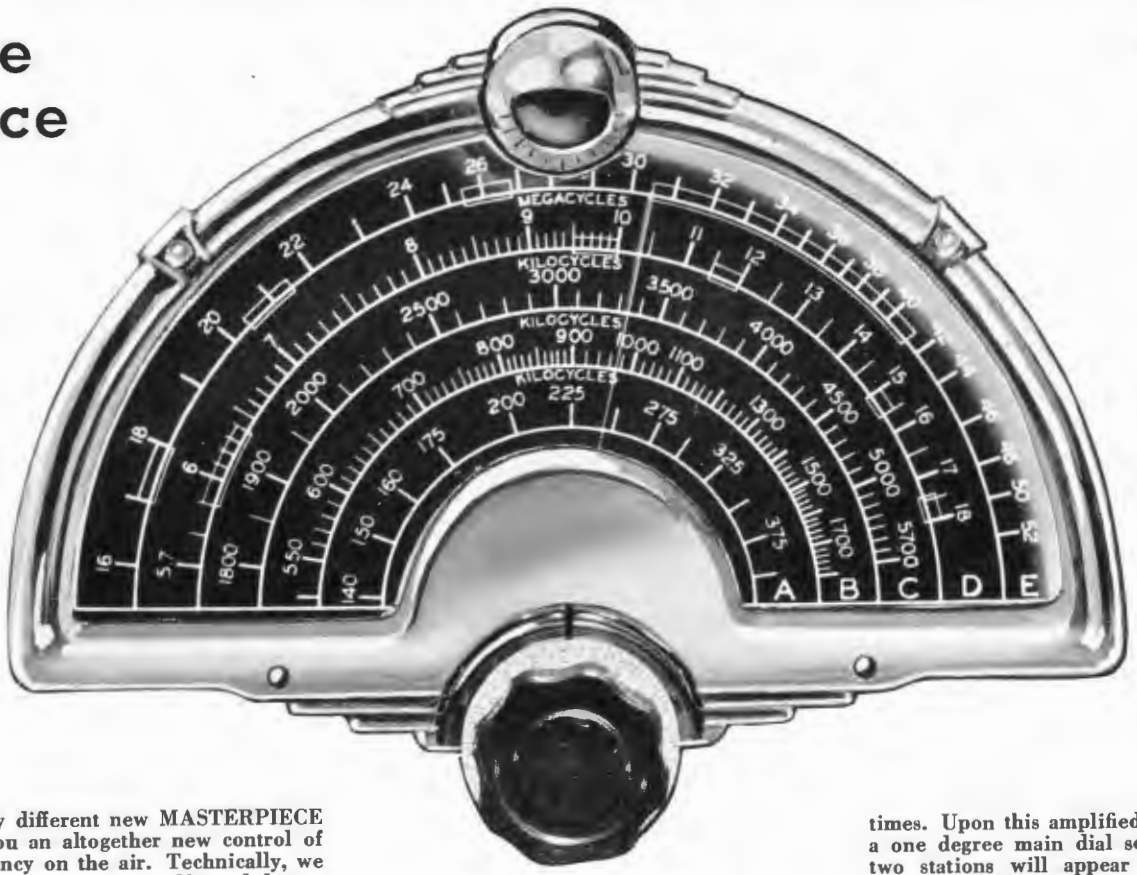
To buy a radio today that does not tune to the new 26 megacycle and the new 31 to 40 megacycle "apex" bands is to buy only half a radio, and is obviously a foolish purchase.

These two new bands have already started to open up with new ultra-high fidelity broadcast stations at a rate that makes the development of the 200 to 500 meters broadcast band in years gone by seem like the sluggish pace of a snail by comparison. Today there are about 200 broadcast station licenses issued to new stations to come on the air in the new "apex" bands. It will only be a very short time now until hundreds of new stations, of ultra-high-fidelity-program capabilities unequalled by any regular broadcast band stations will be on the air, and you do not want to miss them.

Only the superb MASTERPIECE V and a very few other radios give you coverage of these new bands, but whatever you do, you want to be certain to get a radio that will not lose for you a large slice of the new radio entertainment that can soon be yours.

In addition to broadcasts in these ultra short wave bands, many cities indeed now have their two way squad-car-to-headquarters (two-way police) broadcasts down below 10 meters, while amateur phones on 5 meters (56 to 60 megacycle band) are very interesting too.

The Lance Dial



The totally different new MASTERPIECE dial gives you an altogether new control of every frequency on the air. Technically, we believe it to be perfection itself—and due to its being the most conspicious part of a radio receiver we had our laboratory drawing redesigned by the famed industrial artist Glen Don Ball. The result is a handsome, striking vision of electrical and mechanical efficiency.

The Lance Dial, through its single knob, operates the *four*-gang condensers that tunes the MASTERPIECE V precisely and exactly to any desired wavelength. Externally, it is seen to be nine inches in diameter, with five differently colored tuning scales for the five wave bands of the receiver. Which tuning scale is in use is indicated by the distinctive coloring of the scales, and by marking each scale with its own designating letter corresponding with the wave-change knob.

More important still, the kilocycle, megacycle and wavelength figures are large enough to be read across a room when the dial is illuminated as it is in tuning. This large lettering, the clear open calibration and the large size makes possible easy tuning, free of eye-strain even for owners of poor eyesight.

One great defect of previous dials, large or small, has been parallax error. This is the condition where, when a flat pointer is spaced away from a dial scale for mechanical clearance, it is impossible for the eye to line up such a pointer accurately against any dial mark. This causes the dial to read differently as the eye sees it from different positions in front of it. This parallax error completely prevents accurate tuning by eye, for it makes accurate dial reading impossible. This error is further magnified on small dial scales.

The new Lance Dial uses a lance pointer which gives razor edge readings to greater accuracy than the human eye can read. With this pointer, tuning is 100% accurate and parallax is an impossibility. Instead of a broad flat pointer, this sharp knife-edge pointer is just broad enough so that precise dial readings can be instantaneously made. This type of pointer is found on all precision electrical meters, which like a radio dial, must be easily readable to a split hair.

The actual dial scale lengths are scientifically proportioned so that the largest scale is used for the largest frequency or wavelength range, and the smallest scale for the smallest frequency range. Each scale is ½" wide, has large easily read figures, and most important, is clearly calibrated to an accuracy of greater than one-half of one percent. This means that stations the world over may be tuned in simply by setting the dial to their call book frequencies or wavelengths, and there they are. No "fishing" is necessary, for each station comes in exactly where it should, so accurate is the dial calibration, both on American broadcast or on foreign short waves.

Stations Well Spread Out on this Dial

The long wave, or A band, scale is 4" in maximum diameter, which spreads the 270 kc. range (27 channels) out over a dial length of over 6"—easy to read and separate. The "B" band, covering broadcasts from 530 to 1700 kc. (117 channels), has a length of 7½ inches, so that each channel occupies plenty of dial space for easy tuning, while the police and amateur band is larger still on the dial.

The important "D" band, covering all long distance short wave broadcasts from 6000 to 18,000 kc. (a total of 1200 channels) is 7" in diameter, and spaces these 1200 channels out over 10½" of dial scale. Here, each individual station in the 19, 25, 31 and 49 meter broadcast bands can be accurately read apart even upon this large dial main scale, whereas on ordinary radios, the dial pointer cannot even be seen to move over several stations, so closely are they jammed together. The principal foreign stations and countries are marked directly on the proper dial bands.

This large dial, which can be read to 10 kc. even at 25 meters, really eliminates the need of band spread tuning to separate short wave stations. But to make short wave tuning just as easy as locals, a second amplified dial scale is provided, upon which the separation of short wave stations and the number of degrees they occupy is amplified over ten times. Upon this amplified band spread dial a one degree main dial separation between two stations will appear as a ten degree separation. This amplified tuning dial is positively geared to the main dial pointer, so that it exactly follows the main pointer without the slightest trace of play, drag or backlash.

New Band Spread Tuning

At this point Silver engineering leadership again steps ahead, and simplifies band spread tuning by removing the amplifying band spread indicator from the main dial, so that its rapid movement will not confuse the eye, but so that it really simplifies tuning. The amplifying band spread dial or pointer turns rapidly on ordinary dials, and distracts the eye so it is hard to follow the main slowly moving station selector pointer. Since the amplifying band spreader is needed only on short waves, it should be so placed that it does not confuse when not needed. On the MASTERPIECE V the amplifying band spread indicator is a 200 division dial located just behind the tuning knob and on the main dial drive shaft. Thus it is inconspicuous, cannot distract the eye in main tuning, but at a glance gives a dial reading ten times closer than the main dial. It is read against a hair-line indicator just above the tuning knob, and crowded short wave bands are widely spread out upon it for easy, comfortable reading and separation.

This improved band spread dial is linked directly through a single gear and pinion to the dial pointer, as against two or more successive links as in ordinary dials. This single linkage is so built that not even a hundredth of a degree play or backlash is possible between main and band spread dials. Thus it is absolutely relogging, and a station once tuned in at any main and band spread reading will always come in at these dial readings. Through the use of the light load of a single link, positively meshed gear drive, delightful ease of operation and freedom from wear is had, which is impossible to necessarily stiffer belt or multiple link dial drives.

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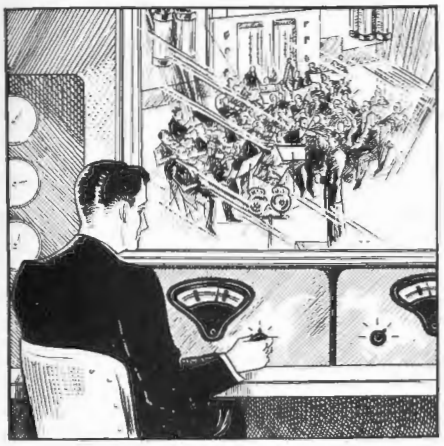
THIS MAN IS RUINING YOUR RECEPTION



VOLUME RANGE EXPANSION

Pictured above is the ever-present broadcast station monitor operator. This man is constantly and continually ruining broadcast music by "compressing" it. This destruction of fine music's emotional story can be offset by undoing his nefarious work with a volume ex-band in your radio. There is no other way to perfect music.

The purpose of the volume expander is to restore programs to their full original volume range, which is always compressed ("monitored") by broadcast stations and on phonograph records. The range of volume from softest pianissimo to loudest crescendo in symphony music is about 80 db., or eighty changes of volume where each change is just perceptible to the human ear. In dance and popular music the volume range will be about 60 db., and in human speech much less. If a radio is to reproduce music faithfully, it must not only cover the full fundamental tone and the overtone ranges, but it must reproduce the full loud-to-soft volume range of original programs.

This perfect music is impossible to all radios not equipped with volume expanders to offset station monitoring. Since this compression must be made to prevent overloading at broadcast stations, and in phonograph recording equipment, reproduction of such compressed programs is unnatural and lacks the emotional qualities which are conveyed in music by its volume variation. This is true of all radios not equipped with volume expanders.

The only way this program compression, effected at the broadcast studios, can be overcome, and full naturalness restored to music, is by re-expanding volume range at the radio receiver. By this means a program compressed from 80 db. down to 60 db. before it is transmitted can be expanded so that final reproduction will exactly duplicate the original, something no previous radios have been capable of. This is not the adding of anything to music, it is only the restoration of music to its original state before the monitoring operators "got their dirty work in" at the control room "cross roads."

A few volume expanders have recently made their appearance in the form of auxiliary units to be added to existing radios. This is the transition stage of all new developments, which the MASTERPIECE V goes beyond in completely coordinating the volume expander with the receiver by building it right into the chassis. This method of building-in gives the full benefits of volume expansion, in no way limited by the compromise of an extra unit to be added to a receiver not originally completely designed for volume expansion. This completely coordinated design is necessary if full results are to be had, for volume expanders today involve a wholly new and different technique of audio amplifier design and engineering.

The Volume Expander is a Magnifying Glass

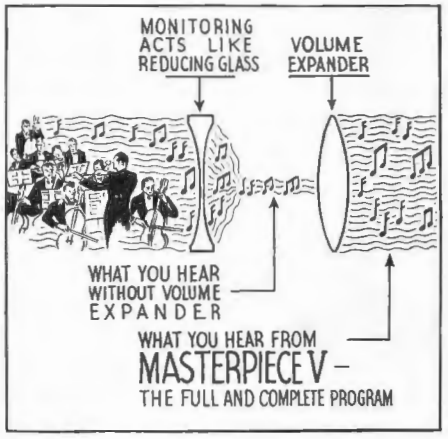
The volume expander of the MASTERPIECE V is the first audio amplifier tube, so automatically controlled that it softens the soft passages that bave been loudened in compression, and loudens the loud passages that have been softened by the broadcast station monitor operator. Thus, it exactly offsets the emotion destroying compressing done at the broadcast studio, and restores received programs to their original state. If you think of "seeing" all programs through a reducing glass, and regard the volume expander as a magnifying glass that brings them back to life size, you have a perfect picture of what the volume expander does.

The first audio amplifier is a 6L7 tube, having an extra grid. Varying the d.c. voltage on this extra grid varies the tube amplification. So the signal that is to be amplified by the 6L7 is also fed to a second amplifier, a 6C5. The amplified signal from the 6C5 is rectified by a 6H6 duo-diode rectifier tube, and finally appears as a d.c. voltage, varying with signal volume, at the 6H6 output. This d.c. voltage is then applied to the "No. 3" injector grid of the 6L7 audio amplifier to automatically control its amplification with volume. When a loud signal is fed to the 6L7 audio amplifier, it also goes through the 6C5 and 6H6, and through them operates to increase the amplification of the 6L7. This increases the loudness of the signal to its original level before it was cut down at the broadcast studio. Similarly, a soft passage is softened to original, as the 6C5 and 6H6 lower the amplification of the 6L7 amplifier on soft pianissimos.

All of this action is automatic, and is so adjusted that the expander automatically undoes what the monitoring operator at the broad cast studio originally did to destroy tone quality in order to prevent station overloading. It restores the original volume range to all compressed or monitored programs automatically.

Because different programs and types of music are compressed to different degrees before transmission, the expansion in the MASTERPIECE V is adjustable for each and every type of broadcasting. The knob marked "expander" on the MASTERPIECE V regulates expansion to the exact degree necessary to offset each and every type of broadcast station compression, and to offset phonograph record compression. When this knob is at zero, it automatically switches the expander out, and as it is turned to the right, it gradually increases expansion to any degree needed for absolutely true tone.

Providing an expansion range of from zero to 20 db., it will completely re-expand radio programs and phonograph records, or its knob can be turned up to "over-expand" radio programs, if desired, for entirely new and thrilling sound effects.



This adjustable over-expansion is a means of reducing atmospheric noise and static in receiving weak stations, and at the same time of improving tone quality and intelligibility. The built-in electronic volume expander of the MASTERPIECE V not only permits of restoring the full emotional and volume values that are what thrill you in fine symphonic music but is a very effective noise reducer as well. Coupled with the phenomenal absence of circuit noise in the MASTERPIECE V, it permits of much clearer reception of weak stations that has ever before been possible.

THE LANCE DIAL

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Two Tuning Ratios—Regular and Fine

Two tuning dial ratios are desirable, one fairly fast for broadcast band and initial short wave tuning, and one very slow for precise, fine short wave tuning. Two such different ratios ordinarily need some troublesome shifting means to go from one to tbe other, but MASTERPIECE V has but one tuning knob, which automatically gives 10:1 and 50:1 ratios instantaneously in a new and simple manner! For one tuning knob turn the ratio is 50:1, then automatically changes to 10:1. Thus, in tuning, the knob turns fast to just beyond any desired station in either direction, then backs up slowly at 50:1 ratio for precisely fine final tuning. The mechanism which accomplishes this (G.P.H. Patents Pending) is simple in the extreme. It consists of a positive cam which shifts the 50:1 to the 10:1 ratio at either end of one full knob turn. Simple and trouble-free, it eliminates the older "over and under" two tuning knobs, and all the older and troublesome push-pull two-speed clutch arrangements. Its operation is smooth and easy, providing effortless tuning on all bands.

This totally new dial is thrilling, for it is large, easy to read across a room or to 10 kc. at even 25 meters, eliminates all spining band spread pointer confusion while giving really positive relogging amplified band spread tuning, has automatically selected fast and fine ratios, and is so smooth and easy to tune that it's a delight to operate. It is no job at all to log a hundred or more foreign stations in a week on this new Lance Dial.

OUR CHALLENGE

In designing and truly custom building MASTERPIECE V radios, we naturally analyze, test or measure every fine radio made in this country today. This we regularly do, for if the MASTERPIECE V is to be the finest radio in the whole world, we must know what other engineers are doing, and how they do it. We must know how other engineers are meeting their problems, just as their examination of the varied of new developments of the Silver laboratories in the past twelve years have contributed materially to the advancement of radio.

Knowing just how superbly the MASTERPIECE V measures up to every ideal of the perfect radio, we have not the slightest hesitation in challenging any other radio at all to a knock-down-drag-out competitive test of merit. We know what the MASTERPIECE V will do, and we also know what any other radio that you might consider competitive will do. Bluntly and directly, we know the MASTERPIECE V is outstandingly better and finer than any other radio regularly made today. We know the MASTERPIECE V will give greater distance, equal or far greater selectivity, less noise, far more perfect A.V.C., immeasurably finer tone, and tremendously more power than any other radio ever built. Knowing this, we have no hesitation in challenging the whole field to any fair test of comparative merit. But unfortunately, there is no *fair* competitive test, for no other radio at all is designed or built as is the MASTERPIECE V.

This is as it should be, for the MASTERPIECE V is the world's *only* truly custom-built radio. It alone is built in truly limited quantities, and finally peaked, tested and adjusted to your exact specifications and needs. It is only reasonable to expect a truly custom-built radio to be better than ordinary radios.

We have no quarrel with any other radio makers, for we are not in the same field, are competitive with none. This is obvious in view of the fact that we alone in the entire radio industry specialize in custom-building every radio we make for its own particular owner, not to a standardized pattern. Naturally with such a program we can and do build radios above compare, radios that in their own exclusive field constitute their owners the royal families of radio.

If you, after reading the complete but brief specification of the extraordinary MASTERPIECE V, do not at once realize that it is without compare, then we encourage you to prove this in the same way other owners have—by the challenge of competitive test. We will be glad to specially build a MASTERPIECE V for you, to loan it to you for a whole month, and we are anxious that you should prove that it is a 1940 model by direct, side-by-side, comparison with any other radios you can find anywhere in the world. When you do this you'll never again be satisfied with anything but a MASTERPIECE V.

LIKE A MILLIONAIRE!

A deposit of $34 and $17.08 a month is now the purchase price of a MASTERPIECE V specially custom-built for perfect operation in *your* home and unconditionally guaranteed to give you the performance *you* demand when you order us to begin work on *your* MASTERPIECE V. There is nothing more that a millionaire can have!

These unusual terms give you a 10-Day Free Trial in your *own home;* One Year of Free Laboratory Service; a 5-Year Guarantee on Parts; and the privilege of purchasing a new MASTERPIECE at any time in the future for $30 less than anyone else except another MASTERPIECE owner!

THE "WORLD'S ONLY TRULY CUSTOM-BUILT RADIO"

Everyone knows that there are many fine radios made today, most quite frankly production made. Those that are called custom built are fine designs built in relatively small quantities to a standard pattern. As we regard such custom building as really only semi-limit-production of a standard design, possibly with somewhat finer parts and more exacting testing than in regular quantity production, we feel we should define what *we* mean by custom building.

When we state that the MASTERPIECE V is truly custom built we mean exactly that. Just as a custom tailored suit is made expressly to your measure, expressly for you and to your specifications at every step of its tailoring, so is your own particular MASTERPIECE V truly custom built for you.

In no sense of the word is the MASTERPIECE V standardized. Each one is different, each one custom built to the exact specifications and needs of its particular owner. Basically, the MASTERPIECE V which we offer you is an extraordinarily flexible basic design having certain fundamental characteristics. Upon this flexibility is erected the structure of your own particular receiver. With your order you give us information about your antenna location, your home, your reception conditions and your own particular desires and specifications of what you want.

With this data at hand, McMurdo Silver personally plans and lays out your own radio and supervises its building to these exact specifications. Through building and preliminary test and adjustment, this is your radio, not a standardized averaged radio, but your own special set. Upon final tests by Mr. Silver your specifications guide him in the delicate and precise adjustments to insure exact adherence to your wishes and desires. The final receiver is no longer just a MASTERPIECE V, it is your own special MASTERPIECE V, laid out, built and tested expressly for you and like a fine tailored suit it fits *you* superbly.

Naturally such a program limits our output of radios to such a small number that their owners constitute the "Royal Families of Radio," possessors of radios designed and built to give them top notch results in their own particular homes.

So we say that the MASTERPIECE V is the "world's only truly custom built radio" because it *is* the only radio built only to order to your exact specifications—the only radio in the world that is hand tailored all the way thru to your specifications by its internationally famous master designer.

1940's LOUD SPEAKER YOURS IS HERE

(Continued from Page 2)

is almost entirely the criterion of loud-speaker efficiency. In the Super-Giant, intelligent use of its 70 lbs. of weight in a large field coil, large magnetic pot, and relatively light aluminum cone frame produces a speaker over 700% more efficient than the speakers found in other radios.

Thus 30 electrical watts fed to its 700% greater efficiency are equivalent to over 200 watts fed to ordinary loud-speakers! This great improvement is important not only as more power, but is even more important in two other ways.

It provides a net increase in effective usable receiver sensitivity of 2.65 times the measured electrical sensitivity of the MASTERPIECE V receiver. This is because, while rated signal input is required to produce standard 50 milliwatt electrical test output, this electrical output of 50 milliwatts when heard through the Super-Giant speaker is equivalent to 350 milliwatts fed to ordinary speakers. Actually, this 700% greater efficiency needs only 38% of rated microvolt input to produce audible sound output equal to that obtained from full rated input to ordinary speakers!

This same factor explains that, at ordinary home volume levels, usually regarded as one to five watts fed to ordinary speakers, only one-seventh this power need be fed to the Super-Giant. This much lower electrical power needed for usual home volumes eliminates completely the last traces of amplifier or speaker distortion, and in conjunction with the new MASTERPIECE V audio amplifier, accounts for the breath-taking tonal purity of the MASTERPIECE V.

Bass and Tweeter in One Super-Efficient Speaker

It is obvious that one mechanical unit is always preferable to two, just as the straight line is always the shortest distance between two points. In the past we have had to use two loud speakers, bass and tweeter, to carry the full 9000 cycle high fidelity tone range. This is because no one speaker could cover this great range, because it needed two different cone sizes, one large and relatively soft for bass notes, and one small and stiff for treble notes. Through the genius of Major Glen, famed acoustic expert for whose inventions Hollywood annually pays a princely sum, a new cone was invented. This new cone is the apparently simple combination of a small stiff inner cone for treble notes affixed to a large cone for bass notes. For bass notes, the two cones work together as one large 16" bass cone. For treble notes, the large cone acts as the soft anulus for the "tweeter" cone, which reproduces the high notes. The tricky "cross-over" filter needed with separate speakers is eliminated, for the cross over from low to high notes is automatic!

Still another new invention is the small round cap at the center of the cone. It not only keeps dirt and dust out of the delicate voice-coil air-gap, but diffuses ordinarily beam-like treble tone radiation over a wide arc in front of the speaker. It is quite a step ahead from the tin vanes often placed in front of speaker for diffusion—vanes which punch "holes" in the sound pattern, and sometimes even rattle!

(Continued Col. 2, Page 11)

The MASTERPIEC in

T. R. F.—SUPERHETERODYNE CIRCUIT: The perfect performance of the MASTERPIECE V is explained by the perfect engineering of its combination of t.r.f. and superheterodyne circuits. It uses two 6K7 tuned r.f. amplifiers from 140 to 18,000 kc., noiseless 6L7 first detector, 6J7 electron coupled oscillator, three 6K7 dual tuned i.f. amplifiers, 6K7 dual tuned A.V.C. and "Magic Eye" amplifiers, 6H6 duo diode A.V.C. and "Magic Eye" rectifiers, 6G5 "Magic Eye" visual tuner, 6Q7 diode second detector and beat oscillator, 6L7 first audio (expander) amplifier, 6C5 expansion control amplifier, 6H6 expansion control rectifier, two 6C5 push-pull phase inverter second audio amplifiers, two 6L6 30-watt electron beam push-pull power amplifiers (superior to four 2A3s' or 42s') and two 5Z3 rectifiers. These twenty tubes perform twenty-four functions, each one working at maximum efficiency.

WAVELENGTHS: The MASTERPIECE V covers every European or American broadcast wavelength from 2150 down to 4.3 meters. It goes down to 5 meter amateur and television wavelengths to cover the entire new broadcast band now opening up between 7.5 and 10 meters. The MASTERPIECE V gives complete coverage of this entire new world of ultra high fidelity reception.

GREATER POWER: New and greater power is provided for greater volume, and to faithfully reproduce crescendos and loud passages in music played at ordinary volumes. This great reserve power of thirty watts undistorted is actually seven times greater than thirty electrical watts into ordinary speakers, for the tremendous loud speaker efficiency results in seven times greater acoustic power than is had from other thirty-watt amplifiers. This greater power (equal to over 200 watts) aids tremendously in reaching out for distant stations, and helps to bring them in loud and clear. This tremendous reserve power guarantees unequalled tonal purity at ordinary home volumes.

EFFECTIVE SENSITIVITY: The electrical sensitivity of every MASTERPIECE V is precisely adjusted to ½ microvolt absolute to 18,000 kc. and 5.0 microvolt from 18 to 70 magocycles, and is the measure of its distance getting ability. But this sensitivity is actually 2.65 times greater due to the greater Super-Giant loud speaker efficiency. It must be rated at .19 microvolt absolute sensitivity in the true terms of signal input to sound output.

QUIETNESS: The MASTERPIECE V is from 10 to 100 times quieter than other radios. It is the only broadcast receiver today using two stages of high gain noise-compensated tuned radio frequency amplification to eliminate first-detector-oscillator noise, the predominant noise of all radios using only one t.r.f. stage. Through this, coupled with the quietest known tube and circuit arrangement, and adjustment impossible to quantity production, the internal noise of the MASTERPIECE V is never over 30 milliwatts at the loud speaker. In consequence, it will get distant stations lost in the internal noise of other radios.

TONAL PERFECTION: The MASTERPIECE V will give any kind of tone desired, from theoretically perfect reproduction from 20 to 9000 cycles, to accentuated or attenuated bass or treble. Its tone is completely free of distortion from the faintest whisper to more than cathedral organ volume. Guaranteed to be so glorious, so thrilling as to be breathtaking. It gives, not reproduction, but the perfect original perfectly recreated in your home.

AUTOMATIC AURAL TONE COMPENSATION: No human ear responds alike to different tones at low, medium and high volume. A perfect radio will perfectly reproduce programs, but in reproducing loud orchestras at lower home volumes, your ear will lose bass and treble at this lower volume. Special circuits are included in the MASTERPIECE V, which automatically compensate for ear variation, and hold tone quality perfect at low, medium or high volumes—circuits that exactly compensate for your ear's changing sensitivity.

DOUBLE SHIELDED METAL TUBES: Metal tubes are now so finely perfected that they are used in the MASTERPIECE V. Seventeen of its twenty tubes are the newest, most highly perfected metal types. The two rectifiers and the "Magic Eye" are glass, for they have no metal equals. These perfected metal tubes give the MASTERPIECE V less noise, less microphonism, greater amplification and perfect stability at all wavelengths. Thoroughly shielded as metal tubes are in themselves, this shielding in the MASTERPIECE V is rendered 100% complete by individual shields for the grid caps of each screen grid tube.

BAND PASS SELECTIVITY: Every radio has shown a V-shaped selectivity characteristic, which impaired program quality through side-band cutting in attaining selectivity. Now for the first time the MASTERPIECE V gives true rectangular band pass selectivity curves; to admit all of the desired programs, and nothing more. It sacrifices no program quality, yet gives super-selectivity. At the turn of the FIDELITY knob, it receives either the full and complete fundamental musical tone range of 4000 cycles, or it admits the full 9000 cycle high-fidelity range without the usual "sloping off" at the extremes of these ranges which muffles and deadens tone quality. The treble tone knob continuously varies selectivity from 2 to 18 kc.

SUPER-GIANT HIGH FIDELITY SPEAKER: This great speaker is two speakers in one, due to its new dual cone structure (G.P.H. patents pending). It has a small inner cone for treble reproduction, and a large outer cone for bass notes. Bass and tweeter speakers in one, it perfectly covers the full range of 20 to 9000 cycles. Treble tone diffusion is provided by a new and special diffuser cap at the cone apex, which diffuses treble tones widely. Not only does it give finer tone than ever possible, but its efficiency increases distance range 2.65 times, and gives the same sound volume that over 200 watts fed to ordinary loud speakers would give!

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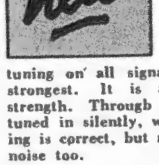
Brief

ing it in the opposite direction gives the fine 50:1 ratio for one knob turn, when the 10:1 ratio is automatically resumed. This single automatic two speed knob is smooth and easy and instantaneously provides the two necessary tuning speeds for easy long and short wave reception.



AMPLIFIED AND CALIBRATED "MAGIC EYE": The "Magic Eye" cathode ray tuning indicator is used in a new circuit in the MASTERPIECE V. Amplified by the high-gain A.V.C. amplifier, and actuated by a special rectifier tube, it guarantees accurate tuning on all signals from the very weakest to the strongest. It is also a meter to measure signal strength. Through the "Magic Eye" stations may be tuned in silently, while it tells not only whether tuning is correct, but registers distortion, fading and local noise too.

COMPLETE CONTROLS: The seven knobs of the MASTERPIECE V are calibrated, not left "blind". Each can be reset to precisely duplicate previous results. Left to right are: volume control, combined fidelity-phonograph-beat oscillator knob, volume expansion control, fast and fine tuning knob, bass tone control-noise reducer, 5-band wave-change switch, and treble tone control. On the Super-Giant Speaker is the 6000 cycle high-fidelity filter switch, with on-off switch on cable for mounting inside of cabinet.

HIGH-FIDELITY FILTER: The MASTERPIECE V introduces the new 6000 cycle cut-off filter now proven so necessary to prevent distortion from over-modulating high-fidelity transmitters. This filter, cut in by a switch on the amplifier, immediately cuts out the distortion heard on the many high fidelity stations which still over-modulate and distort to increase their distance range. This distortion is only evident with high fidelity radios actually reproducing tones above 6000 cycles. The MASTERPIECE V, reproducing up to 9000 cycles at will, has this exclusive new high-fidelity filter, to clean up distorted programs, cut out interference, and give high-fidelity reproduction to any degree desired.

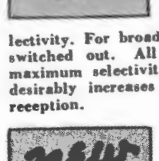
COMPLETE SHIELDING: Every circuit of the MASTERPIECE V is shielded either by large, low loss copper shields above the chassis, or by segregation into different "shielded rooms" below the chassis. Every delicate circuit is shielded so perfectly that instability or interference cannot occur, nor can losses be introduced into sensitive r.f. or i.f. transformer coils from usual steel shielding. The complete tuner chassis is shielded by a polished chromium cover shield, which keeps out all noise and interference.

TWO TUNED R. F. STAGES: MASTERPIECE V is the only all-wave broadcast receiver to use two tuned r.f. stages on all bands. This permits of its perfect image selectivity on short waves, and, through exclusive anti-noise compensation of these two r.f. stages, of its supremely low signal to noise ratio, which is unequalled by any radio whatsoever.

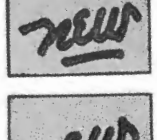
TUNED AND AMPLIFIED AUTOMATIC VOLUME CONTROL: Through a new A.V.C. system using two tubes, theoretical perfection of A.V.C. is attained. Over loading on strong signals and fading are eliminated as never before, while full r.f. amplification is automatically had for weak signals.

SEALED AIR TRIMMERS: The MASTERPIECE V is the only broadcast receiver having all r.f., oscillator and i.f. transformers aligned by absolutely stable hermetically sealed air dielectric condensers. The dial readings do not change, shift or drift throughout the years to come, selectivity, sensitivity and tone do not fail, for alignment cannot shift and change from week to week. It is stable and permanent.

BAND SELECTION: Band selector knob changes ten circuits by means of ten separate silver to silver switches which have proven absolutely dependable during years use. Unused r.f. transformers are short-circuited to prevent absorption losses.



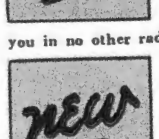
I. F. AMPLIFIERS: All five i.f. transformers use hermetically sealed air tuning condensers and 3-section Litz wound high Q i.f. coils with a low value of tuning capacity for maximum amplification and band pass effect together with high adjacent channel selectivity. For broad high fidelity tuning two stages are switched out. All three stages are switched in for maximum selectivity and distance. This system alone desirably increases amplification for selective distance reception.



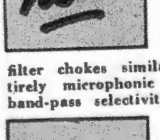
BEAT OSCILLATOR: For easy short wave station finding and C.W. telegraph reception. Controlled by FIDELITY knob.

HEADPHONE JACK: On left rear of tuner is the headphone jack. Inserting standard phone plug connects headphones for quiet personal reception and automatically cuts out loudspeaker.

PUBLIC ADDRESS AND PHONOGRAPH OPERATION: On rear of tuner is pair of tip jacks. The FIDELITY knob cuts the three stage high-gain audio amplifier and volume expander off the radio, for perfect phonograph reproduction of the new high fidelity records. When desired, crystal microphone may be connected instead of phono pickup and a 30-watt public address system had.

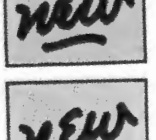


CIRCUIT ISOLATION: All individual r.f. and i.f. circuits are isolated with resistance and capacity filters, as well as complete shielding and short "hot" wiring for complete and absolute stability. This guarantee of static, noise, and oscillation-free reception is given you in no other radio.

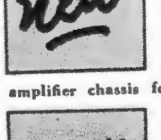


ANTI-MICROPHONISM: Entire tuner chassis upon six pure gum rubber cushions, gang condenser on six more pure gum cushions. All tuning and trimmer condensers of newly developed anti-microphonic design. Amplifier chassis cushioned on gum rubber cushions, filter chokes similarly cushioned. This obviates entirely microphonic howling, as does exclusive true band-pass selectivity.

POWER SUPPLY, FILTER AND HUM: Very large and heavy power transformer of solid, four bolt, flat mounting type. Two filter chokes of similar type, cushioned on pure gum rubber to prevent vibration impairing high fidelity reception. Two 5Z3 super-power rectifiers provide large safety factor and long life. Three section filter for absolutely hum-free operation. Sixty-five microfarads of 475 volt self-regulating, automatically self-healing wet electrolytic capacity guarantees perfect filtration with no AC hum and no breakdowns.



ANTENNAE: Separate antenna primary windings for all five bands are automatically switched to antenna binding posts, allowing use of noise reducing, doublet or single wire antennae as desired.



POWER CONSUMPTION AND FUSING: Draws 200 watts from any 110 to 125 volt, 50 to 60 cycle power line. Operation costs less than 2c per hour. Can be had for other voltages and frequencies. Fused by standard 5 amp. automobile fuse accessible beneath amplifier chassis for complete safety.

DIMENSIONS AND WEIGHT: Three units, tuner, power amplifier, and Super-Giant speaker. Tuner 21 inches long, 13 inches deep behind panel, 9¼ inches high. Power amplifier, 14 inches long, 5¼ inches wide, and 7½ inches high over its six tubes. Super-Giant speaker 18 inches in diameter and inches deep. Optional tweeter speakers (two, for ve wide angle sound diffusion, as in long and very narro room), 5½ inches in diameter and 4 inches dee Tuner weighs 51 lbs., amplifier 30 lbs., Super-Gia speaker 70 lbs., and tweeters 5 lbs. each.

PARTS USED: Only highest qu ity of specially prepared and tes parts are used, with never l than 25% to 50% safety fact By-pass condensers of solid mould type having lowest testable loss or of specially treated paper ty triply impregnated and hermetica sealed against moisture in tropics. Transformers chokes vacuum impregnated in wax and varnish, sea with varnish or pitch against tropic moisture. E hook-up wire has special acetate impregnated silk sulation. 1935-36 records show less than 1/10 of per cent failures! Output limited to truly custom b proportions where each receiver may be individu adjusted and tested, and measured by McMurdo Sil personally. Inspection and quality held to more se and rigid limits than in any other laboratory or fac in the United States.

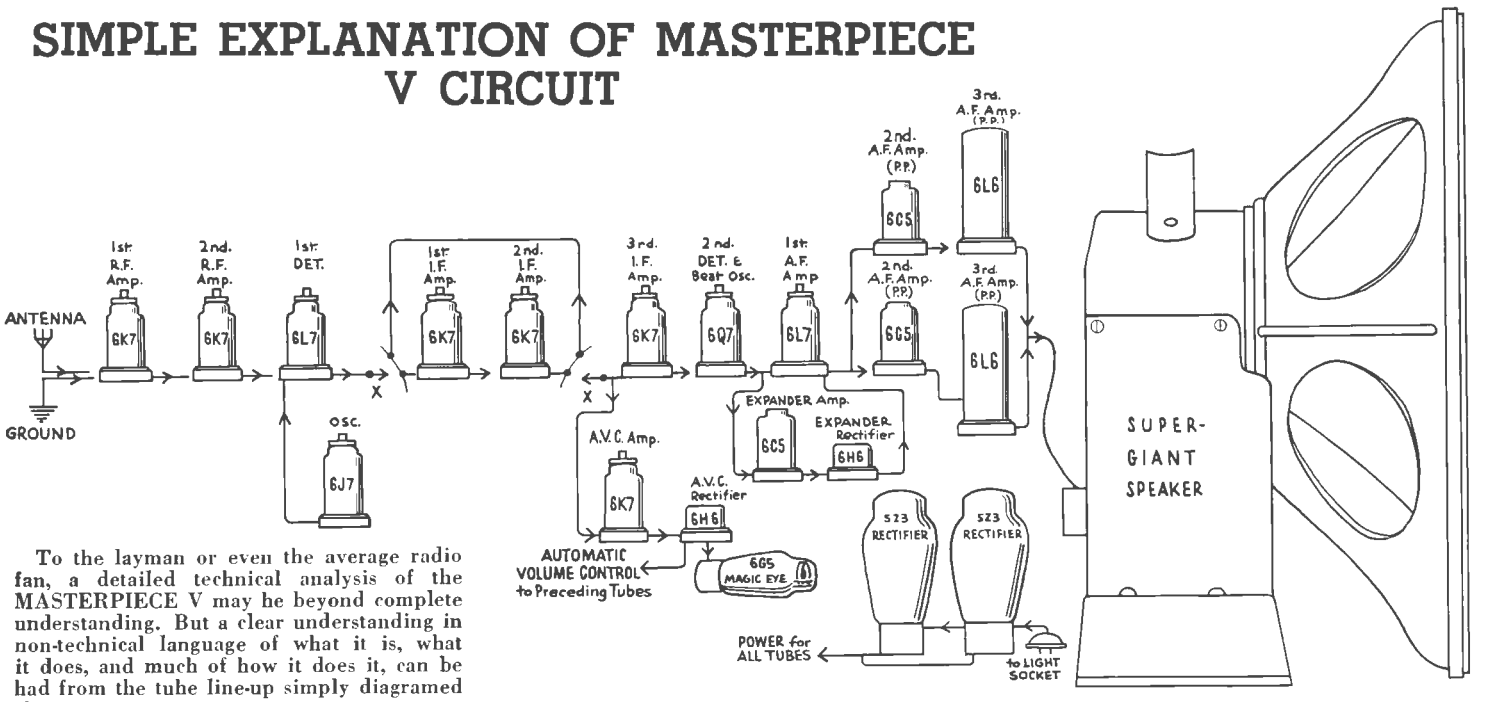
-IN ELECTRONIC VOL-EXPANSION. No phono- or radio has ever recre- symphonic music with its emotional effect because ograph recorders and radio ons cannot handle the full phonic volume range without are "compressed", and their soft to loud cut down before ge can be restored at the re- by a built-in electronic volume crescendo is really a thrilling . truly a soft pianissimo. But pander does something more—it hh-h-h" swish between program entirely the usual background dios. Used in reception of very ecially designed to reduce noise, stations so weak as to be lost r radios.

ANCE DIAL: The new full ion Lance Dial is 9" in diameter, d perfectly satisfies the most gorous requirements of legibility, curacy, dependability and simicity. All five wavelength scales e accurately calibrated on it in gures so large that they can be is easy to read and tune, and its ointer, like the unerringly accu- eliminates the parallax reading his large spread-band dial can be y to 10 kc. even on crowded short red to differentiate its scales and in in tuning. Its drive is simple s absolutely accurately.

BAND SPREAD TUNING: Band pread tuning is provided in a new, on-confusing way. A second dial cale graduated 0 to 200 degrees, ocated beneath the tuning knob o avoid the old confusion of a econd whirling pointer on the ain dial, amplifies each wave l ten times for easy separation of stations. On this absolutely reeach station covers ten times as es on the main dial. This makes ir-line sharp short wave stations r each one will cover plenty of

"FREE WHEELING" TUNING: The MASTERPIECE V provides utomatically through one single uning knob a fast tuning ratio of 0:1 and a fine ratio of 50:1. The single large, comfortable tuning knob moves the dial pointer at 10:1 ratio as far as desired, when turn-

SIMPLE EXPLANATION OF MASTERPIECE V CIRCUIT



To the layman or even the average radio fan, a detailed technical analysis of the MASTERPIECE V may he beyond complete understanding. But a clear understanding in non-technical language of what it is, what it does, and much of how it does it, can be had from the tube line-up simply diagramed above.

The MASTERPIECE V is a twenty tube all-wave high fidelity radio. The first question is why twenty tubes, when other radios use only seven, ten or twelve—or maybe twenty-five or forty. The simple answer is "to do more things, to give finer performance." The analogy of the rough operation of a four-cylinder automobile to the smooth powerful operation of a sixteen cylinder car is appropriate, but inexact. Adding cylinders to an engine cannot get the variety and range of improvement that intelligently adding "Aladdin's Lamps," modern vacuum tubes, can give to a radio. Up to a reasonable limit of about twenty tubes, adding tubes can add totally new results, as well as improve the basic results of, say, a seven tube set, by increasing its distance range, greatly improving its selectivity, eliminating noise and interference, and lifting its tone quality out of the category of reproduction up to that of life itself.

Since each circuit function focuses in at least one tube, let us strip the set down to its tubes, and thereby gain an understanding of its manifold functions. The skeleton diagram above makes this easy, for it shows only the twenty tubes of the MASTERPIECE V each labeled as to what it does.

Starting at the left, the symbol marked "antenna" represent the antenna which collect signals from the air, and feeds them to the 6K7 first r.f. tube, where they are amplified and then passed on to the 6K7 second r.f. amplifier. From here the weak signals, now amplified a hundred times or more, go to the 6L7 first detector (or mixer) tube. Here these signals, on any desired wavelength (frequency) are mixed with the local signal produced by the 6J7 oscillator tube to change them all to 465 kc., the intermediate frequency at which they are further amplified and selected. All signals received irrespective of their wavelength, are converted to this one intermediate amplifying frequency of 465 kc., this change being the superheterodyne principle which permits of uniform amplification and selectivity for signals of any wavelength.

The received and amplified signal now appearing as 465 kc. is successively selected and much further amplified by the first, second and third 6K7 intermediate frequency amplifier tubes in the diagram. The extent of the amplification and selectivity provided in the intermediate amplifier is controlled by ganged fidelity switches marked "X." The action is as described above, or upon turning the fidelity knob controlling the ganged switches "X," the first and second 6K7 intermediate amplifiers are cut out in order to decrease amplification and selectivity for nearby *full range* high fidelity reception.

At the third 6K7 i.f. amplifier the signal is also fed to the 6K7 A.V.C. amplifier seen below it. This tube further amplifies and selects the signal, and then feeds it to the 6H6 A.V.C. rectifier. This 6H6 is two rectifiers in one bulb, both fed by the 6K7 A.V.C. amplifier. One rectifier feeds the amplified signal, now D.C., backward to r.f., first detector and i.f. amplifiers (as shown by arrow) to control amplification and sensitivity in proportion to signal strength, thus automatically controlling the volume of all signals so they appear of the same strength at the second detector.

The second rectifier section of the 6H6 tube feeds the amplified signal to the 6G5 "Magic Eye" cathode ray tuning indicator tube. This 6G5 is also two tubes in one, its first section an amplifier which operates its second cathode ray section, which is visible above the dial as a half circle of green light, the area of which varies as signals are tuned in and out.

The third 6K7 i.f. amplifier feeds the tremendously amplified signal (up to several million times stronger than at the antenna) to the diode section of the 6Q7 tube, which is the second detector that converts the 465 kc. signal into audio frequencies. The second or triode section of this 6Q7 tube functions as the beat oscillator, to make weak stations first audible as a squeal, and hence easy to find when desired. The now audio frequency signal next goes to the 6L7 first audio amplifier, and to the 6C5 volume expander amplifier below it. The signal amplified by the 6C5 is rectified by the 6H6 expander rectifier, and as d.c., is applied to a special grid of the 6L7 audio amplifier to control its amplification in proportion to volume in order to naturally expand programs compressed in volume range at all broadcast stations.

The amplified signal from the 6L7 first audio amplifier is equally split to the two 6C5 push-pull second audio amplifiers, and passed through them to the two special new 6L6 electron beam power amplifiers (*superior* to four 2A3, 42 or 6B5 power tubes). At this point the original signal, probably only of a magnitude of one one-ten-thousandth of a volt (and possessing no power) finally emerges as a voltage of 450 with a power of thirty watts! It now goes to the loud speaker, which recreates it as unbelievably pure sound for your delighted listening.

All power for the whole receiver is taken from any regular a.c. house lighting circuit, and is transformed to, and rectified into pure d.c., by the two 5Z3 rectifier tubes, which supply the exactly required amounts to each tube in the circuit.

The foregoing skeleton description of what the twenty tubes of the MASTERPIECE V do, leaves most of its fine points completely unconsidered. It does show how a weak signal is picked up and amplified millions of times in order to finally bring it to your ear as pure, undistorted and harmonious music and speech of ample reserve power for any requirement you may ever want to impose on it.

This skeleton description of the MASTERPIECE V shows that every single one of its twenty tubes contributes its full share to the extraordinary performance of the whole, and that not a single one is "stuck in" just to increase the number of tubes that can be advertised. It shows that these twenty tubes actually do twenty four jobs. If older tubes such as 2A3, 42 or 6B5 power tubes were used, it would take 27 tubes to do what the MASTERPIECE V does with twenty new tubes of low initial and operating cost and long life.

This description brings out a few of the reasons why the MASTERPIECE V is in a class by itself—why it may not be compared with the many fine radios now available. The MASTERPIECE V does not compete with fine radios at all. It goes many steps beyond them and as the world's *only* truly custom-built radio, brings to you the immensely superior benefits of flexible and perfected fundamental design, truly custom-built to your exact needs.

WHAT DO CURVES MEAN TO YOU?

The curves of a bathing beauty are one thing, the curves of a radio are something else again. Anybody at all can understand the curves of the bathing beauty—often even the possessor herself. Many people can't understand the curves of a radio, but they are still curves nevertheless. Unlike those of the female, they tell a concrete, complete story of merit—what your radio will do for you when you operate it.

The precise measurements these curves graphically depict are made with delicate equipment costing thousands of dollars, and are supposedly representative of every radio of the type measured. Of ordinary fine radios, these measurements are made on a few laboratory models, and really mean very little for the duplicates, which in production cannot possibly be held to laboratory limits, even in relatively small quantities.

Every MASTERPIECE V is a laboratory model. Each duplicate is not an approximate duplicate—it is an *exact* duplicate. Each is held precisely to the initially established limits diagrammed herewith—if such is your wish. If it is not your wish or need, performance characteristics will be altered to give you what you desire and need. This variation, however, will not be a matter of chance, as is ordinarily the case. It will be a matter of precise laboratory adjustment made on your particular receiver as your location and wishes dictates. Since every MASTERPIECE V is truly custom-built and peaked for its owner, the curves herewith tell the complete story of fundamental and basic design merit.

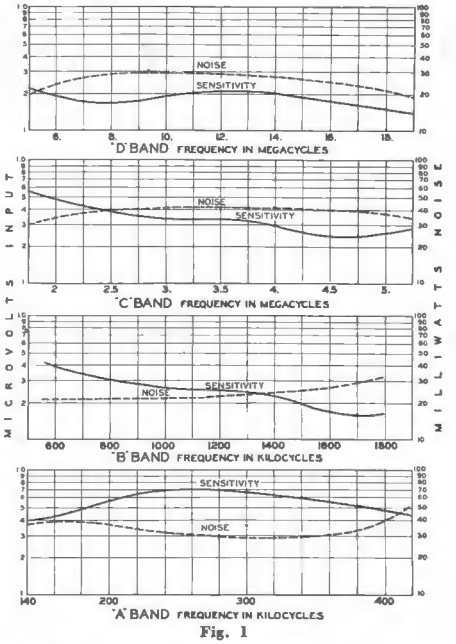


Fig. 1

Figure 1 shows the sensitivity, in microvolts absolute antenna input plotted against dial readings for wave bands A, B, C, and D. No accurate equipment for such measurements being developed today, E band sensitivity is not shown. Where it can be measured (up to 30 megacycles) it runs better than 5.0 microvolts. Carefully projected calculations indicate this value to be correct up to 70.0 megacycles. Besides showing the fractional microvolt antenna signal needed to produce test standard 50 milliwatt power output above inherrent circuit noise (which must include not inconsiderable signal, generator noise at such tremendous sensitivities), the dotted lines of Figure 1 show the total noise output for all bands when a 1.0 microvolt signal, unmodulated, is fed to the receiver. The instant this signal is modulated, audio output becomes 450 milliwatts, with total noise not over 30 milliwatts. This is the extraordinary signal-to-noise ratio of 15 to 1—at 1.0 microvolt input! If comparable curves were published for other radios, you would see that the MASTERPIECE V's greatest total average noise of 30 milliwattts would be from 10 to 100 times lower than that of other radios having not over one-half the sensitivity of the MASTERPIECE V. This condition is a target for the entire radio industry to shoot at for some years to come, so outstandingly superior to ordinary radios is it.

Total noise output is zero for all signals of 5.0 microvolts or stronger—99% of all stations you will listen to.

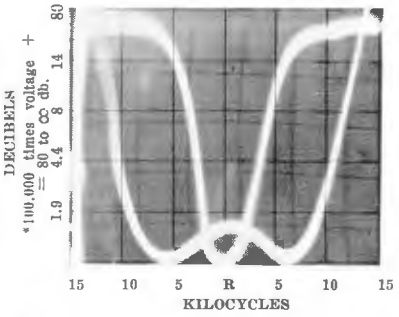


Figure 2 depicts selectivity as photographed upon the cathode ray oscillograph screen used for all selectivity measurements and adjustments. The outer curve corresponds to the "HI.FI." setting of the FIDELITY knob, and the inner to its "SHARP" setting. Both curves are the ideal U-shaped true band-pass long sought by radio engineers. The rectangular shape of both inner and outer curves is the guarantee of elimination of tone-destroying side-band cutting which is exclusive to the MASTERPIECE V. The outer high-fidelity curve shows full admittance for the 18 kc. band necessary to 9000 cycle high fidelity reception, with sharp cut-off to keep out noise and interference. The inner "SHARP" curve shows 8 kc. admittance necessary to perfect 4000 cycle tone range without side-band cutting, but with a very sharp cut-off between 8 and 10 kc. to guarantee no interference even from adjacent channel stations.

By means of the "TREBLE TONE" knob, anything desired between these two initial choices can be had at will—even the narrowing of the inner "SHARP" curve down to 2 kc. selectivity. No more can be asked or desired, for these curves show perfect selectivity to be here at last.

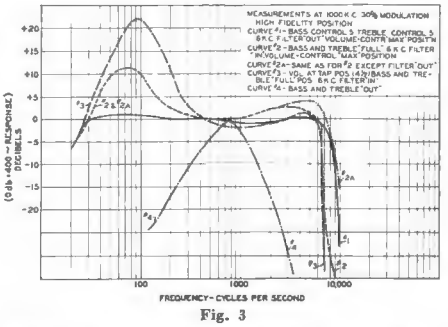


Fig. 3

Figure 3 shows only four of an infinite variety of tone fidelity choices at your finger tips. Curve 1 shows the theoretically perfect response, flat to 5 db. (less variation than you can ordinarily hear in music) from 20 to 8000 cycles, had with "bass" and "treble" two knobs set at 5 and FIDELITY knob at "HI.FI." Curve 3 shows the automatic aural compensation obtained when "VOLUME" is set at 5 or below, as you will use it 95% of the time. Curve 2 shows the cut-off just above 6,000 cycles provided by the filter switch on the speaker, which is also shown in curve 3. Curve 2A shows the minimum bass and treble "boost" of 12 db. bass and 3 db. treble (to which is added 5 db. in the Super-Giant speaker) as when "bass" and "treble" tone knobs are set fully right.

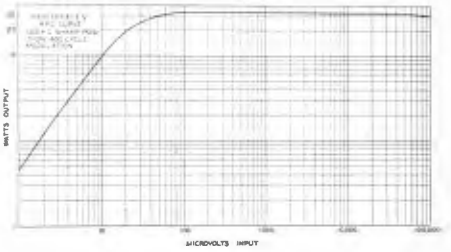


Fig. 4

Curve 4 shows graphically the bass and treble attenuation possible by turning both tone knobs to zero. This is an absurd extreme, making tone almost unintelligible. Comparing the extremes of this and the other curves of Figure 4 shows that you have unlimited control of the tone of your MASTERPIECE V, and can easily set its knobs to give you any tone you desire on any program.

All these curves were taken with the "fidelity" knob set to "HI.FI." When it is set "SHARP," the result is to bend every curve shown straight down at the vertical line marked 4000 cycles, cutting out all tones upon this range, but reproducing perfectly up to 4000 cycles.

(*See Next Page*)

SHE LIKES THE ONE-PIECE STYLE

JOAN TAYLOR displays this one-piece rubber suit at the Annual Bathing Costume Show at the Flamingo Pools, Miami Beach, Fla.

Figure 4 depicts A.V.C. action as measured at 1000 kc. in accord with I.R.E. standard measurement practice. It is only necessary to say that this is the long sought theoretically perfect A.V.C. curve—the best that can be had. It shows constant output (to the ear, which can barely tell the 3 db. difference between 15 and 30 watts close by) to be attained, and held constant, for all signals of 15 microvolts or stronger. This is theoretical perfection itself, preventing overloading or blasting on strong signals, and releasing full amplification for weak signals. Figure 4 shows how total power output is held to not over 32 watts, or the "undistorted" maximum (when total distortion is not over 2% in the MASTERPIECE V, as compared to the regular 5% allowed in other radios).

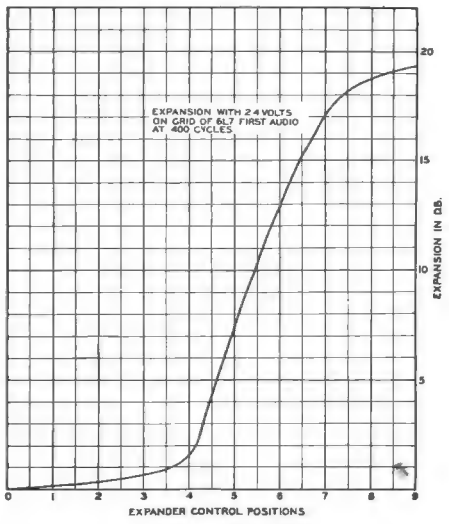


Fig. 5

Figure 5 shows volume expansion, plotted against "expander" knob calibration. This shows the ideal expander curve, whereby you can adjust volume expansion to exactly make up for broadcast station compression of all different types of programs. This 20 db. expansion range, possible only to a completely co-ordinated and built-in expander such as the perfected circuit of the MASTERPIECE V, is what enables you to restore full emotional life and vigor to the immortal music of the great masters—to so perfectly do it that this new music sends the shivers dancing up and down your spine.

A MASTERPIECE IS PURCHASED FOR THE WORST LOCATION IN THE WORLD

About 50% of what is commonly accepted as "local noise" is actually internal set noise in the radio receiver. Elaborate engineering precautions in MASTERPIECE design and construction have *eliminated* this. *It* is so quiet between stations that you can almost hear the proverbial pin drop.

However, the *other* 50% *is* actual local noise. To reduce this to an absolute minimum requires shielding such as you seldom see. The MASTERPIECE is not only thoroughly shielded in the common sense of the word—but *triple shielded* with *"turret" top* (which MASTERPIECE design introduced in 1933, *bottom* and inside the "engine room."

Those are two of the reasons why *only a MASTERPIECE* would operate satisfactorily in the trainmen's waiting room of the Lincoln-Wrightwood terminal of the Chicago Surface Lines!

Almost all of the 647 carmen working from this terminal spend considerable time in the waiting room. They decided to buy a radio and commissioned their Chief Clerk, to get the right one.

Then began what was probably the longest procession of radio receivers ever to enter one room. All the finest nationally known production brands were checked, then the best small production sets. But none of them could "take" the terrific electrical "beating" that a carbarn gives, where the set is surrounded on all sides by the heavy direct current arcs of trolly switches, control boxes and flashing sheets of high tension current!

Finally an electrical engineer recommended they come to us. The spokesman said he guessed it was hopeless but would we undertake to give them a radio that would *sound* like a radio instead of a boiler factory and could also be used as a Public Address unit calling them to duty?

This was no new assignment for us. We have had the same request from the offices of the U.S.S. Pennsylvania, flagship of the American Navy; from Admiral Byrd; from Universities testing weather phenomena and from an imposing list of similar "hard to beat" installations.

Now compare *your own* location with the one pictured above, in which the street car men not only get locals, but London, too! Check the number of immediately adjacent heavily traveled streets, the commercial shops and noise makers on all sides, then look to your own home interference, probably limited to an electric ice box and oil burner, and similar devices in the same building if an apartment structure. At the worst, you are probably on a busy auto street with a few shops several hundred yards away. In place of a veritable ball of sparks and flame *within your walls*, you may have two easily-filtered noise makers, and the line filter of the MASTERPIECE V will bypass the noise from nearby apartments. To summarize this, your location at worst will be 50 *times better* than the above apparently impossible, but completely mastered, MASTERPIECE installation.

You Need to Buy No "Extras" to Bring Your Masterpiece V Up to Date

One of the nice things about the MASTERPIECE V is that it is complete, ready to give the superb worldwide reception that only it can give, as soon as you set it up. All it needs is an electric light socket to push its plug into, and an aerial.

We feel very strongly that there are no *degrees* to perfection—that the perfect radio should have every single thing necessary to perfect results built into it and included in its price. The MASTERPIECE V is so built, a complete and finished radio. You do not have to buy extra gadgets, and no extra gadgets you can buy will improve its inherrent perfection one whit.

We could, of course, have started it off with a small, ordinary inefficient speaker. We could have charged you extra for a volume expander unit to be added on. We could even have charged extra for band spread tuning—a basic fundamental need of *any* all wave receiver! But no fine radio today has any business being built without these fundamental and basic improvements to begin witb. Likewise, if its design is so old that there are not built into these new basic and needed improvements, then it follows that they cannot be added as "extras" and do a perfect job.

Feeling as we do that the compromise of "extras" is not the road to perfection, we *initially* built the MASTERPIECE V with every new invention known to science that will make the results it brings you perfect. You are not asked to pay extra for this, that and tbe other thing that thorough engineering should have *originally put in the design.* When you order your MASTERPIECE V you are assured that it will be truly custom-built, tested and peaked for your own particular needs and desires — to give *you* perfect world-wide reception in your own individual and different home. Equally important, you are sure that in ordering it you are getting a complete radio. You will not be told later on that if you buy an "extra" gadget or two you will *then* be able to get the results you originally expected. You get these perfect and fully satisfying results from the word "go." The price of your MASTERPIECE V is the true price, not one made low by omitting fundamental needs which you will be asked to pay more for later on. In the MASTERPIECE V you get everything at one true price—every single valuable improvement and invention known to science, most of which cannot be had in any other radio at any price.

Experienced Sales Engineer Joins Laboratory Staff

We are pleased to announce the addition of a new member to the laboratory staff, George N. Eidson, who has joined us as sales engineer to take charge of our Chicago Studio.

Mr. Eidson's radio career started in 1915 when he obtained his first amateur radio station license while still a student at Lane Technical in Chicago. During the war he attended military school and then studied engineering at Illinois and Wesleyan Universities.

His technical experience has been as consultant with the Automatic Electric Co., engineer with the old H. G. Saal Co. (remember their "fusiformers"?), sales engineer with Silver-Marshall, and Utah, and Assistant Sales Manager of Zenith. He recently resigned as Eastern Manager of a custom-built radio manufacturer to join our organization.

Mr. Eidson's engineering knowledge and long radio experience ably fits him to discuss reception problems with folks considering joining the "Royal Families" of radio by having a MASTERPIECE V built to their specifications.

Masterpiece Facts

Shipping charges to the West Coast via Acme Fast Freight "radio car" on a MASTERPIECE V run only $4.82.

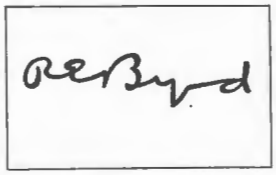
There are installation and local service stations in every locality providing prompt and efficient MASTERPIECE service.

Parts failure in the MASTERPIECE IV was actually less than one half of one percent!

There are MASTERPIECE receivers in every remote area and sector of the world. There is never a moment but what some MASTERPIECE is thrilling its owner.

Admiral Byrd's mother in Virginia relied on the MASTERPIECE II for news of her son, Richard, during his further conquest in Little America. Five M II's served him while he added thousands of new miles to our Union of States.

About 1½c per hour is needed to operate the MASTERPIECE V, or about as much the ordinary bridge lamp. And who would compare the routine function of a lamp with this Alladin's Lamp of glorious, world wide entertainment?



Boston Mass., May 10, 1936

On this anniversary of our return from the South Polar regions I want to express to you my deep and enduring appreciation of the assistance you rendered our second Antarctic Expedition which helped to make it possible for us to serve more than twenty branches of science and map and take possession of thousands of square miles of new territory for the United States.

Attached to this sheet is an autographed piece of insulation from the wall of the Advance Meteorological Base the southernmost habitation ever occupied by man.

In gratitude and friendship

Richard E Byrd

Commander U.S.N. Ret.

1940's LOUD SPEAKER YOURS IS HERE

(Continued from Col. 3, Page 5)

Adds Three Octaves

This new speaker adds three octaves to the music you hear! It covers from 20 to 9000 cycles, while ordinary speakers usually only cover from 60 to 80 cycles at lowest to 6,000 cycles top. What this means to radio and phonograph music is indescribable, as is the whole MASTERPIECE V and Super-Giant combination. It *must* be heard to be appreciated, and once heard, you will never be content with anything less.

It is our hope that other radio makers will take advantage of the tremendous and startling improvement the Super-Giant at last brings to radio. We fear, however, that in line with frequent penny-pinching policies, you will be offered bigger, but *not* heavier speakers. We hope we are wrong, for remember that in a loud speaker, size without weight means no real improvement—except added sales appeal for non-discriminating buyers.

"STRAYS"

Variable Selectivity

The MASTERPIECE V has continuously variable selectivity, in an unusual circuit that increases amplification as it increases selectivity. This is a very important point overlooked in the engineering of practically all radios, and contributes greatly to its superb performance. Two initial selectivity choices of 8 and 18 Kc. are provided by the "fidelity" knob, which automatically regulates amplification. A third choice of 12 KC. is provided by the high fidelity switch on the Super-Giant speaker. Continuous variability from the broad 18 KC. choice on down to 2 KC. selectivity is provided by the "treble" knob. From this explanation you can see that selectivity in not only continuously variable, but additionally you have three major choices with exclusive and necessary automatic amplification control for each major choice—very necessary for maximum results.

(Continued Col. 2, Next Page)

THE MAN WHO OWNS ONE SAYS:

McMurdo Silver Corp.,
3354 No. Paulina St.,
Chicago, Ill.

Dear Mr. Silver:

Please let me congratulate you on your extraordinary achievement in "The Masterpiece IV."

I have listened to it with close attention and interest.

The tonal quality in its fidelity to both vocal and instrumental sounds is something an opera singer seeks mercilessly in a radio. In The Masterpiece IV I find astoundingly satisfying quality.

Hearing a large symphony over the entire great scale from the lowest instruments to the highest, one can all but actually see the orchestra playing. This is also true as regards vocalists and instrumental solo artists.

The ease with which foreign stations can be brought in, with a clarity and elimination of crowded adjacent stations or noises, make it invaluable to the foreign station listener.

The minutely calibrated dial allows you to "go placesa directly and definitely------no more fealing and poking around in the fog.

Once more congratulations and BRAVO on your fine achievement.

Very truly yours,

Charles Hackett

The McMurdo Silver Corp.,
3354 No. Paulina Street,
Chicago, Ills.

Dear Mr. Silver:

I take great pleasure in expressing my appreciation of your wonderful MASTERPIECE IV radio.

In my judgment, it's natural tone is superb.

Your wonderful instrument has been a source of real delight to me.

Very sincerely yours,

Musical Director
Metropolitan Opera House
N. Y. City.

July 8, 1936

From the first trial I would say that THE MASTERPIECE V is the best toned set that I have ever operated.

On the short wave I tuned in London, Germany and Madrid for trial purposes. Found one station on the apex hand. The quality of the European stations was very fine, the finest that I have heard . . . the tuning was extremely sharp.

I will freely say as I have stated above that the tone and the broadcast end of it is very fine and I expect to like it more and more.—CHARLES C. BUCKNAM, Boston, Mass.

GLAD TO DEMONSTRATE

July 4, 1936

To put it mildly, I was not prepared for such a shock. Words fail me! It is *without a doubt* the most wonderful tonal quality I have ever heard. It is really as different from the old radio sound, as day is from night.

My dream has always been to find a set that would give me the quality and reception we hear from the speakers in the control room (writer is N.B.C. Broadcaster-Ed.) Believe me when I say the MASTERPIECE V discounts control room quality 50%. What more can I say?

To return to the tone again before I forget, between numbers or during a rest in the music, *absolutely* quiet, *wonderful*. You may well say the bass control would satisfy me this time for one can get anything one wishes and by working these tone controls, one can *really* greatly reduce static and outside noises.

It is a wonderful speaker, of course, unlike anything else I have ever seen. Last winter I spent $100. for a series of speakers alone (that was wholesale too) and therefore I had the best; they are toys compared to this one.

Since I sent you my order, I have made it a point to hear every new 1937 model set, and there is nothing in the same class with the MASTERPIECE V. I don't think it would be well to publish this letter, as it would seem too much put on, but it really does not express all I feel regarding the set.—ARTHUR MAITLAND, c/o The Lambs, 130 W. 44th St., New York, N. Y.

"STRAYS"

(*Continued from Page* 11)

P. A. Operation

For public address or microphone operation, you need only insert the tip leads of a Shure or similar crystal microphone into the phone tip jacks on the back of the MASTERPIECE V tuner, turn the Fidelity knob to "phono," and you have a 30 watt public address system. Close talking with the microphone will give plenty of volume for a 3000 seat theatre, or even larger.

16,000 Cycles

As each MASTERPIECE V is truly custom-built for its owner, we can build it to reproduce up to 16,000 cycles if you desire. This will necessitate the two tweeter speakers at $16.00 net extra to cover the tone range of 9,000 to 16,000 cycles. The usual "whistle trap" will of course be included to cut out the 10,000 cycle beat note from adjacent channel stations. You are the doctor on this, but we do not recommend higher than the 9,000 cycle range, as you will get absolutely no benefit. This is because local noise will increase, and tone will not improve as no stations that you can use this range on are modulating above 10,000 cycles today, and very few will do so in the future, if ever any at all, because of the present and future 10 KC. station spacing. May we add that we find no radios made today going up to 16,000 cycles, or actually as high as our preferred 9,000 cycle limit of the MASTERPIECE V. It actually covers the greatest tone range of any radio made today, or so our measurements of other radios prove to us.

July 12, 1936

Just how does one register genuine enthusiasm? Surely you, with the ability to produce the MASTERPIECE V should have sufficient imagination to picture two genuinely happy people in the possession of such an instrument. . . . It was indeed like a second honeymoon to come to your Studio, and to be treated like old friends.

But I must not overlook the commercial side. The set came through perfectly. Everything within reason came through in most desirable fashion. True we have not explored the entire range of the set, but all my "pet peeves" were covered to complete satisfaction.

The one fact that has impressed me, is that this receiver will sell itself much more readily upon actual hearing rather than through the means of literature.—FRED E. BOESE, 1701 E. La Fayette Place, Milwaukee, Wisc.

July 14, 1936

The tone quality of the set is certainly marvelous. Have had three local radio dealers exclaim that they had never heard a "radio" before until they heard this one.—BRUCE O'LEARY, Marshall, Mich.

July 13, 1936

I am in receipt of the MASTERPIECE V recently shipped me and am very much pleased with it. The new dial is wonderful and the tone surpasses anything I have ever heard.—Very truly yours, L. F. HAMERSLY, Washington, Indiana.

July 12, 1936

The set seems to be functioning perfectly. I had London, but the weather is terrible at present for any short wave reception.—Very truly yours, ROLAND MAYER, Center Street, Redlands, Cal.

July 5, 1936

BELIEVE IT OR NOT!

When the announcement of the MASTERPIECE V came to us, both my wife and I were skeptical about the ability of even such an Artist as McMurdo Silver to build a better radio than the IV had been. So we concluded to go to the Studio to hear a demonstration. My wife found her tongue first by remarking: "THAT RADIO ACTUALLY HAS PERSONALITY."