



EXPERIMENTER'S CATALOG

This is our revised Catalog. Give your old one to someone else. Modern Radio Labs.

73

Effective Date

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Established 1932

Phone
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OCT 1973

Pages revised as required.

Litho. in U.S.A. by M-R-L

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Sales to over 53 Countries

MRL Radio Flyer...FL

contains new listings, price changes, specials, etc. not found in the CATALOG. Certain items may be transferred to CAT. later as pages revised. Flyers are issued as our time permits.

MRL "Data Sheets" are included with each issue of the Flyer.

Flyers are mailed to steady buyers only - due to mailing costs, etc., but it doesn't take much of an order - now and then, to keep on our active list.

Please give CAT.# and description to avoid errors. Prices are subject to change. 25¢ service charge on orders under \$1; may be applied on \$2 order later. CATs. are free- but send 10¢ for mailing. Mailing info. next page.

M R L Handbooks

An exclusive item:
not obtainable else-
where. They represent

notes from our large library;
our own experiments since 1915 &
reports from hundreds of Fans.

HEADPHONES: OPERATION & REPAIR.

MRL Handbook No. 1.

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This Handbook contains 33 detailed drawings to help you. The material has been collected over a number of years - and much of it cannot be found in the Radio texts, libraries, etc. Letters have been received from three of the leading phone manufacturers praising this Handbook.

Because most Fans buy one good pair of phones in a lifetime - it is a good idea to keep them in repair. Using phones, in poor condition, cannot give best results in DX reception, tone, etc.

The Handbook gives data on old as well as modern ones - and how to keep them in good order.

Some of the headings are Early phones - Diaphragms - Cords - Fitting lugs to cords - Fitting tips to cords - Re-magnetizing - Re-winding - Hooking phones to sets - Phones in series and parallel - Freak phone reception - Using phones as testers - Using phones as various types of magnetic speakers - Using phones as microphones - Batteryless telephones - Fixed coil phones - Modern telephone circuit - Miniature phones - Continuous current type - Fixed coil-acoustic phones - Balanced armature phones, as the Baldwins - Dynamic phones - Piezo-electric crystal phones.

As usual, we try to add additional details to make our Handbooks more interesting.

When phones were more expensive and harder to get - our shop used to re-wind and repair a lot of earphones. Over a period of time one can learn a lot about phones, which is quite a subject in itself. Eventually labor became too high to continue repairing phones. However, this HB can save you quite a few dollars in simple repairs that you can easily make.

A later kink, that will interest you, may be added to the HB. Years ago we tested super-sensitive phones by touching the tips together to get a click. Now a different plating is used on the tips which does not produce the click. It is not that the phones are less sensitive but the new plating doesn't click. This is from the Trimm Laboratories.

MRL HB-1. 2 oz. postage.... \$0

MRL #2 and 2-A LONG DISTANCE CRYSTAL SETS.

MRL Handbook No. 2.

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Many have acclaimed this the "World's Best DX Crystal Set." This HB shows all details for building this wonderful set.

You may refer to CAT. page K-1 for more details on the kit.

HB-2 shows how to build both the #2 2-dial set and the #2-A single dial set. They're the same circuit but the different types of condensers make a different panel and wiring layout.

Some of the points covered in "Building the Set" are the complete panel front, rear and side layouts for both sets, all drawn to scale and positioned for best results under many conditions. Other details on How to check parts - Mounting condensers - Mounting switch levers and other parts - Soldering - Wiring them with step-by-step plan - Best way to mount coil - How to wind the coil - Mounting the coil - Mounting the set, etc.

In "The Antenna System" you'll find Theory - Directional effects - Placing the Aerial correctly - Kind of wire and insulators - Erecting the Aerial - About the leadin - Multi-wire Aerials - Temporary Aerials - Ground leadin - Best grounds - Counterpoise - Lightning arrester, etc.

Under "Operating & Testing" we have covered Logging - Daytime reception - Fading - No signals - Freaks - Phones & condenser - Using speakers - SW reception - Best crystals & catwhiskers - Use of wave traps for interference.

"Theory of Circuit" covers The signal - Aperiodic circuits - Coupling - Auto transformer - #2 circuit - Primary condenser.

"Records by Locations" list 186 good DX reports from all over the U.S. and Canada on pages 20 to 24. Also from Australia, Bahamas, Hawaii, Philippines. In our files we have hundreds not listed in the Handbook.

We have really gone overboard with this HB. So many things are explained that may be adapted to other sets than the #2. A short discussion of plug-in coils for Xtal sets is given, to reduce dead-end losses on Short waves.

The proper way to operate a Carborundum Xtal at its peak DC voltage is explained.

You will enjoy it and should have it on your shelf.

MRL HB-2. 2 oz. postage.....\$0

CRYSTAL DETECTORS.

MRL Handbook No. 3.

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The data in this HB has been collected over a number of years and was almost impossible to obtain. Much of the older material was kept secret by the larger companies. Before the advent of tubes, a large number of minerals and combinations were tried - always looking for a better one.

The number of titles will give you an idea of the scope of this HB. Under each title we have attempted to give the chemical formula, common name, description, source and distribution, sensitivity, catwhisker type to be used and any other interesting data for each.

The "Quick Reference Chart" gives name, formula, class of chemical, active element and if a battery may be used in series. "Trade Names" gives all we had on hand - and shows the duplicity of brands on the market.

A simple discussion of Diodes and Transistors is given, as so much now is very technical.

This Handbook can lead you into experiments with other combinations of minerals, etc. once you see how they detect signals.

MRL HB-3. 2 oz. postage.... \$0

M R L Handbooks, continued

MRL I-TUBE D. C. ALL-WAVE SET.

MRL Handbook No. 4.

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This is one of our best MRL Handbooks.

The One-tube set, it describes weighs but 12 ounces. Literally hundreds of them have been sold to satisfied customers, so the rig is not an experiment on the market.

The circuit is simple, and is easy to assemble and wire. The DX ability is due to the layout of the proper parts, Antenna condenser, and little kinks we have learned during its sale the last 13 years.

Complete parts lists are given in detail. While we prefer certain parts, the whole list may be purchased at any good Radio Parts store.

On its 24 pages we have attempted to show all drawings in full size, so measurements may be made directly. It is easy to lay out the panel, base, etc. by just removing the staple from the Handbook, and placing sheet directly on the flat surface. A center punch is then used to mark the hole centers, for easy layout.

Our new system of systematic wiring, showing starting points, etc. will help the novice. One may use the schematic or pictorial diagrams as he wishes. Details are given, as we progress, why certain methods are used.

Complete data for winding all the coils from 20 meters up thru the Long Wave band of 830 meters are shown.

7½ pages of "Performance Reports" are given. These show, in condensed form, and alphabetically by Countries, States and Cities, some of the best results we have heard about. Besides the station call letters, we have figured the approximate airline miles, which run up to 12,000. Now and then a Fan reports some special kink, or change he has made and found useful.

MRL HB-4. 2 oz. Postage.....\$0

All are handy 5½" x 8½" pocket size. Index is on the cover to make it easier for reference. On

CRYSTAL SET CONSTRUCTION.

MRL Handbook No. 5.

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There are few Beginner books on Radio that really begin. Most of them start half way up the ladder. We have had so many inquiries about the simpler forms of Radio - that this Handbook is a necessity. Symbols accompany all drawings to learn parts.

It is sectionalized so you can easily refer to it without reading the whole book.

It starts by explaining the use of Panels, and especially as concerns Crystal sets. Lots of hints on processing, etc.

Cabinets - two kinds that are easy to build - Also finishing.

You will find lots of data on Coils as so many types may be used in Crystal sets. Info. on forms; winding; tapping; finishing; large vs small; dead-ends; jumble-winding; solenoids; Loop-sticks; sliders; couplers; AC-DC.

Various types of Condensers R treated, from mica to bypass, as all may be used. Explains condensers in series, parallel, etc.

Crystal stands is also a big field of experimentation and you will get some good ideas here. Pressure; fine vs large wires; remaking present stands; mounting Diodes, etc. conveniently.

Semi-conductors as detectors, Diodes and Transistors are well covered. How tubes and Transistors are similar and dissimilar. Data on high-freq. Transistors.

Headphones - the best types & some kinks in use. Tone; ear cushions; series vs parallel; crystal phones; repair; etc.

In Primary and Secondary circuits the HB really gets going. Aperiodic circuits; series and parallel tuned; sharp & broad.

Loose-coupling and sensitivity are most important. Lots of good data on making Couplers, etc.

Two Transistor amplifiers are shown - easy to build.

8 layouts for panels given. Complete assembling data and a soldering iron setup. Quick way to arrange panels.

Discusses problems for getting long distance reception.

MRL HB-5. 2 oz. postage .\$.0

the back is a synopsis of some other Handbook in the series to make them more useful.

HOW TO MAKE COILS.

MRL Handbook No. 6.

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You will find lots of good information in this Handbook. It contains 46 drawings and 3 valuable charts. A lot in a small space but covering it well.

It leans toward the Novice or Experimenter and shows him how to make coils easily without a big investment in equipment. No real complicated winder is used and most of them can be made up from parts around the average home or shop. Commercial-looking coils may be wound using these simple methods. Over many years we have run into many kinks in the field of coil building.

From the above titles you can see the extent of coils covered. Various types of low-loss H.F. and transmitting coils are shown - with highest efficiency.

Low-loss basket and spiderweb coils are given, and you'll have fun making them up. There are lots of uses for them - especially in long distance work.

Two methods are given for your making honeycomb coils. Other specifications as to turns, tuning range, inductance, distributed capacity, resistance, etc. from 25-1500 turn coils. They are useful as standards in these values in your Lab.

All our plug-in coil data is shown - so you can wind them yourself. Over many years we have experimented to get the best results from balance of turns, wire, spacing, etc. Our testimonials on DX attest to our being right on this subject.

Toroid coils are covered to some extent. They are now being made by the thousands in some plants. A simple method of winding them for your receiver.

Multi-layered coils are covered in detail. A chart gives many values useful in figuring turns.

Link coupling will help you in selectivity problems.

Coil mountings are covered.

MRL HB-6. 2¢ postage..... .50

M R L Handbooks, continued

Circuits used in MRL Handbooks are all tested; we don't just copy material from other sources

to fill up space. Many additions are made to our original and you may combine them for new ones.

EXPERIMENTS WITH MAGNETISM
AND COILS.

MRL Handbook No. 7.

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We have attempted to explain a lot of the peculiar actions of Magnetism, in relation to coils. Over 30 experiments may be conducted with very little equipment. There are also other drawings that help to make it more interesting reading.

Coils work under very definite rules. As we experiment with Radio we are apt to take a lot for granted. If we know some of the simpler rules - it is easier to go forward. This Handbook goes into these important rudiments of coils and their operation. It is a companion for #6 Handbook.

In early Radio days the writers had very divergent theories on Magnetism and Coils. We have attempted to cover some of these differences and bring the subject up-to-date.

Much data is given on magnetic materials. It explains what are best for magnets, coils, chokes, transformers, etc. Latest core data is given in a chart.

Quite a bit is given on various types of low-frequency audio and power transformers.

A lot is explained about the shielding of parts with magnetic and non-magnetic materials and which are best and why.

Details on figuring coil inductances in series and parallel are explained. You can also rig experiments so you can "see" the effect of counter emf.

Lots of material on AC resistance and what it comprises. It tells why good coils work better and what to look for in making better DX coils.

Details on making a simple galvanometer, contracting helix, repulsion coil, current-wave tester, and other gadgets.

We are sure it will be as interesting to you in reading it as it was our writing it. Add it to your MRL Handbook collection.

MRL 20 CRYSTAL SET CIRCUITS.

MRL Handbook No. 17.

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It is hard to say how many thousands of this Handbook we've sold to satisfied Fans. And many Engineers, and other professional men build these sets in their spare time.

All the circuits are practical and have been tested over a long period of time. We do not copy plans as so many of them don't work right. Most of these plans are original with us. Hundreds of good DX reports have been received by us from Fans.

The schematic, pictorial and layout diagrams are clearly made up. You don't have to be an expert to build any of them. They run from simple sets to one of 5 controls. Diagram parts are all numbered for simplicity.

Every inch of space is filled with useful information.

Testimonials from thousands of customers attest the appreciation for this set of plans. Our Blueprint #17 has been completely re-written. It incorporates lots of kinks, changes and experiences represented by many hours of experimenting.

We have added many sketches of panel layouts, variations, and details not found in our original plans. Also, any semblance of tube rigs have been replaced by purely Crystal sets.

Circuits are shown that will stimulate the Beginner or ones that will give the Old Timer a good run for his money.

Parts lists are shown, all of which may be easily obtained. A good part of them may be home-constructed.

It is a well-known fact that to start Radio right - the Xtal set is the first step. Learning these, the future steps are much facilitated.

MRL 18 CRYSTAL SET CIRCUITS.

MRL Handbook No. 25.

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Crystal circuits in this Handbook are all entirely different from HB-17. Like #17 - thousands have been sold to Experimenters. Many are used in Radio classes & clubs. The material has been collected over a number of years & all circuits have been completely worked out and tested. There are no tubes used. Complete part lists are given with each.

Some of the special features of HB-25 are: #19 Pocket Radio 3" square, that IS selective. #22 DX Marvel that really gets the DX. #37 Push-button set tunes like an auto radio. The #28 Plug in coil Crystal set has a 6000 mile DX record on Short waves. #31 Police call crystal converter will work ahead of any tube set to get Police and Amateurs on your big set. #34 Wired wireless Crystal works in conjunction with a tube oscillator to talk to your neighbor. #38 Xtal booster is a novel rig to increase volume on a crystal set. Various notes of interest are added for your enjoyment.

The ONLY way to start in Radio is by building some Crystal sets and then go to 1-tubers, etc. This HB will give you a good beginning. It gives good, clear diagrams and a chart to show you what symbols mean. All details are worked out.

One may spend their lifetime with Crystal experimenting and always learn something new. Xtal Diodes are now being made for HF sets as their characteristics cannot be matched by tubes. You will enjoy working with them.

MRL HB-7. 2 oz. postage..... 50

MRL HB-17. 2 oz. postage... 50

MRL HB-25. 2 oz. postage... 50

M R L Handbooks, continued

RADIO KINKS and QUIPS.

MRL Handbook No. 8

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The scheme of this Handbook is different from others we have written. Pages are alphabetically arranged so you can easily find the kinks, so no need to thumb thru the whole book. 36 drawings help to explain. Parts lists are furnished when needed.

From piles of notes we have selected kinks that we feel are not common to other publications and many that have been asked. Am sure you will find many that are interesting to you.

A few of the items of interest are: figuring natural wavelength of an Aerial in a hurry - an adjustable Ant. system - 5 meter T Aerial - inside doublet for apts. - use of chokes - choke substitution - winding Crystal coils - band/spread condenser - how to get best Crystal set reception - Transistor amplifier for Xtal - HF and LF BC station tuning - 110 line hum control - best DX operation requirements - counterpoise - ground waves - substitute grounds - hum & noise control in Hi-Fi - permanent Hi-Fi needles - speakers in Hi-Fi - panel drilling hints - proper wiring - dials - shielding - care of phones - mike from phones - body capacity in phone cords - complete diagram for AC-DC set without shocks - filaments - resistor substitution box - improving regeneration - motor-boating - shop operation - drilling - universal output trans. chart - baffles - tone - fixing speakers - 2-way 110 switch - DX series-parallel switch - boosting TV stations - TV Ant. data - testing - simple signal tracer - transformer data - Transistor feedback - Transistor battery - Transistor wavemeter - variable grid leaks - many others.

MRL HB-8. 2 oz. postage.....50

Where can you find a line of instructive Radio Handbooks at this price? By our system we can

MRL RADIO NOTES No. 1.

MRL Handbook No. 9

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This Handbook is chockfull of good information for the Radio Fan. As the titles show - there is something of interest to all the Experimenters.

As MRL "Radio Builder" No. 34 is out of print - we decided to completely do it over into a new Handbook. All articles have been expanded and put up-to-date in every way possible.

There is a DC TRF Stage that may be used on any set to boost DX signals and sharpen the set. Complete details with panel and base to scale and parts list.

A discussion of the MRL Type D Antenna Coupler whereby you plug SW coils inside to get sharper tuning and balancing the Aerial.

MRL #10 DX Crystal Set is well covered for present owners and a few logs from others.

On Erratic SW Reception - we have broadened the original into an useful discussion of DX.

Facts about Enameled Wire has presented quite a discussion of this seldom-heard subject. How it is made, handled, and its advantages and disadvantages.

A lot of info. on Guy Wires and Insulators, and how an Antenna mast can best be set up.

A Simple Long Wave Booster is described - with panel layout.

A greatly enlarged article to 3 pages on AC Filament Supplies, past and present. Series and parallel strings & several types of power supplies are given.

Speaker Hints are more than that. Almost two pages of data.

The Beginner in Radio - a completely new article. Over a page of what he runs into - remedies.

Blue Glow in Tubes - about 1 1/2 pages on glow and gas.

Shoot your order in now.

MRL HB-9. 2 oz. postage..... 50

produce them - while others must make large volumes at hi-prices. Buy parts for the difference.

FACTS FOR CRYSTAL EXPERIMENTERS.

MRL Handbook No. 10.

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Crystal Efficiency and the Characteristic Curve.....	19
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Why Crystal Sets? - gives a lot of reasons for their use. Thousands of listeners depend entirely on their use - believe it or not! Tone fidelity, DX reception and other points are covered. The simplest set is shown, along with the most modern type of Crystal set.

Pocket Radios, using Diodes, are explained - and advising you on pitfalls in their advertising that catch thousands a year.

De-modulation and Rectification are explained in detail, in a simple manner that WE all can understand. This is also useful to the Amateur.

Theories of Detection - and there are many. All explained in detail - so you can use your own judgment which is best. Also an explanation of Selenium and Silicon rectifiers, Simple thermocouple experiments are shown. Principles of thermo-coupled ammeters. All about the formation of crystals and X-ray tests. The Hole and Hall theories are here.

Some Early Xtal Detectors, or Cymoscopes, from 1874 up to the present are shown - and many most of us never heard of before.

Good Care and Operation of Xtal Detectors is very important for best results. Mounting Xtals and the best kinds of catwhiskers to use. A discussion of stands - & many types are shown.

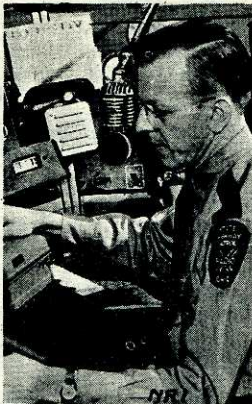
Crystal Efficiency and the Characteristic Curve shows interesting methods of testing and plotting graphs. Effects of battery use on Crystals. Discussion of the proper use of Carborundum Xtals and batts. as well as use of dual Carborundums.

Some Modern Crystal Diode Applications shows latest methods of manufacture - with voltages up to 1500 on a Silicon rectifier Diode. Several types of catwhisker shapes are shown. Photo-Diodes, grown and diffused junction Diodes, 2 million to 1 ratios.

Resonant Circuits covers Xtal sets affecting other sets, etc. Also latest GRM Coil experiments on BC and Short waves.

MRL HB-10. 2 oz. postage.... 50

M R L Handbooks, continued

NEW MRL
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OPERATING
as a
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While this new MRL Handbook favors Radio Operating aboard ship - it goes into dozens of other branches of operating.

The FCC license is the "door opener" to all Radio communication jobs. This Handbook stresses the acquisition of this by steps - and what jobs you can do with each element of progress.

You are carried along from the rank beginner up to the Commercial licensee with top wages. Even tho you have a low-grade license, you can profit immeasurably from this Handbook.

It has been one of the hardest we ever tackled - due mostly to the extensive Communications field, with its dozens of large branches. As an example, in the mobile branch alone, there are over one million licenses.

While Radio jobs may often be hard to find, it is possible you may inquire into just the right job - by a hint from this HB-11. It also gives you a lineup on what pay to expect.

Space forbids description of all the different branches of Radio operating. If you desire a Ham station - this HB tells how you can rig one up - and also the easier ways to learn code.

Servicing communication equipment is a big field that is covered in a practical way. Airlines have big Electronic departments to keep them going.

You may have a yen for the big Ocean Liners - well this HB tells the good and bad points. Author spent 3½ yrs. as Ship operator.

An interesting trip, with pictures, thru RCA KPH land station is extensively described.

MRL HB-11. 2 oz. postage.... .50

We have sold over 7500 of certain MRL Handbooks by direct mail. There is hardly a Hamlet

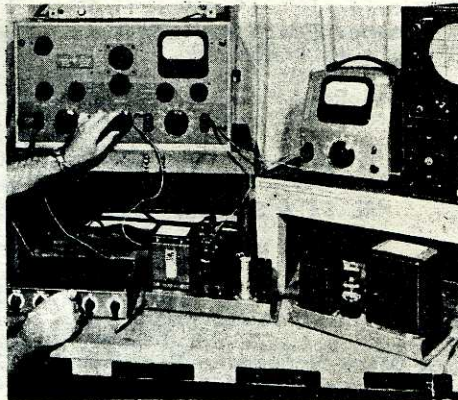
in the U.S., or Canada, that has not had MRL HBs. Hundreds of testimonials prove their usefulness

Radio Workbench Tips

MRL Handbook No. 12

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From the above contents, - you can see the HB covers the subject quite thoroughly.

Most service manuals go into details about methods. Few of them dwell on a real handy Workbench that you'll use for years, whether Service man or Hobbyist. It takes years of experience for one to find what to include and what to eliminate. In fact, we wish our's was the same, in all details, as the one described!

This HB describes, from practical experience, about going into servicing on a small scale, shop layout, business hints, etc. How to build the bench yourself, from the bottom up.

Simple testing equipment, you can build - and how it is used.

Lots of shop machine data you never saw before.

Build it up and get going!

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This is a complete revision of MRL "Radio Builder" numbers 26, 30, 31 and 32. All advertising and superfluous material have been eliminated. All important articles have been made over and greatly expanded. A lot of research has gone into making this material up-to-date. Some new articles have also been added.

From above contents, you can see it covers quite a range of subjects important to the Experimenter. Many drawings, that help to explain details are included.

"Improving Japanese Miniature Radios" is a new article. Shows how to get more DX and to get better tuning and tone on any of the models. Using these methods, we have greatly improved range of our 5-tuber.

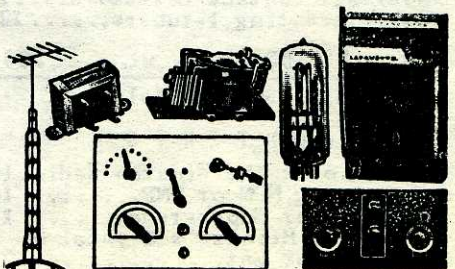
Another addition is how a fellow went from our crystal sets up into the Engineering field. His is a good plan to follow.

Also "Substituting Tubes" will give you a quicker method.

The article on Power supplies has been brought up-to-date. One supply is for a low-powered TRX rig, with variable output control. It uses a filament transformer and 2 crystal or Silicon rectifier diodes.

The other power supply is for use with a Selenium or Silicon rectifier diode and works from an isolation transformer to prevent shocks. It is used on 1-2-3 tube rigs. Units are practically hum-free and low cost. The parts lists are included.

MRL HB-13. 2 oz. postage.....50



MRL HB-11. 2 oz. postage.... .50

MRL Data Sheets is another MRL exclusive. Completed volumes are 12 pages 8½x11, photo-lithographed and easy to read.

They are chock full of long-lasting material. All circuits are checked for operation so you will have little trouble if followed right. Material is all solid - very little MRL advertising. Featured most are constructional articles and facts needed by the Experimenter. Often revised re-prints of older material is included. Parts lists, schematics, line drawings and details are all given. DX reports and hints from Fans and our Lab.

Currently, 4 DS pages go out with each MRL "Radio Flyer." 3 sections make a complete volume, with index on page 12. Only our steady buyers get them FREE as they come out at random (no fixed date). However, non-buyers may buy back volumes, in completed form, and get back on our MRL mailing list.

Everyone likes DS - according to our whopping sales of them. You need them in your Radio library. They fit standard binder. Got any kinks or pet circuits? Send them in - and we'll pass them along to other Fans.

MRL DATA SHEETS, Volume 1.

C O N T E N T S.

A Transistor Circuit - MRL #2 & Variometer - MRL 1-tuber Tuning Chart..... 1
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MRL "RADIO BUILDER & HOBBYIST"

MRL "Radio Builder & Hobbyist" is being discontinued on a subscription basis. It is necessary that we devote our time to MRL Handbooks and other literature instead.

BACK ISSUES #41-42-43-48-49 will still be handled at 25¢ each, plus postage.

BACK ISSUES #25 thru 40 will be discontinued when the present supply runs out. Until then, we can supply them at 15¢ each, and postage. Material in them will be combined and made into future MRL Handbooks as they run out. So, if you want them at the low price of 15¢ each - get your order in real pronto!

RB-34 has already been discontinued - and contents, plus a lot more, are contained in our new MRL Handbook #9 "MRL Radio Notes No. 1" at 50¢ each. (A-4) Also others are getting low now.

COMPLETE SETS OF "RB&H" of 20 issues sell for \$3.50, plus one lb. postage. If any are out - you will be given credit for the difference.

Following are the contents not shown on CAT. page C-1.

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Table of contents for Experimenters' Electronics and Science No. 1, listing items like A Note to our Friends, For Good Reading, etc.

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CONTENTS No. 2

Table of contents for Contents No. 2, listing items like A Note to our Friends, For Good Reading, etc.

Table of contents for MRL RB&H No. 49, listing items like HER4 - Switzerland Calling, Questions & Answers, etc.

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Table of contents for MRL RB&H No. 40, listing items like Multi-tube and TV Sets, Questions and Answers, etc.

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"TRANSISTORS: PRINCIPLES, DESIGN & APPLICATIONS." Gartner. 1960. 674 p. Here's the one for you TRX buffs. All kinds of data, Engineering, etc. 2 1/2 lbs. 2.00

"AUDUBON ENCYCLOPEDIA" Sec. 1-A-B. Interesting book in color and identifying lots of animals and birds. For nature lover. 1 1/2# 2.00

"RADIO OPERATOR'S LICENSE Q & A MANUAL." Rev. 7th Ed. New. 1969. Kaufman. 568 p. Complete phone, solid state, Radar, ship, etc. Allied price 8.95. 2 lbs. 4.50

"BOOK OF POPULAR SCIENCE." Grolier. 1958. 418 p. Hundreds of interesting subjects of Science to read for us all. Good condition. Book No. 6. 3 lbs. 2.00

"BOOK OF POPULAR SCIENCE." Vol. 1. Grolier. 1965. 527 p. Metallurgy, animal life, industry, Is very easy to read. No. 1 and 6 in different years. 3 lbs. 2.00

"HANDBOOK OF ELECTRICAL REPAIRS" Day. 1969. 131 p. Brand new. A guide to elec. repairs, charts, wiring, home problems. Same price as Fawcett & postage 1 lb. 1.80

"X-RAYS IN THEORY AND EXPERIMENT." Compton. 1935. 828 p. If you are looking for data - it's here. It runs from discovery to modern techniques, etc. Big 3 1/2# 2.50

PLEASE GIVE BOOK LIST NO. when ordering - so we'll find it! Hi.

"A DIPPER FULL OF STARS." Page. 1959. 223 p. You guys, who like to name stars while parking - it puts you wise! 1 1/2 lbs. 1.50

"RADIO AMATEUR'S HANDBOOK." 34th Ed. 1957. ARRL. About 772 pages. Fair condition. Tubes, ads, etc. for that period. The Ham's bible everyone knows. 3 lbs. 2.00

"FUNDAMENTALS OF MICROBIOLOGY." Frobisher. 1959. 617 p. In good shape. A real textbook. We don't know all these things are around us. Interesting. 3 lbs. 2.50

"PICTURES IN A MINUTE." Wolbarst 1960. 192 p. Awful lot of info. for Camera fans. Hi-speed, Polaroids, etc. Interesting. 1# 1.50

"PRINCIPLES & PRACTICE OF ELEC. ENGINEERING." Gray. 1940. 586 p. Circuits, magnets, Motors, batts transformers, rectifiers, lighting, experiments. 2 1/2 lbs. 1.50

"ELECTRICAL ENGINEERING EXPERIMENTS." Reed. 1939. 500 p. Instruments, synchroscope, thermometers, Electronics, mercury-vapor rectifiers, etc. 2 1/2# 2.50

"MANUFACTURING PROCESSES." Bege-man. 1958. 612 p. Foundry, patterns, plastics, welding, metal cutting, lathes, gears, sawing, abrasives, threads, etc. Book store price 6.40. 2 1/2# 2.50

"LICENSE MANUAL FOR RADIO OPS." Johnson. 1956. 430 p. Basic law operating, phone, telegraph, air craft, ship radar, abbreviations, Mercator projection. 2# 2.50

"REFERENCE DATA FOR RADIO ENGINEERS." 4th Ed. ITT. 1150 pages. A real find. Allied lists the 5th Ed. for \$20. Just about all reference data you'd need. Not too technical. Charts and tables of all kinds. In perfect condition. Info. is stable. 2 1/2# 7.50

"ELECTRONICS." Brown. 1954. 545 p. Tubes, amplifiers, feedback cir., tuning cir., modulation, UHF, Instruments, Lab. methods, Equipping Lab., Xtals, Marked bookstore price 7.50. 2 1/2# 2.50

"TUBE SUBSTITUTION HANDBOOK." Sams. 1960. 93 p. Altho older edition - we've added many tubes that are direct subs. Original price 1.50. 4 oz. .75

"MOUNT OLYMPUS." Farquhar. 1929. 47 p. Collector's item. Only 950 copies. Excellent condition. Has numerous pictures. In cardboard case. Interesting. 2 lbs. 2.00

"FUNDAMENTALS OF APPLIED ELECTRICITY." Jones. 1956. 337 p. A very interesting book. Also on Radio, TV, experiments, simple interesting theory. 2# 2.50

"RADIO OPERATING QUESTIONS AND ANSWERS." Nilson & Hornung. 1940 415 p. Always good for that Ham or Commercial License. Lots of needed diagrams. 2# 1.95

"RADIO OPERATING QUESTIONS AND ANSWERS." Nilson & Hornung. 1950 588 p. Always good for that Ham or commercial license. Lots of needed diagrams. 2 lbs. 2.25

"RADIO OPERATING QUESTIONS AND ANSWERS." Hornung-McKenzie. 1955 571 p. For Radio licenses of all kinds. Good condition. 3# 3.00

"PROPERTIES OF ENGINEERING MATERIALS." Murphy. 1939. Metals, timber, clay, concrete, tables, etc. Fabricoid cover. 2# 1.75

"KINEMATICS OF MACHINES." Guillet 1940. 300 p. All kinds of engineering data on machines, drives, gears, etc. 2 lbs 2.00

"SCIENCE IN YOUR OWN BACKYARD." Cooper. 1958. 192 p. Especially for youngsters but good light reading for all. 1# 1.50

"INDUSTRIAL ELECTRONIC CONTROL." Cockrell. 1950. 385 p. Vacuum tubes, relays meters, rectifiers, timing, PE cells, 2# 1.50

"ALTERNATING CURRENT CIRCUITS." Kerchner & Corcoran. 1948. 553 p. Engineering data, problems, etc. All kinds of data. In fine condition. Useful. 2# 2.50

"MODERN MARINE ELECTRICITY." By Smith. 1943. 384 p. For the boat fan with power. Installations, gyro-compass/pilot. 1 1/2# 1.50

"POPULAR SCIENCE LIBRARY. (6)
(1) "Story of Starry Universe" 368 p. Most interesting for Fans of Astronomy & general science.

(2) "Story of Our Earth." 384 p. Geology, rocks, early animals plants, minerology, etc.

(3) "Story of Chemistry." 430 p. Takes from beginning of general chemistry to foods, etc.

(4) "Story of Force & Motion." Forces, gases, heat, sound, currents, photography, plating, etc.

(5) "Story of Mechanics." 421 p. Machines, power, manufacturing, vacuums, Radio, TV, Fac.

(6) "Story of Electricity and Magnetism." 452 p. Atomic, Lite, EMF, Batt's., Motors, etc.

Above 6 books sold only in a set. Beautifully bound in blue. New condition. May be used in HS Science. 6 books 8 lbs. 7.50

"ELECTRONICS TECHNICIAN #2." U. S. Navy. 1953. 489 p. Radar and Radio compasses, etc. Oodles of interesting diagrams. Paper cover good condition. 2# 1.95

"WONDERWORLD OF SCIENCE." Duncan. 1952. 360 p. Calif. school text, altho elementary - we can all learn something. 2# 1.25

"COMPLETE HOME HANDYMAN'S GUIDE: Cobb. 1948. 500 p. Just about everything you can fix around the shop and home. All kinds of data on tools. etc. 2# 2.50

"POCKET DICTIONARY." Thorndike. 1953. 451 p. Paper. 1# .25

MRL Detail Prints (DP)

A DP gives added (detailed) information on our plans of HB-17, 25, etc. All plans tested out in our Lab. before completion. Lots of magazine plans do not work; but ours will! DP's have consistently sold for over 25 years, and enough testimonials have been received on them to fill a book! Lots of time has been spent to make them complete and useful. Many of our circuits are original, and not found in other publications. Plans are revised when time and conditions permit.

Most DP's give layout to scale as well as parts list, coil data and winding, wiring hints, kinks and variations from the original circuit, operation, and a pictorial diagram if space permits. Printed on good, white paper, 8 1/2 x 11. Easy to read and follow.



MRL DP FILE #1.

The following 15 DP's are neatly bound, keeping them neat and easy to find. On the front cover is a complete cross-index for quick reference. We have also added an interesting 1 1/2 page article on "Static" to the cover. All DP's in the file are photo-lithographed. It takes months to make all the units with their variations. A welcome addition to any Radio library. We suggest a copy for every Radio class or club. You save 50% by buying the complete set of plans. Following R the plans in this file.

DP File #1 Index. Sold at same price as DP's. Useful in filing if you already have some of the DP's. Cross-index gives all details. A big 1 1/2 page article on "Static" is included. It was revised and reprinted from early issues of MRL "Oscillator" and "Radio Builder" now out of print - and well worth reading.

#1 MRL #37 Push-button Crystal Set. Plan shows schematic; pictorial front & rear panel views; how to mount trimmers; coil data etc. We have also added a SPST switch to increase the range, as different from circuit in HB-25. Just throw a lever to a station.

#2. MRL #33 Selective Crystal Set. Shows simplest layout and all is mounted on the panel. It gives detailed drawing of all connections in pictorial. Also shows hi-gain connections. You have a variable selectivity control and other features.

#4. MRL 15 1-tube DC Circuits. A plan sold usually thru our ads that shows 15 good tested plans on a page. Also complete parts

list. Shows Lo-B cir.; variable screen grid; reversed Electron-coupled; space charge with 6 v. B.; super-regenerative; reflex; long wave; etc.

#11. MRL Type D Antenna Coupler shows full-sized drawing of the unit. Also under-base view for condenser mounting; use a vertical or "L", Doublet; Zeppelin; complete mounting instructions; several formulas for building Aerials; theory. (See CAT. E-4)

#12. MRL 2-stage Transistor Amplifier. This is a well-worked out circuit using 2 Transistors as power amplifiers in a simple circuit. Signal goes into a 4" PM speaker mounted on the panel. A 6.3 v. fil. trans. and filter furnishes all power. This unit may be hooked across phone connections on a Xtal or tube set & bring out those weak ones. Phone jack cuts out the speaker.

#13. MRL All-wave Vario-coupler. Shows complete constructional layout in simple drawings of all details; use in Crystal set; in Australian regen. cir.; in BC band set; a good Shortwave circuit; theory. (See CAT. E-4).

#14. MRL Transistor Small Set Amplifier. Just made up. All details for building a slider Xtal set, with excellent selectivity. Also added is the PNP Transistor Amplifier, which works on 1 1/2 to 6 volts of flashlight cells and operates a speaker. Volume control used. May be attached to a 1-tuber, or any Crystal set.

#22. MRL #2 Long Distance Xtal Set. After all these years - the best way to lay it out. Showing front, rear, side and wiring views of our Old Reliable DX'er. This is the one we advertise a record of 5800 miles in our ads. Up-to-date details we now use.

#22-A. MRL #2-A Long Distance Set. This is the same circuit as the #2 (DP-22) but it uses a 2-gang condenser with a different panel layout. Reports are about equal to the #2 as the condenser automatically adjusts itself. Is very easy to build and makes a remarkable set for local and DX. Same selectivity switch as #2. Over 5000 mile reports. One fellow in Canada plays Moscow every evening on this set.

#23. MRL #8 Crystal Set. One of our very selective sets. Uses a different principle than most Xtal sets. You can't go wrong on this set. Pictorial and wiring diagrams give details. Distances up to 1800 miles covered.

#26. MRL No. 1 Crystal Set. Our original Xtal set, whose DX and performance got us into the

M/O business. Many records over 1000 miles. Uses MRL QRM Coil for trapping stations. Back panel view shows clips for different condensers. Easy to assemble and wire. Selectivity controlled. It gives very loud signals.

#28. Radio Symbols. Approximately 157 old and new ones. Big job to get it up. Hang it on your wall for quick reference. Looks much better photo'd than mimeo. Many you probably never saw b4.

#30. Proper Aerial & Ground Construction. Was very popular when mimeo'd before. We sold just hundreds of them. All latest data and the old ideas revised. You are sure to find a good idea.

#34. MRL #10 All-wave Crystal Set. Shows 2 versions - a City operated set or a Country set. Same panel layout but different circuits and coil. As a City set it is very selective, altho this set has also brought in Moscow (7000); London (5200) and others by the hour. Uses Carborundum & battery or adjustable as desired - or a Diode. Easy to build.

#41. Code Short Cuts. Entirely revised. Shows new Transistor code oscillator as well as tube and buzzer. All kinds of kinks on learning "that" code. Keying, keys, speed, "bug" keys, etc.

MRL DP File #1. 5-2. 4 oz...1.00

Above DP's and Index, if bought separately, 10¢ each, plus postage. Order by DP # only.



MRL DP FILE No. 2.

Here are 15 more neatly-printed DP's to add to your collection of tested and revised circuits. This file includes some of our best sellers. Same introductory description as for DP-File #1.

DP-File #2 Index. Besides a cross-index, this sheet contains 1 1/2 pages of discussion on "More Efficient Regeneration." Will be relished by anyone experimenting with 1-tube regenerators. Gives explanation of Mistali's combination regeneration control for our MRL HB-4, 1-tuber. Also all detailed drawings of variable grid leak, output, etc. At same price as other DP's - 10¢.

DP-16. MRL Portable Transistor Amplifier. A most handy 1-stage Transistor amplifier - built into a box. One 9V. Batt. goes inside. Tips plug into Xtal, or tube set and phones into two tip jacks. Regulated by volume control and switch. Easy to build. Brings in those weak stations U can "almost hear" now.

Continued from D-1.

DP-21. 10 Tested Crystal Set Circuits. These are mostly circuits sent in by our Fans but revised and bench-tested by us. So, you can be sure they all will work OK. Many new ideas in Crystal set circuits. All are easy to build. Parts list included. Can provide many hours of fun and practice.

DP-24. MRL No. 9 Selective Crystal Set. One of our old-timers - that still works good in congested areas. It is a 2-dial set with no tap switches. Uses an efficient circuit similar to the old Telefunken receivers, but we have added our ORM Coil to knock out any bad station. It is very simple to build.

DP-25. The Flextal Crystal Set. This has about every combination that you can imagine in a crystal set. It uses 3 sets of coils and 3 variable condensers. All on a 7x8 panel. All details are given for this interesting set. Selectivity is varied in 3 different ways, so it is also good for the City as well as Country.

DP-29. MRL Simple 1-tube Short Wave Set. All-wave. Can use 01A, 30, WD-11, 99, as well as the more modern tubes. 8 socket layouts are given. Very easy to put together from this plan. Uses a vernier dial, aluminum panel and base. The next step after Xtal sets. Special layout has given some extreme DX records as you can see in other MRL reports.

DP-31. MRL Powerful 2-tube AC All-wave Receiver. One of our most efficient SW receivers to date. Uses MRL 5-C or C Celluloid plug-in coils in a most sensitive circuit. A 6BA6 HF miniature detector and 6V6gt powerful power stage and Selenium rectifier. Works into a PM speaker on the 7x9 panel. A switch throws speaker or phones on. A delicate band-spreader helps to sneak up on the DX stations. Has a tone control as well as volume. Replaces our previous 6C6-42 DX circuit - but much more sensitive. No hum. Has already pulled in lots of good DX. We suggest this for the more advanced Fan.

DP-33. MRL Pocket Radios. All brought up-to-date. Same size as previous #19 set, but uses a Xtal Diode and Transistor for more power. Pencil inside 3x3 1/4 box. All details shown. May be hooked to any metal object for Aerial. Also shown is a Radio on a pencil. Also a Diode in a phone; and loading coil details. Layout drawings full size. Easy 2 make.

DP-38. MRL 6-watt Power Amplifier. Print is all re-vamped. A large amplifier to run a 12" PM, or magnetic speaker to full volume. Uses 76 as driver and (2) 42's in push-pull. Has input vol-

ume and a tone control. Phone jacks in both stages. Uses AC or DC on filaments. Power can be supplied by our DP-49 Power Supply. Blast those weak stations with this Power amplifier.

DP-39. 16 Tested Transistor Circuits. We spent many hours on this DP. About half the magazine circuits do not work, but these do - even with weak Transistors! All have been bench-tested and brought to efficiency. We have selected the 16 most simple circuits for their purposes. Most of them not found elsewhere.

DP-43. MRL #26 Single-dial All Wave Crystal Set. Has been remade. Uses our Type 5-X coils & with switch for making it selective or broad tuning. Mounts on a 4x5 panel and 3x4 base. The TRX amplifier gives ample volume for weak stations. DP shows all wiring. Lots of good reports including 9200 miles 3 times from Australia, etc.

DP-47. MRL #28 ALL-wave Plug-in Coil Crystal Set. This is a complete revision of our original plan - of which we sold so many. It has equaled #2 and 2-A in DX records on Shortwave. Uses MRL Type RF Celluloid plug-ins, with turn details. Complete detailed drawings. Also data on a loading coil for Antenna tuning. One of our best DX'ers.

DP-57. MRL 1-tube Shortwave Converter. A real hot converter that hooks ahead of any RF or Superhet. Radio. Really bangs in the stations. Uses 1R5 miniature tube with its own filament supply battery. B-power comes from your receiver - and may be regulated, if desired. A well-layed-out rig, that uses your receiver as an amplifier. A switch throws the battery off and your regular BC set on. Oscillates all over the dial. Uses sensitive vernier dial. 3 trimmers make for easy balancing. A special wave trap goes between your set - which may be used on your BC set also. Altho for the more advanced - 3 pictorial diagrams give all details at half-size. Uses MRL 5-RF coils and MRL Type A for the oscillator. A real go-getter.

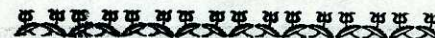
DP-63. MRL 2-tube All-wave DC DX Receiver. Lots of fine reports on this rig. Nothing like DC to pull them in. An easy chassis to lay out. Uses 32 or 34 detector and 33 audio, altho other tubes may be substituted. Has a tank condenser, vernier control, Ant. condenser control and regeneration. A 2 1/2 ohm rheostat may be substituted if you can't find a 6 ohm. Gives details for winding MRL A coils. Lots of good reports as Europe, Asia, South America, etc. All details given.

DP-64. MRL #3 Selecto-dyne Crystal Set. We have made this DP over, and have concentrated

on Diamond-weave spiderweb coils for some real good DX. By building up a powerfully-tuned primary and then varying the coupling of the secondary tuned circuit - it becomes a very efficient and selective set. Method of making diamond-weave coils is given in detail. Also data on pancake coils - if you prefer to use them for simplicity. At one time we used to get \$15 for a completed set like this.

DP-69. MRL #12 2-slider Xtal Set. While our original #12 3-slider crystal, in HB-17, still works good - we prefer this later layout. Stations now being much closer "apart" - a variable condenser is needed to separate them. Also some form of selectivity - so we've put in a primary that slides inside the coil. It mounts on small panel and base. All details given. It also uses a crystal Diode for detector.

MRL DP File #2. 5-3. 4 oz. 1.00



SOME COMMENTS FROM OUR FANS.

Eric Hayne, Canada: "I find the sets on DP-4 work very well."

LIKES DP FILE AND PUBLICATIONS.

Len Cutress, Canada: "Received DP-file #1 and think it is fine. It fits my 3-ring binders of 3 Radio files on small sets. Built your ORM Coil (DP-18) at once. Like your publications because the material is good. I hope you keep up the good work."

AN OLD TIMER SPEAKS UP.

John J. Trowbridge, Illinois: "I've been in Radio for over 15 years - and I can say I've learned a lot from your simple books. We can use more."

MRL GOOD FOR YOUNG ORGANIZATIONS

Andrew Stall, Illinois: "I am ordering a set of DPs. Your organization is what a young boy, learning about Radio, needs. Your material would be mighty helpful to High School students, starting in Radio, if somehow, you could reach them by advertising, or by direct means."

EXPERIMENTERS AT ALL AGES.

Guy E. Singleton, Ill.: "At over 70, I'm still a DX Hound, interested in Super-hets. For many years I've taken several Radio mags., but I've never seen anything to equal your literature. Helps keep me going."

APPRECIATES OUR LINE OF WORK.

N.J., Newark, B.C.: "Have just gotten back into Radio after a lapse of 20 yrs. I think you are doing a tremendous job for the small set Experimenter builder. Keep up the good work."

MRL DP FILE No. 3.

Here are 15 more tested DPs for your collection. (19 & 19-A count as 2). Lots of good reports on them. Same introductory description as Files 1 and 2.

DP-File #3 Index. This uses a cross-index like the others. Also a lot of data on "Long Waves" - including a long wave circuit we used to work aboard ship to copy press, etc. Index at same price of 10¢ as other single copies.

DP-6. MRL #39 Selective Xtal. Shows details for building original as shown in HB-17. Back wiring diagram, coil data, etc. Also shows a new plug-in layout, so you can wind for SW bands. It uses Banana jacks and plugs. It makes a very efficient layout. Has no dead-end effects.

DP-18. MRL QRM Coil Transistor Set. We stumbled onto this new arrangement for the most selective Xtal set you've seen. By using 2 QRM Coils - you can sharpen up the stations at will - and get many you never heard on a Xtal set. As a boost to the Xtal diode detector - we added a Transistor amplifier, using 2 pencils for power. Volume controlled. All on a 4x5 panel with base. Very easy to build. Also details for using the QRM Coil in its many ramifications for cutting out stations or boosting them in.

DP-19 and 19-A. A Navy Type Loose Coupler. This is a double print due to so much material. Gives all details for building one. The large primary gives excellent volume and makes it work fine with inside Aerials. Pri. has 2 sets of switches. Secondary operates with a 6-point sw. and slides into primary. Lots of details given for operation and a discussion of original types. Being a double print, it is...20.

DP-27. MRL #15 Crystal Set. It has been completely re-vamped from the original, that used to sell for \$12, all over Oakland, Calif. A most efficient set, as several methods of controlling selectivity may be used. Good for city or country. An entirely new coupler, of Cello, has been designed - having a controlled rotor at each end and a tapped secondary. Also built on a much smaller panel - 6x8. An adjustable Steel galena, or fixed Diode may be used. Lots of fun operating this crystal set.

DP-35. MRL 2-tube AC Longwave Receiver. May be used for shorter waves if desired. Uses 6BC5 in a very sensitive circuit that oscillates good - where it is required on Lo-F. A 42 output tube delivers 3 watts to speaker and phones in a novel jack hookup. Tickler may be wound over end of

secondary. Uses Selenium or Silicon rectifier in an efficient power supply circuit for A-B. Panel shows speaker layout in easy form. Uses B longwaver.

DP-36. 2-tube E-C Long Wave Receiver. This is a complete revision of original which reported such good results. Uses a 6C6 detector tube and 42 power amplifier for 3 watts output. Has its own power supply. Complete panel and base layouts, etc. Get on these long waves and see what you can find up there. It uses MRL C or 5-C Long Wave coil, but may be adapted to EC if desired.

DP-44. MRL #29 Variometer Xtal Set. Full-sized drawing of Variometer, plus 6 other drawings of all details. Different than the original #29, and a lot better. Also #29-A - a revision of an old selective circuit that is also easy to build. Many more possibilities for experiments.

DP-48. MRL #35 Prize Selector Crystal Set. We have greatly re-vamped this N.Y. Show prize winner. It uses our #2 coil for 1st stage; Variocoupler for second. Rotor can cut feed-over energy to zero if desired. You'll be amazed at its selectivity and volume obtainable. Built on a 7 x 10 panel. DP shows all wiring, in 2 stages to make it easier.

DP-49. MRL Heavy Duty No-hum Power Supply. Completely revised from our original plan. All the latest improvements. Mounts on a metal chassis for a real commercial-looking job. Has hi-voltage tap for 350-400 v. DC for amplifier circuits. Also an 0-100 v. DC variable control for lo-voltage detector and Transistor circuits. Also 6.3 v. AC filaments. Incorporates the best of filtering for no-hum. Uses pilot lite. Has jack for electro-dynamic field supply. A must for any Radio man's bench.

Not built by us any more - too much labor involved. You may have a lot more extra time than us.

On DP-49 - make 30x450 v. (2) 8 x 450 filters. More output and less chance to "shoot" the filter condensers. For hi-powered power supplies - smaller filters are used.

DP-56. MRL #11 All-wave Xtal Set. A most simple set to build. Completely re-vamped from our original plan. Now uses a 2-gang condenser working a single coil tuner and a single gang QRM coil wave trap circuit for bothersome stations. Circuit made over for modern Radio congested areas. It has a 4-tap switch for added selectivity control, as well as an 11-pt. for wave bands. Mounts on a 5/8x7 panel. Uses Xtal Diode.

DP-58. MRL #4 Telefunken Xtal Set. Just revised. Uses a new layout according to our 5/16"

scale. Also adapted to Diode-Xtl stand use at will. Coil has been changed for 3 tap selections for short waves. Also a 1914 version of a Telefunken ship set using several tuned circuits, with a Carborundum crystal detector.

DP-59. MRL All-wave Crystal Hi-Fi Adapter. Altho original circuit is shown, we now have a much more practical tuner that works into the detector tube of any set for maximum efficiency. Mounts on a 4x6 panel. Prefers MRL new 5-X plug-in coils, altho any Xtal or tube set will work. Also shows data on 5-X coils. It shows a pictorial diagram for all essential details. Volume control mounts on adapter.

DP-61. MRL "50-in-1" Antenna Tuner. One of our old stand-bys. Lots of good reports on this one by our customers. Completely redrawn and showing more details than original plan. Mounts on a 5x5 panel. Over 50 combinations for Aerial tuning - to make your signals come in better. Can be set alongside any set and cut in or out at will. Will not injure any Radio set.

NEW DP-73. MAKING HB-4 SET AC ON THE FILAMENT.

This DP shows a slight change in wiring of the 1-tuber - so U can use a 1 1/2 v. battery for 1A5, 1C5 or 1Q5 tubes. Or, you can run a 6.3 v. fil. transformer to A-plus and A-minus for AC tubes. Don't use the transformer on 1 1/2 v. tubes or you're minus a tube.

There are several tubes that can be used without further re-wiring. We suggest 6V6 or 6E6 which we stock. The extra wattage sure does make it oscillate.

This new DP-73 is made to fit inside HB-4. Fold in center and raise staples. Force them thru the sheet and bend over. Then trim the edges. Future HB-4's will have it in.

MRL DP File #3. 5-4. oz. 1.00

ALL REVISED DPs 10¢ EACH

plus postage, in Vol. 1,2,3 and others to be revised later, when purchased separately from the DP Files.

A MAN OF MANY MRL SETS.

John W. Rater, Iowa says: "Have built up many of your Xtal cir. At present, I have built #37; DP-12 (2 stage TRX amp.); DP-14 (small set amp.); DP-16 (my favorite port. TRX amp.); DP-22 (#2 - another favorite); DP-26 (my #1 on DX); DP-39 (#2 and #3) and at present, am building DP-43 (#26 all wave Xtal). Have two Aerials - a 100 ft. L 50 ft. high and a doublet 30 ft. on a side and 30 ft. high, so have lots of free power to use!"

MRL Detail Prints. Cont. from D-3

Following DPs will be revised as time permits. When 15 have been finished, another DP File #4 will be made up. In the meantime, any that are revised are at above prices. Ones not revised will be 7¢ each; plus postage. We will charge accordingly, so send enough.

DP-45. MRL #22 DX Marvel Xtal Set. Well-named from reports received. 2 sets of switches and a special coil. MRL ORM Coil may be used in Ant. if desired. Very selective and good on distance.

DP-50. MRL #21 Local Selective Crystal Set. The old capacity-coupled set made over. Fine for a crowded Radio area. You may set the selectivity adjustment, and go ahead and tune balance of set. Coupling may also help in selectivity. DP-50 shows pictorial diagram of layout. A large Aerial may be used in country.

DP-51. MRL #22 Combination DX Crystal Set. Novel little 3-condenser set, using 2 dials and a knob on front panel. DP shows a pictorial diagram. No taps required. A combination of our #8 and #9 circuits. A SPDT gives a broad or selective tuning.

DP-52. MRL #13 Variable Selectivity Crystal. Originally called a "200 miler" but this is too modest. DP shows one method of using a fixed Carborundum Xtal. Any crystal may be used. Uses a 2-slider coil and 3 variable condensers. One condenser is used in a novel trap circuit.

DP-65. MRL #17 Pinole Special Crystal Set. Simple to build but efficient. 1 coil; 3 switch levers; 1 var. cond. Good DX properties. Selectivity control.

DP-66. MRL #20 Variable Selectivity Xtal. Uncanny operation. Easy to build. Gets DX. 2 coils; 1 var. cond. Variometer optional - 700 to 800 miles reported.

WATCH THE MRL "RADIO FLYER" for announcements of new DPs, revisions and notes. Remember, U get the "Radio Flyer" and new DS (Data Sheets) FREE if you make an occasional purchase. Keep on our list - it's to your advantage (and our's! Hi) Let us know what you'd like to see in future MRL literature. We want to please U.

PUT UR NAME AND ADDRESS on the outside of your envelope for Ur own protection.

50 STATIONS ONE NIGHT.

T.R. Erickson, Calif.: "Am your satisfied #2 customer. It's still pulling them in. One night I got over 50 stations on it when I hooked up an amplifier. That's better performance than my commercial 3 TRX set I have here."

HB-12 "RADIO WORKBENCH TIPS."

Jack Kluru, Que., Canada: "HB-12 recently arrived. Please accept my congrats. for a very FB job! The good suggestions contained therein are not easy to find elsewhere, and I know of no place where they are under one cover. HB-12 will certainly give many a good start in setting up a Radio shop."

FANS KEEP COMING BACK.

Paul M. Rich, Wyo. is back in the Xtal game again. He built our Xtal sets 25 yrs. ago and still has most of our prints. He and an old friend got the bug again. His friend has his general license. Paul is going after his Novice now. "All because of a Xtal set" he says.

A DOCTOR SPEAKS OUT.

Dr. F.W.E., Phoenix, Arizona: "Believe me, my friend, there is a wealth of Electronic and good 'horse sense' information in the collection of Handbooks you sent me. I have read, and re-read these many times and usually come up with some new gem on each re-reading. Am enclosing another order."

NO NEED TO REPEAT.

Hu Smith, Jr., Oregon: "After reading letters of appreciation and praise among MRL material recently sent me - I say "my sentiments exactly." My appreciation - with an order."

ANOTHER ENTHUSIASTIC FAN.

Ed. T. Bell, Mich.: "I'm still having a lot of fun experimenting with some of the sets from your plans. Have made MRL #26, #10 selective; DP-16 TRX Amplifier; #2 coil Regenerative found in DS vol. 2. All work good for me, which is more than I can say for some other plans from magazines I've tried."

MRL LITERATURE HELPS.

Blackwell Evans, La.: "I built a 3-tube regen. set and really didn't understand how it worked. Then I got some of your literature and things cleared up fast. I am now a confirmed "small set man." Ur Handbooks FB. You may print this."

FROM FATHER TO SON.

J.W. Norton, Wash.: "I am an accountant but experimented with Xtais, TRX, etc. for many years. The order is for my son, who is following my love of "electronic tinkering!" While we have ordered from the East, we find your firm a good place for those of

us making small sets. Many of Ur prices are very, very reasonable. "We appreciate your "Flyer" and your "side remarks" when you write. I've already picked up several good bits of knowledge from your literature. I can fully appreciate your putting them out as once I was in charge of 4 mimeographs and 3 Multiliths."

GOOD SERVICE AND RESULTS.

David Morris, Mich.: "I want to thank you for your prompt service and quality of products. I have built your 2-A and No. 1 Xtal sets. Also DP-14 and Radios from your Data sheets. All work very good. Thanks for your cooperation."

WE'RE ALL BEGINNERS IN RADIO.

So says Ed. Robinson, Ohio "Received HB-6 - very interesting. Have enjoyed all your writing. Can't see how you do it all - don't leave out the jokes - we think they are the 'leaven in the bread.' Only literature I have found that's written for the beginner - and who isn't in this business?"

Radio Parts. Most parts in the DS can be obtained from us. We don't omit a good circuit because we don't sell the parts. However, look in CAT. INDEX first before ordering elsewhere. We've been "accused" of pushing our own parts - (the very idea!).

Contributors. Don't be offended if we juggle your article around. Many things must be considered as Fans are working under different conditions. The availability of parts, crowded station areas, complexity of the circuit, improvements, etc. we must consider. We try to "fit" everyone, even the round-shouldered guy who sez: "Can I help it if I have to live in a basement, and the landlord makes me use a clothesline for a sky hook?"

Also, don't get sore if we do not print your article. We hope to get around to it soon. Your interest is appreciated. The 4 pages of DS (Flyer 3) sure stirred them up. Thanks again.

When you move, be sure to give old address, as well as new, as cards are filed by states. We cannot bring down credits, etc. unless we know.

A MAN OF MANY MRL SETS.

John W. Rater, Iowa says: "Have built up many of your Xtal cir. At present, I have built #37; DP-12 (2 stage TRX amp.); DP-14 (small set amp.); DP-16 (my favorite port. TRX amp.); DP-22 (#2 - another favorite); DP-26 (my #1 on DX); DP-39 (#2 and #3) and at present, am building DP-43 (#26 all wave Xtal). Have two Aerials - a 100 ft. L 50 ft. high and a doublet 30 ft. on a side and 30 ft. high, so have lots of free power to use!"

Since 1932 MRL HI-Q Celluloid Plug-in Coils

have been **BEST** for Long Distance reception

"HI-Q" EQUALS EFFICIENCY

"Q" is the index, or measure of efficiency of a coil, or inductance. Specifically, - the ratio between Inductive Reactance and effective Resistance. MRL Celluloid coils have this property of low-loss. They are more efficient than other coils for DX reception, as attested by hundreds of letters from customers.

The special MRL Coil Cement, which holds the wires in place, is non-conductive. 15 meter SW stations have been tuned while applying the cement, without any change in vernier-dial tuning. The 4-prong coils have 1/4" hole in the bottom between prongs, to help prevent RF "creeping."

Celluloid is similar to Bakelite in efficiency. However celluloid may be made very thin - which makes it far superior for DX properties, for less "blocking" material is within its RF field. Grooved and ribbed coils have extra material in their RF fields; while angles formed by ribbed coils offer resistance to high frequency currents.

Many have the idea a celluloid coil is flimsy. Such is not the case with MRL Coils. Up to #20 wire has been wound without any warping. Hundreds of our coils have been in constant use for years. Rings and wire help to strengthen the forms. Try replacing any coils with these and see the difference in DX.

FOR THE TECHNICAL MAN

Celluloid, as used by us, has the following properties, as given by Du Pont Visco-loid Co.:

Dielectric constant: 6.3. **Power factor:** 2.5%. Both measured by a bridge method at 2000 volts 60 cy. AC, using Celluloid as the dielectric.

Volume insulation resistance: For .060" stock, the resistivity is given as 3.85×10^5 , and in megohm cent. as 9.75×10^5 .

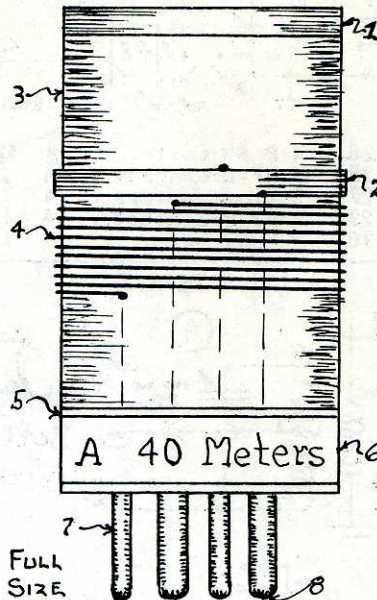
Dielectric strength: Taken under blunt needle points. Per .001" in thickness gave strength of 635 to 780 volts. (.015" - 10M v)

Surface resistivity: Between 2 parallel electrodes is an average of 3×10^7 power megohms at 14 deg. C. on avg. of 4 samples.

Moisture absorption: 3% of wt. **Moisture strength:** 4900 to 8500 pounds per square inch.

MRL COIL CONSTRUCTION.

1. Reinforcing ring, placed under heavy pressure. Covered by colored ring to denote band.
2. Ticklers right- concentrated field. Taps at right place.
3. .015" form. Low-loss. Solid.
4. Coil dia./length correct. Right spacing for low distributed capacity. Wire will not slip.
5. Base placed by pressure.



6. Labeled for each band.
7. Burnished prongs- no noises due to dirty, or rosin-coated prongs, to mar your reception.
8. Contacts heavily tinned and rosin-soldered. They fit the standard tube sockets.
9. Size: $1\frac{1}{2}$ " dia. x $2\frac{1}{2}$ " winding space. Long-wavers have $3\frac{1}{2}$ " winding space for wire.

RANGE and OPERATION.

Our plug-in coils are designed to tune with a .00014 midget variable condenser. You can see there is plenty of overlap between bands. Because condensers, and conditions vary, we can only give approx. range of coils. Each type of coil is made in each of the following ranges:

Band	Freq. Kilocycles
20 meter.....	19,000 - 12,300
40 "	13,000 - 6,000
80 "	6,200 - 2,700
160 "	2,800 - 1,250
HF-BC.....	2,100 - 950
Broadcast.....	1,350 - 600
LF-BC.....	1,000 - 436
Long wave.....	600 - 360

Short Waves. For 20-40-80 meter bands we suggest using the .00014 mfd. cond., but with a 2-plate vernier condenser connected in parallel. Separate the two plates 1/4"- and no vernier dial is needed. 20-40-80-160 m. stations tune about the center of the dial. If a larger cond. is used for tuning, the stations are hard to locate.

Medium Waves. Bands of 160 and BC do not need the 2-pl. vernier condenser. It takes 2 BC coils to completely cover the BC band. The HF-BC is used on the high-frequency end, and goes from pol-

ice to center of BC band. As a result, the "peanut" stations tune at the top of the dial. This allows greater separation and ability to find stations you never heard before. For the upper half, use the LF-BC (Lo-freq-BC) coil, which covers from center of BC to ships. Consequently, it crowds LF-BC stations to the bottom of the dial and allows sharper tuning. You may also hear some new LF-BC stations.

Long Waves. There are lots of queer things up here, as ships, beacons, compass, police, foreign BC, etc. To go above 833 m. we suggest a 2-gang .00035 with both sides connected in parallel across the .00014. In this case, you may need some more capacity to add to plate condenser for more regeneration. If interference from BC station, use an MRL GRM Coil in series with the Ant. to dampen it out.

Precaution: When extracting coils, tubes, etc. from sockets, always rotate them as you pull. This saves socket as well.

The plug-in coil is more efficient than tapped coils or coil switches. The former have deadening effects due to deadening of the circuit by unused portions of the coil. In coil switch combinations, too many connections may get out of order, as well as deadening effects due to nearness of other coils.

WHAT SOME OTHERS SAY:

Jones Radio Handbook: "Celluloid..its advantage is that a very thin form will serve as an excellent coil support..makes an extremely low-loss form..space-wound coils are superior to others..grooved coils undesirable."

Calif., Oakland, E.M.S.: "Coils very good; calibration on nose; oscillation over whole scale."

Calif., Oroville, H.A.B.: "Your BC coil fine. Easy to tune lots of DX across U.S.A. on 12' Ant."

Calif., S.F., K.: "On Type C I played Japan and Hams all over."

Colo., Walsenburg, J.S.: "Your Cell. Coils are fine for DX."

Minn., Granite Falls, H.L.: "My Xtal set with your plug-in coil, I built, sure works fine."

Miss., Richardson, C.L.F.: "Got UR Xtal and Plug-ins. Work fine."

Pa., Reading, R.J.S.: "Coils R fine. Wouldn't think of making them for the price you ask."

Wash., Seattle, O.E.S.: "Good luck here with your SW coils."

Wash., Spokane, I.E.R.: "Rec'd MRL Coils. Sure 'fine business.'"

Wash. D. C., H.B.: "First station played was DJA, DJB (Germany). work better than the -- coils I paid \$3.50 for. Have many good makes, but your's are best."

MRL HI-Q Celluloid Plug-in Coils

20-40-80-160 m. bands sold in sets only. Base drawings show a convenient under-view of coil & socket. If wiring from another circuit - be sure to check connections. Our coils will cover about 90% of the plug-in coil needs of the Builder. It is a good idea to read ALL of page E-1 to become familiar with our coil set-up and advantages.

Antenna to Ground Plug-in Coils

MRL TYPE A and 5-A.

This type covers the majority of circuits used by Experimenters. Tickler regeneration feeds back to grid coil - increasing volume and selectivity and giving c-w code reception. Very smooth and efficient regeneration. If set fails to oscillate, you may have tickler leads reversed. .0001 regeneration is average. If too much oscillation - reduce B supply, as you have achieved above-average construction. S.W. coils in sets only.

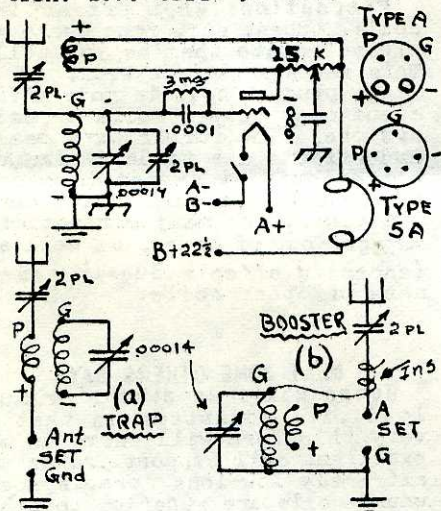


Diagram (a) shows A (or 5-A) used as an all-wave trap to cut out stations, or (b) as a booster to increase volume and selectivity on stations for any type of receiver.

MRL Type A. 4 prong base.

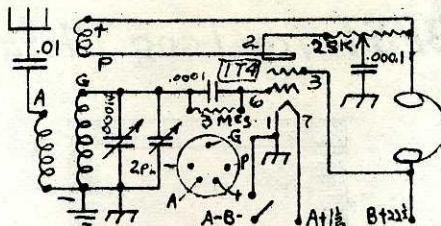
CAT.		oz.	wt.	
7-1.	4 A S.W. Coils.....	8		3.50
7-3.	A-HF Broadcast....	4		.90
7-2.	A-Broadcast.....	4		.90
7-4.	A-LF Broadcast....	4		.90
7-5.	A-Long wave.....	6		1.50

MRL Type 5-A. 5 prong base.

7-121.	4 5-A S.W. Coils.	8		3.50
7-123.	5-A HF-Broadcast.	4		.90
7-122.	5-A Broadcast....	4		.90
7-124.	5-A LF-Broadcast.	4		.90
7-125.	5-A Long wave....	6		1.50

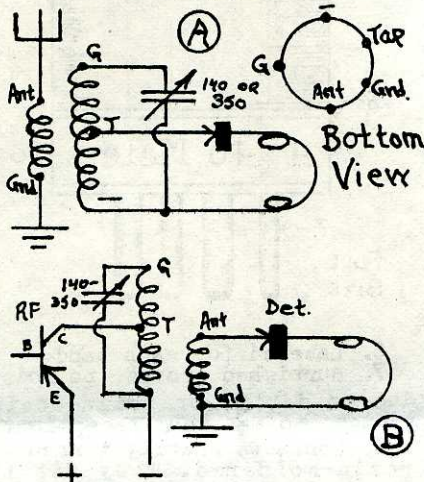
MRL Type B

B is the same as A, except all 5-prong, and with primary. Used in many mag. circuits. Primary correct for proper selectivity.



7-26.	4 B SW Coils.....	8		4.00
7-28.	B-HF-Broadcast....	4		1.15
7-27.	B-Broadcast.....	4		1.15
7-29.	B-LF-Broadcast....	4		1.15
7-30.	B-Long wave.....	6		1.75

MRL TYPE 5-X.

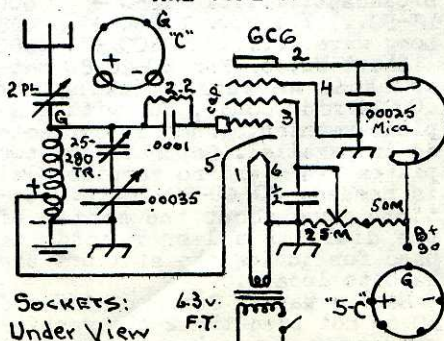


These are 5 prong coils, with the secondary tapped. (A) shows their use as plain detector from the Aerial - coupling into a crystal, Transistor or tube, for more selective tuning.

(B) shows same coils in reverse - using the large coil for the primary. This comes from a TRF stage. The small coil goes into an untuned, low-impedance input to crystal, TRX or tube.

4 5-X SW Coils...7-25.	8 oz.	4.00
Single bands, each	"	1.15
5-X HF-BC.....7-21.	4 "	1.15
5-X Broadcast....7-22.	"	1.15
5-X LF-BC.....7-23.	"	1.15
5-X Long wave....7-24.	6 "	1.75

MRL TYPE C.



SOCKETS: 63v. F.T. "5C" +
4 prong base. This electron-coupled circuit is one of the best SW circuits known. Wound on

our Lo-loss celluloid forms and with proper placing of tap, you have an Ace coil for efficiency. Regeneration is very smooth.

May be operated from 6.3 v. fil. trans. and 45-90 v. of B. Or, from DP-49 power supply. DP-31 shows circuit with 1-step of audio. A 2-plate bandspread cond. may be placed across (G) and (-) of the coil. Be sure to use a 2-plate Ant. cond. controlled from panel, similar to HB-4, for best results. Please send along 4-pr. tube bases (see CAT. p. E-2).

4 C SW Coils.....7-6..	8 oz.	3.50
C-HF-Broadcast...7-8..	4 "	.90
C-Broadcast....7-7..	"	.90
C-LF-Broadcast...7-9..	"	.90
C Long wave.....7-10.	6 "	1.50
DP-31. 2. tube AC set plan		.10

MRL TYPE 5-C.

Same as C except 5-prongs.

4 5-C SW coils..7-127.	8 oz.	3.50
5-C HF-BC.....7-129.	4 "	.90
5-C Broadcast...7-128.	"	.90
5-C LF-BC.....7-130.	"	.90
5-C Long wave...7-131.	6 "	1.50

10 METER COILS. On DP-31, make them 3 turns #20, closewound, and tapped at 1. Oscillates fine down there. We make them for 75¢ - Type C or 5-C. Prices on other types same as 20 meter bands. Laying turns close, makes them oscillate better at HF bands.

Tuned Radio Frequency & Detector Plug-ins

MRL TYPES RF and 5-RF

MRL RF coils are used in the front end TRF stage for greater DX, selectivity and stability. As the first stage tunes broadly - the TRF and detector condensers may be ganged. A 2-plate condenser, with vernier dial, is preferred for band-spread tuning of the detector only. Our RF are correctly made with close coupling for SW; loose coupling for lower frequency bands.

(D) shows a TRF stage coupling into types A, C, 5-X or to your regular receiver A-G terminals.

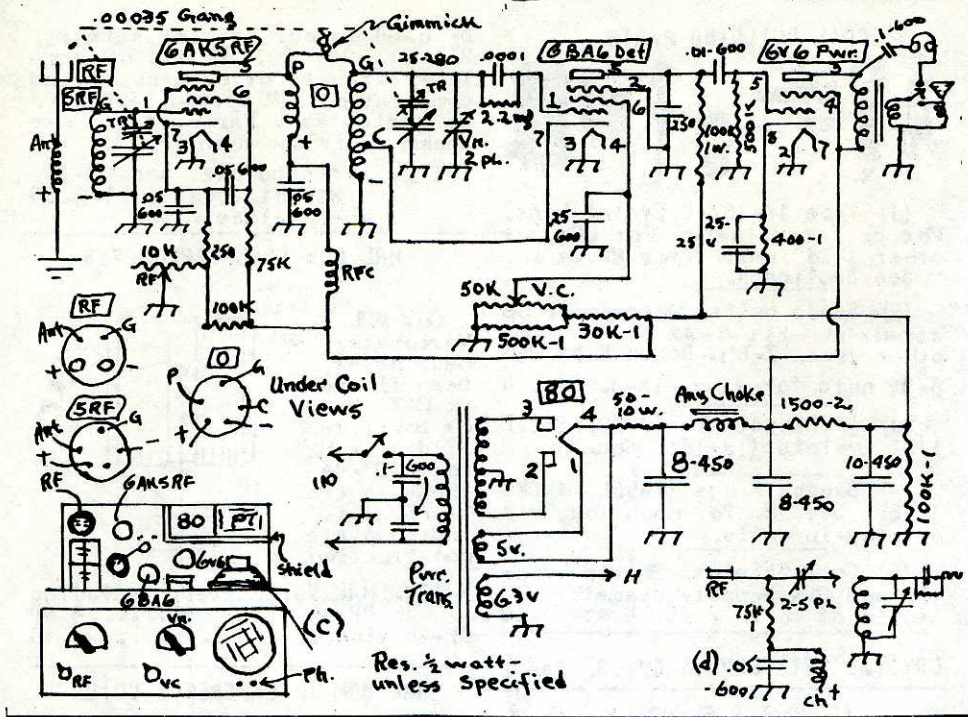
Or you may use 4 prong RF and couple into types O (5 prong) or E (6 prong) detector stage. If U want to use E as 2nd TRF stage - just omit the tickler. O and E have hi-impedance primaries. Two insulated pieces of hookup wire may be twisted together, to form a "gimmick" for more gain between stages.

RF-1 coil may fit inside an MRL Type D Coupler for more gain and selectivity. A QRM coil may be used between Ant. and coil to cut out any bothersome BC stations.

The above circuit is most efficient - with reports of World-wide reception from many Fans.

(C) is optional chassis plan.

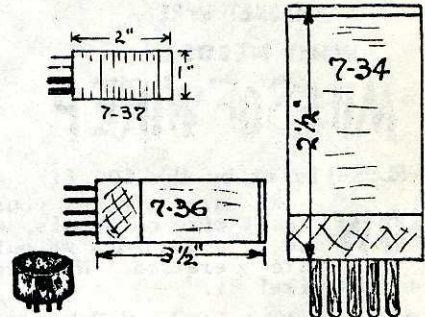
Coils — Coil Forms



primary of the circuit, and is tuned with a .00035 var. cond. in series. Latter may be mounted on the panel or outside the set. Tunes to a harmonic and increases volume and selectivity on a station, from 30 mc. to 500 kc. May be used with any type Aerial - 3 kinds shown above. Furnished with mounting bracket and details in DP-11.

D Coupler & DP-11.7-43. 4 oz..75
DP-11, alone..... 10

MRL HI-Q Celluloid Plug-in Forms



These are very low-loss Celluloid plug-in coil forms -- However, they are specified in several of our all-wave crystal sets, as #26, 28, etc. when you want to change bands. Hundreds of these forms have been used since 1932, when we put them on the market. Many big Radio men as Sargent, Jones, etc. have approved Celluloid forms. We furnished plug-ins for Sargent's kits for several years. The base and ring are inserted under hi-pressure to make them rigid. After coil is wound and tested, paint strips of MRL Light Coil cement (7-57) over wire to hold it in place, and help re-inforce the form. Even tho .015" Celluloid - they are very strong. No cement is furnished. (w/s means winding space.)

Miniature forms 1" diameter: 2" long, in 4-6-7-8 prong. For HF bands. 7-37. Specify type .25 4-6-7-8 prong bases only. New & used. 7-38. Specify type.. .15

Standard forms 1-7/16" diameter:
MRL 4-prong Plug-in Form. W/s 2 1/2". Standard size. 7-33. .25
MRL 5-prong. 2 1/2". 7-34. .25
MRL 6-prong. 2 1/2". 7-46. .20
MRL 4-prong, Long form. W/s 3 1/2" for long waves. 7-35. .30
MRL 5-prong, long. 7-36. .30
MRL 6-prong, long. 7-48. .25

6-7-8 prong bases only. New and used. 7-41. Specify type. .10

WHEN ORDERING any coil, or part please give CAT. # as well as description to prevent mistakes. On most items - postage EXTRA.

MRL TYPE RF COILS

Under Socket Views

4 prong base. RF coils match any other types of same band. Spacing best for most gain.

CAT.		wt.	
7-16.	4 RF SW coils....	8	3.50
7-18.	RF HF-Broadcast..	4	.90
7-17.	RF Broadcast.....	4	.90
7-19.	RF LF-Broadcast..	4	.90
7-20.	RF Long wave.....	6	1.50

MRL TYPE 5-RF COILS

Same as RF except 5 prong.

CAT.		wt.	
7-137.	4 5-RF SW Coils..	8	3.50
7-139.	5-RF-HF-Broadcast	4	.90
7-138.	5-RF Broadcast...	4	.90
7-140.	5-RF-LF Broadcast	4	.90
7-141.	5-RF Long wave...	6	1.50

Detector after TRF Input.

Under Coil Views

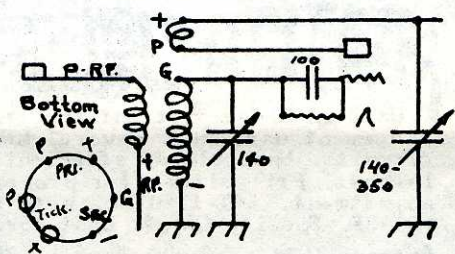
MRL Type O.
5-prong base

O detector coils are most efficient - with lots of gain. See above diagram for use. Same as C coils - except hi-imp. primary. May also be used between Ant. & ground with short Aerial.

CAT.		wt.	
7-11.	4 O SW Coils.....	8	4.00
7-13.	O-HF-Broadcast...	4	1.15
7-12.	O Broadcast.....	4	1.15
7-14.	O-LF-Broadcast...	4	1.15
7-15.	O Long wave.....	6	1.75

MRL TYPE E.

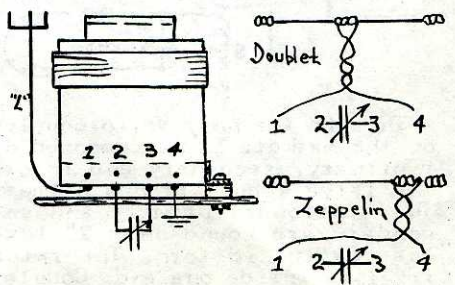
6-prong. Fit above diagram. Has hi-impedance primary, like Type



O, but with tickler like A, 5-A or B. Tunes with .00014 SW cond. or .00035 and 25-280 trimmer in series. A .00014 makes a good regeneration control (DP-29) for lots of DX. Used where a stage of TRF is used ahead for DX. May also work from a Short Aerial. If used as 2nd TRF - omit tickler.

CAT.		wt.	
7-184.	4 E SW Coils.....	8	4.00
7-185.	E HF-Broadcast...	4	1.15
7-186.	E Broadcast.....	4	1.15
7-187.	E LF-Broadcast...	4	1.15
7-188.	E Long wave.....	6	1.75

MRL D LO-LOSS ANTENNA COUPLER.



We have sold these since 1934. 2" dia. x 2" high. Wound on Celluloid. Raised a little above chassis and plug-in coils slip inside. This coupler forms the

Coils — **Coil Forms** — **Tubing** — **Wire** — **Accessories**

BAKELITE & FIBRE COIL FORMS.



(3) Coil Tubing. Cut to any length. 1/16" wall. Outside dia. given. All new stock. Prices per lineal inch. Postage extra.

3/4"	Bakelite.....	7-174.	.10
1"	"	7-166.	.13
1 1/2"	"	7-69.	.20
2"	"	7-167.	.24
3"	"	7-67.	.32
3/8"	Fibre.....	8-110.	.08
1"	"	7-68.	.12
1 1/2"	"	7-99.	.16
2"	"	7-66.	.22

MAGNET WIRE

WHO NEEDS

MILES OF WIRE?

MRL sells it by the 100 ft.

Now ---we are winding your magnet wire on spools, - due to a new idea we put into operation. No more tangled wire! Hi.

All in stock. Only M/O house in U.S. selling by 100 ft. You know how much you are getting.

DCC or Enamelled OK for coils, but cotton preferred for Xtal set coils. Enam. takes less turns but tunes sharper. Postage Xtra. 100 Ft.

20	Double Cotton.....	7-88.	.85
22	"	7-89.	.70
24	"	7-90.	.55
26	"	7-91.	.40
28	"	7-92.	.30
30	Single Cot. Enamel.....	7-93.	.20
20	Enamelled.....	7-74.	.70
22	"	7-75.	.50
24	"	7-76.	.40
26	"	7-77.	.30
28	"	7-78.	.20
30	"	7-79.	.15
32	"	7-80.	.15
34	"	7-81.	.15
36	"	7-82.	.15
38	"	7-83.	.15
40	"	7-84.	.15

MRL CEMENTS & THINNER.

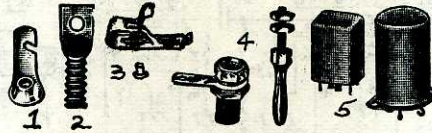
We use only time-tested materials that we have used for a long time. Best for purposes.

MRL Heavy Cement. Binds wood, celluloid, leather, models, paper, speakers, plastics and many others. 7-58. Fl. oz. bottle .35
2 oz. " .60

MRL Light Cement. Especially for binding coil wires. Hi-Q as it does not change setting on a station. Moisture-proof. Prevents corrosion. 7-57. Oz. .35
2 oz. " .60

MRL Thinner. Thins either type of cement, lacquer, etc. Also OK for cleaning brushes, chassis, etc. 7-59. Per fl. oz. .35
2 oz. " .60

COIL BUILDING PARTS.



(1) Type 13-167-C Eyelet Lugs. For coil terminals. Fit QRM, or other 1/16" wall forms. Rivet in. See Section H.

(2) Spade Bolts. Holds coil up straight. Fit 6-32 nuts. Many other uses. 7-54. Dozen 4 oz. .40
6-32 nuts for same. 13-3. Sec. H

(3) 1/2" Fahnstocks (9-29); Sec. F
1/8" Eyelets (13-161) Sec. H.

(4) Banana Plugs (7-55), Jacks (7-56) Sec. M. For mounting Xmtr or plug-in coils.

(5) Coil Shields. Shields from QRM and QRN. Specify diameter and length of coil. 7-60. 4 oz. .10

CRYSTAL SET FORMS & COILS. See F

AC-DC T. R. F. COILS.

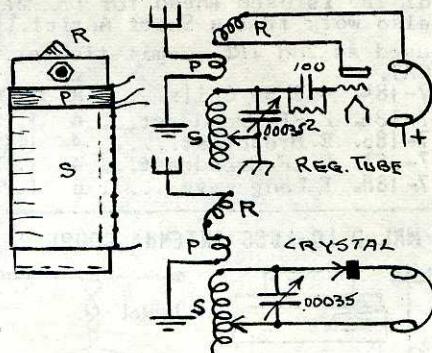


Used in midget sets, or for replacement use. Also several MRL circuits. Unshielded; efficient; lo-cost. Pri. slides for proper adjustment. 540-1750 Kc. with a .00035. Specify CAT. #. List 85¢.

Antenna Coil. 7-44. 4 oz. .75
Detector Coil. 7-45. " .75
Any 2-1.40

MIDGET BC Coils - see J-1

MRL VARIO-COUPLER.



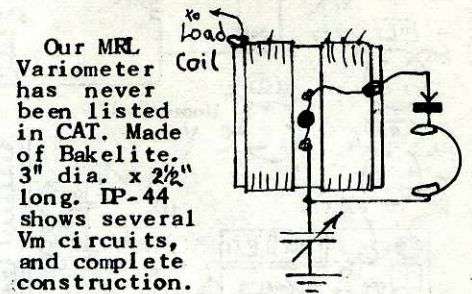
This is the only Vario-coupler on the market. It is composed of a primary, secondary and rotor. The large secondary has 5 taps. The stationary primary and secondary are wound on a 2" low-loss Celluloid form. The rotor revolves inside one end. Coupler may be mounted in any position, on the rear of a panel, by the shaft bushing and locknut.

There are numerous ways this coupler may be operated. It may

be used in our crystal sets #3, 20, 21, 22, 29, 35 and others. Tube circuits offer many varied combinations. May also be hooked in series as a Variometer. More hookups are shown in IP-13.

7-172. Vario-coupler and DP-13. Weight about 1 lb. 3.50
DP-13 alone .10

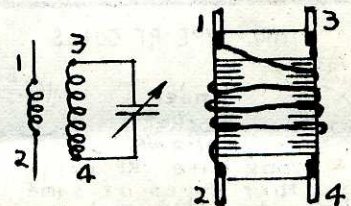
MRL LOW-LOSS VARIOMETER.



Our MRL Variometer has never been listed in CAT. Made of Bakelite. 3" dia. x 2 1/2" long. DP-44 shows several Vm circuits, and complete construction.

7-194. MRL Variometer, including DP-44. 8 oz. wt. 3.50
DP-44 alone. .10

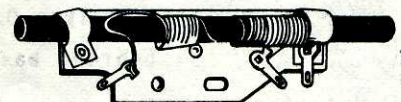
MRL QRM INTERFERENCE COIL.



One of the handiest gadgets on any Broadcast Radio. Placed in parallel with the Ant. and Gnd. it boosts and sharpens the signal. In series with Ant. and set it eliminates, or cuts down unwanted stations. When used in series, leave it on the bothersome station and tune balance of set normally. Uncanny in operation. Hundreds sold. Tunes with a .00035 variable or a 100-500 mfd. trimmer. DP-18 goes with the QRM Coil.

7-42. MRL QRM Coil & DP-18. .75
DP-18 alone .10

LARGE VARI-LOOPSTICK.



5 1/4" x 3/8" dia. BC Band. Mounted on fibre base. Core may be used for other Loopstick experiments, etc. 7-182. 4 oz. 1.25

— Panel Brackets, See Sec. H. —

LARGE FERRITE LOOPSTICK CORES.

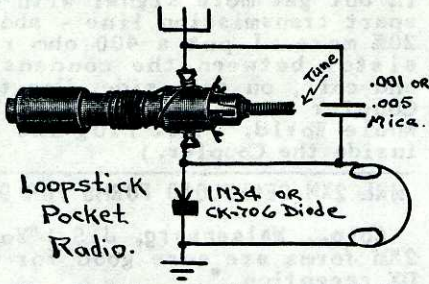
Many want to experiment with hi-inductance cores for coils.



These include a tapped coil for experimentation. 1/4" in dia. by 5" long. 7-173. Each. .50
OR 3/8 x 5 1/2"

Coils — RF Chokes — Accessories — Switches

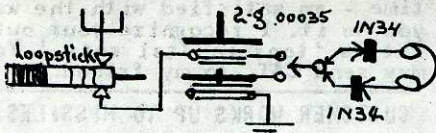
VARI-LOOPSTICK ANTENNA COIL



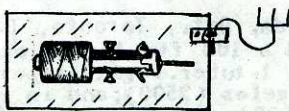
Mr. R. Vipond, Monterey Acdy., Watsonville, Cal. says "this one works very well as a pocket set. I get 5 stations using a screen and water pipe. One couldn't ask for a simpler set. Your M/O biz can't be beat, and I like the way you pack things."

Over 100,000 sold by mfrs. in 5 mo. It can replace a loop but is 2½ times more sensitive. Will also improve reception for almost any set on BC band, using a small Aerial. Gives greater range for DX Fans. Boosts sensitivity and signal-to-noise ratio. Any angle OK. Average "Q" is 250. A magic Ferrite core tunes the bankwound coil from the end. We prefer tuning them with a .00035 var. cond. Loose wires may be unwound to get more pickup. Is about 2¼" long. List price \$1.00

7-179. Vari-loopstick. 4 oz. .85



Here is an uncanny circuit for a Loopstick and 2-gang variable. You may use a SPDT toggle switch for a change in selectivity. One side of SPDT hooks to one stator and the other to frame of cond. About the simplest, selective circuit out. Other data on these Loopsticks appear in various MRL literature.

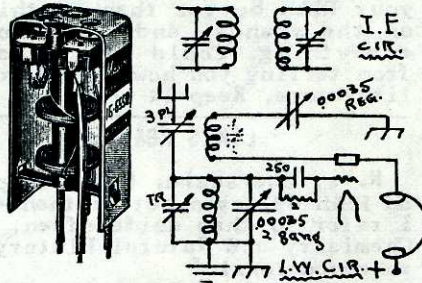


For more pickup on DX stations - when using a Loopstick Aerial, as found in most pocket Radios - cut a piece of tin and mount it close to Loopstick. Hook Aerial, or wire from telephone box, etc. to it. You will also find this makes it non-directional.

SUPERHETERODYNE INTERMEDIATE FREQUENCY TRANSFORMERS.

Meissner shielded can type 1¼" sq. x 2½" long. Held down by two spade bolts. Two Lo-loss Steatite trimmers tune from the top with range 450-475 kc.

The hi-gain coils are ¾" in dia. May be used for 2½ mhy RF

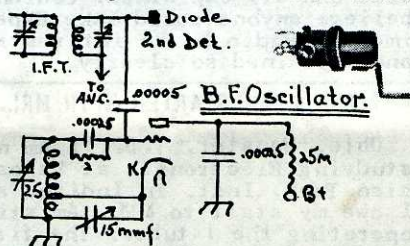


chokes by disconnecting 1 side of cond. May also be placed in series and used for loading coil if cond. are disconnected. Input and output are about the same. Complete directions for use and alignment of supers. furnished.

Circuit shows use as long wave receiver from 660-2000 meters. If ship wave of 500 kc. is wanted - take off some turns. Disconnect trimmer on tickler. If no oscillation - reverse tickler. List price is \$1.00.

7-116. IF Input trans. 6 oz. .85
7-117. IF Output " .85

BEAT FREQUENCY OSCILLATOR COIL.



OK for replacement or new construction. Unshielded coil is ½" dia. x 1-1/8" long. Furnished with bracket and 3-lug con.

FB for code reception practice - electron-coupled. Peaked at 456 kc. to match above IF coils, Range 290-650 kc. Signal from oscillator beats against a near IF freq. This produces a readable audio, or beat note. Output hooks to grid of 2nd det. thru .00005 mica. The trimmer between K and ground gives the fine adjustment to the tone of the note. Regular selling price around 75¢.

7-118. BFO Coil. 4 oz. wt. .40

RADIO FREQUENCY CHOKES.



RF Chokes used in ordinary SW or experimental sets aren't too critical. They choke off the HF and feed it to ground thru a bypass cond. The usual size is 2½ millihenries; 28-32 ohms resistance and air core. Usually used after Plate of detector tube.

A PI, duolateral or sectional RF choke is shown. Has less distributed capacity and some prefer them. One-coil Chokes may

vary in size and shape. One-coil chokes are often used for tuning coils - and may be connected in series to build up inductance.

6-3. 2½ mhy Sec. Choke. 2 oz. .50
6-2. 2½ mhy One-coil choke... 30

Watch Flyer for other Chokes.

COIL & PANEL SWITCHES.



COIL TOGGLE ROTARY SLIDE

11 Position Coil Switch. Use instead of 10 pt. switch points, to mount behind panel. 1-hole mounting. Can use on 2, 2-A and other sets with 9-10-11 points.

9-36. 11 Pos. Switch. 4 oz. 1.10

4 Circuit; 2 pos. Coil Switch. Can use for pri., sec. and tickler changes for 2 bands. Front 1-hole panel mounting.

7-63. 4 cir.; 2 pos. sw. 4 oz. .60

6 Position Coil Switch. Can be used on MRL #10, Vario-coupler, etc. 1-hole mounting.

23-12. 6 pos. switch. 4 oz... .50

Switch Levers & Stops. Sec. F.

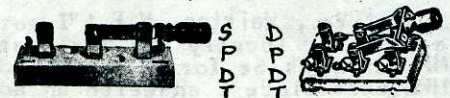
SPST Toggle.....	23-1.	2 oz.	.35
" Rotary.....	23-1.	"	.25
SPDT Toggle.....	23-3.	"	.45
" Rotary.....	23-4.	"	.35
" Slide.....	23-7.	"	.30
DPST ".....	23-5.	"	.30
DPDT Toggle.....	23-6.	"	.75
" Slide.....	23-8.	"	.45

7/16" n.p. Round Knurled Nuts to fit toggle sw. 13-8. 2 nuts. 05

3/8" Hex. Volume Control Nuts. 13-7. 2 VC Nuts for .05

PORCELAIN KNIFE SWITCHES.

Hook a SPST to each Aerial and throw any in or out. Excellent 4 experiments and quick hookups.



SPST 1-circuit.	12-12.	4 oz.	.50
SPDT 2-Aerials.	12-13.	"	.60
DPST 110 line.	12-14.	"	.70
DPDT Reversing.	12-15.	"	.80

WATCH FLYER FOR MORE SWITCHES.

QUESTIONS? Stamped envelope!

We furnish our time; you furnish postage. Arrange questions with space between for answers. 1 page limit. We like UR reports - so send them in. TKS - MRL

MRL 2-A CRYSTAL IN USE 13 YEARS.

Ill., Chicago, A.W.S.: "I'm using my MRL #2-A - after 13 yrs. Also have made a few more of MRL sets. I enjoy reading everything you send. I don't know of any other place to get all this dope, especially on crystal sets. After all this time it would be like losing a friend to not hear from MRL."

MRL 1-TUBER GOES AFTER 6 YEARS.

Ala., Mobile, E.T.A.: "1-tubers have bitten me again. Got mine out, that I had built 6 yrs. ago - knocked off the dust - and she still goes. As you are my best source of info. - send me a new HB-4 for it."

LIKES MRL PUBLICATIONS.

Texas, Sinton, W.E.H.: "I don't have the words to express my Tks for sending me the Flyer. All of your publications are wonderful, and I read them 8-9 times."

A COMMUNICATION MAN REPORTS.

Alaska, Kodiak, J.P.T., KL7DG: "Ur work and patience in developing the art of Crystal sets has been appreciated. Ur HB-10 held my interest thruout a PM as I covered the 24 p. I've been in Radio since 1933, when I built my first Xtal set. 'Reliance Radio' is the name of my service agency which maintains marine and Aeronautical radio communication equipment on Kodiak Is. I shy away from the involved word of 'Electronics' - Radio is OK."

MRL STARTS HIM OFF IN HAM RADIO.

Calif., El Monte, J.M.F., WVGHHG: "Got the Flyer and RB&H. Just want to thank you for your help in getting me started in Amateur Radio. I have enjoyed building Xtal sets and MRL one-tuber. I passed the general ticket. Ur HBs and literature sure have helped. Keep up the good work. Rig here is 40-80 m. ARC-5 - Rec'r S40B. Ant. 40 m. dipole and long wire. Run 75 watts."

MRL BEATS LOCAL PRICES.

West Va., Weirton, M.P.: "I got a resistor locally for 22¢ that MRL charges 5¢ for. I've liked MRL ever since I answered an ad 2 yrs. ago - so do a lot of other guys around here. Hope you last a long time."

OTHER TUBES GOOD ON MRL 1-TUBER.

Mass., Cochituate, D.N.: "I own one of your 1-tubers you built. Set works fine for me. I take it on hikes and trips, using a 6 ft. long Aerial. While experimenting - I found these tubes to work good with the 1-tuber - 1A7, 1N5 3Q5, 6C5, 6K6 and 6W6."

MRL PLANS FOR RADIO FANS.**LIKES MRL LITERATURE.**

Texas, Ballinger, C.W.S.: "Like your RB&H better than anything on the stands, and I buy most everything. Could not refrain from telling you how I like your literature. Keep it up."

LIKES RB&H.

N.Y., Scarsdale, B.S.: "Comps. on RB&H 49, even better than 48. I refer to them quite often. Ur Chemistry and Natural History R so educational."

8000 MILES ON MRL 1-TUBER.

Ore., Portland, D.L.H.: "I get New Zealand (8000); Moscow (5600); Quito (4200) and many unidentified Foreigners, plus all over U.S. and Canada. It is really a wonder set. The vernier dial, I got from you, surely is the making of the set, as it splits those DX stations."

MRL HBs EASY TO READ.

N.Y., Brooklyn, T.C. Radio Svc. "Was surprised to find the MRL HBs so easy to learn. Seemed an instructor was standing by my side and all explained. Couldn't believe anyone could make Experimental Radio be so interesting and explained so clearly."

TECHNICIAN STARTED WITH MRL.

Ohio, Wooster, T.D.: "I am now studying Electronics at Valparaiso Tech. Inst. in Indiana and I owe my start to MRL. Am still operating the 1-tuber. The first station I received, when I went home in June, was HCJB, Quito, (3200). I substituted the 1Q5 for the 1C5 and get a little more volume. For several years I have been using 30 v. B. but now I agree 16 works best. I got #49 RB&H and liked article on regeneration. Congrats."

MRL QRM COIL and STEEL GALENA.

Colo., Loveland, D.M.: "Your Steel galena is the best I ever used. Your QRM Coil is worth much more than you ask because it works swell."

MRL 50-IN-1 TUNER (DP-61) WORKS

Calif., Montebello, K.E.C.: "I built your combination booster and wave trap gadget, and bro., it sure does its stuff. I can cut out that 10K-watter, 4 miles away. Am very proud of it. On your #2, I built, I got S.W. in San Francisco at 5 pm. and was very loud. It sure is a honey."

NOTE ON MRL D-ANTENNA COUPLER.

Calif., North Fork, H.H.: "I have been making experiments on your D-coupler. Use it all the time - do not ground the set. Have tried Ant. wires cut to specified lengths, but switch

over to my 375 ft. one and the Coupler and get more signal and no more noise, even on 10 meter band. I tried the twisted lead-in but get more signal with 6" apart transmission line - about 20% more. I put a 400 ohm resistor between the condenser and coil, on each side. Use the Coupler - and you tune in the whole World." (ED. Plug-ins go inside the Coupler.)

MRL 2XM CELLULOID FORMS FOR DX.

Colo., Walsenburg, J.S.: "Your 2XM forms are sure good for my DX reception."

MRL PLUG-INS LAST OVER 10 YEARS.

Calif., Rancho Santa Fe, P.K.: "Your service has been very satisfactory. I am still using your fine Celluloid plug-in coils I bought over 10 years ago."

LIKES OUR PHONES and MRL 2-A.

Canada, N.S., Halifax, F.W.: "You weren't kidding when you said those Trimm phones were about the best on the market. I got a pair here for \$3.00 and no pull on the magnets. You are the best I have dealt with - I always seem to get what I order. My 2-A is still working swell."

LIKES OUR STYLE OF BUSINESS.

Ill., Chicago, T.S.: "Having done business with you for some time - am satisfied with the way you do it. I recognize your outlet as 'tops in Xtal sets.' You may send CAT. to my friend."

CUSTOMER WORKS UP TO MISSILES.

Calif., San Jose, D.E.: "Dropped in to say that I started with MRL in 1948. Have worked up to a position in Lockheed Missile Labs." (Ed. Mr. E. sent in a 9000 mile report on MRL DP-29 1-tuber, in 1948.)

MRL 1-TUBER GETS DX ON TV AERIAL

Canada, Ont., Toronto, T.C.: "I hooked a 100 ft. Aerial onto my TV and 1-tuber. I got airports in Los Angeles (2500); and in Florida (1500) and Montreal. On TV Ant. I got Kansas (1100). Lots of other unidentified."

LIKES OUR HANDBOOKS.

Calif., San Diego, F.S.: "Have recently purchased 7 of your excellent Handbooks on Xtal sets. They are the best I've seen, and they are certainly worth more than you ask for them. Am very happy, and lucky that I answered your ad."

QRM COIL WORKS IN MONTANTA.

Mont., Hardin, J.Y.: "I have just received your QRM Coil and it sure does work up here."

THANKS, FELLOWS FOR FB REPORTS

SEMICONDUCTORS - MRL DX CRYSTALS

ABOUT CRYSTAL SETS.

The only correct way to start any branch of Radio, is by making a few Crystal sets. Go from there to 1-tubers, and finally, up to the communication set as it is known today. Nothing discourages the beginner like over-optimism that he can start at the top, without knowing the principles of Radio. Then, after a large outlay of money and time - his "monster" doesn't work - he may quit Radio for good. The Fan, who starts at the beginning and gradually works up - will accept Radio as his lifelong hobby or vocation.

Contrary to many beliefs of self-styled "experts" - the construction of Crystal sets isn't confined to youngsters - altho they are in the majority. We have hundreds of Engineers and other professional men in our files. They build these little sets as diversion from their slide rules and other complications. It is possible to spend one's lifetime in this inexpensive and interesting field and always find you can always learn more. Semiconductor circuits can run into big complicated layouts if you so desire. However complicated, we Old Timers still are right in calling them "Crystal sets."

From here on, you may branch out into larger rigs, Amateur Radio, repairing, operating, research, engineering, writing, teaching, or any branch you desire. But to start anything - be sure to start at the beginning and the rest comes easier.

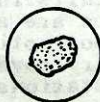
Crystal set conditions are a lot more favorable now with better circuits, more powerful transmitters, and lower priced parts, than when they were considered dependable receivers prior to 1921. Millions are being spent by the large Labs. to even better these conditions.

MRL MOUNTED CRYSTALS and MATCHING CATWHISKERS.

Any crystal and its catwhisker is a Diode - and works anywhere a Diode is required. We try to sell the most sensitive crystals obtainable. If we can make a more sensitive crystal we do so instead of buying it mounted. The catwhiskers furnished match the crystals. All crystals are set-tested for sensitivity. They are mounted in soft metal approximately $\frac{1}{4}$ " in diameter. It is best to renew crystals every 6 months for best reception.

MRL STEEL GALENA CRYSTAL and C/W

This long has been our best crystal seller, and repeat orders by the hundreds attest this fact. Hundreds of



letters are on file similar to the following:

Wisc., Sheboygan, A. D.: "Since receiving your Steel galena Xtal I could hardly believe my ears, to know I was listening to distant stations. It beats all other crystals I ever used."

Steel galena is rough, and resembles a piece of broken steel rod, whence its name. Do not confuse it with the smooth, layered type that is hard to keep in adjustment. Both have the same chemical formula.

Most long distance crystal records are made with Steel galena crystals. When you hear a weak DX station, re-adjust the catwhisker for sensitivity, using a very light c/w furnished with the crystal. If stand has a heavy wire - wrap the tiny c/w around it. Steel galenas stay in adjustment because most of their surfaces are hot. Do not use battery on Steel galena. They are as clear as a bell!

9-1. MRL Steel galena. 2 oz. .25

MRL SILICON CRYSTAL and C/W.

MRL is one of the few sources for mounted Silicon Xtals and C/W, outside of the Diode manufacturers. Silicon resembles Steel in color, and is a furnace product. It is used a lot in Diodes for HF and Radar work with fine c/w & as a Short wave detector. It is also sensitive to light waves. A grown-junction Silicon rectifier may work up to 1500 v. at 50 ma. (see NB-10). For detecting signals we furnish light c/w. Tungsten may work even better than one furnished. All set-tested.

9-7. MRL Silicon & C/W. 2 oz..25

MRL IRON PYRITES XTAL and C/W.

Va., Norfolk, R. M. M.: "Your Iron pyrites crystal is very sensitive to Short waves; one of the best I have used to date. The first night I played England and Berlin on 19-25 meters with good volume. I used MRL #28 Xtal set circuit (DP-47) with MRL Type RF Celluloid plug-in coils. On the 40 meter coil I got Cuba, England, Chicago and many other stations."

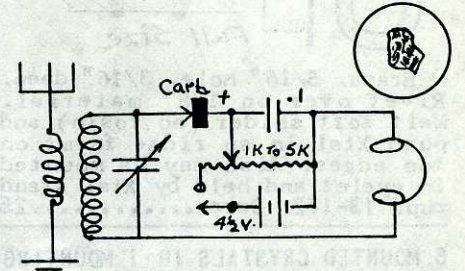
Above unsolicited testimonial is one of many reporting on our Iron pyrites. We have sold hundreds of them to satisfied customers. Thousands of fixed and adjustable Iron pyrites were used in the Harkness Reflex sets of the 1920's. It has been claimed they do not tamish as readily as Steel galena and may stand a little more current.

They seem to work better on SW than Steel galena. A heavier c/w is furnished with Iron pyrites than Steel galena. A Gold c/w may be an improvement over the

one furnished. One advantage of an adjustable c/w is the ability to select the most sensitive spot with the right pressure. It has a lot to do with DX reception. Re-adjust on weak stations for more volume. Set-tested.

9-2. MRL Iron pyrites & C/W .25

MRL CARBORUNDUM CRYSTAL and C/W.



As far as we know, no other firm sells a mounted Carborundum crystal and c/w. All are set-tested. We get magnetic speaker volume on loud locals. It is noted for its stability.

Carborundum crystals should be operated at the voltage point where the greatest signal change results from the smallest input voltage. In other words, the correct voltage should be applied to each Carborundum Xtal in order for it to work efficiently. The diagram shows how this is accomplished. You will find a point where it is more sensitive - below which, or over, it is much less sensitive. Up to 10 v. DC have been used on Carborundum Xtals - or no voltage at all may be used for strong signals, depending on conditions. Less battery is usually required on DX stations. Get the polarity right or the signals will be weak or fuzzy. We have gathered a lot of good information in our Handbooks 3 and 10 that will prove very interesting to you.

A hot spot is found better if an adjustable c/w is used. Altho Carborundum has been tested with a 5 lb. pressure - we used to have about 4 oz. on them at Sea, in 1920, with RCA receivers. The right combination of hot spots, light pressure and correct bias voltage will give you a very efficient detector. Same conditions apply to our fixed Carborundums. We furnish a heavier c/w with it than with a Steel galena.

9-34. MRL Carborundum & C/W. .25

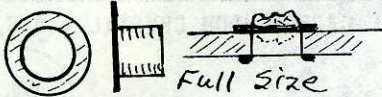
MRL LOOSE CRYSTALS.

Some Experimenters may like un-mounted crystals. They may be mounted in Wood's metal, or packed in a cup of Tinfoil. One good way is - to make a spring-brass, or phosphor-bronze clip as shown. These loose crystals are the run-of-the-mill variety, and not tested altho we try to sell good ore. We much prefer the mounted ones,



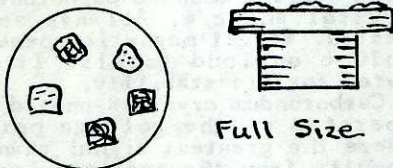
which are tested and guaranteed. Proper mounting size furnished. About 2 pieces to an envelope.
 9-10. MRL Loose Galena..... 10
 9-11. MRL Loose Iron pyrites.. 10
 9-12. MRL Loose Silicon..... 10
 9-6. MRL Loose Carborundum... 10

LARGE BRASS EYELETS FOR MOUNTING LOOSE CRYSTALS.



Brass. 5/16" hole. 3/16" deep. Rivet over on 1/8" material. Melt soft solder (no rosin) and push Xtal in so ridge forms on top edges. Also may be mounted in eyelet and held by Xtal stand cup. 13-162. Dozen..... 25

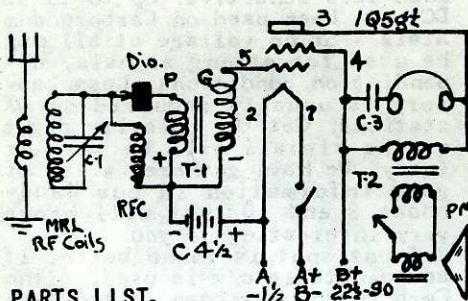
5 MOUNTED CRYSTALS IN 1 MOUNTING
 A new item. Also has printed description of crystals. Take UR



pick of Xtals when fishing. May use our regular catwhiskers for these Xtals. 9-44. Each..... 80

Diodes

ALL-WAVE DIODE DET. & AMPLIFIER



PARTS LIST.

- 1 .00014 or .00035 var. (C-1).
- 1 .1 x 600 bypass cond. (C-3).
- 1 Diode, any type.
- 1 3:1, or other audio transfr.
- 1 RF Choke.
- 1 Output transformer, 8000 imp.
- 1 PM speaker.
- 1 1Q5gt tube, or equivalent.
- 2 SPST toggle switches.
- 1 Octal wafer socket.
- 1 Set MRL Type RF plug-in coils.
- 1 Wafer socket to match coils.
- 2 Tip jacks or jack for phones.
- 1 1/4" bar knob and scale.
- 1-1/2 A; 1-4/2 C; 1-2 2/2 B-batts.
- Panel, base, hardware.

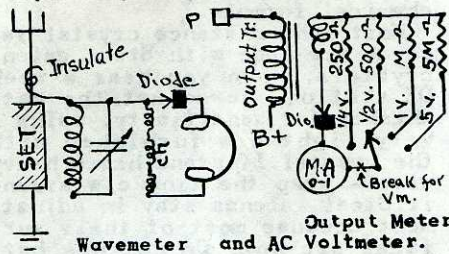
The above circuit is given to get you acquainted with Diodes and at the same time, rig up a little set that works a speaker. DX isn't entirely out of the question, either, with our Celluloid coils. An adjustable Xtal may be used if you want more DX.

RF choke may be 2 1/2 mhy. but a larger one is better.

For 5-RF coils, use a 5-prong wafer socket.

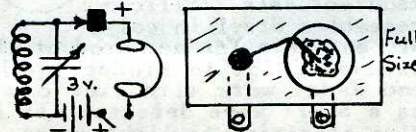
Diodes have lots of uses. They work good in a Harkness Reflex - where we used to use Fixed Iron pyrites. Because manufactured Diodes have their contacts welded together - they cannot burn off like the Iron pyrites used to do. In this circuit, the induced current is very low - so no harm can come to the crystal.

Below are two more adaptations of Diodes. Using the same principle as above - we can rig up a



very useful wavemeter so you can spot your DX stations on your dial. It can also be used as an indicator, or monitor, for a Xmtr. The other shows a Diode as a rectifier for an output meter, or used as an AC voltmeter.

MRL SEMI-FIXED CARBORUNDUM XTAL.



Our new semi-fixed Carborundum is a neat little unit. Drawing shows full size. It is mounted on clear, low-loss Plexiglass. Due to our new method, a larger crystal surface is exposed. In case you want to make an adjustment - just move the catwhisker sidewise. The up and down pressure is not too important.

Tiny lugs are fastened so you don't heat the crystal in connecting. The entire unit may be dismantled by removing two small nuts. Stability is due to the large c/w it is possible to use with this crystal.

You may use the simple circuit above - or the one shown for an adjustable Carborundum on page F-1. It gives good volume on 3 volts, but others may take 1 1/2 v.

We use only the best crystal material - and weak ones are discarded. We get magnetic speaker volume on locals. They are tested in actual operation.

9-4. MRL Semi-fixed Carborundum Crystal, packed. 2 oz. .50

MRL FIXED SILICON CRYSTAL.

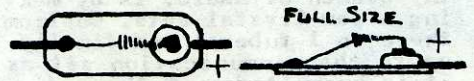


This sensitive Silicon crystal doesn't need adjusting. Is very sensitive on HF stations. Needs

no battery or outside power. Silicon used in most HF TRX.

9-42. MRL Fixed Silicon. .50

SEMI-FIXED GALENA CRYSTAL.



A very sensitive, easily adjusted crystal. We know of no other semi-fixed Galena on the market. The catwhisker holds the adjustment well.

9-45. Semi-fixed Galena. .45

POLARITY. With some sensitive crystal tuning circuits, without a TRX amplifier - we find polarity is important. Try reversing your Diode on DX stations and you may find it makes a big difference. Wrong polarity, into a TRX amp. may make the signal fuzzy.

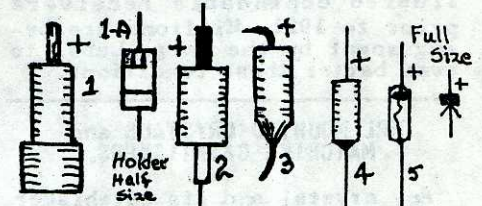
PHILMORE FIXED CRYSTAL DETECTOR.



A real rugged Xtal, in Bak. case. Sensitivity determined by Lab. methods. Renews life of reflex or Xtl sets. Very sensitive. List price \$1.20.

9-56. Philmore fixed Xtal..... 90

FACTORY-MADE CRYSTAL DIODES.



Above drawings show actual sizes. These are pre-adjusted crystals, with welded catwhiskers, and work good in any Xtal circuit. They are not critical in operation until you get into hi-frequency tube circuits.

From a law in Physics - "no two things are exactly alike" - applies especially to semi-conductors. Even the same types seem to vary considerably. We recommend your trying different ones on weak DX stations until you get the best match for your circuits. In many cases the "A" types are a little different, altho not noticeable in Xtal circuits. Try reversing the polarity on DX stations for best results.

Continued on next page.

They have good volume. Some may be improved with a slight addition of battery current as per the Carborundum layout on page F-1.

Selectivity is not as good with these as the adjustable types of Steel galena, Iron pyrites, Silicon and Carborundum - possibly due to the welded c/w.

Previous CAT. numbers are now omitted - just order by type No. Advise if we may substitute. Watch the "Flyer" for changes in this list. Note the many price reductions from previous lists.

(1) Silicon. 3000 mc. converter or mixer. General purpose use.

- IN21-B or IN22. (1)50
- IN21 or IN22 Holder (1-A). With pigtail ends. CAT. 9-50.....20
- IN34-A. (2) Germanium. Similar to IN66, IN69, IN294. General purpose. 60 volt maximum....50
- IN52. (2) Germanium. Similar to IN67, IN297. General purpose. 70 volts maximum.....50
- IN60. (4) Germanium. Similar to IN295. Video detector, medium level. 25 volts maximum....50
- IN70. (2) Germanium. Similar to IN67. High back resistance. Harmonic distorter for UHF-TV. General purpose. 100 volts..50
- IN64. (2) Germanium. Similar to IN295. Video detector, general purpose. 15 volt maximum....50
- IN82-A. (2) Silicon. UHF-TV mixer. Low-noise. 5 volts.....50
- IN128. (5) Germanium. Hughes. JAN. Similar to IN294. Miniature. General use. 40 volt..50
- IN295. (4) Germanium. Similar to IN60, CK-706-A. Video detector. General purpose. 40 volt....50
- CK-706-A. (4) Germanium. Similar to IN295. Video detector or general purpose. 40 volts...50

PLUS SIDE is for best conductivity, or the crystal side. Usually labeled "cathode" or where the line or red dot shows.

TRANSISTORS

Transistors are being used more every day. In a good circuit - one Transistor can operate a PM speaker on loud locals. Our TRX may be used in most circuits - for general purposes. Watch "Flyer" for changes in our listings.

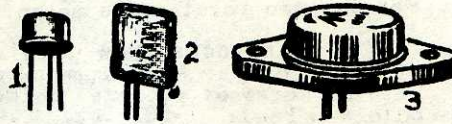
Be sure to check dot, or basing diagram, before turning on the current, or it may damage the TRX. The dot is the collector. Leads may be soldered but hold them with pliers as a heat sink to protect the unit.

The number refers to type; the letter to basing diagram. Note our low prices on these units.

WATCH FLYER for additional TRX and other semiconductor listings

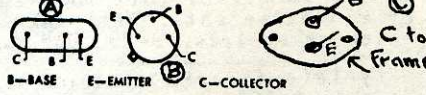
MINIATURE RESISTORS, see R.

TRANSISTOR MIDGET BYPASSES. See Section J on Condensers.



BASING DIAGRAM

BOTTOM VIEW



PNP TRANSISTORS.

- 2N1098. (1-B). GE. Germanium. A good audio amp. Gain 44. Gen. use. Alpha 1 mc. 18 v. max. 200 mw. output. Sim. to 2N107, 2N218, 2N402, CK-722..... .99
- 2N2613. (1-B) PNP. Ger. 9 v. OK. 1 mc. Gain 200. Tone good. .99
- TO-102. (1-B) US TRX. Germanium. IF, or general amp. 9 v. max. Cur. gain 40. Sim. to 2N410, 2N450. Cutoff 7 Mc..... .99
- TO-103. (1-B) US TRX. Germanium. Aud. driver or general. 11 v. max. Cutoff 2 Mc. Sim. to 2N408, 2N241A, etc..... .99
- TO-104. (1-B) US TRX. Germanium. 15 v. max. Cutoff 1 mc. Sim. to 2N408, 2N241A..... .99
- 2N155. (3-C) CBS, or similar makes, of Germanium power TRX. Takes 6-12 volts at 1/2 amp. but will drive a 12" speaker. Claim 8.5 watts output. 30 v. max. v. Power gain 30 db..... .99
- X-771. (3-C) Power TRX, similar to 2N155. Circuits incl. .49

NPN TRANSISTORS.

- 2N1613. (1-B) NPN. Silicon. 1 mc. Gain 80. RF. 9 v. OK .99
- 2N364. (2-A) Texas. Ger. Gen. use, Sim. to 2N444. 30 v. 2.5 mc. NPN's for regeneration.... .99
- 2N438. (1-B) CBS. Ger. Gen. use. Regeneration at HF. 30 v. 3.75 mc. cutoff frequency..... .99



TRANSISTOR TRANSFORMERS

Well made. Weight about 1/2 oz. Permalloy steel cores. Fine wire vacuum impregnated. TRX do not draw enough current to operate the ordinary output transformer into a PM speaker. Therefore, we must use these special transformers to balance the output impedances of Transistors.

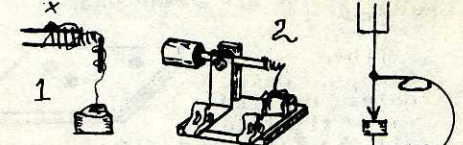
- Driver. 20K: 1K Imp.24-31. 1.00
- Input. 100K: 1K " ...24-28. 1.00
- Input. 200K: 1K " ...24-29. 1.00
- Input. 500K: 1K " ...24-30. 1.00
- Driver. 10K: 2K-ct ...24-27. 1.00
- Output. 500-ct: 3.2...24-17. 1.00

Audio. Hi-imp. Pri. (C) to Lo-imp. Sec. (Base). 24-32. 1.00

Crystal Stands

ASSEMBLED STAND & CRYSTAL

The universal joint on swivel arm provides a quick, accurate adjustment on any point on the



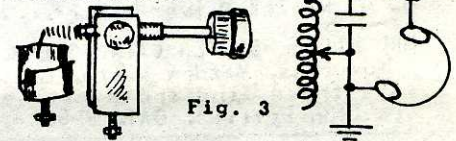
sensitive crystal. Unit is completely assembled with crystal, cup, base, catwhisker and two clips for wires.

We suggest soldering the Phosphor bronze catwhisker to the arm (X, Fig. 1). Then, wrap a piece of MRL fine catwhisker (CAT. 9-13) around this spring and bring down to a point for a contact with Xtal. This works better than the heavier contact.

Often advertised as "a complete Xtal Set for 45¢" when attached to phones, Aerial and a ground (Fig. 2). In this hookup, the nearest, or loudest station will predominate, with others in the background, unless some form of tuning (Fig. 3) is used to select stations. For further information, read about K/D stands below. Regular list price 55¢.

Assembled Stand and Crystal. 9-17. 4 oz. weight.....55

KNOCKED/DOWN CRYSTAL STAND.

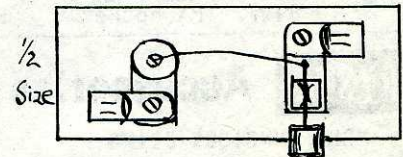


Same as assembled stand, except no crystal or base. Mount in holes 1" apart, in a convenient position on panel. Or, it may be mounted on a base (see below). Sometimes the knob may be a little loose. Spot a drop of solder on shaft and drive the knob back on. Also solder Phosphor bronze spring and add MRL c/w as shown in Fig. 1.

Use as in Fig. 2, 3 or any circuit where a good adjustment is required. For further details on Fig. 3, see DP-33 "MRL #19 Pocket Radio."

K/D Stand. 9-14. 2 oz.....30

WOODEN BASE MOUNTED XTAL STANDS.



Specially made so you can get a fine contact on your Xtal. It is easy to adjust and keep in contact. CAT. 9-3. Each .50

MRL CRYSTAL CUPS. CAT. 9-16..... 10

To hold the crystal in place. Is furnished with screw and nut. May be bent in to hold unmounted crystals.



F-4

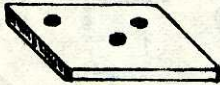


5/16" Cups for making fixed Xtals. 4-40 hole. 9-33. .05
Use 13-12. PH. Doz. .19

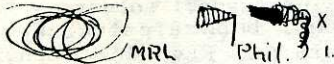
Full Size

MRL K/D STAND BASE.

Fibre, or Compo. base. Holes drilled just right to fit the K/D stand. Other uses. K/D Stand Base. 9-15. 1 oz. .10



CRYSTAL SET CATWHISKERS



MRL fine Catwhiskers are used for long distance reception with Steel galena, when wrapped about a heavier Phil. type (see Fig. 1). The heavier brass MRL type is used on Iron pyrites, Silicon and Carborundum. Fine come 5 c/w to an envelope.

MRL Catwhiskers. 9-13. (5).....05

Philmore type are now made by us. Very springy brass. Fit all stands. Should be soldered (X-Fig. 1) to arm. Work good on MRL Carborundum, Silicon or Iron pyrites. Use MRL fine c/w on the Steel galenas. Packed two to an envelope. List price 20¢.

Philmore Type C/W. 9-35. (2).. 10

MRL Nickel-Silver Catwhiskers. Very fine. Good for DX. Try them. 9- 9. Nickel-Silver c/w Ft....05

MRL NICKEL SILVER CATWHISKERS.

Norcross, Meadow Vista, Calif. says these find spots all over his Iron Pyrites. CAT. 9-9. .05

MRL Phosphor-bronze Catwhisker Wire. Try a variation and see how it works on DX. Many recommend it. 9-53. PB Wire. Ft. .05

Transistors. Hundreds of types are being made. We sell only the ones listed in CAT. and Flyer. If you want another type- you'll have to dig it up elsewhere. The Gen. Transistor Corp. wanted \$760 on first order - Texas requires about \$1100. For what little we make on them - we'll stay with our present low-priced ones for general use. MORE TRY = F-6

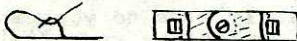


UNIVERSAL TRX. SOCKET.

Lo-loss phenolic with 3 Beryllium copper silvered contacts. Push-on clip. Full size. 9-27. TRX socket. .30

CRYSTAL Accessories

MRL FAHNSTOCK CLIPS



Well termed "quick binding posts." Push the end down; insert the wire, and the clip does the rest. Heavily plated, spring brass clip always gives a good clean contact. Be sure your wire is clean before inserting. Been used on Xtal sets for years. As

M R L Catalog



we do not sell double clips, you may put two together as shown.

3/4" Fahnstocks. Now used as standard clips. May be mounted with #6 screw or eyelets. Solder onto A-G leads. 7-53. Doz. .40

1/2" Fahnstocks. Fine for small space. Ideal for coil mounting, or miniature sets. Will take #6 screw or eyelets. 9-29. Doz. .30

Eyelets for above clips will go thru 1/16" stock and clip. See Sec. H for more. 13-161. Doz..06

INSULATED BINDING POST TERMINALS

Molded plastic. Same as above.



Knurled grip, removable head. Hole provided in stem for wire or phone tip connection. Overall length when fully opened 1". Supplied with hex nut and solder lug. Available in red, black.

4-12. Midget BP. State color .09



COMBINATION INSULATED BINDING POSTS

Knurled grip, with jack to accommodate standard banana plugs built into stem. Overall length 1 3/4" when fully opened. Extends 5/8" above panel when head is screwed down. Fitted with 8/32" stud (9/16" long). Supplied with two hex nuts and solder lug.

4-8. Black Insul. Jack BP... .30

4-9. Red " " "..." .30

MRL BINDING POSTS.

Heavily nicked. Standard sizes. Insert a wire, or tip, and screw the head top screw down, with fingers or screwdriver to make a fast connection. We suggest using a lug and lock-washer under screw when making soldered connection to leads. When securing, hold binding post steady with an awl, or nail, pushed thru hole. Be sure they are tight.

6-32 Binding Post. 4-2. Each.. 10



HEAD TOP SCREWS FOR ABOVE BINDING POSTS

May screw by fingers or screwdriver. Also work good on terminal strips and under-panel wiring. Have many uses.

13-48. 6-32 HT Screws. Dozen .15

13-53. 8-32 HT Screws. Dozen .10

MAPLE FEET TO #74 and other experimental bread-board sets. Use Pegboard (page Q-1) for base. 9-8. 2 wooden feet .05

F-4

673

EBY BAKELITE BINDING POSTS. #38 "Ensign" design. With brass inserts. Brand new. Eby list price 1.20 each. We add one nut.

Dimensions:
Knob-1/2" Dia. x 7/16"H.
Base-17/32" Dia. x 1/4"H.
Threaded Stem: 6-32x9/16"L.



4-4 Eby Binding Post. Each .30

BAKELITE BINDING POST HEADS.



Fit 8-32 screws. Have brass inserts. 9/16" Hl. x 1/8" across top of the head. Specify color.

4-26. Black BP Head. .15

4-27. Red BP Head. .15

MRL KNURLED NUT BINDING POSTS.

These binding posts are used in a small space, and wire fits under screw. Use lug and lockwasher under screw for good connection.



6-32 Knurled Nut Binding Post. 4-28.10

6-32 Knurled nuts for the above posts. 4-22. Dozen.....50

8-32 Knurled Nut Binding Posts. 4-5.10

8-32 Knurled Nuts for the above binding posts. 4-6. Dozen...60

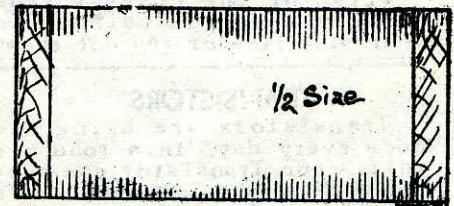
More terminal parts, Sec. W.

Md., Baltimore, H.G.: "Your MRL Xtals are best I ever bought."

CRYSTAL

COIL PARTS

MRL CELLULOID CRYSTAL SET FORMS.



1/2 Size

MRL 2XM FORMS

Most efficient Crystal set DX coil made. We have sold thousands, with ever-increasing long distance records as a result. It is specified in most of our MRL circuits. Most distance records have been made with sets using this form. Due to a thin wall (.015"), Celluloid makes a most efficient form, with a very Hi-Q. Absorbs very little moisture. Fibre rings in each end, re-inforce it, so up to #14 wire may be wound without caving in. This may be used by Amateurs in Xmtg. coils. Being thin, Celluloid puts so little loss material in the field that highly efficient results can be expected. As an

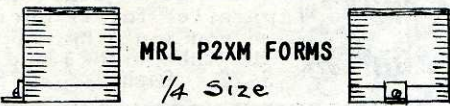
Cont. Next Page

experiment - wind a coil on a fibre tubing 2" in diameter. Now - wind one on a 2XM using the same kind of wire. Note the difference in operation and tuning. MRL 2XM forms are 2" in diameter by 4 1/2" long. Drawing is half-size. We now use a 3/8" ring in each end - so sliders may be put on easily.

When winding- secure first and last turns with tape. Paint the edges with the cement.

MRL 2XM forms are much more economical and lighter than Bakelite or other plastic materials for coils. If you are going to build a first-rate set, by all means, make a good coil, as it is the heart of your rig. More data on Celluloid in Sec. E.

7-40. MRL 2XM Celluloid Form and Mounting Bracket. 6 oz.... .45



These forms are identical with 2XM, except they are 2" long instead of 4 1/2" and have a small ring in one end. Often substituted for 2XM when smaller forms are needed. Besides Xtal sets, they are used in Antenna couplers (MRL 7-43) with coils plugging inside. Also used for rotors inside coils, etc.

7-39. MRL P2XM Celluloid Forms and Brackets. 2 coils. 6 oz.. .45
1 P2XM and Bracket..... .25

SPECIAL 1x2 1/2 M Celluloid Form.

These are formed on 1" fibre rings 3/8" long, for easy drilling without chipping. Forms are



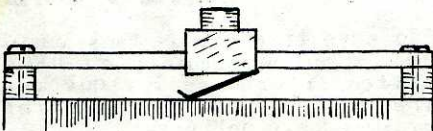
2 1/2" long. May be mounted upright or flat. No bracket furnished. A good form for SW coils where a switch is used. Other uses.

7-32. 1x2 1/2 M Celluloid Form. .25

BAKELITE and FIBRE Coil forms in Section E.

COIL CEMENTS, see Section E.

MRL COIL SLIDER PARTS



MRL Sliders and Rods are made only by us as we could no longer obtain them from mfrs. We have a very smooth-operating slider. It fits a 3/16" square rod. Because crystal sets are not critical in tuning - a slider works OK.

Due to the wear on smaller wire - the sizes from #20-28 are best. Enameled is mostly used, but DCC is very good - as you just remove the cotton and a good contact is obtained. When winding your coil - leave about 3/4" at each end for mounting slider and so slider contacts the end of coil. Cover edges and each side of path with MRL Light Coil Cement, and let dry.

Center-punch the rod 1/8" from each end; drill with a #33 drill to take a 4-40 x 3/4" binding head screw thru form as shown. Use a fine file, or sandpaper to clear a path of contact. Brush off the dust and vaseline it lightly for smooth contact. You may use several sliders on one coil as per our MRL #12 (DP-69).

MRL Slider. Fits 3/16" square rod. 9-25. 1 oz. wt.....20

Slider Rod. 3/16" sq. Per lineal inch .06. Example: 6" is 36¢; 4 1/2" long is 27¢. CAT.9-26.

Holes drilled in each end for 5¢ per hole - a new service.

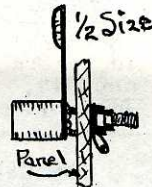
3/8" x 5/16" Fibre Bushings to raise slider. 13-137. Dozen.....20

4-40 x 3/4" Binding Head Machine Screws. 13-47. Dozen.....20

4-40 Nuts. 13-2. Dozen.....16

MRL SWITCH LEVERS

Switch levers have been used almost from the start of Wireless. We used to pay \$1.50 for a big clumsy lever. Today about the only types are large electrical switchboard types. So, MRL is the only source of this handy little switch lever.



We long felt the need for a midget switch lever that is efficient, yet works in a small space. Rear-working inductance switches may be used - but they are far more expensive. In most cases it is easier to wire up a coil from switch points.

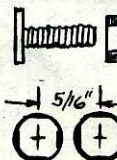
Our levers are 1" radius and using springy metal which holds its shape, for the lever. The 3/8" insulated knob seems to be about right. A lug fits behind the panel, and then two nuts - one being a locknut.

Scribe your 1" radius on panel before drilling a snug #6 hole. Bend the lever down a little to make it tight. Place a 3/16" wrench around the nut and tighten the 1/4" locknut. Lever should work so good contacts are made.

MRL Switch Lever. 9-20. 1 oz.. .20

MRL SWITCH POINTS and NUTS.

These are shown at full-size. Made to our specifications. Doubt if you can get them elsewhere. Brass and heavily nickel-plated. Fit close to

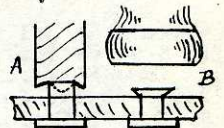


panel; protrude 1/16". Scribe a light circle with 1" radius. Mount the points 5/16" on centers. Points are slightly squared to make them easier to hold with pliers. We advise using a nut driver wrench on nuts in the rear. You may use small 6-hole lugs under nuts, or solder directly to the ends- which we do. Use our #22 stranded plastic hookup wire described below. Put touch of Vaseline on points to make them run smoothest ever. We sell in dozen lots with nuts.

9-21. MRL Switch Points and Nuts Per lot of a dozen. 2 oz. .35
13-3. Extra 6-32 Nuts. Dozen .15

MRL RIVET TYPE SWITCH POINTS.

Brass; heavily nickeled. These points are easier to install, altho a little harder to solder than regular switch points. Use the same layout method as above. Lay head of point on a solid metal surface, and push rivet up thru panel. From the back, use a rivet punch to drive them down (A). Or, you may use a large center punch, and flatten down with a hammer (B). When all the points are set, good and tight, apply a tiny speck of soldering paste to the hole, and tin with the soldering iron, until all R tinned. Hold wire down with a screwdriver until it cools. Attempt to pull wire off, to test its security. Be sure to clean off any paste, etc. between the points with Carbon tetrachloride of benzine. Furnished in three sizes. May fit other thicknesses by countersinking the back of the holes, as noted below.



MRL Rivet Switch Pts. for 1/8" or 3/16" Panel. 9-22. Doz. .15

MRL Rivet Switch Pts. for 1/4" or 5/16" panel; 3/8" if you countersink. 9-32. Dozen .10

MRL Rivet Switch Pts. Same as 9-32, but Copper. 9-30. Doz. .08

THERMOPLASTIC

WIRE FOR POINTS.

#22 stranded plastic-covered. Ideal for sw. pts. to coils. Is easy to skin. Tins easily. Makes a neat job. 26-29. 20 ft.....30

MRL NEW METHOD SWITCH STOPS.

We prefer these lug type stops to the previous screw types as they take up less space on the panel. Place the "B" lug under the first and last point before fastening. Bend lug up at right angles to the panel. Extra lugs may be used 4 wiring.

9-24. MRL Switch Stops. (20) .30

CANADIANS

buy for less, even after paying duty, tax and postage.

Crystal Receiver Coils

MRL QRM Coils, Variocouplers, and other coils, see Section E.

MRL CRYSTAL SET COILS.

All coils made according to the latest data obtainable for best operation. Tapped when necessary. Some on Bakelite, but mostly on Celluloid forms. Rotors included when specified. Postage is always extra.

Circuit & Coil	CAT.	wt.	
1 8-9. Cello.....	7-100.	1/2	1.00
1 QRM. Fibre.....	7-42.	1/4	.75
2, 2-A 10-11. Cello..	7-101.	1/2	1.00
4 3-1-7. Cello....	7-102.	1/2	2.00
5 Use 2 #2 Coils ..	7-103.	1	2.00
6 1-2, 2-3. Cello..	7-104.	1/2	1.50
6 8-9. Cello.....	7-105.	1/2	1.00
7 Loading. Cello..	7-106.	1/2	1.00
7 Same, Fibre.....	7-120.	1	1.50
8 1-2-3-4. Cello..	7-107	1/2	1.50
8 RF Choke.....	6-3.	1/4	.50
9 7-9-11. Cello..	7-108.	1/2	1.50
10 Country. Cello..	7-169.	1/2	1.50
10-A City. Cello...	7-109.	1/2	1.50
11 1-2. HB-17.2 Gil..	7-101.	1/2	1.00
11 3-4 " Cello..	7-111.	1/2	.75
11 DP-56. Main. Cel..	7-119.	1/2	1.50
11 QRM Fib. 7-42.		1/4	.75
12 Sec. Fibre.....	7-112.	1	2.00
13 1-3. Fibre.....	7-113.	1	2.00
13 7-8. QRM. Fibre..	7-42.	1/4	.75
15 1,5,2. 3 Cello..	7-114.	2	3.50
17 3-5. Cello.....	7-115.	1/2	1.50
19 Coil only. Fibre..	7-148.	1/4	1.00
20 1-2,3-5 2 Cell..	7-149.	1/2	1.50
21 Variocoupler....	7-172.	1	3.50
21 7-8. Fibre.....	7-150.	1/4	.50
21 9-10-11. Bak....	7-151.	1/2	1.50
22 Variocoupler....	7-172.	1	3.50
23 QRM.....	7-42.	1/4	.75
23 9-13-5. Cello...	7-153.	1/2	1.50
24 3-2-7-8. Cello..	7-154.	1/2	1.50
24 Loading. Cello..	7-155.	1/2	1.00
25 7-7-5-6. Cello..	7-156.	1/2	1.50
25 QRM.....	7-42.	1/4	.75
26 4 5-X Coil Set..	7-25.	1	4.00
27 1-2. Cello.....	7-158.	1/2	1.00
27 5-6. Cello.....	7-159.	1/2	1.00
28 4 5-X Coil Set..	7-25.	1	4.00
28 Loading. Fibre..	7-168.	1/4	1.00
29 Variometer.....	7-194.	1	3.50
29 Loading. Cello..	7-160.	1/4	1.00
29-A Coil. Cello...	7-193.	1/2	1.50
30 2 QRM Coils....	7-42.	1/2	1.50
30 5-6-7-8. Cello..	7-162.	1/2	1.50
31 4 5-C Coil Set..	7-127.	1/2	3.50
33 2 AC-DC Coils..	7-44,45.	1/2	1.40
34 IF Transformer..	7-116.	1/2	.85
35 1-2(#2 coil)Cel..	7-101.	1/2	1.00
35 Variocoupler....	7-172.	1	3.50
37 1-2. Cello.....	7-157.	1/2	1.00
38 1-2-3-4. Cello..	7-165.	1/2	1.50
39 1-2-3-4. Cello..	7-175.	1/2	1.50
40 I.F. Transformer	7-117.	1/2	.85
41 L-1 or L-2, Cel..	7-176.	1/2	1.00
41 L-3. Fibre.....	7-177.	1/2	1.00
42 AC-DC Coils (2).	7-44,5	1/2	1.40
43 Coil. Celluloid..	7-178.	1	2.00
RE Oct. 1952. Cell..	7-180.	1/2	1.50
Flextal. QRM.....	7-42.	1/4	.75
Flextal. A. Cello..	7-152.	1/2	1.00

Flextal B. Cello..	7-161.	1/2	1.00
Heintze. DS-1 p.10	7-145.	1/2	1.50
Peil #1. DS-2 p. 5	7-190.	1/2	1.50
Miller DS-2 p. 3.			
3 coils total	7-170.	1	4.00

HEINTZE COIL 7-145.
Sub. #14 bus and space over 2" long - making "square coil."

50-in-1 ANTENNA TUNER. DP-61.
Norcross claims 288 ways to tune your Aerial.

TRANSISTORS. Cont. from page F-3
PNP Types:

2N990. PNP. Amperex. Germ. RF.
20 volts. Gain 150. .99

2N1265. (2-A) PNP. Sylvania. For gen. use. Germ. 10 v. max. Has current gain of 75. .99

Special PNP 100 mc. Mesa TRX. (1-B) CAT. Germanium. Similar to 2N705, 2N711, 2N974. 15 v. 360 mw. Gain 40. 9-57. .99

Special PNP MDT 30-180 mc. Ger. 15 v. 100 m. watts. Gain about 20. CAT. 9-58. .99

NPN Types:
2N657. (1-B) NPN. Silicon. 1 mc. Gen. purp. Gain 100. RF .99

Special NPN Epitaxial 200 mc. TRX. (1-B) Silicon. Similar to 2N706, 15 v. 500 mw. 9-59. .99

IMPORTANT: Rig 500K VC & 1K res. in series for checking bias. Some need it; some don't as 2N2613. Then insert correct resistor.

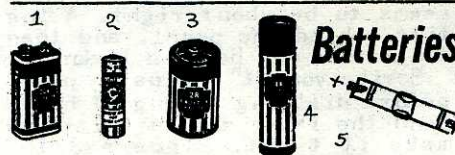
SUN CELLS or BATTERIES.



Usually Selenium. Work with any direct light. Sunlight generates about .5 volt to operate a Transistor set. Full directions and circuit with each cell.

#1 Sun Cell. 3-3. 2 oz. wt. .60
#2 " " larger. 3-12. 1.00

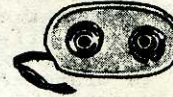
#3 Sun Cell Battery of 3 cells in series, for 1.5 v. Mounted on neat 2x3 Bak. panel. 3-13. 1.75



9 VOLT TRANSISTOR BATTS. (1)
Standard 5/8x1x2. Fit all 9 v. rigs. Fresh stock. While 1 1/2 v. will operate any TRX - 9 v. is many times louder. Get polarity right. 3-8. 9 v. Batt. 4 oz. .35

NEW 1-HOLE BRACKET for #10-26.
This new MRL bracket fits into 3/4" square space. It holds Mercury or pen or 9 v. batts. for our #10, 26, etc. 13-176 Each..... 15

9 VOLT BATTERY CONNECTOR.



For 9 v. flat and min. 45 v. batts. Is completely insulated. Snap fasteners. 1/2" spacing and 2 3" leads. Color coded. New.

3-15. 9 v. Batt. Connector.... 12

Use (3) 9 v. TRX batts. in series for the 1-tuber. You'll need (3) 3-15 connectors above.

1 1/2 VOLT LARGE FLASH. CELL. (3)
#2 for 2-3 cell flashlights. 1 1/2x2" long. Good power for TRX sets or MRL 1-tuber. On latter, put 2 in series-parallel to get 1 1/2 v. 3-1. #2 Cells. 4 oz. .15

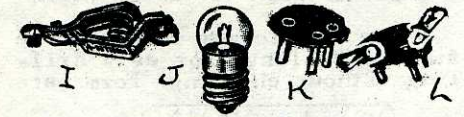
D-CELL BATTERY HOLDER.
Holds 2 D cells. We added jumper and a Fahnstock clip so it can put 2 cells in parallel for 1-tuber so you won't burn up the tube with 3 v. 3-22. Each .75

LARGE PENCELLS. (4). Close-out
1/2x2" long. 1 1/2 v. Good power 4 TRX rigs and small flashlites. Listed often as AA or 915. Fresh stock. 3-7. Large PENCELLS. .10

HOLDER FOR LARGE PENCELLS. (5)
Fit these or Mercury batts. 2 lugs to solder. 3-10. Holder .20

MINIATURE PENCELLS. (2) Close-out
ER-904. For tiniest batts. Are 3/8x1 1/4" long. Good power for tiny rigs. 3-18. Min. PENCELLS. .10

BATTERY ACCESSORIES.



(I) Standard clips 2 1/2" long. Fit storage batt. posts. 3-6.. 10

(I) Heavy duty clips 4" long. For better connection. 3-11. .10

(J) 2.5 v., .3 amp. rnd. screw Flashlight lamp, for 2-cells. Order #14 Flash lamp..... 20

(K) Large batt. plug for large 45 v. B-batteries. 3-4. .09

(L) Same, but with 3 Fahnstock batt. clips for wires. 3-5. .12

Tested Instructions and Plans

To save time - some Fans would like a quick summary of MRL-written literature for quicker ordering. We have the following for immediate delivery:

15 MRL Handbooks - 50¢-----	7.50
3 MRL DP Files 1,2,3, \$1--	3.00
6 MRL DS Vol. 1,2,3,4,5,6	
at 30¢ each-----	1.80
4 MRL REBH back numbers---	1.85
2 MRL E-S - 25¢-----	.50
6 MRL DPs - Mimeo'd. 7¢---	.42

Add postage and insurance. 15.07

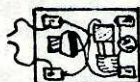
CRYSTAL SETS, Continued.

N.J., Lakewood, L.H.: "Contents of #5 are a gold-mine, and you have dug deep to find all these facts you clearly explain. It is worth \$1. Can appreciate the amount of research you have done. Facts have been made clear to Experimenters lucky to read one. Schools and libraries should also have copies."

Fla., Tampa, R.B.: "Have read your HB-5 from cover to cover & it has helped me a lot."

"PEPPY PAL" BEGINNER KITS.

We are now selling these kits to beginners and others wanting a one-nite project. While inexpensive - they will give good results. Directions make them easy to assemble. All except the Crystal slider set and oscillator use Loopsticks for tuning.



**PEPPY PAL
X-LESS AMPLIFIER.**

On base 1½ x 2. Very neatly wired. Uses current from receiving station for power. Cheaper than parts alone. Completely wired. tested.

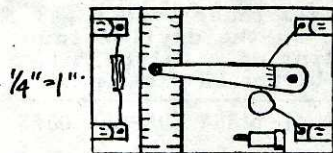
Uses current from Ant. Compact and can hook to Xtal set.
14-17-W. X-less Amp. ppd.....2.50

2-TRANSISTOR ALL-PURPOSE AMPLI.

This uses 2 TRX and furnished wired, with battery. Excellent 4 boosting power of Xtal sets. Has more power than the Xless - no battery amplifier above.

14-21-W. PP-8 2-TRX Ampl. 3.00

PEPPY PAL SLIDER CRYSTAL KIT.



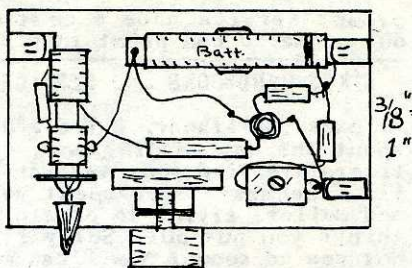
Assembles on a 3x5 base. Has been easily constructed by hundreds of Fans with good results. Uses crystal Diode for detector. Sliding lever on coil tunes in the stations. All new parts. The Fahnstock clips make it easy to hook onto. A good one to start on - requires no soldering.

14-10. PP-2 Xtal Kit. Ppd. 1.57
14-10-W. Wired & Tested. 2.07

PEPPY PAL TRANSISTOR KIT.

This little set mounts neatly on a 3x5 base. A sensitive Transistor acts as a detector. Because they draw such little current - the pencil lasts a long time, altho inexpensive.

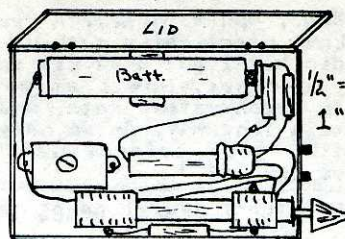
It uses an adjustable Loopstick with a knob. Balance of tuning is done with a .00035



midget variable condenser and a knob. It gives good selectivity and sensitivity on local and DX stations. A slight amount of regeneration helps the DX stations to come in. It can work on a short Aerial. If in the country, a ground may be added for DX by hooking to the side of Loopstick opposite the Aerial input.

14-11. PP-7 Trans. Kit. Ppd 3.65
14-11-W. Wired & Tested. " 4.65

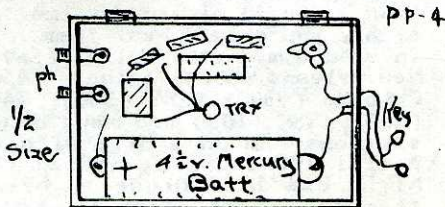
PP-6 REFLEX TRANSISTOR KIT.



This is a neat little pocket Transistor set placed in a 2x3 plastic box and lid. It uses reflex and regeneration to make a very sensitive little rig. Uses a pencil for power. Loopstick tunes with a knob. Trimmer condenser for further adjustment. Ample room for parts so not hard to rig up. Furnished with Aerial lead and clip which works fine on locals. For more pickup, use a short outside Aerial.

14-16. PP-6. Reflex. Ppd....2.59
14-16-W. Wired & Tested.....3.59

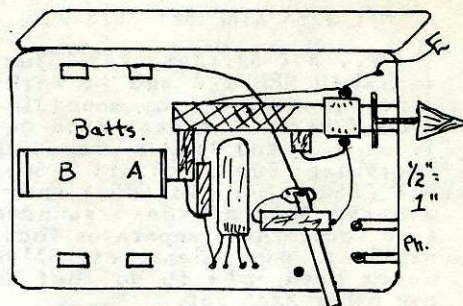
TINY TRANSISTOR CODE OSCILLATOR.



Here is a little oscillator in a plastic box 3" long. Very loud signals. Works on 4½ Mercury or 2 pencils; last long time. Lugs attach to key; phones plug in. Batts. extra. All wired up and tested. 14-15. Postpaid.....2.00

PEPPY PAL 1-TUBE PORTABLE KIT.

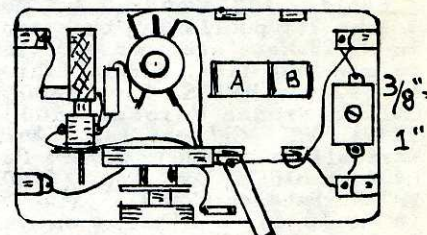
Very compact, sensitive and selective. Uses Loopstick and a fixed condenser for tuning. The drawing shows essential parts. Includes all parts except batts. - which may be hearing-aid type. Sub-miniature tube included. All



parts riveted on a separate base so little soldering required. In a neat plastic box. Any type of Aerial is OK. Includes tube.

14-12. PP-5 1-Tube Portable Kit, with Tube. Postpaid.....3.60
14-12-W. Wired & tested.....4.60

PEPPY PAL 1-TUBE BREADBOARD KIT.



Uses a very selective and sensitive super-regenerative circuit. Loopstick and variable condenser tuning. Loopstick puts the set on BC band. A trimmer condenser controls regeneration and tone. A sensitive Acorn tube goes with kit, and operates on a pencil and hearing-aid batt. Batts. not furnished. Built on a 3x5 base. Easy to build.

14-13. PP-3 1-tube Breadboard Kit. Postpaid to you.....3.65
14-3-W. Wired & tested.....4.65

Fun-to-Build Crystal Sets

MRL CRYSTAL SETS.

When considering buying a good DX crystal set- be sure to check over our sets in Sec. K. It usually pays to spend a little more and get a practical crystal set. Our MRL sets are made with large low-loss coils, variable condensers, good spacing, arrangement and construction. You can't get DX on a small coil in a crystal set - unless you use amplification with tubes or Transistors.

We realize we should have more Xtal set kits but it takes a lot of time to get them up. It is possible we may have more soon.

Because our DPs (Sec. D) are so easy to follow- it is easy to list the parts you need, and to lay out the set. Many buy them in kit form, wire them and sell to their friends.

MRL HANDBOOKS (Sec. A) are Ur best bets for good, meaty info. on Xtal sets, etc. They seem to like our way of explanation - so they tell us!

As we've said before - there's a lifetime of fun in small sets.
BUY FROM MRL & GET FLYERS FREE.

MRL #2-A XTAL SET GETS OUT.

Ark., Hot Springs, V.S.: "Just finished MRL 2-A and it works fine. There are many mountains around here, but last nite between 4:30 and 4:45 I picked up Pittsburg (800); Detroit (750); WLW (550); Del Rio (650) and 4 others. Some of these sounded like locals. Also separates local stations, cops, Hams, etc. I've never been able to do that on any other Xtal set.

"My Aerial is 100 ft. long and 25 ft. high. I use Steel galenas most of the time.

"I like the way you pack stuff I got stuff from Chicago in a box 4 times too big, and broken at that. Ur literature fine."

MORE DX ON MRL 1-TUBER (DP-29).

Calif., Inglewood, G.A.: "Many thanks for publishing our report in RB-29. Here are some additions to our long list: ET3AD, Ethiopia (9200); HS1SS, Siam (8000); CN8BA, French Morocco (6000); VK4FI, VRI, Gilbert Is., KX6BE, Marshall Is. (4800); OA7AP, Peru (4000); HI6EL, Dom. Rep. (3200); VP7NK, Bahamas (2800)." (Ed. See in RB-29 for a big log on this 1-tuber (DP-29). You'll be much amazed at the distances.)

MORE DX ON MRL 2-A CRYSTAL SET.

Canada, Ont., Barrie, J.W.: "Just completed 2-A set 2 weeks ago. Since have logged 14 different stations - 3 of them over 500 miles away. I think you'll agree that is good. Thanks for your rapid and courteous service - here's another order."

AN OLD TIMER LIKES OUR BOOKS.

Mo., St. Joseph, C.M.R.: "I am 52, and have made Xtal sets for 40 years. I have Boy Scouts and Cub Scouts that make Xtal sets. You have the best books on sets that I have seen. I have many of your Flyers - and the boys have about 'done in' your Catalog. I have ordered several times."

NORTH OF ARCTIC CIRCLE.

Canada, N.W. Ter., Melville Pen., L.L., Federal Electric: "I am your most Northern customer. Am north of 69 Lat." (Ed. Mr. L. sent a picture of the snow and some barges. He also took along over \$10 worth of MRL literature for those long nites. Hi)

BUILDS SEVERAL MRL #2 and 2-A's.

Md., Salisbury, F.B.T.: "Rec'd Trimm Pro. phones - they really are good. Picked up WGEO on 9530 Kc. and she came in like local on #2. Loads of Hams, aircraft, police, marine, etc. Just no better made. I built 3 of Ur #2 and a 2-A, but don't want to part with them! Ur company is the only one I know for us small time 'dabblers.' Ur friendly and

prompt service made a customer out of me. U can print this."

LIKES HANDBOOKS and SERVICE.

Texas, Ballinger, C.W.S.: "Have spent the day reading your fine literature. Find your service and lit. the best. Have spent years and dollars trying to obtain the things you put out. Sorry I did not see ad sooner. Now I can mail orders with complete confidence, that I will be dealt with fairly and promptly. Your last order was much more than expected."

FROM FAR AWAY CEYLON.

Ceylon, Colombo, B.T., St. Benedict's College: "The boys sure go for your literature and read it all. Also like your kits and Radio parts."

STARTS WITH A MRL NO. 2 CRYSTAL.

N.D., Upham, T.A.: "A year ago I knew practically nothing about Radio but I got a #2 kit and put it together. Now I am working with regenerative sets, and have come a long way. As so many have said - your friendliness sure does pay off."

MRL 1-TUBER (HB-4) DRAGS THEM IN

Ga., Macon, D.S.: "Just a few lines to let you know the 1-tuber is all the boys claim. Getting out of this location, on any Radio is good. I get Moscow (5600) every nite. Also Switzerland (4800); London (4400); Ecuador (2400) and many more. I have to reverse filament leads to get them. As I have no outside Aerial - I have to use inside 30 ft. one."

MRL #2 BEATS 2-TRANSISTOR RIG.

Ill., Anna, R.D., P.E. Monitor WPE9HFY: "Must say I am so very proud of my #2. It sounds better than my 2-transistor set. Locals good - and 40 mi. in daytime. At night, you should hear them roll in around midnite. Dallas (550); New Orleans (500); Atlanta (450); Chicago (350); WCKY (330); WAVE (200); WSM (100) and many other stations. Am on a hill with an Aerial 100 ft. long and 30 ft. high. Use 1N34 Diode to bring them in louder. I've heard of DX Xtal sets in the old days, but had to hear it to believe it. You may print this."

STEEL GALENA BRINGS THEM IN.

S.D., Dell Rapids, P.V.: "Used one of your Xtals. Sure does bring them in. Receive 4 stations 24 mi. away with wonderful volume. Have gotten Short-wave stations many times."

MRL HB-1 HELPS A LOT.

Kans., Wayside, R.A.: "Your #1 Headphone HB clears up a lot of problems on phones."

LIKES DP-4 1-TUBE DETAIL PRINT.

Mich., Franklin Mine, P.J.K.: "RB-30 received - best yet. Also like DP-4 as I have them all on one sheet - no need to go rummaging thru a lot of magazines to find 1-tube circuits."

VARIETY OF STATIONS ON MRL #2-A

W.Va., Washington, D.M.: "Used Ant. 50 ft. long and 20 ft. high and Trimm Featherweights, and I got lots of stations. Here are a few of them. Spanish (possibly Del Rio) (1450); New Orleans (625); KMOX (550); Boston (500); WSM (450); WENR, WEEM (400); WJZ, WOR (350); WRVA (250); KYW (250) and 2 boats on Ohio river, the "Robert Weir" and "Indiana." The Ant. points SSW. Thanks for a FB crystal set."

TRX AMPLIFIER #16, 50-in-1 TUNER and MRL 1-TUBER (HB-4) TOGETHER.

Canada, N.S., Lunenburg, R.T.: "Had all these hooked up and the DX rolls in. Listened to Germany (3600) last nite. Use a 75 foot Zeppelin Ant. 30 ft. high. I get good results with these Aerials. It points West & East. Weather here isn't too good for DX. It's good during the winter, tho."

MRL QRM KNOCKS VANCOUVER STATION

Canada, B.C., Vanc'r., R.A.: "Am very pleased with your QRM Coil. Practically deadens my bad station, without reducing signal strength of the others. Quality of your stuff is excellent. You may print this."

MRL 50-in-1 TUNER ON MRL #2 SET.

Ill., Peoria, B.M.: "I made Ur 50-in-1 tuner (DP-61) and it is perfect - couldn't be any better. I use it on my #2 set. I get the signals louder and I get Short-wave in the daytime loud. I am putting up a better Ant. system for better DX stations."

MRL 1-TUBER (DP-29) DOES IT.

Calif., Baldwin Park, R.R.M.: "Built most all the plans you sent me and can report good results on most of them. I got Oklahoma City (1600) on DP-29, 1-tuber. Also lots of Police and good on Broadcast band."

MRL #2 CRYSTAL BEATS THEM ALL.

N.Y., Armonk, R.W.: "A few mo. back I bought one of your #2 Xtl kits - much thru curiosity. You see, I have made hundreds of them in my day, but must admit the #2 beats anything I ever made. It's all its advertised to be, considering I haven't the proper Ant., and live on a 50 ft. lot."

HUNDREDS more on file. We'd like yours. Reports given in the spirit of comparing results.

Antenna Kits — Wire — Insulators — Arresters — Accessories

NEW MRL ANTENNA KIT.

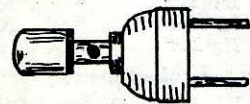


By making these kits ourselves we can give you a better deal. No expensive box or advertising.

All parts needed for an ordinary Aerial; no need to shop around. Includes 50' tinned and stranded Ant. wire; 25' stranded rub.-cov. Leadin. 2 porcelain Low loss insulators; 2 por. split knobs; 1 ground strap and screw, MRL DP-30 with directions and lots of Aerial kinks. Value \$4.80.

"PROPER ANTENNA and GROUND CONSTRUCTION." DP-30. .10

Gives further details on the erection of various Aerials, as multi-wire, doublet, zeppelins, etc. More on page D-1.



ANTENNA ELIMINATOR.

Safe to use on any 110 v. line and is plugged in whichever way it works best - to get the "hot" side for Aerial. Binding post is fitted for your Ant. set lead. A ground may be used on set but it usually works as well without. Ant. Eliminator. 1-20. 3 oz. .70

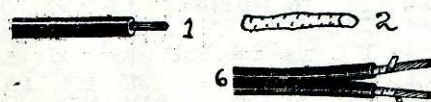
AERIAL WIRE



High conductivity copper wire. Enamel protects wire from weather corrosion. Stranded is light, but still gives more surface for pickup than solid. Solid is best for SW; stranded for the average Antenna. Add postage to cost.

- #12 Enamel. 1-5. 50 ft. 2# 1.85
- #14 " . 1-4. 50 ft. 3# 1.30
- 7-26 Stranded, tinned.
 - 1-7. 50 ft. 1/2 lb. wt. .90
 - 1-6. 100 ft. 1 lb. wt. 1.65

LEADIN & TRANSMISSION WIRE.



(1) #18 Heavy, single conductor Stranded Leadin Wire. Much heavier insulation than previous listing. Good transmission wire. Easy soldering, flexible, weatherproof, rubber covered. Also for grounds, batts., etc. 1-11. Per foot, plus postage. 03 1/2

(6) #18 Rip Cord. POSJ, Handy cord centerstrip. Flexible rubber. Parallel - and rips apart for connecting. Stranded. Solders very easily. CAT. 11-5. Foot. .03 1/2

(2) #8 SOLID ALUMINUM GROUND WIRE. Runs from lightning arrester to ground rod to carry hi-current. Excellent for other ground uses and making Xmtg. low-loss coils. Very light weight. #8 Alum. Wire. 1-44. Ft. 1/2 oz. 05

INSTALL A GOOD GROUND. Because lots of energy is from ground - hook all grounds together. Make short as possible. Use #8 Alum. wire for leads. Water, ground rods, switch boxes, etc.

Many Technicians are stressing the value of grounds. We always understood most of the received energy comes thru the ground. So use a heavy ground wire- and all ground connections you can get at once.

LOOPS and LOOP WIRE.



Wound on rigid fibre form with lug terminals. Replaces present loops, and turns may be removed for balancing. For RF stage this loop replaces first coil. Size 4 1/4 x 7; 6 x 10; Specify size desired. 1-42. 6 oz. .75

LOOP Wire. Also called Antenna cord. May be used for loops, inside Aerials, rotor pigtails and many other uses.

Approx. 19 tiny strands that solder easily. Very flexible. 1-14. Per foot .01 1/4

AERIAL INSULATORS.



(4) Porcelain insulator. Ribbed. 2 1/2" long. Strain insulator for long Aerials, doublets, etc. 1-22. Porc. Insulator. 2 oz. .12

(3) Aero. Guy Insulators. The wires overlap in case insulator breaks your mast won't fall. Of polished porcelain to shed moisture. 1 1/2" long. 1-23. 2 oz. .15

TELCO TV MAST BASE.

Holds TV mast to roof. Adjustable to all angles. 1 only. 1 lb. wt.60

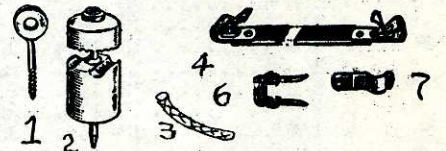


LEADIN INSULATORS & PARTS.

(1) 3" Screw In Insulator. Eye wall or screw eye. Holds leadin away from wall or trees. Bakelite insulator. 1-25. wt. 3 oz. .06

TV COMBINATION 3" SCREW-IN Insulator. May be used for TV or regular leadin. 1-27. .08

(2) Split, or Nail-it Knob. A handy knob for leadin or wiring



houses. Sturdy. 1-24. 3 oz. .14

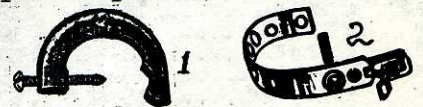
(4) Window Leadin Strip. Fits under window so it may close. Is plastic coated; Fahnstock clips each end. Best to solder on the wires. 1-12. 2 oz. wt. .25

(6) Saddleback Staples. Insulates wire from staple. Use on inside wires. Easier installation. 1-35. 24 for 10¢; 100 - .30

(7) Push Clips. Fasten wire to baseboard, or picture moulding without nails. 1-36. Dozen .05

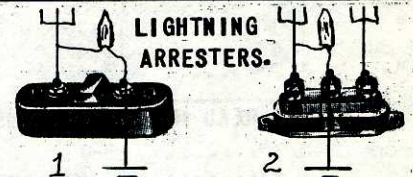
GROUND CLAMPS & STRAPS.

(1) "C" Ground Clamp. Positive contact with screw point. Rust-proof. Opens 1 1/2". 1-17. 3 oz. .40



(2) Ground Strap. Zinc clamp that takes a larger pipe; opens 2" dia. Fahnstock clip should be soldered to leadin to keep down corrosion. 1-18. 2 oz. .20

LIGHTNING ARRESTERS.



(1) General purpose. Uses gap principle. Underwriter's approved. Protects house and set. With 2 mounting screws. Use heavy wire to ground, or several twisted together. 1-34. 4 oz. .50

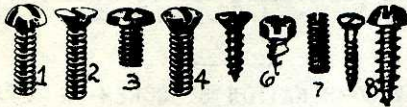
(2) Doublet or TV. This protects house and TV set. Also uses gap principle. Screws furnished. 1-43. 7 oz. wt. .70

Neon Lamp. NE-2, 1/25th watt. Connect across arresters, as above, and watch static flashes. Will not affect arrester or set. Other uses. 20-18. 2 oz. .15

PUT NAMES AND ADDRESSES ON ALL MAIL. We have several that we don't know who sent them!

Hardware — Connectors — Fuses — Mounts — Metal Products — Accessories

Most all screws and nuts furnished in steel, as it is not necessary to use higher priced brass in Radio work. All plated when possible to obtain it.



(1) ROUND HEAD MACHINE SCREWS.

Thread	Length	CAT. #	Doz.
2-56	x 1/2"	13-62.	.15
"	x 3/4"	13-65.	.20
4-40	x 3/8"	13-30.	.11
"	x 1/2"	13-58.	.12
"	x 5/8"	13-11.	.13
"	x 1"	13-68.	.15
4-36	x 1/4"	13-139.	.15
"	x 1/2"	13-104.	.20
"	x 3/4"	13-140.	.21
"	x 1"	13-115.	.22
6-40	x 1/2"	13-145.	.10
"	x 3/4"	13-146.	.12
"	x 1"	13-149.	.14
5-40	x 1"	13-74.	.11
6-32	x 1/4"	13-14.	.14
"	x 5/16"	13-15.	.16
"	x 3/8"	13-16.	.18
"	x 1/2"	13-17.	.20
"	x 5/8"	13-18.	.22
"	x 3/4"	13-19.	.24
"	x 1"	13-20.	.24
"	x 1-1/4"	13-21.	.25
"	x 2"	13-23.	.30
8-32	x 1"	13-27.	.17
"	x 2"	13-28.	.20
10-32	x 3/8"	13-64.	.10
"	x 1-1/2"	13-63.	.15

(2) FLAT HEAD MACHINE SCREWS.

2-56	x 3/8"	13-94.	.15
"	x 1/2"	13-29.	.20
3-48	x 1/4"	13-186.	.09
4-40	x 3/8"	13-12.	.19
"	x 7/16"	13-31.	.19
"	x 3/4"	13-32.	.20
"	x 1"	13-45.	.25
"	x 1-1/2"	13-46.	.30
6-32	x 3/16"	13-39.	.15
"	x 1/4"	13-33.	.16
"	x 5/16"	13-34.	.17
"	x 3/8"	13-35.	.18
"	x 1/2"	13-36.	.20
"	x 3/4"	13-37.	.25
"	x 1"	13-38.	.30
"	x 1-1/8"	13-136.	.32
8-32	x 1/4"	13-42.	.09
"	x 1/2"	13-43.	.13

(3) BINDING HEAD MACHINE SCREWS.

2-56	x 3/8"	13-91.	.15
3-48	x 3/4"	13-88.	.25
4-40	x 3/4"	13-47.	.20
6-32	x 1/8"	13-173.	.20
"	x 1/4"	13-48.	.20
"	x 5/16"	13-171.	.21
"	x 3/8"	13-95.	.22
"	x 7/16"	13-51.	.23
"	x 3/4"	13-50.	.24
"	x 1"	13-52.	.25
"	x 1-1/4"	13-49.	.28
8-32	x 1/4"	13-54.	.10

(4) OVAL HEAD MACHINE SCREWS.

6-32	x 1/2"	13-55.	.08
10-32	x 5/8" Oval.	13-144.	Dz..20

(6) SELF-TAPPING SHEET METAL SC.

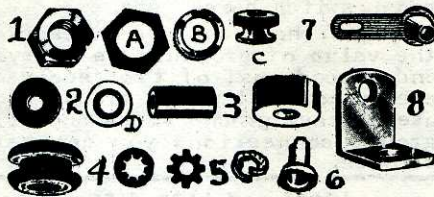
6-32	x 1/4" Flat....	13-66.	.10
"	x 1/4" Acorn...13-67.	.10	

(7) SET SCREWS.

10-32	x 5/16".....	13-71.	.10
12-28	x 7/16".....	13-72.	.10

(8) WOOD SCREWS.

2	x 1/2" Oval Head...13-80.	.20	
6	x 3/4" " "	13-142.	.20
2	x 3/4" Flat "	13-81.	.10
4	x 5/8" " "	13-141.	.11
4	x 3/4" " "	13-92.	.11
6	x 1/2" " "	13-84.	.12
6	x 1" " "	13-85.	.15
10	x 1-1/2" "	13-89.	.12
3	x 3/8" Round Hd...13-78.	.10	



(1) NUTS (Hexagon, unless noted)

2-56	x 3/16".....	13-1.	.16
3-48	x ".....	13-82.	.16
4-36	x 1/4".....	13-83.	.16
4-40	x ".....	13-2.	.19
5-40	x 5/16".....	13-57.	.16
6-40	x ".....	13-10.	.15
6-32	x 1/4".....	13-3.	.15
"	x 5/16".....	13-4.	.20
8-32	x ".....	13-5.	.25
10-32	x ".....	13-61.	.15
"	x 3/8".....	13-6.	.15

32-5/16	Carter rheostat nuts. (A)		
	Thick. 13-185.	2/5	
"	thin. 13-187.	2/5	
3/8"	vol. control (A) 13-7.	2/5	
7/16"	Rnd. Tog. Sw. (B) 13-8.	2/5	
6-32	Knurled (C).....	4-22.	Doz. 50
8-32	" (C).....	4-6.	Doz. 60

(2) FIBRE WASHERS.

Hole size	CAT. #	Doz.
#4.....	13-105.	.05
#6.....	13-106.	.06
#8.....	13-107.	.07
#10.....	13-108.	.08
1/4".....	13-109.	.09
5/16".....	13-113.	.10
(D) Shoulder, protruding.		
1/2" panel hole. For 3/8"		
vol. cont. shaft. 13-114.		.12

(2) METAL WASHERS. Per 20

#2.....	13-96.	20 for .10
#4.....	13-97.	" .07
#6.....	13-98.	" .08
#8.....	13-99.	" .10
#10.....	13-100.	" .10
7/16".....	13-103.	" .12
Tiny mod. plane. 13-102.		" .05
Larger " " 13-110.		" .05

#6 CUP WASHERS.

Many uses with Experimenter. We beat center down and mount fixed Xtals in them. Steel and nickel plated. 13-112. Doz. .10

#8-10 Cup Washers. 13-148. Dz..25

Keep experimenting!

(3) INSULATED SPACERS: BUSHINGS.

Hole	Wide High Use	CAT. #	Doz.
#4	3/8 5/16 Slider	13-137..	20
#6	1/4 3/16	13-135..	10

(3) METAL SPACERS or BUSHINGS.

#4	1/4 1/4 cond....	13-147..	10
#6	5/32 1/4 cond....	13-158..	15
#8	1/4 1/2 cond....	13-154..	30
3/8	9-16 3/16 Vol. con.	13-156..	30

NEW METAL BUSHING.

3/8" long. Slotted to fit a 1/4" shaft snugly for extensions, etc. Other uses. 13-138. Doz..15

(4) RUBBER GROMMETS. Doz.

1/4"	Panel hole.....	13-129.	.20
3/8"	" ".....	13-130.	.25
1/2"	" ".....	13-131.	.35

(5) LOCKWASHERS.

Teeth type; internal or external:

#2.....	13-127.	20 for .08
#4.....	13-122.	" .08
#6.....	13-123.	" .08
#8.....	13-124.	" .08
#10.....	13-125.	" .10
1/4".....	13-126.	" .12

Split spring lockwashers:

#2.....	13-116.	20 for .05
#4.....	13-117.	" .05
#6.....	13-118.	" .10
#8.....	13-119.	" .10
#10.....	13-120.	" .15
1/4".....	13-121.	" .20

(6) EYELETS. Rivets with holes.

Hole	Length	CAT.No.	Doz.
1/16".....	1/8".....	13-161.	.06
1/8	3/16.....	13-163.	.10
3/8	3/16. For mounting		
	loose crystals. 13-162.		.25

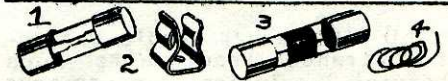
(7) EYELET LUGS. Rivet & lug.

Hole	Panel	Length	CAT.No.	Doz.
5/32".	1/8"	3/4"	13-167-B.	.10
1/8	1/16..	3/8	13-167-C.	.15
5/32	3/32..	3/8	13-167-D.	.10
3/16	1/8 ..	5/8	13-167-E.	.10
7/32	1/8 ..	1/8	13-167-F.	.10
1/8	1/16..	3/4	13-167-G.	.10

See Sec. E for more data.

(8) BRACKETS. All with holes.

Wide Base	Uprite	Uses	CAT. #	Each
1/4"	7/16	5/8 Bases...	13-111.	.05
3/8"	1/2"	1 1/2" "	13-180.	.05
1/2	1/2"	1 1/2" "	13-178.	.06
1/2	1"	1" "	13-181.	.08
5/8	1"	1 1/2" Vol. Con. 13-9...	.15	
5/8	1-1/8	1 1/2" MidgCond. 8-125..	.15	
3/4	1	1 1/2" Bases	13-182.	.10
3/4	1	2" "	13-183.	.15
3/4	1/2	1 1/2" Tab. Vol..	13-132.	.25
3/4	1 1/2	1 1/2" "	13-184.	.15
1"	5/8	2" APC Cond. 13-177..	.25	

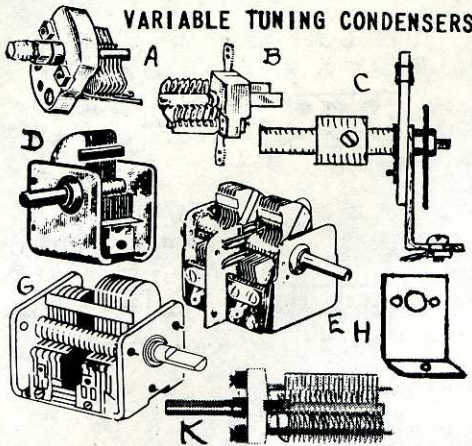


(1) Min. 1 A. fuses. 2-1. .04
(2) Fuse clip for above. Also for cart. leaks. 25-34. Ea. .02

(3) Cartridge fuses. Sizes. 3 or 30 Amp. 11-24..05

(4) Fuse wire. 1/2 - 2 - 1 - 2 3 Amp. Specify. 11-26. Foot .05

Capacitors (Condensers) Variable ————— **Trimmers and Padders** ————— **Accessories**



Our variable condensers are the best obtainable at the price and for general use. As many are hard to get, they may vary some in size and shape, but will make every effort to supply ones in cuts. 1/4" shafts, except Screw Dr.

NOTE: Large variable condensers, as we've known them for over 60 years, are no longer being made. Types like our 8-124 are substituted. MRL attempts to supply larger types as long as we can find them.

(G) Our superhet. type is now substituted for standard tuning because previous 8-7, 8-55 no longer made. Short stator plates to make it about .0003 which is OK for 2, 2-A, 10, 18, 26, 1-T and others. The small section may be used for 1-T without the series trimmer. Semi-midget type 1x1 1/2 x 2 deep, with trimmers and screws. Tested. Mostly 0-100. 8-112. Superhet. 4 oz. 1.85

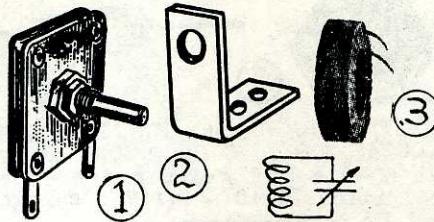
(E) 2-gang TRF type condenser. Very neat and compact semi-midget 1x1 1/2 x 1 1/2 deep. With trimmers, screws. 0-100. Tested. Very hard to get. May be used in 2-A and 10. 8-10. 2-gang TRF. 4 oz. 2.95

(D) .00014 condenser. Works on 1-tube without series trimmer. Base mounting with screws. 100-0 rot. 8-4. .00014. 6 oz. 1.50

(K) .00015 S. W. Low-loss Miniature. Very low-loss. OK for 1-tube or DP-31 sets, etc. Cap. range 6.7-158 mmfd. Low-leakage. Takes little space. Use straight without trimmers in series. Complete with screws. List 2.20. 8-3. 6 oz. weight.....2.98

MIDGET TUNING CIRCUIT.

For builder of miniature and Transistorized sets. Well made. (I) .00035 mfd. Variable Condenser. 1 1/2" square. 1-hole mtg. 3/4" x 3/4" shaft. Extends only 1/2" behind panel. 180 deg. rotation. 10-400 mmfd. Interleaves between plates prevent shorts. 8-124. Midget Cond. 4 oz... 1.00



(2) Bracket for midget cond. 1 1/2" high x 1-1/8" deep. 5-16" hole may be reamed to take vol. controls, etc. Cad. plated steel bracket. Many other uses. 8-125. Midget Cond. bracket... 15

(3) Midget BC Coil. About 11/16" in dia. 550-1600 Kc. to match cond. May be mounted on condenser itself. 7-183. Midget BC Coil. 2 oz .40

MIDGET LOW LOSS SLW TRIMMER.

This replaces our 8-1 -- 2-3 plate trimmer with a bandspread type for fine tuning. Rotor can be 0-100 or 100-0 for straightline wavelength tuning. Plates can be separated for finer tuning. Ideal 4 bandspread. 8-1. 1.00

(C) MRL 2 plate Ant. cond. as used in 1-tuber (HB-4) and other similar rigs. Includes bracket & insulated extender. Bracket used as plate, with easy connection thru base. CAT. 8-118. 6 oz. 2.00

(A) APC midget low-loss type. Isolantite insulation. 2-screw mtg. Screwdriver adjustment. 8 mmfd. 3 plates. About 1x1x1". OK for HF. 8-85. 3 plate APC. .50

(A) APC midget low-loss. Same as 8-85 but 9 plates. 25 mmfd. Similar use. Both include mounting screws. 8-57. 9 pl. APC .50

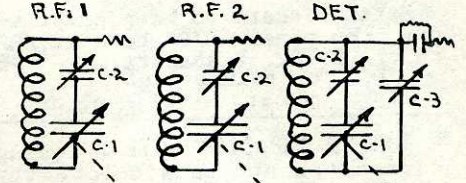
(H) Bracket for APC condensers (A & K). 1" wide x 5/8" x 2" up, with 4 mounting holes. 13-177..25

(B) TYPE U SUBMINIATURE VARIABLE Full Size Tiny capacitors that require only 7/16" sq. panel space, and up to 1/2" behind. Have high Q. low temperature coefficient, and high torque-to-mass ratio. Solid-brass rotors and stators. All metal parts silver-plated. Steatite ceramic. 3/16" P.C. terms. 4 oz.

Screwdriver adjustment. New. Very low-loss. Johnson U-189-3. For air trimmer or Ant. cond. 1/4" behind panel. Reg. 50¢ net. 8-2. .40.

.00014 MFD. MIDGET CONDENSERS.

Because 140 mmfd. SW condensers may be scarce, we have outlined our efficient method of tuning without them. For the 1-2 3 gang 140's we use .00035 Var. cond. (C-1) in series with 25-280 trimmers (CAT. 8-117) (C-2). Adjust the trimmers on the BC band, as the RF stages tune much



sharper here. A signal generator is best, but not required. The whole condenser range may be shifted to suit. Use an insulated screwdriver for best results.

As the detector tunes sharper, we place a 2-3 plate midget (CAT 8-1) (C-3) across this stage only, as a bandspreader. If you can separate the plates 1/4" it is much better. A bar knob and scale may be used on the panel.

TRIMMER VARIABLE CONDENSERS.



Postage stamp, slot adjustment compression type. All new. Low-loss. Can mount inside coils.

Capacity	Use	CAT	Eq.
3-15 mmfd. Standard.		8-15.	.10
3-15 2-gang, 2 circuit.		8-84.	.15
25-280	In series with .00035 gives .00014 (SW)	8-117.	.40

200-600 mmfd. trimmer. Bak. Real neat and well made. 1" square. Locknut mtg. 8-96. 200-600 .50

CONDENSER SHAFT PARTS.

(H) Bearings. 1/4" hole for a standard shaft. Bushing, with a locknut, fit 3/8" hole thru your panel. 8-104. 2 oz..... .30



(I) Couplings. For 1/4" shafts. Brass. CAT. 8-119. 2 oz..... .20 Insulated. 8-120. "20

(J) Extenders. Insulated type, as on 1-tube Ant. cond. Couples to 1/4" shaft. CAT. 8-99. 1 oz. .20 Same, but with 1/4" metal shaft extender. 8-97. 1/4" metal ext. .20

(J) Reducer. Brass. From 3/8" shaft to 1/4" shaft. 8-116. .35

Shafts. Cut to any length.

3/16" wood.	8-105.	6" long..	.03
1/4" "	8-103.	" ..	.04
3/8" "	8-109.	" ..	.05
1/4" metal.	8-111.	Per inch.	.02

Tubing. 1/4" goes over shaft.

Brass. 1/4 x 3/8".	8-115.	Per in..	.10
Fibre. "	8-110.	Per in..	.06
Aluminum 1/4" O/D	8-91.	Per in..	.05
" 7/16" "	8-92.	Per in..	.05
Aluminum about 1/32" Wall.			

Capacitors continued **FIXED**

Mica — Ceramic — Plastic — Electrolytic — Color Codes

Metal spacers to keep cond. a-way from panel. 3/8" hole x 7/32 thick. 8-102. 2 spacers.... .05
Also for volume controls.
Other spacers - see Sec. H.

TUNING CAPACITY NOTES. Tuning condensers are an odd lot. Try one in series with Aerial for better selectivity and bringing in those SW stations. A capacitor in series with Aerial or ground is like cutting Aerial in two. A long Ant. is an advantage for good pickup - but should be cut down for SW with capacitors. It is best to use cond. with less plates for SW - rather than one with large plates, i.e., .00014 instead of .00035 full capacity. C-2 makes .00035 a small cond.

MICA or CERAMIC FIXED CONDENSERS

We always furnish best grade & smallest size obtainable. The

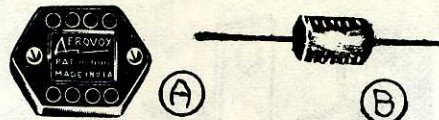


odd sizes are capacity tested on our sensitive meter and marked. Refer to Color code chart for standard sizes.

Mfd.	mmfd.	CAT. #	MRL
.000003	3	8-108	.15
.00001	10	8-126	.15
.000012	12	8-42	.15
.000025	25	8-16	.15
.000047	47	8-36	.15
.00005	50	8-17	.15
.000055	55	8-52	.15
.0001	100	8-18	.15
.00012	120	8-26	.15
.00015	150	8-46	.15
.00018	180	8-27	.15
.00022	220	8-47	.15
.00024	240	8-58	.15
.00025	250	8-19	.15
.0003	300	8-48	.15
.00042	420	8-106	.15
.0005	500	8-20	.15
.00062	620	8-29	.15
.001	1000	8-21	.20
.0015	1500	8-87	.20
.002	2000	8-22	.20
.004	4000	8-95	.25
.005	5000	8-23	.25
.006	6000	8-24	.25
.0068	6800	8-14	.25
.007	7000	8-93	.25
.008	8000	8-90	.25
.009	9000	8-88	.25
.01	10,000	8-25	.25
.012	12,000	8-59	.25
.02	20,000	8-51	.25
.05	50,000	8-98	.25

SPECIAL BUY ON NEW CONDENSERS.

(A) shows heaviest duty for Xmtr and other Hi-voltage uses. 5000 v. test.. 2500 w.v. In brown molded Low-loss Bakelite. Standard brands as Sangamo, Sprague, Aerovox, C-D, etc. Have screw terminals. Drawing is less than



half size. Sizes: .0001, .002, .0024, .003, .0036, .004. Above at 50-80% off Amateur net. New condition. 8-107. Size? Each .25

(B) is CRL NPO (neg-pos-zero) temp. compensating capacitors. OK for coupling HF, etc. for the limiting of freq. drift, in 3 mmfd. (.000003 mfd.) only. Regular 29¢ Ham net. 8-108. Each .15

MIDGET BYPASS CONDENSERS. Drawing is slightly enlarged. Molded plastic insulation and



hermetically sealed. Ideal for Transistor and other miniature sets. Furnished in sizes.

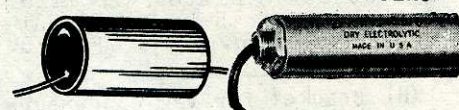
Cap.	Working V.	CAT.	wt.	Ea.
1 mfd. x 25 v. Midget		8-127.		.20
3 "		8-128.		.25
6 "		8-129.		.30
10 "		8-130.		.35
30 "		8-30.		.40
50 "	15 "	8-39		.40
100 "	" "	8-35		.40

TUBULAR BYPASS CONDENSERS.



Cap.	Working V.	CAT.	wt.	Ea.
.01	600	8-40.	"	.15
.01	1000	8-82.	"	.15
.02	600	8-41.	"	.16
.02	2000	8-55.	"	.15
.05	600	8-43.	"	.18
.05	1000	8-83.	"	.20
.1	600	8-44.	"	.20
.1	1000	8-100.	"	.20
.22	600	8-45.	3 oz.	.25

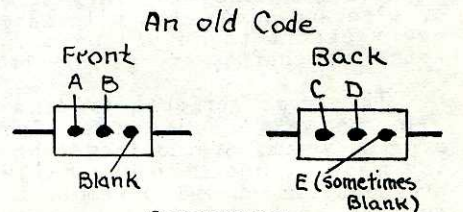
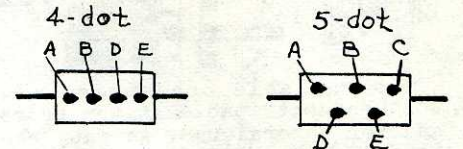
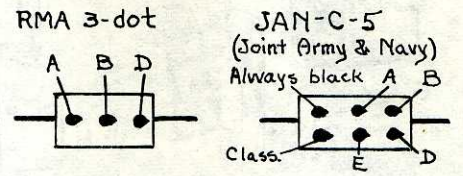
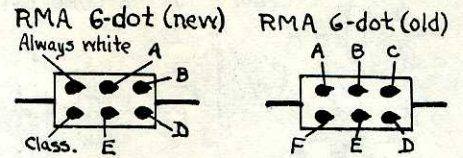
POWER SUPPLY FILTER CONDENSERS.



Cap.	W. V.	CAT.	Wt.	MRL
20	150	8-60.	2 oz.	.35
20x20	"	8-61.	4 "	.50
25x20x20	"	8-63.	3 "	.75
80x40x20	"	8-65.	4 "	.85
100	"	8-64.	4 "	.65
4	450	8-68.	2 "	.35
6 spade	"	8-79.	4 "	.40
8	"	8-71.	4 "	.55
10	"	8-73.	4 "	.60
16	"	8-75.	4 "	.70

Good grades at low prices. For Experimental or replacement purposes. Hermetically sealed. The spade types may be mounted on base or under base. Also called twist-prong electrolytics.

WATCH THE MRL FLYER..
for announcements



CERAMICS

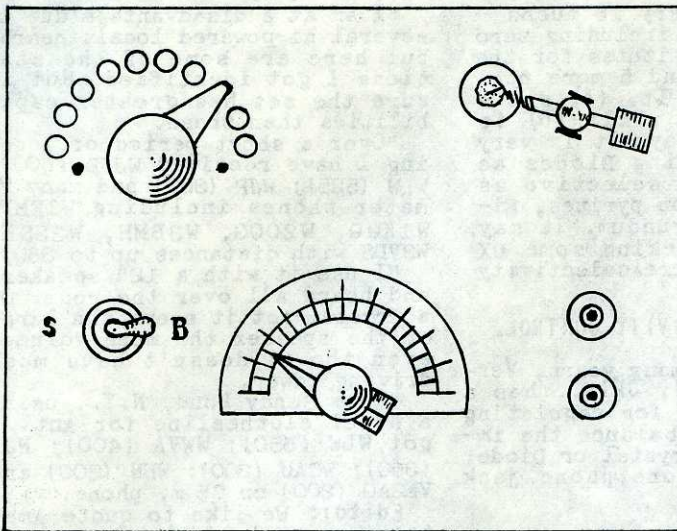
A B C	D	E	F
1st sig. figures	No. of zeros	Tol. %	DC. W-V
Black	0	—	20
Brown	1	0	1 100
Red	2	00	2 200
Orange	3	000	3 300
Yellow	4	0,000	4 400
Green	5	00,000	5 500
Blue	6	000,000	6 600
Violet	7	0,000,000	7 700
Grey	8	00,000,000	8 800
White	9	000,000,000	9 900
Gold	—	.1	5 1000
Silver	—	.01	10 2000
None	—	—	20 500

It is not necessary to learn the color codes. Just keep them for reference. Many changes have been made over the past years. Early Radio parts were not coded - and some of the mfrs. now do not code them. If you don't have a cond. tester, or bridge, you R out of luck. Some companies even use their own codes.

Classifications in the series are not necessary to define.

When reading a condenser hold arrows to right - like you read a book. If the A sign is brown, you have a (1). If 2nd color is green it is (5). If 3rd color is red it is (2). If 4th color is orange you have 3 zeros after 152 or 152,000 mmfd. or .152 mfd.

If you find wax on Mica cond. it is required by the Armed forces when shipping to tropical climates. It may be washed off with lacquer thinner if desired.



Drawn one/half size

Since 1933, we have continually improved our original #2 Xtal circuit. Today, we feel this is the most efficient Crystal set you can buy, or build.

#2 and #2-A sets have received stations over 6000 miles distant - under good conditions. You may not do as well - or maybe better - a lot depends on your location and conditions. Reports of SW BC reception over long periods of time, and DX Amateurs that would not be re-broadcasted, has proven reception is direct.

Some customers have bought as many as 6 of these kits, at various times, proving they are OK. Due to lack of space, we cannot list our 6" stack of testimonials. (See HB-2 for 4 condensed pages of our best records). Selling a kit year after year - with fine reports, is good enough for us. When near strong stations, a horn speaker may be used.

This single-dial #2-A is our latest. Some like it - others prefer the #2. We get good reports from both of them.

All new parts are used. Whenever we can improve any kit, we do it at once. Coil is wound and tapped, and all parts ready to fit together. No need to start making them over to fit - like many other kits. The panel is drilled, countersunk, etc. All U need is a screwdriver, pliers, soldering iron and an evening of time. Very easy to assemble - in fact, lots of Grammar school boys build them all the time.

The panel is 5½" x 7" (drawing 1/2 size) - of Compo., neatly arranged. Switch points are riveted in, when you get the kit. Just tin the back of them; solder fine, flexible wires on back of points, and run wires to the coil. The switch-points give you a variation in your tuning - for different bands. The high-freq. is toward the left.

Selectivity. The #2 and #2-A are noted for selectivity. The SEL-BRD switch - on left, gives your choice. The BRoad side is

like our original #2 circuit. It is used in the Country, away from loud stations, where most DX is obtained. SELECTIVE side is fully 200% sharper than BRD side. This is for City use, next to powerful stations. It is often possible to sneak between two powerful stations and get DX on the SEL side. Removing the lead to the ground often helps if too close to a station with a strong ground wave. Use 50' of Aerial for City; 100-150' for Country - both Aerials high as possible.

Kit includes an MRL Steel galena Crystal. Any Xtal may be used, if desired. An MRL Carborundum (CAT. 9-34) may be used, if 3 vo. of battery is used in series, for real, good volume. The phones plug into tip jacks at the right.

The heart of the DX properties is the coil (CAT. 7-101), wound on MRL 2XM Celluloid form (CAT. 7-40). The proper size of the winding wire, tap arrangement, placing of the coil with short leads - all make a big difference in operation. All parts are arranged for shortest leads, with efficient operation. Coil may tune down to 20 meters, in fact, most of our DX records have been made on some hi-frequency band.

Large and small hookup wire is furnished. The small must be us-

MRL NO. 2-A

LONG DISTANCE

Crystal Set Kit.

Single Dial
Control

\$ 5.00

Plus 2 lbs. p.p.

ed for flexible leads to the coil and A and G leads - nothing else! The heavy wire is used for the balance of the set. We found larger wire works much better in HF circuits for DX in Xtal sets. Directions are given in DP-22-A, (10) furnished free with kit.

This set may be used alongside the bed, when others are asleep. Or, on a camping trip, by throwing 100 ft. of leadin wire (CAT. 1-11) over a limb, and driving a pipe into wet ground. No batts. to lug around. Amateurs use them for Monitors. Hooking a #2 ahead of a BC set will both improve selectivity and volume of the BC set. Also used where there is no current, or batteries. Have one around when your big set stops.

Advertisements are going around about Pocket Radios, with "no crystals to adjust; working speaker; and illuminated dials." They use a fixed Crystal; an ear phone in the case for a speaker; and a flashlight battery for the dial lamp. Buy a #2 or #2-A and get a set that's big enough to work correctly.

There is no better, surer way to learn Radio than starting with a Crystal set. We invite a comparison with other kits on the market for price, selectivity and operation.

Our prices for #2 and #2-A Kits do not include Aerial, cabinet or phones. See our Catalog for prices on Aerial supplies and phones. Use the best kind of phones you can afford, in order to hear more weak signals.

CAT. 14-1. MRL #2-A Crystal Set Kit, only. Ship. wt. 2 lbs. \$5.00

CAT. 14-1-W. MRL #2-A Crystal Set Kit, wired and tested. Shipping weight 2 lbs. extra..... \$7.50

MRL No. 2 Long Distance Crystal Set.

The #2 is more like our original. Same size panel, etc. except 2 var. condensers. Many prefer the 2nd cond. for finer tuning of A-G. Directions that apply to the #2-A also apply to #2. DP-22 (40) is furnished with Kit.

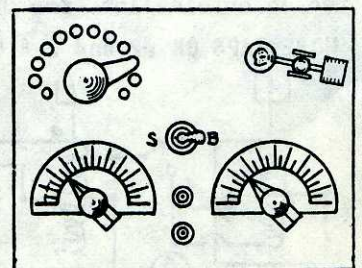
Difference in price is due to cost of 2 single cond. against a 2-gang for 2-A.

CAT. 14-2. MRL #2 Xtal Kit. 2 lbs. \$5.50

CAT. 14-2-W. Same, wired. 2 lbs. \$8.00

NOTE: Order HB-2 (50¢) extra. Gives all details for both sets. (See page A).

Modern Radio Laboratories.



Drawn 1/4 size

MRL #2 & 2-A
Crystal Set Notes.
#2 Kit, DP-22.
#2-A Kit, DP-22-A.
MRL Handbook #2.

We have so many hundreds of letters on these two sets that it is impossible to list them all. Following are some of the reports, selected at random, and some notes the Fans have mailed in. Present owners of #2 and 2-A sets may improve their reception if they read these notes.

MRL #2 SET BEST IN 23 YEARS OF EXPERIMENTING.

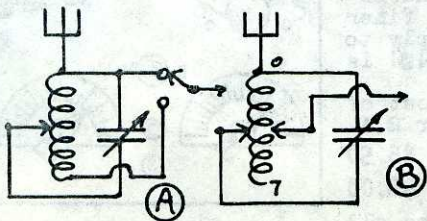
Mr. M. D. Maraulja, Florida, sez "Received #2 kit in good shape & wired it up the same evening. I will say that I have been buying and building Xtal sets off and on for some 23 years and none of them could come anywhere near this #2 in DX, volume and selectivity. The SEL-BRD switch is fascinating - it's so effective. It will separate out and boost the volume on some DX stations, too. In 4 nites of listening I got the following: Cincinnati (800); Nashville (650); Charlotte (550); New Orleans (500); Atlanta (450); and many Floridan. It is equal to a 1-tuber I built altho not for volume on locals. I use the phone finger stops for an Aerial and sink for ground. I tried stringing up outside Ant. but got better results on the phone Aerial.

"I can plug in the phones and leave a 3 ft. Ant. lead hanging from the set, and no ground. If I walk past the phone the locals blast in. Ground boosts the volume on DX stations.

"Adding a 2-stage Transistor amplifier to my #2 increased my DX to Lincoln (1225); Milwaukee (1150); Cleveland (1000); Ft. Wayne (950); Rushville (900); Baton Rouge (550); Birmingham (500); etc. Am going to build a #2 and Transistor amplifier into a cabinet."

Editor: Mr. M. is lucky to be hooked to a good phone Aerial as it beats the outside. It is normally the reverse. This all results from experimenting and nobody can tell what you'll find in your location. If he was trying for SW, then he'd have to use an outside Ant. for HF.

MORE TAPS ON #2 and 2-A COILS.

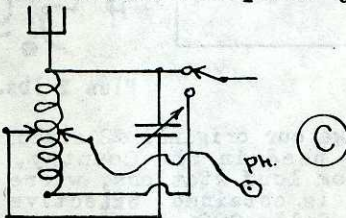


Our friend, Wesley Lingley, advises that he adds several taps to the coil for the #2. U

may run taps every 15 turns - making 7 in all, including zero point. This substitutes for the SEL-BRD switch and 5 more pts. may be added to it. (A) shows method now used while (B) is his method. He says it is very helpful when using Diodes as they are not as selective as Steel galena, Iron pyrites, Silicon and Carborundum. It may also help in working some DX stations where more selectivity is needed.

ANOTHER SELECTIVITY CONTROL.

Our friend of many years, Vernon Lee Chappell, Okla., has a simpler plan (C) for regulating selectivity, to balance the impedance of any crystal or Diode. He disconnects one phone jack



from the variable cond. frame & uses a clip onto the coil. If U want a permanent connection hook your lead onto a pin and insert it thru the DCC. Solder down as soon as best position is found.

It is a good idea to use some switch points and lever as the setting will be different when using the SEL-BRD switch.

GOOD FOREIGN DX ON MRL #2.

For over 10 years Clyde Pauley, West Va., has been doing business with MRL - and sending in good reports. Here is what he says: "I am still using my MRL #2. Best DX is Leopoldville, Africa (7200); TAS, Ankara, Turkey (5900); Moscow (5000); Berne (4400); Berlin (4400); Paris (4000); London (3800); Cuba (1100) and all over the U.S.A. That's a long distance from my mountain home. I use your Steel galena and also 1N34 Xtal diode.

"My TV twin leadin is about 1000 ft. long to the top of a mountain. Sometimes I hook it to my Xtal set, and boy! you should hear it. Sounds like a 3-tuber."

Editor: Above distances measured on a globe, the only correct way, so they are accurate. He can really pull them in. That long Ant. really picks up the "electricity!" As an old Marine operator, I used to work 1000 miles with a fixed Perikon Xtal detector - when transmitters were far inferior to those nowadays. It only stands to reason, that with modern tube transmitters, and in a good location, a GOOD set will really bring them in.

W2YQT GETS GOOD DX ON #2.

Our old customer since 1947, George Mulfinger, W2YQT Recording studio, N.Y. state, writes about his #2 he built. It is built with 6 taps instead of 10.

"I am at a disadvantage due to several hi-powered locals nearby but here are some of the stations I got identified, but am sure the set has greater capabilities than these.

"Over a short period of logging I have received WJJD (600); WLW (525); WJR (360) and many 75 meter phones including WLEMF, W1KQZ, W2OOG, W3BMH, W3SSK, W8VDS with distances up to 360.

"I use it with a 12" speaker, and heard all over the room. On a Crystal set it seems the larger the speaker the more volume, even tho it doesn't have much driving power.

"From Sandy Pond, N.Y., using a steel clothesline for Ant. I got WLW (550); WWVA (400); WJR (360); WCAU (300); WHN (200) and VE2AG (200) on 75 m. phone."

Editor: We like to quote Amateurs as most of them are skeptical about DX on Xtal sets. He is running a 10 m. phone station and recording studio, so knows his stuff. We have an earlier report when he got London on an MRL 2-A. Selectivity problems can usually be overcome by using a shorter Ant. and possibly no ground. Depends on conditions.

9 DX STATIONS OVER 1000 MILES.

When 15 yrs. old, our friend B. W. Bergstrom, North Dakota, wrote about the 2-A kit he wired up: "I'm really tickled pink with your Xtal set. A week ago all I could get was locals. Then I hooked up my ground to a water-pipe and, I'm telling you, the all-nite stations just poured in. In 4 days (no sleep) I have logged 9 stations over 1000 mi. away. Every nite WJR (950) comes in like locals. I'm studying to be a Ham but Xtal sets hold a priority with me. I've used a P-set for 3 yrs. but it can't compare with the MRL 2-A. I get all my DX on a 1N34 Diode. Both our locals have strong gnd. waves."

MRL #2 HI-Q CELLULOID COIL TESTS and STEEL GALENA TESTS.

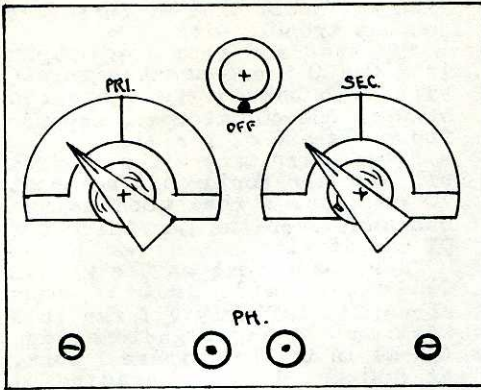
Bob Mickelson, Illinois, made a check on one of our MRL-made #2 Celluloid lo-loss coils. He used a General Radio Bridge Q Meter, which is about tops. At 600 kc. he got a Q reading of 215 - which is very good. At 1500 kc. the Q was so high it banged the meter off the scale. The distributed capacity of the coil is quite low - about 11 mmfd. He further gave the coil a coating of Krylon (pure acrylic) to moisture-proof it. When dry the Q was still the same.

You can now see why MRL Celluloid Coils are tops for DX - as most of our sets with good DX records are built with them.

He also tried about 70 minerals from all over the Globe, as he is a mineral collector. The Steel galena still gives a much better test than Germanium for DX performance on weak stations. We believe this is due to Diodes using such large catwhiskers.

MRL POPULAR RADIO KITS

MRL #18 Selective Diode-Transistor Set.



Without a doubt, this is one of the most selective Xtal sets we ever rigged up. By pulling out the Antenna coil and bringing up the TRX volume - you can pick up almost any local station without QRM from another. Around here (24 stations) we hooked stations we never heard on any Xtal set before. Good tone, too.

This is an old principle - but we haven't seen it used for many years. It does require an Aerial and ground, or good substitutes. We get locals when Ant. coil is pulled clear away from secondary coil. If in the far country, the Ant. and ground may be hooked to 1-2 on the secondary coil. Due to its construction, it should work well in the city or country with any size of Aerial.

Because the selectivity may be adjusted, you can slip in between many stations and pick out a weak one. Then, just up the volume and you bring it in good. We have been able to separate local stations and get one 100 miles away. However, in a good location at night, this set is really a wonder. DP shows how tone may be changed if desired.

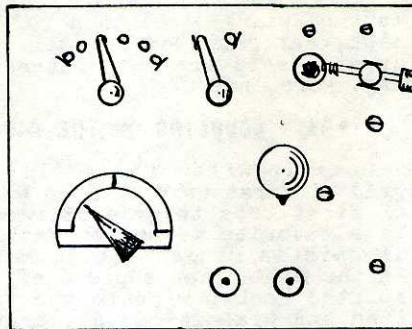
It is easy to assemble from DP furnished with kit. It mounts on a 4x5 panel and 4x4 1/2 base. DP-18 shows how each wire is hooked, as well as other minor details. All parts furnished, down to the solder and wire. No drilling, or fitting is required.

A 4.3 v. Mercury battery is furnished, altho a 1 1/2 v. pencil will work. They fit into a battery holder so renewal is easy. Battery drain is very low, so it becomes very economical.

This set should last for years and you'll be amazed at its performance. As said before, it is one of our most selective Xtals we ever devised.

MRL #18 Diode-Transistor Kit, with battery. 14-18. 1 1/2 lbs. 7.95
Same wired and tested and with battery. 14-18-W. 1 1/2 lbs. 9.95
DP-18 by itself. .10

MRL #10 (Revised) All-wave Diode-Transistor Set.



Our original #10 Crystal set has lots of good reports. Some users, in Canada, regularly play Moscow with it - as well as other DX stations all over the U.S. In cities - they cut out the powerful locals with ease.

However, we all like just a little more power to make those weak stations "boom in" - so we added a Transistor amplifier and volume control to our original circuit. Now, when you just barely hear a weak station - the control can bring it up to room volume. The knob also cuts off the battery drain.

The 2-pole switch runs one side to the stand and the other to Fahstock clips so you may use any fixed Diode. With this lever, you can turn from a fixed to adjustable detector without knocking it out as would occur with a toggle-snap switch.

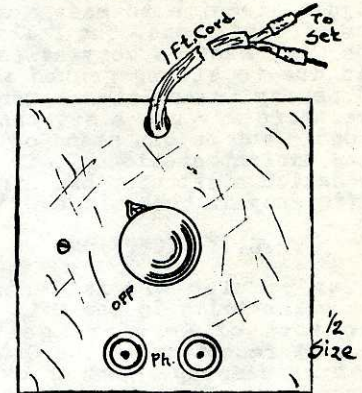
The set uses our original 10-A Hi-Q celluloid coil, which we've found to be most efficient. The selectivity is very good - we're separating about 24 locals here. We have also played police, airports, Hams, ICW code, etc.

DP-34 has been completely revised. It also shows the layout for the #10 country coil, which also uses the same panel layout. A pictorial wiring diagram makes it easy to build and wire, with short leads for efficiency. The set mounts on a 5 1/2 x 7 Compo. panel. All parts, fittings, wire, hardware, solder, etc. are furnished. Price of kit is the same as for individual parts.

We furnish a 4.3 v. Mercury battery, or equivalent, with each kit. Any battery may be used 1 1/2 to 9 volts - the more battery - the more volume. Battery holder allows quick changing without soldering. Because a TRX draws so little current - the battery lasts a long time.

MRL #10 Kit, with Diode, Steel galena, battery, DP-34 and all parts. 14-7. 2 lbs. wt. 8.50
Same, wired and tested for best results. 14-7-W. 2# 10.50
DP-34 by itself. .10

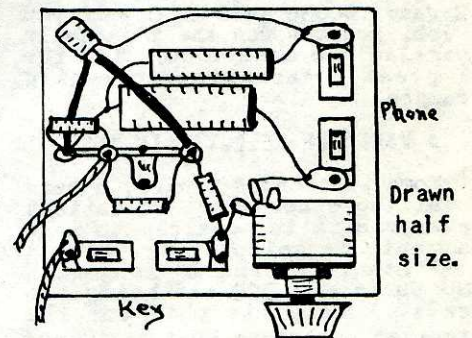
MRL #16 Transistor Small Set Amplifier



Here is one of the handiest rigs for the Crystal and 1-tube Fan. It is a Transistor amplifier built into a wooden box with a removable lid. You may reduce the volume to almost zero - or boom in those weak stations. It takes a 9V BATTERY which clips in. The 1 ft. cord plugs into phone tip jacks of your set. It brings volume to best tone. The battery is not furnished.

14-14. Amplifier kit. 1/2 lb 3.95
14-14-W. Same wired, but including the battery..... 5.00
New DP-16 details, alone .10

MRL #41 Transistor Code Oscillator



This oscillator sounds like a tube transmitter. Tone controlled by knob. May also be used as an audio oscillator if desired.

Connect any key in front and magnetic phones at right. Uses 1 1/2 to 9 v. battery, but as TRX only draws 1/4 ma. it is economical. You can mount batt. on base if desired; plenty of room.

Easy to assemble. All parts furnished, down to solder, etc. Kit furnished for practically the cost of the parts only.

MRL #41 TRX Code Oscillator Kit. 14-9. 8 oz. wt. 2.75
Same, wired. 14-9-W. 3.75
DP-41 by itself. .10

MRL #10 Crystal Set Notes.

DP-34, #10 KIT.

The #10 has been one of our pet crystal circuits. It has been very much revised from the original broad-tuning DX set. In this business one must try to adjust circuits to meet a maximum of conditions. The fellow in the City wants a very selective set due to strong ground waves of nearby transmitters. Country operators may use a set that is broad - but he can reach out for long distant stations. It is hard to design a set that has highest efficiency in both places.

CITY RECEPTION.

Our regular #10 is designed for selectivity in the City, although lots of Fans are getting good DX reception in the Country with this setup. Most of our DX reports are from Fans using the regular City #10. We figure that if you have strong transmitters within 25 miles of you - the regular #10 is alright. Tuning should be very easy to handle in the single dial set.

COUNTRY RECEPTION.

The difference between the #10 City and Country circuits is the latter has many more turns wound over the secondary, for the most transference of energy. You may purchase this #10 Country Coil for \$1.50 from us - and make the change if desired. It requires but the unsoldering of the coil taps on the coil and the other coil and secondary leads. It is easy to follow directions.

If using the #10 circuit in HB 17 you may use one side of the 2-gang .00035 as C-1. Or, if you wish, you may use the 2-gangs in parallel to make .0007 mfd. for a greater variation in tuning ranges.

A VARIABLE SELECTIVITY IDEA.

Some want broad tuning; others want loose coupling. To satisfy everyone it is possible to make a variable selectivity. Wind a 1½" Bakelite tube 2" long with 30 turns #22 DCC and bring out ends. Substitute this for the regular secondary. Push it in and you get tight coupling and broad tuning. Pull it out and you will sharpen it up. Find the best setting for your location and lash it down with Cellophane tape. In case you are using the large Country coil, with all the turns you may still use this adjustable secondary coil with good results. Try reversing the leads & you may better reception on the weaker stations.

MRL #10 AT SEA.

S. S. "Sea Cloud" E. E. R. "It will interest you to know that at 10 pm EST. in Lat. 13 N, Long. 81 W

station WING, Dayton (1800) was heard very well. The next evening the Central American stations were too strong to permit hearing the U.S. stations as we were just entering Cristobal, C.Z. On the evening before, about 200 mi. north Ft. Wayne (1600); Nashville (1500); Little Rock & Dallas (1600) came in very well. Main Antenna was 150' flat top 100 ft. high, set grounded on hull. The crystal sets are very interesting. More later."

HI-GAIN COUPLING ON THE #10.

Coupling from the Aerial to grid of first tube or from plate of first tube to grid of second is a favorite method of getting hi-gain in midget mantel sets. In the #10 solder a piece of insulated hookup wire to the Ant. lead and wrap it loosely around the catwhisker lead on the secondary. The more turns the more coupling. A similar effect is obtained by inserting a trimmer cond. between Ant. and whisker. (Remember the neutrodynes?) The more capacity the more coupling. Both methods reduce selectivity.

#10 AS SHORT WAVE CONVERTER.

C. G., Del Paso Heights, Calif. writes that he uses the #10 ahead of his superhet. to receive Police and Amateurs between 1.7 to 5 mc. His superhet. has a built-in Ant. with a primary on the same form. He hooks the output of the #10 at tip jacks to this primary. Turn the Radio to around 1100-1200 to find a blank spot and tune #10 as usual. For the Fan without a SW receiver it will be very rewarding. Other data on Crystal converters see DP-59 for explanation.

NOVEL AERIAL AND GROUND ON #10.

G. D. W., Massillon, Ohio reports he has been using #10 for over a year. In Lawrence he used a 4-wire Ant. as shown in HB-2, 110' long and 35' high. Each wire brought in to a SPST switch. By varying them it was effective on DX. Now in the city he has no long Ant. but buried 12' of copper pipe in ground so he has a good ground anyway. He found a 14" wide built-in TV Aerial was good for Ant. He ran #10 into a phono. amplifier from phones. He also ran it to grid and ground of a 3-tuber for amplifier.

AMPLIFIER FOR #10.

Our new DP-12 gives a simple Transistor amplifier, that will make the #10 work a speaker with good volume. Just hook the phone tip jacks to the input. You can easily tell which way it works best. You will be able to shorten your Aerial for better selectivity and bring in those weaker stations.

SELECTIVITY, COIL CHECK, XTALS.

Ill., Chicago, R. D. M.: "The #10 is the first set I've found to

separate those 50 Kw. babies and bring in those weak suburbans. Your #2 and 10 are the only ones that can do it here and I have experimented with a number of circuits. I use 90' #14 solid between chimneys and a radiator for ground, which isn't too good here. #10 does a good job on a 1220 kc. local that my AM-FM TRF job has trouble with.

"My standard test for output is a 0-500 Micro-ammeter in series with phones. Readings run between 350-400 micros., depending on length of Aerial.

"I've tried many minerals from all over the World - having about 70 on hand. A real good Galena can beat even the Germanium for DX sensitivity.

"Here is a test on the MRL #2 Celluloid coil. (#10 is constructed similarly.) I ran this test on a General Radio bridge (GR-Q) in the Lab. where I work. At 600 kc. I got a reading of 215, which is very good. At 1500 kc. it banged the meter off the scale. Distributed capacity of the coil is quite low - about 11 mmfd. I gave the coil a coating of Krylon (pure Acrylic) and when it dried the reading was the same. It prevents moisture forming on the wire." (This 2XM Celluloid form is one of the secrets why MRL sets get DX.)

KINDS OF CRYSTALS.

Diodes, which do not need adjusting, cannot come up to Steel galena, Iron pyrites, Silicon or Carborundum for selectivity. Due to the difference in impedance of Diode germanium. We selected fixed Carborundum, with battery, in the #10 because it would hold its adjustment and give good response at the same time along with selectivity. To better work at the critical point of Carborundum try 3 volts in series with a 1000 ohm wirewound variable resistance. For simplicity we have used but 1½ volts, but operation can be improved with proper adjustment of voltage.

SEE BACK ISSUES RB&H FOR MORE.

Scattered thru these copies U will find a lot of info., reports, etc. we didn't want to repeat here.

One fellow in Kingston, Ont. gets Moscow (7000) 1 hour at a time, every nite. Also BBC (5200) every nite besides numerous others over 200 miles, including Hams, Police, planes, etc.

Chicago gets thru heavy QRM in his area to get Calif. (1800) on SW. Says it is the first Crystal set to work good there.

Phoenix gets 700 on SW. Wyoming easily gets 750 miles. Calif. gets 46 stations first nite - including 13 Mexicans. Tennessee 950 miles. N. Dakota 1400 miles first nite.

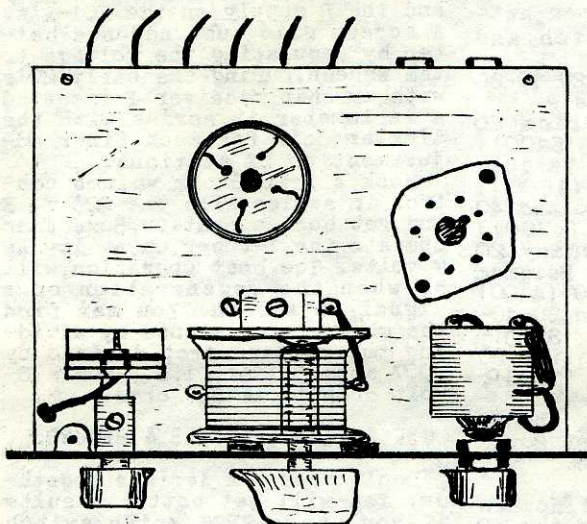
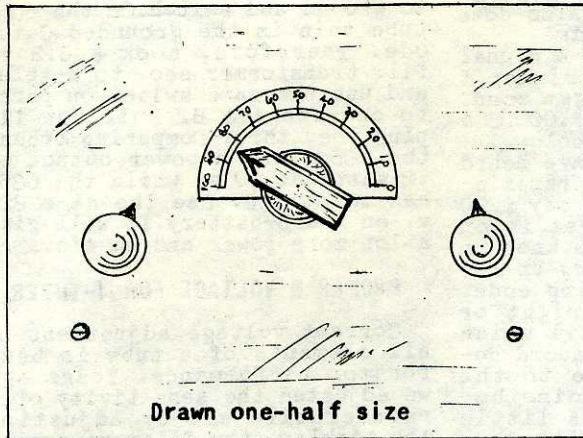
You, too, can chalk up some of the good ones. Try some of these. See CAT. page K-2 about kit. Or, 12¢ for DP-34.

MRL 1-TUBE DX

ALL-WAVE
RECEIVER KIT

Best distance
reported
12,000 miles

1.5 v. DC. "A"
or 6.3 v. AC.



\$7.50

Plus 2 lbs.
Parcel Post



Hundreds of these little 1-Tube Kits have been sold to satisfied customers. If one compares the advantages found in this Kit - there is nothing on the market at near the price. The utmost care has been taken to produce an efficient 1-tube Kit, and still make it easy to build.

It uses a 4 1/2"x6" finished Aluminum panel, which, besides making a neat appearance - tends to offset body capacity effects.

A finished Compo. base is used so grounding troubles are mostly eliminated. A wooden back-strip holds the phone tip jacks and printed terminal strip shows the position of the six leads.

The usual set of this nature has but 2 controls, while we use 3. The 3rd one operates the Antenna condenser from the front panel. This is the most important part of the set, and the reason for most DX. Most companies use a cheap hard-to-tune trimmer at the rear instead.

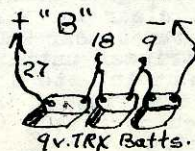
The best parts are used to let the set operate efficiently. We make some parts especially for this set.

The Kit is easy to wire if you follow directions in HB-4, fur-

nished with the Kit.

Set is lightweight - only 12 oz. but shipping makes it run 2 lbs. It may be taken on camping trips or carried in suitcase. It has been used on boats, bikes, etc. On trips, throw a piece of leadin wire over a limb for Ant.

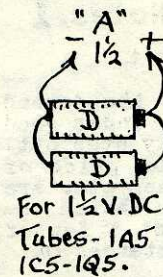
It has low drain on batts. and some Fans say "they never seem to wear out!" Due to regeneration the B should last a year. 22 1/2 v. of B is recommended but some work down to 9 v. If unable to get B-Batts. hook up several 9 v. TRX batts. as shown:



If using DC fil. hook 2 flash-light batts. as shown for long lasting. Reverse fil. polarity if using a 1Q5 tube:

As set is also wired for AC "A", - 6V6, 6F6, etc. may be used on a 6.3 v. filament transformer with no other changes in set.

Oscillation is good on Short wave bands. Most DX is on 40 m.



For 1 1/2 V. DC
Tubes-1A5
1C5-1Q5.



For 6.3
V. AC.
Tubes
Only
6F6-6V6
etc.

Any Aerial or ground is used, altho in the City we prefer one that is shorter. Set will run a speaker on stronger stations.

Kit gives you an all-wave set for little more than a good Xtal set. Takes but a few seconds to change bands with plug-ins.

Any kind of phones may be used but we prefer 2000-5000 ohm DC.

HB-4 (CAT. A) gives all details and includes recent addition of 4 pages. Latter gives wiring data, kinks, and other helps.

Instead of crowding the BC band stations - we furnish two coils for this band. 5A-HF goes below "peanut" stations and it spreads them out. 5A-LF goes up to ship station wave on 500 Kc. On latter the stations at bottom of dial are squeezed together and amplified.

Set was designed for the 1C5, 1A5, 1Q5 power pentodes to give lots of gain. If you use a 6.3 v. fil. transfr. you may use 6EY6, 6FZ5, 6F6, 6G6, 6K6, 6L6, 6U6, 6V6, 6W6, etc. (CAT. T) with a lot more volume than 1.5 tubes.

2 5-prong coils are furnished with Kit. If you prefer 4-prong, send 4-prong 1-3/8" tube Bakelite bases and we allow 2¢ each.

While this should out-perform any similar set- we cannot guarantee any specific distance, or station, due to varying conditions under which it is used.

MRL 1-tube HB-4 Kit, all parts, 5A-HF, 5A-LF coils, HB-4. (No tube included). 14-3. 2 lbs. 7.50

Same, assembled, wired, balanced, tested. 14-3-W. 2# 10.00

NOTE: ALL FOLLOWING ARE EXTRA:

Set 4 5-A SW plug-in coils. E	
in CAT. 7-121. 8 oz.	3.00
5-A Long Wave. 7-125.	1.00
HB-4. separately. CAT. A	.50

Tubes, see CAT. T.
Batteries, see CAT. F.
Filament Transformer, see CAT. M
Headphones, see CAT. P.
Aerial Supplies, see CAT. G.

DON'T FORGET POSTAGE. It's extra.

A Report at Random: Greg Tyre, Missouri: "Johannesburg, So. Africa (9600); Cairo (6600); Moscow (5500); Berne (4900); Hilversun (4700); London, Lisbon (4400); Quito (3000); Havana (1500) etc. Use 84' Ant., good ground. 24 v. of B. Get stations from all over the World. Had to tell You."

Lots more on file.

MRL 1-Tube Notes. 1

HB-4, 1-Tube Kit.

There is no end to the demand for our 1-tube kits. Under good conditions they really step out. Kits are sold for the price of parts, but panel, base, etc. are all drilled, ready to fasten together. Here are just a few of our best reports. Distances OK.

Texas, Athens, W. F. M.: "After 10 years of building sets, your 1-tuber is best. Canada every p. m. Been making reports for over 5 mo. and gotten QSL cards from Australia (8800); Switzerland (5600); Spain (5200); Guatemala (1400). Play local on 6" speaker with good volume. Like Flyer."

Idaho, Moscow, J. P.: "On your 1-tuber the 31 m. band sure has been hot. Logged 6 new countries and 3 old ones, as P. I. (7200); Romania (5700); Spain, Hungary, Moscow (every nite) (5600); Japan, Switzerland (5200); Denmark Sweden, London (5000); Norway (4800); Guatemala, Costa Rica, Ottawa (1800); XERB (1100). Have London over 30 min. periods. In 1 1/2 hrs. I got 10 Calif. Hams on 20 m. Get better results on 12' Ant. Use Loopstick and var. con. for wave trap. Entered "Boy's Life" contest in 1956."

Canada, Lulu Is., B. C., R. P. V. "Never believed such pickup pwr. could be obtained with 1-tube. I get 3 locals with no Aerial or ground. Use 20' inside and a 75' outside for SW. In about 1 month I received 40 stations, including Australia (6500). You're doing a great job in small sets."

Guadalcanal during War, A. L. V. "In 1944 I received following on a 50' Ant. Berlin (9600); Moscow (8400); S. F. (6100); India (5600) Tokyo (3600)."

Iowa, Marengo, G. S.: "Thanks for starting me in Radio. I am 15 and the 1-tuber was the first set I built. Have received 26 BC stations as far as San Antonio (1050) in 2 weeks."

La., Houma, A. M.: "Surprised at reception of my 1-tuber. You may print this. A 2-nite log follows Hawaii (4200); NYC (1400); Denver (1200); 3 in Mexico City (1000); Cuba (800) & 13 more BC. Also Marine phones & tugboats. I have many un-identified."

Canada, Alta., Tomahawk, B. R.: "Still logging DX on 1-tuber. I got Mexico City (2600), New Orleans (2200), L. A. (1400) on BC. Ohio (1750) on 80 m.; NYC (2400) on 40 m.; Australia (8000) on 20 m. band. U may print this."

N. Y., Amsterdam, W. O.: "I have had one of your 1-tubers for 6 or 7 years, so am ordering another. The longer I work it the better I like it. Some of the DX stations were Bulgaria, Moscow (4800); Switzerland (4000); and London (3600)."

SSB on 1-TUBER and a-3-DAY LOG.

Ohio, Warren, J. S.: "I'll match the 1-tuber with any small communication receiver as S-38-D, AR-2, etc. at night. It also does pretty good in the daytime."

"Because I didn't have a signal generator to set the trimmer I bought a \$2 .00014 midget cond. and substituted for the .00035 & the trimmer. (See note below.)"

"For some Fans that have heard Single Side Band (SSB) transmissions and don't want to pay \$250 for a set - they can get it on the 1-tuber. Center the knob on an SSB station and bring up regeneration like receiving code. Tune a little to the right or left of the signal until voice sounds like a 45 rpm. record doing 78. Tune a little to the left or right until voice becomes natural. It is a little hard at first but you'll soon get the knack. On a super-het. just flip the BFO switch and tune like the above."

"Here is a 3-day log. 20-40-80 means received on 3 coils: Brazzaville, Fr. E. Africa 20 (7100); Bulgaria 20-40 (5400); Moscow 20-40-80 (5000); Vatican 20 (4900); Prague 40 (4800); Budapest 20-40 (4800); Poland 40 (4700); Yugoslavia 80 (4700); Berne 40-80 (4500); Germany 20 (4300); Spain 40 (4200); Belgium Holland, Paris, Denmark 40 (4100) Tangier 20 (4000); London 20-40-80 (4000); Ecuador 20-40 (3200); Colombia 40-80 (2600); Calif. 20 80 (2200); Guatemala 40 (1900); NY 20-40 (700)."

"My Ant. is 40 ft. long and 20 ft. high and pointing East South east. You may use my name."

Pa., Smethport, W. A. D.: "No new DX on the #2 Xtal, but on the 40 m. coil I got Belgian Congo OTMI (7200) and lots of SW and Hams."

Calif., Sunland, D. T.: "My 1-tuber still bringing in Melbourne (8200) every a.m. and in the evenings it is Moscow (6200) and many others in between."

ADJUSTING THE TUNING TRIMMER.

If you don't own a signal generator you may adjust the tuning trimmer on the 1-tuber easily without it.

Insert the A-HF-BC coil and screw the trimmer clear down. Also turn the Ant. cond. and the main cond. clear in. Find a station that tunes near 950 kc. and back off trimmer until it comes in good. Cut Ant. to a few feet and adjust again. It will then be adjusted correctly for all A and 5-A coils.

If you'd like to substitute an expensive .00014 for the .00035 and trimmer - be sure to get one with friction bearings. If ball-bearings, fasten some pigtailed or brush connections around the shaft to prevent noise on 20-40.

HB-4 has over 7 pages of condensed reports by cities. We now use a globe for distances.

SUBSTITUTING 6G6g TUBE FOR A. C.

Luckily a 6G6g tube fits a 1C5 socket. Also our 1-tuber uses #8 prong for a tie point for A-B to ground and switch. On the 6G6g tube this is the grounded Cathode. Therefore, hook a 6.3 v. fil. transformer sec. to A-Aplus and use the same switch on panel to operate A & B. Pull out 110 plug when thru. Comparing tubes, the 1C5gt has a power output of .2 watts at 80 v. while the 6G6g has .6 at 135. Use the same 22 1/2 v. on the B-battery. It will give a lot more power and no A's.

PROPER B VOLTAGE FOR 1-TUBER.

Correct voltage adjustment of all elements of a tube is best for top performance. Years ago we adjusted the sensitivity of a regenerative set by adjusting the tickler, the filament supply and the B supply on the 201-A's. A screen grid tube adjusts better by regulating the voltage to the screen. During the early 20's with my ship receiver I inserted a variometer in series with the tickler coil for much finer adjustment on DX stations.

Hook a 1-2000 ohm volume control in series with the 22 1/2 v. B and get best operation. Some Fans operate the 1-tuber on as low as 9 volts. The best operation will be when the regeneration on a signal is smooth. You may find the correct resistance by dividing the voltage drop desired by .007 amps. (1C5), i.e., for a 6-volt drop it is 857 ohms.

USE SEVERAL AERIALS & GROUNDS.

Don't hook all Aerials together. You will get better results if you use A SPST knife switch to each one individually. You may then cut them in and out at will for loudest signal. Also use a switch on each ground. The knife switch is preferred because contacts are farther apart. Under most conditions SW stations work better on short Aerials, but you always find that exception. Run Aerials out in different directions if possible. Make a notation of the best combination in your log of that station.

USES LOADING COIL IN ANT. CIR.

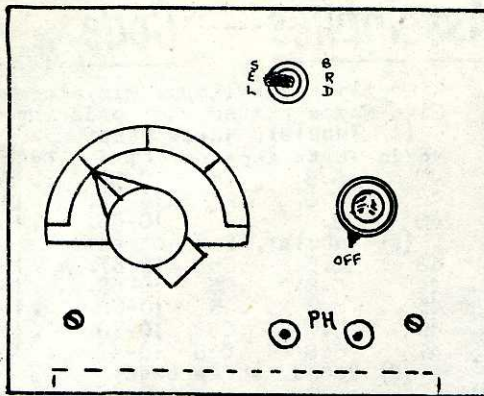
A Fan claims that using one of our loading coils (DP-33) with a slider on 100 turns of wire will make the 1-tuber more selective. It is placed between Aerial and set, and improves volume on some stations. May help tune Antenna.

TRY REVERSING FILAMENTS.

Reverse battery connections to A especially for 1Q5gt tubes. It sometimes helps on 1C5's. It may give smoother control.

Also, a 3Q5gt tube may work OK in the socket, but be sure to remove #8 CT on socket of tube.

READ all back issues of RB&H for lots more data on 1-tubers.



Diode-Transistor All-Wave Kit

\$ 7.50



the back to plug in the coils.

At the top of the panel, we have added a SPDT switch, which makes the set broad or selective at will. Our new 5-X coils are designed for Xtal or TRX uses, and are very selective, as well as efficient.

We have many good reports of DX on this little set. One fellow has received a station 9200 miles away on 3 occasions. Many other good reports have come in.

A little kink, not brought out in DP-43 - is that the bias resistor may be left out when using some Transistors. Try it in and out, for best results.

The DP shows all details of assembly and wiring, in pictorial diagrams that are easy to follow. All holes are drilled and countersunk when necessary, and they all fit together OK.

The panel is neatly lacquered, for a real commercial job, when you get thru building it.

MRL attempts to keep plans up-to-date as changes are made.

This is a complete revision of our old DP-43 set. It is up-to-date in every way possible.

Under good conditions this set will really get the long distance stations. The crystal detects the signals and the Transistor amplifies them. This is necessary as a junction Transistor is not an efficient detector on Short waves by itself but it really amplifies those weaker stations the Xtal picks up.

Because a crystal does not ordinarily detect code signals you won't be bothered with them. The Short wave BC, Hams,

etc. will tune broad enough to keep their tones good.

At present this is the only panel-base Diode-transistor kit on the market. It is neatly arranged on a 4" x 5" Compo. panel held upright by strong brackets onto a base. This type of arrangement makes it easy to assemble and wire. Panel is furnished drilled, but you may arrange parts on base according to your own likes, or by the plan.

All new parts are furnished.

Detail Print #43 is furnished with the kit, and it gives all details necessary to assemble & wire it. It also gives data on winding your own 5-X coils.

The kit uses our type 5-X Celluloid Hi-Q plug in coils so you may work on any band. Only the

5-X Hi-Frequency Broadcast band comes with the kit, but others may be added. We'd suggest you order 20 and 80 meter coils in addition to the kit. If you want more overlap - order a set of 5-X coils. Because the kit uses a .00035 tuning condenser you need not have as many coils as with a .00014 variable condenser.

The set hooks to any Aerial or ground. You may use a longer Antenna in the country. As the secondary "floats" above ground, this tends to make it more sensitive to Short wave stations.

Any type of magnetic phones may be used - but the more sensitive the better. As a Transistor draws so little current the continuous use of sensitive type phones will not harm them. The phones plug into front jacks.

Parts are not critical. There are no adjustments to make except to switch off the Transistor battery when not in use. As a Transistor draws but $\frac{1}{2}$ to 1 m. a. of current, batteries last a long time. You may use $1\frac{1}{2}$ to 9 v. of flashlite cells - the more batteries, the more volume.

If you want to try for extreme distance you may rig up a crystal stand and catwhisker on the front. You may then adjust the tiny catwhisker to Steel galena.

An output transformer may be placed where the phones hook on, and a PM speaker hooked to its secondary for clear reception.

The set may be placed in a small cabinet that is open in

MRL #26 Diode-Transistor Kit, DP 43 and 5-X HF-BC Coil. CAT. 14-8. Ship. wt. 2 lbs. 7.50

Same, wired, tested, but including battery. 14-8-W. 2# 10.00

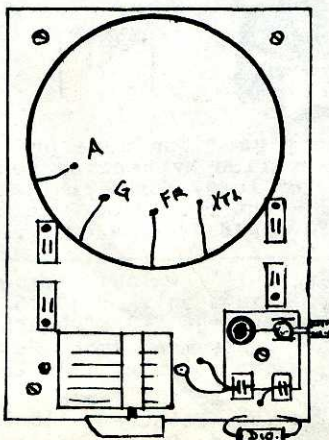
Set 4 MRL Hi-Q Celluloid Type 5-X SW coils, 20-40-80-160 m. CAT. 7-25. 8 oz. wt. 3.50

5-X, 20 or 80 m. bands, each 1.00

DP-43, if bought separately .10

Don't forget postage.

Grandad's "ORIGINAL RADIO" Crystal Set. MRL #74.



In "Mechanix Illustrated" magazine, Dec., 1970, a customer of ours wrote up this kit and mentioned us as supplier of parts. We had over 700 replies and were forced to make up a kit that any one could assemble - without any prior knowledge of Crystal sets. Kit has been slightly changed for better operation. It separates stations well and will get distant stations if in a good location and good Aerial system.

Kit is very easy to assemble. Has drilled base and all parts and wire. Wires may be placed under the nuts - so no soldering required. Kit does not contain 4" mushbox which can be obtained at local grocery. Also no phones (CAT. P-1) or Aerial and ground wires (G-1). The more Aerial wire

and the higher it is - the better it will work. A good ground to water pipe or radiator is required for best reception.

DP-74 (furnished with kit) has list of supplies if you wish to buy them separately. You can refer to CAT. index for prices. Many magazine prices were wrong. Plans are drawn to scale and are very easy to follow.

This set is good for camping. Throw a piece of insulated lead-in wire over a limb and pipe in ground - and you're "in."

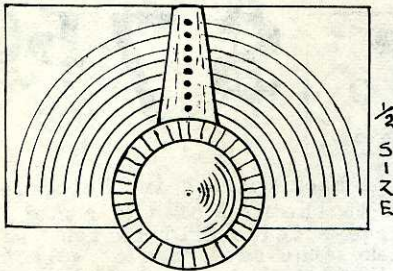
MRL #74 Crystal Set Kit. 4.50, plus 2 lbs. postage and 20¢ ins.

DP-74 alone - 10¢ plus letter postage.

On CCD's - send \$1 deposit. But you'll save 95¢ COD charges if you send full cash with order - refund or credit balance at your will.

Dials — Knobs — Cable — Pilot Light Assemblies — Code

MRL LOGGING DIAL & SCALE.



Ideal for logging stations directly on the dial scale. Large $\frac{1}{2}$ " knob rotates a heavy celluloid pointer. Latter has 8 holes for 10-20-40-80-160-HF-LF-LW bands. Scale $2\frac{1}{4} \times 3\frac{1}{4}$ is printed on light cardboard. When you locate a station, mark it with a soft lead pencil, thru the hole on the proper band. Move dial and lightly mark the call letter on the scale. May be erased later. You can now refer to the station in a jiffy. Glue scale onto the panel and mount knob. Slide the scale around to make holes follow the lines. Directions given. Will go on HB-4, 1-tuber panel.

MRL Log Dial & 3 Scales, with directions. 10-72. 6 oz. 1.00
Scale alone. 10-41. Each .05

BAR CONTROL KNOBS.



Bakelite knobs, with engraved pointers, fit $\frac{1}{4}$ " shaft. Standard on all our kits and plans. Along with the scale, they make a very neat dial layout. Replaces the old round dials on older sets.

- 2" Black Bar knob 10-27..... .16
- $\frac{1}{4}$ " Black " " 10-23..... .20
- $\frac{1}{4}$ " Red " " 10-24..... .25

MRL DIAL SCALES.

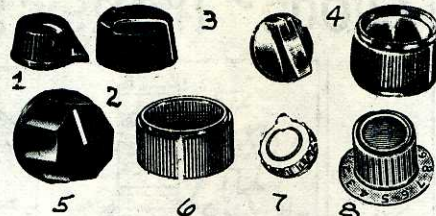
Neatly printed on light, white cardboard. Cut out the scale, including the $\frac{1}{4}$ " hole in center. Use glue, or MRL Heavy Coil cement to fasten on panel. After U mount condenser, slip it on and line scale up with a square.

- 0-100 for 2" Bar. 10-74..... .05
- 100-0 " " 10-75..... .05
- Celluloid cover for large scale. Tack or screw on. 10-76..... .10
- 0-100 for $\frac{1}{4}$ " Bar. 10-31..... .05
- 100-0 " " 10-32..... .05
- Celluloid cover for small scale. Tack, or screw on. 10-65..... .05

ROUND CONTROL KNOBS.

All fit $\frac{1}{4}$ " shafts, unless designated. Bakelite; very neat. Descriptions show uses.

- (1) Small black pointer. $1\frac{1}{16}$ " dia. Fit 1-tuber. 10-9 .20



(1) Same, except walnut. Many uses on tiny sets. 10-10..20

(1) Same, except red. Is very flashy on small sets. 10-17..20

(2) ROUND dome knob. $\frac{3}{4}$ " dia. Walnut. Use on Verniers, midgets or vol. controls. 10-11..15

(7) 15-16 push-on Ivory pointer for $\frac{1}{4}$ " knurled shaft. Very decorative. New. 10-1. .10

(4) 1" push-on. Walnut. Fits $\frac{1}{4}$ " knurled shaft. 10-3. .15

(1) $\frac{3}{8}$ " pointer push-on for knurled $\frac{1}{4}$ " sh. Black. 10-2. .10

(3) 1" used push-on. Fit flat- $\frac{1}{4}$ " shaft. Mostly walnut. In good usable condition. 10-20. .10

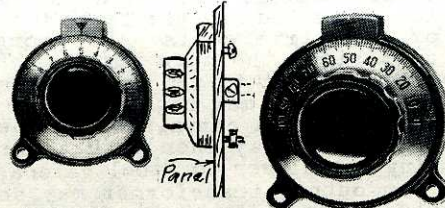
(6) $\frac{1}{2}$ " black arrow. Beautiful knob. Black. New. 10-4. .35

(5) $1\frac{5}{16}$ " Arrow. Black. New. Beautiful knob. 10-18. .30

(5) $1\frac{5}{16}$ " Arrow. Black. Same as above. Decorative. 10-19. .40

(8) Calibrated Instrument Knob gray. $\frac{1}{2}$ " dia. Engr. 10-0 in 360 degrees. New. Bak. 10-77. .50

PRECISION VERNIER DIALS



Sometimes the Japanese come up with something good - and these dials really work smoothly. 8:1 ratio. Large black knob.

Very professional looking. Very handy for those DX stations. In 3 sizes. Don't forget postage.

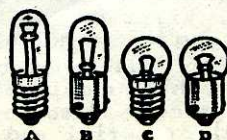
Dia.	Scale	List	CAT.#	MRL
$1\frac{1}{2}$ "	0-10	3.35	10-6	1.75
2"	0-100	4.13	10-7	2.00
3"	0-100	5.20	10-8	2.75

DIAL CABLE.

Buy what you need, but add a little for extra measure. You can't substitute string for dial cable! We know.

Light linen, strong.	10-36.	.03	Foot
Heavy " "	10-37.	.03	
Linen & Phos. bronze.	10-38.	.03	
Heavy braided, same.	10-39.	.03	
Heavy " steel.	10-40.	.03	

DIAL LAMPS or PILOTS.



Mostly Mazda lamps. Miniature. Give Mazda number when ordering.

(A) Tubular, screw base:

Mazda	Volts	Amperes	CAT.#	Each
40	6.8	.15	10-44.	.15
46	6.8	.25	10-49.	.15
48	2.	.06	10-66.	.15

(B) Tubular, Bayonet base:

43	2.5	.65	10-67.	.15
44	6.8	.25	10-68.	.15
45	3.2	.35	10-69.	.15
49	2.	.06	10-70.	.15
47	6.8	.015	10-45.	.15

(C) Round, screw base:

50	6.8	.5	10-46.	.15
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(D) Round, Bayonet base:

51	6.8	1 cpwr	10-47.	.15
55	6.8	2 "	10-71.	.15

(C) Flashlite lamp. 2.5 v by .3 amp. Screw. #14. 10-52. .20

DIAL LAMP

SOCKETS & JEWELS



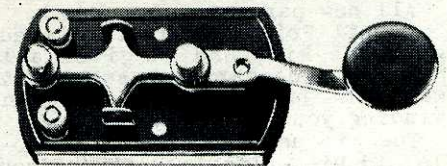
- (2) Bayonet type " 10-51. .15
- (3) Red jewel screw. 10-56. .40
- Green " 10-60. .40
- Red bayonet type. 10-61. .40
- Green " 10-62. .40

DIAL & FLASH LAMP COLORING

Color your dial lamps or flash light lamps red or green. Screw lamp into pigtail socket, and hook to battery. Dip into coloring and let dry, when lit. Remove coloring with lacquer thinner.

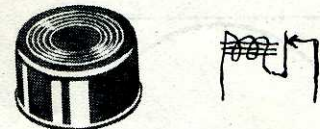
Green, 1 drachm bottle. 10-54. .10

TELEGRAPH KEY



Fully adjustable. Ideal for a beginner or Amateur. Parts nickel plated. Mounted on Phenolic base with Navy type knob. Coin silver contacts. 12-17. 8 oz. 1.25

HIGH FREQUENCY BUZZER.



Very good for code practice. Tone varied by bending contact. 1-1/16" long. Works on flashlite cell - but better on 3 volts. 12-20. HF Buzzer. 4 oz..... 1.00

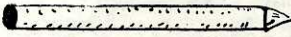
- (A) $\frac{1}{2}$ " walnut arrow $3/16$ " shaft only. 10-15. .15
 - (B) Large 2-3/8" black Bak. instrument knob. New. With brass insert. 10-25. .30
 - (C) Same but 1-5/8" diameter New. Setscrews. 10-26. .20
- Last 2 will decorate up that transmitter, etc.

Test Equipment, Neons, Jacks and Plugs, Test Clips, Meters

**SOLDERING IRON PARTS
NEW SOLDERING IRON TIPS.**



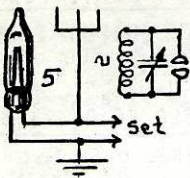
For fine work. Fit American Beauty Iron and others. $4\frac{1}{2}$ " long and $3/8$ " dia. into iron. Then $1/4$ " dia. at tip. 20-3. Each .85



Same, except $3/8$ " full length. For heavier work. Tinned for best use. 20-25. 4 oz. .85

Soldering Iron Cord. Heavy duty asbestos heater cord, that does not kink or get hot. A long lasting type. Cut to any length. Also for Flatirons. 20-19. Ft. 05

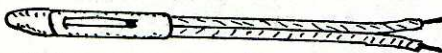
NEON TEST LAMPS.



(5) $1/25$ watt Pigtail. Many uses around shop. Also for checking lightning flashes across A & G. More details on P-6-1. Also 4 freq. meter as shown in upper left drawing. 20-18. 2 oz. .15

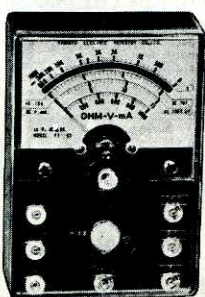
Dry Condenser Tester. In upper right drawing we have added the best dry cond. tester - it will not work on electrolytics. Hook to a DC power supply and cond. as shown. A short is steady; poor or leaky is intermittent. One flash is OK. May also be used as nite lite- if you put a resistor in series. Other neons - same.

PRACTICAL POCKET ELECTRIC TESTER



$7\frac{1}{2}$ " long. Fit into pocket with clip. Very neat. Neon tests AC-DC circuits, Radio, TV, fuses, spark plugs, tells AC or DC, and many other uses. 90-500 v. AC-DC 20-17. Pocket tester. $\frac{1}{2}$ oz....50

NEW DELUXE POCKET TESTER.



Comes in hand held sturdy plastic case. Has four easy to read expanded ranges. Supplied with color coded test leads that are $16\frac{1}{2}$ "

long and $1\frac{1}{2}$ " volt penlite battery.

Featuring a Mirrored Scale For Precision Reading

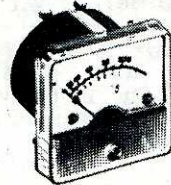
Although extremely compact, this 1,000 ohms per volt multimeter while measuring only $3\frac{1}{2}$ " by $2\frac{3}{8}$ " by 1" has big meter performance as well as big meter styling.

SPECIFICATIONS

- Meter Sensitivity: 350 Ua
- AC Voltage: 15 volts, 150 volts and 1,000 volts.
- DC Voltage: 15 volts, 150 volts and 1,000 volts.
- DC Current: 150 Ma
- Resistance: 100 K Ohms
- Accuracy: $\pm 3\%$ of full scale value on DC Ranges, $\pm 4\%$ on AC Ranges.

One of the best little testers for your bench. 20-9. De Luxe Pocket Tester. 10 oz. wt. 7.95

MINIATURE MICRO-AMMETER.



Fine for comparing outputs of Xtal, TRX, Xmtr., or other small rigs. Usually $1\frac{1}{2}$ " hole. Zero adj. Some may have two scales. Stock may be 50, 100 or 200 micro-amps. If you want details on stock - send postal. 20-5. 6 oz. wt. 6.50

TEST PROD WIRE.



41 strands of tinned wire all covered with live rubber insulation. Easy to solder. Very flexible; will not kink. Cut to any length desired. Specify color. Black TP wire. 20-16. Foot .03
Red " " 20-15. " .03
Rip cord, double, see G-1.

TEST CLIPS.



(1) Alligator Clips. Standard. 2 TP wire goes thru hole and solders in slot. Or, a Banana plug will slip into hole. 20-10. .10

(2) Insulated Alligator Clips. Same connections as plain clips, except insulated. Banana plug fits into end. Specify color. 2" long. Good quality.

Black Insul. Allig. 20-12. .18
Red " " 20-11. .18

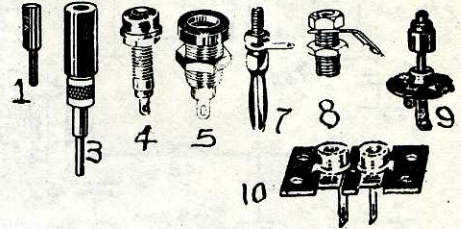
(3) Tiny Alligator Clips. $\frac{3}{8}$ " long for small spaces. 20-24. .05

(6) Midget Insulated Alligator only $1\frac{1}{2}$ " long. 20-23-R. Red... 12
Same in black. 20-23-B. 12

MRL PLANS FOR BUSY HANDS

(5) Spade Lugs. $3/4$ " Long Take phone tips, or may be soldered to TP leads. Fit under Binding Posts or screw terminals. 20-20. Each .05

PIN TIPS & JACKS.



(1) Phone Tips. 17-18. (2) .05

(3) Solderless Insulated Tips. Stranded hookup wire goes thru a hole and ferrule screws up. If wire breaks - repeat operation. 17-20. Red Sold. phone tip. .25
17-21 Black same .25

(4) Phone Tip Jacks. Standard. Insulated ends against previous all-metal jack. Takes $1/4$ " hole. Good grip. Solder lug on back. 17-26. Phone tip jack. Each .15

(5) Insulated Tip Jack. A more sophisticated jack. Also fits $1/4$ " hole. Give color. 17-27. Red Ins. Tip Jack. .25
17-28. Black. Same .25

(7) Banana Plug. n.p. $1-1/16$ " long. With 2 nuts. Good spring. Fit most test units. Fine for horizontal coils. 7-55. Each .15

(8) Banana Jack. n.p. $1/2$ " long. Fit Banana plug. 7-56. Each .12

(9) Single Auto Pin Jack-plug. Sold complete only. Used for auto and record players. Pin won't slip out. 2-3. Pin & Jack .15

(10) Double Pin Jack & Plugs. Mounted on Bak. terminal strip. Sold complete with 2 pin tips only. 2-4. Double Pin/plug .25

$3/8$ " dia. Bak. or fibre rods. 4 to 5 in. long. Ok for making a neutralizing screwdriver or other uses in shop. Per rod. 10

Insulated Screw Driver may be fashioned from a $1/4$ " dowel. Saw a slot in end and push a piece of metal in it - glued. Wrap with a heavy thread. On opposite end you may put a piece of Alum. tubing, bent around a hex nut to fit. A good length is 8-103. 6" wood .04

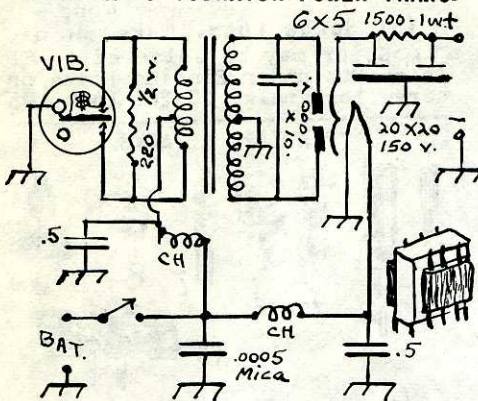
MRL tries to furnish the best items for practical use as result of many year's experience.

LITERATURE SLOW.

PO advises that 3rd class lit. is handled last - not an idea of ours as it's mailed at once! So, if we split lit. from mdse. to save postage - please allow.

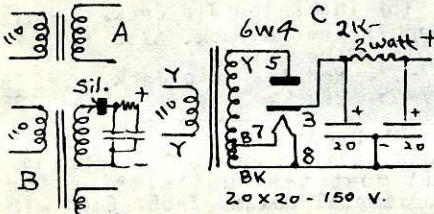
Power Supplies — Transformers — Chokes — Rectifiers

AUTO BATT. VIBRATOR POWER TRANS.



Shows non-synchronous vibrator full-wave power supply. 6 volts from storage batt. goes thru the vibrator into pri. Transformer steps up this interrupted DC to about 600 v. Tubes 6X4, 6X5, 6Z4 84 use 6 v. heaters. An OZ4 uses no heater. CH coils about 20 Ts. #14 on $\frac{1}{2}$ " form Other parts, except vibrator, may be found in CATALOG. For auto radios. **Vibrator Trans. 24-11. 2# 2.00**

Isolation Transformer. (B or C)



Prevents shock from chassis-110. Sec. 145 and 6.3-1 amp. Used in DP-31 set. May use 6 v. rectifier tube, Sel. rect. or Diode rectifier for power supply. **24-23. Isol. Trans. 1 1/2 lbs. 2.50**

6.3 VOLT FILAMENT TRANSFORMERS.



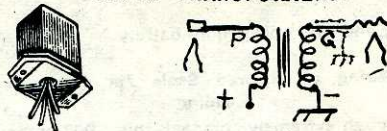
6.3 v. 1 amp. OK for several tubes in parallel. No need for a center tap as these tubes hum less than 2 1/2 v. Compact. Good make. Fine for DP-37 fil. trans. **6.3 v. Filament Transformer. CAT. 24-8. 10 oz. wt. 1.75**

2 1/2 v. Fil. Trans. 2 1/2 amps. Well built. For 2 1/2 v. AC tubes. **24-22. 2 1/2 v. Fil. Trans. 1# 1.50**

NEW. 6 v. 1 1/2 amp. FIL. TRANSFRS. OK for 6 v. car chassis. Only 2 in stock. Special #103. 1 lb. weight. Each..... **1.95**

USED Jefferson HD Fil. Transfr. Real husky. 6.3 v. 4 amps. for HD tubes. 2x3x2 1/2 high. Only one in stock. Ask for our Special No. 41. 2 lbs. weight. **2.00**

AUDIO TRANSFORMERS.



Transformers step voltage up or down, depending on circuit. You may reverse 1 side of pri. to see if tone and volume are improved. If audio squeals result - reduce B-supply. Woven shielding (W-1) or metal foil may be placed over output to the grid and grounded to stop audio feedback.

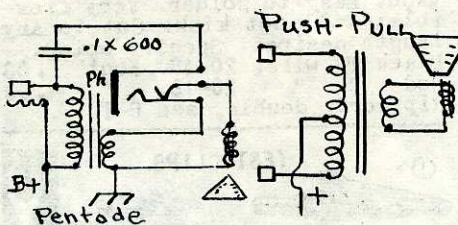
Audios, like we used to use, are not made now, and hard to get. Our present audios have 3 windings of different ratios so you may use any 2 windings for best operation with likely 3:1, 5:1, etc. ratios. They are base mounted as drawing. Others may be open mounting like Fil. Transfr. If you wish further info. on stock - send return postal. **24-18. Audio Transformer. 1# 2.00**

NEW TRX. AUDIO. About 2:1. 4 1/2:9 ohms DC or 25:50 ohms imped. ance. Upright mtg. 1x1 1/2 1 1/4 high. Drawing like Fil. Transformer. TRX take lo-ratios - so Ok. **24-2. 2:1 TRX Transfr. 6 oz. 1.00**

NEW TRANSISTOR AUDIO. Tiny. 1 1/2 oz. Mount with strap. 1-1/8 by 7/8 x 1" - lots of iron. 8 ohms and 1 ohm DC. Good for TRX audio stages. **24-1. Midget audio 1.00**

More TRX Audios CAT. F

OUTPUT TRANSFORMERS.



Same physical characteristics as (D). To match output of tube to pri. look in tube manual for the load resistance. Specs. not too critical. Secondaries match 3.2 ohm imp. voice coil of PM or Dynamic. Imp. varies as different B voltages applied. The double phone jack may be used in any VC circuit. Add 6 oz. pp. to each.

2000 ohm imp. matches 2A3, 25L6, 50B5, 50C5, 50L6, 70L7, etc. **CAT. 24-14. 6 oz. wt.90**
5000 ohm imp. matches 3B5, 6V6, 33, 46, 47, etc. **24-12... 1.00**
8000 ohm. imp. matches 1C5, 1D8, 1Q5, 1S4, 2A5, 3A4, 6F6, 6Y7, 42, etc. **24-13. 6 oz. 1.10**
Push-pull pentode matches 1E7, 1G6, 6F8, 12SL7, 19, 53 as per 2nd diagram. **24-6. 6 oz. 1.10**

Universal output transformer. Has tapped pri. and sec. so almost any tube may be matched.

Changing imp. of primary also changes sec. Adjust taps for the highest volume. **24-3. 6 oz. 2.00**

50 Ohm Output Transformer. Good for feeding output into the phones. Imp. about 1500 on pri. Thordarson. **24-15. 1 lb. 1.00**

PUSH-PULL HEAVY-DUTY OUTPUT TR. 1200 ohms DC (about 8K imp.). CT. Round case 2 1/2" dia. Sec. 3.2 for regular spkr. 3" mtg. Used. Special #20. 8K OT. **1 lb. 1.50**

HEAVY-DUTY OUTPUT TRANSFORMER. Used, good cond. Pri. 600 ohms DC; Sec. 8 ohms DC (about 40 ohm imp.) 3" mounting centers. Special #27. 600 CT. **1 1/4 lb. 1.50**

8000 IMP. H-D OUTPUT TRANS. Used. Heavy-duty. 8000 imp. pri.; 3.2 sec. for voice coil. 2-7/8" mounting centers. Special #38. 8K OT. **1 lb. 1.50**

P-P HEAVY-DUTY OUTPUT TRANS. Used. Good cond. 600 ohms DC. pri. C-tapped; Sec. 3.2 ohms. Mtg. centers 2 1/2". Heavy-duty. Special #39. 600 DC OT. **1 1/2# 1.50**

MIKE TRANSFORMER. Used but OK. 3 connection input. 5K DC output. Alum. case 1-3/8 x 1-3/4 by 2 1/2 hi. Special 123 **1 lb. 2.00**

FILTER OR AUDIO CHOKES. Also be used as pri. in impedance coupling. Ratings as near as we can measure on inductance meter. Brand new. Henry m.a. Ohms CAT. Wt. Each **4..... 50...170..6-8. 6 oz. .90**
8..... 50...200..6-6. 8 " 1.00

RECTIFIERS

All crystal Diodes, Transistors, tubes, etc. are semi-conductors or rectifiers. However, we usually call a rectifier a device that rectifies AC into useable DC for power supplies.

SILICON RECTIFIERS. Miniature rectifiers for small space. More data in MRL HB-10.

On p. 22, HB-13 you'll find a voltage doubler power supply for doubling the input to rectifier. Many have used 1N34 Diodes, but the output is greater with a Silicon Diode and it won't "blow" your Xtals. We prefer to mount the rectifiers away from chassis to avoid shorts, etc. It is odd that these small units can replace the bulky 80 tube in small power supplies.

400 v. input. 3-17. **4 oz. 1.00**

MRL HEAVY-DUTY POWER SUPPLY. DP-49 shows details on how to build it. All revised plan. **.10**

FILTERS & BYPASS CONDENSERS. J.

HEAVY-DUTY RESISTORS See Sec. R.

Batteries & Accessories - F

0-1
NEW
RADIO BOOKS



**A Pictorial Album of
 Wireless and Radio**

A PICTORIAL ALBUM OF WIRELESS AND RADIO—1897-1929, is another historical 'first' for this firm. The Album which contains more than a thousand actual photographs of operating wireless and radio equipment has been compiled around the unique collection of broadcast, receiving and experimental equipment belonging to Harold S. Greenwood, Arcadia, California. This collection of several thousand individual components and complete units is unique, and represents, as far as is known, the largest such grouping of historical radio material in the world. Each component is in operable condition and has been fully and authentically restored to new-like appearance.

Since his High School days, Greenwood has been an ardent radio amateur broadcaster and operated a radio parts wholesale establishment for more than 25 years. His interest in the preservation of typical pieces of equipment dates from his youth and the concise historical notes which accompany the photographs are his personal recollections in many cases.

In addition to photographs of this fabulous collection a selected number of advertisements, dating as far back as World War I, representing the leading firms and their products have been reproduced. Radio Corporation of America, Marconi, Tuska, DeForest, Atwater Kent and Crosley are a few of the pioneer firms whose receiving sets are shown and which will certainly stir nostalgic feelings in the generation which sat up till 2:00 AM "getting Des Moines," "tuning in Honolulu," or the K.C. Night Hawks or Amos and Andy. Crystal sets, Headphones, Battery Eliminators, Loop Antennas, The E. I. Co., Superheterodyne, Neuterodyne and Spark Transmitters are other subjects culled to set memories in motion. A collector's dream.

Both as sheer entertainment and an educational documentary, the Album of Wireless and Radio deserves a place on every American bookshelf.

Originally written by Greenwood - it has been taken over and revised twice by Gordon MacMahon. He is an Old Timer and an ardent collector of Antique Radios - so knows his business.

It has photos of over 1000 receivers, Xmtrs. and parts, as well as interesting old ads and stories of Radio's growth.

This is really quite an historical book. Just chock full of pictures of old familiar rigs. We get nostalgia when we look at it. Old Timers will have lots of fun discussing it and the "good old days of Radio and Wireless."

Vintage Radio. 1973 Edition.
 263 pages. Postpaid to U 4.95

A limited number of the 1972 Ed. available. 240 pages. Ppd. 3.95

MRL HANDBOOKS.

When looking for "easy to read" books- order a supply of our HBs - section A in CAT. or new ones announced in MRL Radio Flyer.



Most of these books are by the well-known author, Wm. I. Orr, W6SAI, 3A2AF, also editor of the "Radio Handbook." Not enough space for lengthy descriptions but you can be assured they are all very practical.

Please add 25¢ to each book for postage and handling.

"ALL ABOUT CUBICAL QUAD AERIALS" 2nd Ed. 112 pages. 3.95 & 25¢.

New dim. in ft. and inches for every type of Quad 6-80 meters. Matching methods. More sturdy construction. Packed with useful information you need.

"BEAM ANTENNA HANDBOOK". 4th Ed. 200 pages. 4.95 & 25¢.

Correct dim. for 6-40 m. beams with all data. How to get top beam performance. Has simplified drawings, etc. A must for the DX operator. A great book!

"VHF HANDBOOK." 210 p. 3.95 & 25

First HB devoted to VHF spectrum ever published. Selected for training armed forces. Moon-echo transmissions, receiver design and Xmtr from 2-watts to 1 KW. Test equipment, Yagis, etc.

"BETTER SHORTWAVE RECEPTION." 2nd Ed. 156p. 3.95 & 25¢.

For the SWL and Ham DX'ing. From foreign to Astronauts. How to get the best buy in receivers and equipment. Triples pleasure of the SWL listener.

"CARE & FEEDING OF POWER GRID TUBES." 158 p. 3.95 & 25¢.

Xmtr. design for HF and VHF. How to get peak efficiency. For the beginner or advanced. Selected as textbook by Engineers. For problems with Xmtrs.

"SIMPLE, LOW-COST WIRE AERIALS FOR AMATEURS." 192 p. 3.95 & 25¢

Another great HB for building all kinds of Aerials 2-160 m. 3-band Novice dipole. Exact dim. in ft and inches. Ant. tuners, Baluns, ground systems, etc.

"TRUTH ABOUT CB AERIALS." 240 pages. 4.95 & 25¢ postage.

Clear, fun-to-read HB gives CB operator all he wants to know or build for efficient CB reception of his rig. Beam, Yagis, dipole, and many more all covered. Facts on license, lightning, etc.

Before you readers get "up tight" about the ARRL reviewing a book on CB antennas - read on. First, while the book is basically about CB antennas, there is plenty of useful data for the radio amateur. The authors even make a strong pitch for the CBER to get into ham radio.

More important, this is an excellent text book for the newcomer who is interested in antennas. It goes a long way in clearing away some of the

0-1
 mumbo jumbo that Cbers (and hams) are fed by some advertisers of antennas. One would expect that such a book would only treat vertical whips, but not so. Wire antennas, Yagis, quads, Delta loops are just a few of the antennas covered. Not only are they described but there is plenty of dope on building your own.

We cannot help but admire the authors' frankness. For example, Chapter 7 is entitled "The Truth About Antenna Gain (P.T. Barnum is alive and well and writing advertisements for CB antennas)." Chapter 17 of the book is devoted entirely to amateur radio and points out in simple language how easy it is to become a ham. Actually, any CBER who would read and try to learn the material in this book would make an excellent candidate for ham radio.

773
 We believe this is a line of books that you will enjoy and find very practical. If you have used any of W6SAI's, Stoner, and others shown here - you'll agree they are well worth the price. W6QKI helped with VHF book.

Shoot your order for one, or more, and include postage and Calif. sales tax if you live in Calif. We'll get them out to you pronto - nice fresh copies.

"RADIO AMATEURS' DX GUIDE." 64 pages. 2.50 & 14¢ book post.

9x12 large size. By QST and ARRL. Maps, distances, DX log, Q-signals, codes, time charts, QSL Bureaus, Prefix map of the World, etc. There are now over 285,000 licensed Amateurs in the U.S. alone. Get moving!

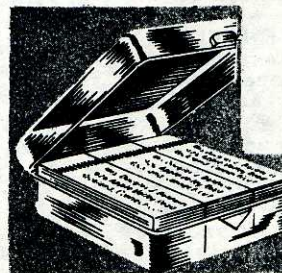
"MONTGOMERY WARD ALMANAC 1898." 98 pages. 1.00 & 14¢ postage.

Reprinted by Clymer. 5½x8½. Neat and very interesting. Old Timers will love it; kids laugh! But we had some good ideas in those "good old days!" All kinds of interesting facts for farmers and others you'll like.

"HOW TO GIVE HAIRCUTS AT HOME." 47 pages. 1.00 & 14¢ book post.

Lots of tricks of the trade. Now you long-haired fellows can get a good haircut without paying \$2.50 for it. All details.

LABELS



500 of these Gold Stripe Labels in a neat box. 90¢

It is hard to settle on fixed prices as they go up and down. Presently these seem rather steady. Hundreds of uses for these labels. Above furnished 2" long with gold stripe and in a box. 500 postpaid for .90 Additional lines 20¢ each.

We can also furnish a smaller label 1½" long, in a box. 1000 labels postpaid for 1.50

For both above labels figure 25 spaces wide x 4 lines. Usually takes 2-3 weeks.

PRICES SUBJECT TO CHANGE

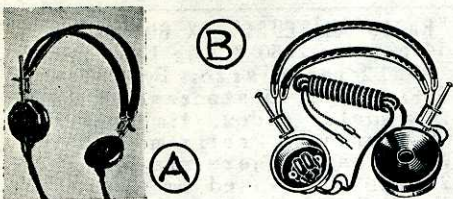
MRL PLANS for BUSY HANDS.

Headphones and Accessories — Cords — Tips — Plugs and Jacks

We have been selling Trimm phones since 1935, and prefer them to others. Repeat orders from customers back us up. Trimm phones are well-built and tested for your enjoyment.

In most cases the investment in Phones is a life-time proposition, so try to buy as good pair as possible. Trimm phones take the usual hard-beating given to most phones. They are all easy on the ears.

The higher resistance phones are usually more sensitive to weak signals and give sharper tuning on Crystal sets. Note that AC Impedance is about 5 times the DC resistance. (See HB-1: "Headphones: Operation & Repair" on page A-1, for more details.)

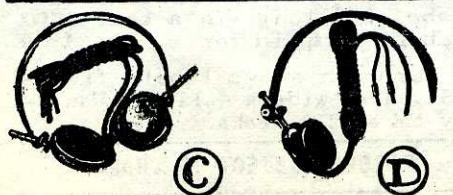


TRIMM FEATHERWEIGHTS. (A)

World famous as the leading quality headset for over 25 yrs. Fine for Amateur communication service where sensitivity to the weak signals is paramount, besides being "easy on the ears." Total weight of phones is 5 oz. On a small rig, or Crystal set, it is equal to an audio stage. Permalloy magnets exert a 4 oz. pull on the diaphragm. The coils are impregnated to keep out the moisture. 6 ft. wearproof cord, with terminals enclosed. Fabric-covered headband. 5M ohms DC; 24M ohms AC Impedance. We believe this phone set is the tops in performance. List price \$13.50 Featherweights. 17-1. 1 lb. 7.95

(B) TRIMM DEPENDABLES (formerly the well-known Professionals)

A larger phone than the Featherweights, altho still comfortable to wear. The original Trimm phone, altho much improved. Fine for general use, where good sensitivity and sturdiness must be had. Heavy Alnico V-magnets with lots of pull. Impregnated, moisture-proof coils. Mercerized moisture-proof cotton 5 ft. cord with enclosed terminals. Adjustable, plastic-covered wire headband, easy to wear. Bakelite case and cap. We obtain for you the highest Impedance of 28,000 ohms; 4000 ohms DC. List \$7.20 Dependables. 17-3. 1 lb. 4.30



TRIMM ACME DE LUXE. (C).

A superior low-cost phone set. Ideal for small rigs and Crystal sets. Bakelite case & cap. Each phone has one large coil - larger in diameter than double-coil phones, and a U-type Chrome steel magnet. It makes a very sensitive phone. 4 1/2 ft. cord with enclosed terminals. A very efficient set for the low price asked. Weighs approx. 5 1/2 oz. on your head.

4000 ohms DC; approx. 20,000 Impedance. Very sensitive. Uses a split Vinyl covered wire headband, easy to wear. List price is \$5.20. 17-52. 8 oz. 3.15

2000 Ohms DC; approx. 10,000 Impedance. Has light steel headband. Hundreds sold. List price is \$4.40 17-9. 8 oz. 2.65

(D) 1000 Ohm Single phone and light steel headband. Weighs 3 1/2 oz. on your head. List price is \$2.65. 17-10. 6 oz. wt. 1.60

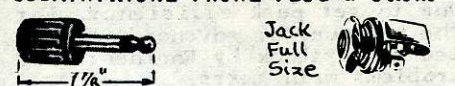


(E) Ear cushions. sponge rubber. Keeps ears comfortable for hours. Reduces the sound leakage. Useful in Labs., Amateur svc. and long DX sessions. Fit most phones. Beware of cheap imitations. Sold singly if desired. List per pair \$1.60. Phone cushions. 17-12. pair 1.08

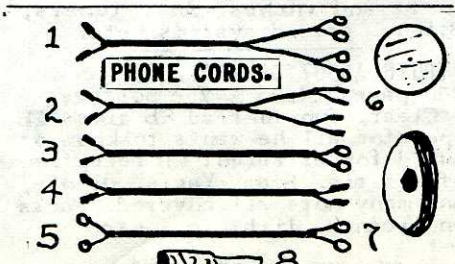
(G) Standard Plug. In general use. Plastic shell prevents a shock. Removed for fastening in 2 prs. of phones, with spades, tips or eyelets. Hole is for a stay cord. List 65¢. 17-13. .40

(H) SMALL BAKELITE PHONE PLUG. Fits standard phone jack, but shell is 1/2" dia. BLACK or RED 17-48. Small phone plug.....40

SUBMINIATURE PHONE PLUG & JACK.



For 17-4 and other miniature phones. Plug is 1-1/8" long; the jack is for 1/4" hole in 1/8" panel. Jack is single/closed. 17-6. Sub-min. phone plug.....15 17-5. Sub-min. jack only.....15



Made from best grade of tinsel cord. Very flexible. Check type before ordering. Good length. (1) Double lugs/tips. 17-35. .90 (2) " tips/tips. 17-36. .70 (2) " tips/tips, fit Trimm

- (3) Single lugs/tips. 17-37. .70
- (4) " tips/tips. 17-38. .70
- (5) " lugs/lugs. 17-39. .35

DIAPHRAGMS. (6)

Cut to any size to 3" in dia. Tinned. Give exact diameter. Diaphragms. 17-16. Each .15

PHONE CAPS. (7)

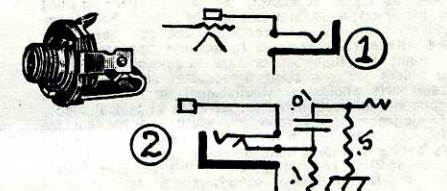
If not sure about fit, send in old phone, with postage and cost of cap. Prices are for one cap. Trimm Rex.....17-22..35

Empire, American Bell or Dixie phones.....17-24..25

Used ones in proportion. 4 oz.

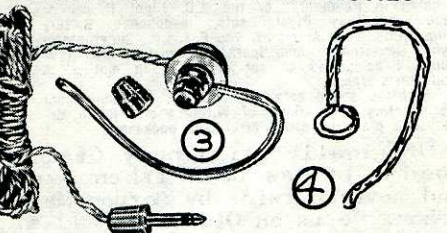
(8) PHONE TIPS. All standard, and new stock. Wrap tinsel with fine wire before soldering. Tin inside. 17-18. 2 tips for .05

HEADPHONE JACKS.



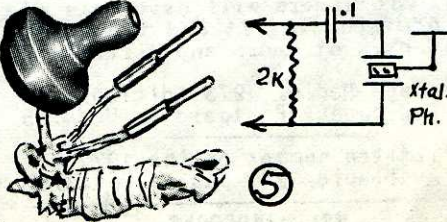
- (1) Single phone jack. 17-31..30
- (2) Double " " Closed 17-32..35

LIGHTWEIGHT EARPHONES



(3) Dynamic type for TRX, Rdo. and TV listening. 2 diff. sizes ear plugs furnished with band. Min. phone plug; flexible cord. 2000 ohm impedance. Hooks direct to output. 17-4. Dyn. Phone 1.25

(4) Xtal earphone holder fits over ear. 17-8. Phone holder. 10



(5) Crystal earphone. Molded plastic shell fits into ear. The diagram shows output to crystal type phones. 17-2. Xtal phone. 89

Panels — Mounts — 1-Tube — Speakers — Grilles — Microphones — Jacks

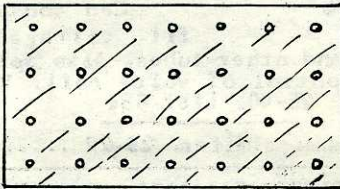
PANELS & BASES.

Brown, tempered **Compo. panels** are used in most MRL layouts. Are easy to mark, drill and keep in good condition. May be sawed and planed, just like wood. You may lacquer them, if desired. Following sizes cover most MRL projects. Shipping weight about 1 lb. to the square foot extra.

3½ x 5½.....11	6 x 6.....14
4 x 4.....09	6 x 7.....16
4 x 5.....10	6 x 8.....17
4 x 5½.....11	6 x 10.....20
4 x 6.....11	6 x 12.....23
5 x 6.....13	7 x 8.....19
5 x 7.....14	7 x 10.....23
5½ x 6.....14	7 x 12.....26
5½ x 7.....16	8 x 8.....21
1/8" Compo. 16-2.	1 lb. ft..36

PANEL PEGBOARD CUT TO SIZE.

Due to so many holes, it is **FB** for quick bench layouts of circuits. Many of holes are just the



right distance - all 1" apart. We cut so holes have an even margin. Same price as our Compo. panels. 16-12. Pegboard, size?

1/4" PLYWOOD.

Our sanded plywood does not contain pitch pockets, knots, etc. but is sent to you in good shape. Following sizes cover the majority of MRL projects. Postage runs about 1 lb. to the foot.

¾ x 5½.....06	5 x 6.....10
2 x 6.....07	5 x 7.....11
3 x 3.....07	5 x 9.....13
3½ x 5½.....09	5 x 11.....15
4 x 4.....08	6 x 7.....12
4 x 5.....09	6 x 9.....14
4 x 6.....09	6 x 11.....16
5 x 5.....09	8 x 9.....17
¾" Ply. 16-7.	sq. ft. 1 lb..24

MRL 1-TUBER (HB-4) PARTS

"ALL DRESSED UP!" For a long time we have lacquered bases and panels of our kits. Looks **FB**. In most cases we bake it on.

Aluminum panels. Only size now carried in stock is 1/16 x 4½ by 6 at 40¢ each, plus postage. You may give Aluminum panels a nice finish by rotating steel wool on the surface and lacquering.

16-8. 4½x6 Alum. panel for MRL 1 Tuber (HB-4) set. 6 oz. .40

MRL BACK STRIP.



Altho designed for our 1-tuber (HB-4), it may be used for other rigs. ¾ x 5½" long. Two holes drilled for tip jacks; 6 for the batts. and A-G leads. #2 x ½" OH wood screws hold it to base. The following scale cements over the holes. 16-1. MRL Back strip - 10

MRL BINDING POST STRIP SCALE.



As used on our 1-tubers, but is OK for any DC set. Keeps from getting batts. mixed up and is neat appearing. 4-21. Scale .05

See J-1, #8-118 for Ant. Cond.

TUBES, BATTs., PHONES extra. Read "Accessories" CAT. K-3.

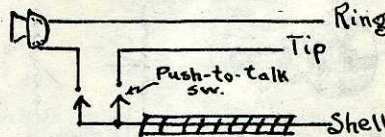
MRL LOG DIAL installed on 1-T. for \$1.00 extra. See CAT. L-1.

HB-4. If purchased before Dec. 1968 - send 10¢ for DP-73 which adds 4 pages for AC operation.

RE-READS OUR LITERATURE 10 TIMES

Wm. E. Hatch, Texas: "I don't have the words to say how much I appreciate your sending me the Flyer, and how much I enjoy your literature. I have just finished reading the back issues and the Handbook for about the 10th time and will read more. I am a good booster for all of your publications." (Thanks - MRL)

MICROPHONE JACKS.

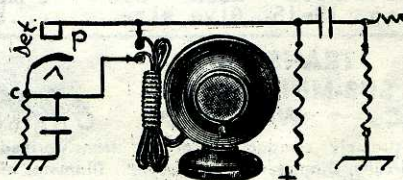


Standard Mike to Plug connections

For double-button or 3-contact mike above. 12-31. Mike jack .40

MIKE OR STEREO PHONE PLUGS. Can be used for either. 17-34. .35

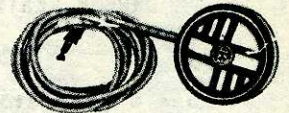
JUNIOR MICROPHONE



Attaches to any AC or AC-DC Radio without extra wiring. Goes from plate of det. to cathode or ground, as shown. 4" high, with pushbutton on front. All directions, fittings, etc. Hook it up and fool 'em. 12-40. 1 lb. 1.60

LAPEL

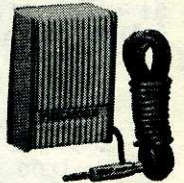
MIKE.



Supplied with clip. In black plastic case with ¾ ft. shielded cable. 1½ in. dia. Frequency response 90-10K cps.; 10 dbls.; very sensitive. Current 2 ma. May be used as above mike, with or without transformer. List \$2.50. 12-5. Lapel mike. 6 oz. 1.60

POPULAR PRICED

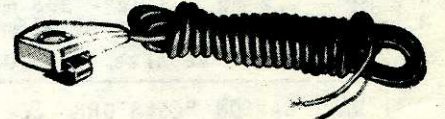
DYNAMIC MIKE



You improve your tape recorder when using this mike. In plastic case with 6½ ft. of cable and a molded miniature phone plug. 50-10K cps with imp. 50K ohms. 2½" long by 1-¾ wide. 12-18. 6 oz. 2.60

Min. plug, on above two mikes fit 17-5 min. jack. (Sec. P)

NEW CONTACT MICROPHONES.



Hi-imp. Xtal mike. with 8 ft. shielded cord and clamp bar. Amplifies guitars and other string instruments. 12-6. Each 1.10

NEW MICROPHONE COAXIAL CABLE.

Very flexible. 3/32" diameter. Can also be used as substitute for phone cords where feedback occurs. 12-21. Per foot.....05

MICROPHONE TRANSFORMER. Often a 6.3 v. fil. trans. may be used instead of a mike transformer. (N)

SUBMINIATURE TRANSISTOR SPEAKERS

Exact replacement for most TRX and small tube sets. 8 ohms DC (40 ohm imp.), Individually boxed, 2" by ¾" deep. 21-2, 2" TRX spkr. 1.25



2½" PM Speaker.	21-20..1	1 lb..1.60
3" "	21-11..1	1 lb..1.60
4" "	21-12..1½	1 lb.1.60
5" "	21-13..1½	1 lb.2.00
3" Dyn. 3K field.	21-1.	1# 2.00
4# " 400 "	21-3.	1# 2.75
5" " 400 "	21-4.	1½# 3.00

GRILLE CLOTH

Cement on with MRL Heavy Coil cement (7-58. 25¢). Iron before you put it on. Keeps dust out of speaker. 21-16. Sq. foot .35

Panel brackets, see (Sec. H).

Cements and thinner (E).

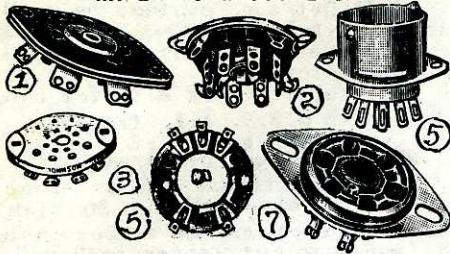
Headphone jacks (P).

Output transformers (N).

Watch Flyer for more speakers, parts and 1-tube notes.

Receiving Tubes

WAFER TUBE SOCKETS



- Pins
- 4 UX Bakelite (1).....25-6...20
 - 4 UX Molded plate (7)..25-50..35
 - 5 UY Molded plate (7)..25-10..35
 - 6 Bakelite (1).....25-8...20
 - 6 Molded plate (7).....25-49..40
 - 7 Min. Bakelite (1)....25-13..12
 - 7 Shielded base (5)....25-31..20
 - 8 Octal Bakelite (1) ...25-11..12
 - 8 Loktal Molded (2) ...25-12..12
 - 9 Min. Bakelite (1)....25-14..12
 - 5 Acorn, Steatite (8)..25-42..40



6 PRONG MOLDED SOCKET WITH RING.
New stock. Ring holds socket securely. Reg. 22¢ wholesale. At MRL 25-18. Each .12

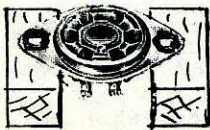
BASE TUBE SOCKETS



Mount on top of chassis, or on wooden or Compo. base. Made of molded Bakelite. Good for quick experimental circuits.

Supplier has priced themselves out of the market. They used to sell for around 25¢ each. So, we won't re-order when sold out. Substitute our MIP Assembly as shown below - works good.

- 4 pr. UX. List 1.50 25-43. 1.00
- 5 " UY " 1.50 25-44. .75
- 6 " " 1.50 25-47. .75
- 8 " Octal." 2.00 25-46. .80



MRL MIP BASE MOLDED PLATE ASSEMBLY

Because Bak. base sockets are getting prohibitive in price - we devised the use of our MIP Assemblies. These consist of two drilled black wooden blocks, two FH screws and nuts to fit any MIP (molded plate) socket. Socket is not included (see above).

The blocks raise the socket up enough to run wires underneath. We suggest soldering leads onto prongs B4 mounting but socket is easily removed if desired.

Our MIP Assemblies are cheaper than base sockets. We use them in our #26 and other sets. They make a very sturdy mounting. 25-21. MIP Assembly complete. It doesn't include socket. .20

DON'T FORGET POSTAGE.

Accessories

TUBE SHIELDS.



Fit over tube to cut down howl and hum. Cuts down QRM on detector tubes. Sizes for miniature and 1" diameter tubes only. 25-25. Tube shield. Size? .10

3-PIECE ALUMINUM TUBE SHIELDS.

New cond. 1-3/4 dia. x 3 1/2" long. Cut down QRM on detector. 2 in stock. Special #90. Ea. 45

GRID CLIPS



Fit over tops of grid caps on large tubes. 25-23. 2 for... .05
For small tubes. 25-24. (2).05

PARTIAL TUBE LIST.

MRL tubes tested on our modern Hickock Conductance tester for emission and shorts. Occasionally suppliers send us shorted tubes. Some testers are Ok on emission but not good on detecting shorts in tubes. We refuse to knowingly sell shorted tubes.

They are guaranteed to work OK - but lifetime not guaranteed. (Several chain stores guarantee them to the front door - as you and MRL have experienced.) Hi.

They are obtained from Army-Navy surpluses, warehouse, Radio TV stocks, etc. All are neatly boxed and packed for shipping.

The "list price" column, in previous CATALOGs, has been deleted as it was confusing. (Ask ur Radio-TV dealer what he will charge for them!) Hi. Certain Hard-to-get tubes listed at end of list. In this era of higher prices - MRL prices following conservatively at

\$1.00 Each & Post.

- 01-A Sub. 30 below.
- OZ4 Full wave rect. metal.
- 1A5gt See below.
- 1A6 Pent. converter.
- 1A7gt Pent. converter.
- 1AE4 Med. mu triode.
- 1B3 HW rect. TV HV use.
- 1B7 Pentagrid converter.
- 1C5gt See below.
- 1C6 Pentagrid converter.
- 1F4 PA amp. pent. same as 33.
- 1F5 Pwr. amp. pentode.
- 1G3 HW rect. TV HV use.
- 1G5 Pwr. amp. pentode.
- 1H4gt Med. mu triode.
- 1H5gt Diode; hi-mu triode.
- 1J5 Pwr. amp. pentode.
- 1J6gt 2-triode PA. see #19 note
- 1L4 Sharp cut-off RF pentode.
- 1LE3 Med-mu triode.
- 1N5gt Sharp cut-off RF pentode.
- 1P5gt Remote cut-off RF pentode
- 1Q5gt See below.
- 1R5 Pentagrid converter.
- 1S4 Pwr. amp. pentode.
- 1S5 Diode; sharp cut-off pent.
- 1T4 Remote cut-off RF pentode
- 1T5gt Beam pwr. amp.
- 1U4 Sharp cut-off RF pentode.
- 1U5 Diode; sharp cut-off pent
- 1V HW Hi-vacuum rectifier.
- 2A3 Power amp. triode.
- 2A5 Power amp. pentode.

Special-Purpose Tubes

- 2A7 Pentagrid converter.
- 2B7 2-diodes; remote pentode.
- 2X2 HW hi-voltage rectifier.
- 3A3 HW hi-voltage rectifier.
- 3A4 Pwr. amp. pentode.
- 3A5 HF 2 diodes.
- 3B2 HW Hi-vacuum rectifier.
- 3B4 Beam power amplifier.
- 3B5gt Beam power amplifier.
- 3BC5 Sharp cut-off RF pentode
- 3BN6 Gated beam discriminator
- 3BU8 Twin pentode.
- 3BZ6 Remote cut-off RF pentode
- 3C2 HW hi-voltage rectifier.
- 3C5gt Pwr. amp. pentode.
- 3BC6 Sharp cut-off RF pentode.
- 3Q4 Pwr. amplifier pentode.
- 3Q5gt Beam pwr. amplifier.
- 3S4 Pwr. amp. pentode.
- 3V4 Pwr. amp. pentode.
- 5AN8 Triode; pentode.
- 5T4 FW Hi-vacuum rectifier.
- 5U4G FW Hi-vacuum rectifier.
- 5V4G FW Hi-vacuum rectifier.
- 5W4gt FW Hi-vacuum rectifier.
- 5Y3G FW Hi-vacuum rectifier.
- 5Z3 FW Hi-vacuum rectifier.
- 6A3 Power amp. triode.
- 6A6 2-triode power amplifier.
- 6A7 Pentagrid converter.
- 6A8 Pentagrid converter.
- 6AC5gt 2-triode power amplifier.
- 6AC7 RF pentode.
- 6AF4 UHF triode oscillator.
- 6AG5 Sharp cut-off RF pentode
- 6AG7 Power amp. pentode.
- 6AH6 Sharp cut-off RF pentode
- 6AK5 Sharp cut-off RF pentode
- 6AK6 Power amp. pentode.
- 6AL5 Twin diode.
- 6AM8 UHF Hi-mu triode.
- 6AQ5 Beam power amp.
- 6AR5 Pwr. amp. pentode.
- 6AR6 Beam power amplifier.
- 6AT6 2-diode; hi-mu triode.
- 6AT8 Triode; pent. converter.
- 6AU4gt HW Hi-vacuum rectifier.
- 6AU5gt Beam power amplifier.
- 6AU6 Sharp cut-off RF pent.
- 6AU8 Triode; pentode.
- 6AV6 2-diode; hi-mu triode.
- 6AW8 Triode; pentode.
- 6AX4gt HW Hi-vacuum rectifier.
- 6AX5gt FW Hi-vacuum rectifier.
- 6AZ8 Triode; pentode.
- 6B7g 2-diodes; remote pentode.
- 6B8g 2-diodes; remote pentode.
- 6BA6 Remote cut-off RF pentode
- 6BA8 Triode; pentode.
- 6BC5 Sharp cut-off RF pentode.
- 6BE6 Pentagrid converter.
- 6BJ6 Remote cut-off RF pentode.
- 6BK4 Sharp cut-off Beam triode.
- 6BL7gt 2 med-mu triodes.
- 6BQ6gt Beam power amplifier.
- 6BQ7A HF 2-triodes.
- 6BS8 med-mu 2 triodes.
- 6BU8 2 pentodes.
- 6BY5g FW hi-vacuum rectifier.
- 6BZ7 Hi-F 2 diodes.
- 6C4 Medium mu triode.
- 6C5 Medium mu triode.
- 6C6 Sharp cut-off pentode.
- 6CB6 Sharp cut-off RF pentode.
- 6CD6g Beam power amplifier.
- 6CG7 Medium mu 2 triodes.
- 6CL6 Power amplifier pentode.
- 6CM7 Medium mu 2 triodes.
- 6CN7 Duplex diode triode.
- 6CU6 Beam power amplifier.
- 6CY7 2 triodes.
- 6D6 Remote cut-off RF pentode
- 6DB5 Beam power amplifier.

Receiving Tubes

T U B E S - continued

6DQ6 Beam power amplifier.
 6DT6 Sharp cut-off pentode.
 6EA7 2 triodes.
 6EW6 2 triodes.
 6EX6 Beam power amplifier.
 6F6g Power amplifier pentode.
 6F7 Triode; remote cut-off p.
 6F8g Medium mu 2 triodes.
 6G6g Power amplifier pentode.
 6GH8A Triode; pentode.
 6GY6 Sharp cut-off RF pentode.
 ① 6H6gt 2 diodes.
 6J4 HF triode.
 6J5gt Medium mu triode.
 6J6 Medium mu 2 triodes.
 6J7/gt Sharp cut-off pentode.
 6K5gt Hi mu triode.
 6K6gt Power amplifier pentode.
 6K7/gt Remote cut-off RF pentode
 6L6 Beam power amplifier.
 6L7 Pentagrid mixer.
 6N7/gt 2 triode power amplifier.
 6O7/gt 2 diodes; Hi-mu triode.
 6R7/gt 2 diodes; med-mu triode.
 6S4 Medium mu triode.
 6SA7/gt Pentagrid converter.
 6SD7/gt Remote cut-off pentode.
 6SG7/gt Remote cut-off pentode.
 6SH7/gt Sharp cut-off RF pentode
 ① 6SJ7/gt Sharp cut-off RF pentode
 6SK7/gt Remote cut-off RF pent.
 6SL7gt 2 hi-mu triodes.
 ① 6SN7gt med-mu 2 triodes.
 6SQ7/gt 2 diodes; hi-mu triode.
 ① 6SS7 Remote cut-off RF pentode
 6T8 3 diodes; hi-mu triode.
 6U7g Remote cut-off RF pentode
 6U8 Triode; pentode.
 ① 6V6/gt Beam power amplifier.
 6W4gt HW hi-vacuum rectifier.
 6W6gt Beam power amplifier.
 6X4 FW hi-vacuum rectifier.
 6X5/gt FW hi-vacuum rectifier.
 6X8 Triode; pentode converter
 6Y5 2 diode FW rectifier.
 6Y6/gt Beam power amplifier.
 6Z4/84 FW hi-vacuum rectifier.
 7C4 HF diode.
 7E6 2 diodes; med-mu triode.
 7N7 Med-mu 2 triodes.
 10 Power amplifier triode.
 12-A See below.
 12A8/gt Pentagrid converter.
 12AD6 Pentagrid converter.
 12AE6A 2 diodes; triode.
 12AL8 Med-mu triode; tetrode.
 12AT6 2 diodes; hi-mu triode.
 12AT7 HF 2 triodes.
 12AU7 Med-mu 2 triodes.
 12AV6 2 diodes; hi-mu triode.
 12AX4gt HW vacuum rectifier.
 12BA6 Remote cut-off RF pentode
 12BE6 Pentagrid converter.
 12BF6 2 diodes; med-mu triode.
 12BH7A Med-mu 2 triodes.
 12BY7 Sharp cut-off pentode.
 12CN5 RF pentode.
 12DL8 2 diodes; tetrode.
 12DS7 2 diodes; tetrode.
 12J8 2 diodes; tetrode.
 12K5 Space charge tetrode.
 12SA7 Pentagrid converter.
 12SJ7/gt Sharp cut-off pentode.
 12SK7/gt Remote cut-off RF pent.
 12SL7/gt Hi-mu 2 triodes.
 12SQ7/gt 2 diodes; hi-mu triode.
 12V6gt Beam power amplifier.
 12X4 FW hi-vacuum rectifier.
 12Z3 HW hi-vacuum rectifier.
 19 See below.
 22 Sharp cut-off RF pentode.
 VT-24/864 see below.

24A Sharp cut-off RF pentode.
 25A7gt HW rect., pwr. amp. pent.
 25L6/gt Beam power amplifier.
 25Z5 Hi-vacuum rect., doubler.
 25Z6/gt Hi-vac. rect.; doubler.
 26 Medium mu triode.
 27 Medium mu triode.
 30 See below.
 31 Power amplifier triode.
 32 Sharp cut-off RF tetrode.
 33 Power amplifier pentode.
 34 Remote cut-off RF pentode
 35/51 Remote cut-off RF pentode
 35B5 Beam power amplifier.
 35L6/gt Beam power amplifier.
 35W4 HW hi-vacuum rectifier.
 35Z4gt HW hi-vacuum rectifier.
 35Z5gt HW hi-vacuum rectifier.
 36 Sharp cut-off RF tetrode.
 37 Medium mu triode.
 38 Power amplifier pentode.
 39/44 Remote cut-off RF pentode.
 40 Medium mu triode.
 41 Power amplifier pentode.
 42 Power amplifier pentode.
 43 Power amplifier pentode.
 45 Power amplifier triode.
 46 2 grid power amplifier.
 47 Power amplifier pentode.
 48 Power amplifier tetrode.
 49 2 grid power amplifier.
 50 Power amplifier triode.
 50B5 Beam power amplifier.
 50C5 Beam power amplifier.
 50L6gt Beam power amplifier.
 55 2 diodes; med-mu triode.
 56 Medium mu triode.
 57 Sharp cut-off pentode.
 58 Remote cut-off pentode.
 59 Power amplifier pentode.
 70L7gt HW rect.; beam pwr. amp.
 71A Power amplifier triode.
 75 2 diodes; hi-mu triode.
 76 Hi mu triode.
 77 Sharp cut-off pentode.
 78 Remote cut-off RF pentode
 79 2 triode power amplifier.
 80 FW hi-vacuum rectifier.
 81 HW hi-vacuum rectifier.
 82 FW mercury vapor rect.
 83 FW mercury vapor rect.
 83V FW hi-vacuum rectifier.
 84 See 6Z4
 85 2 diodes; med-mu triode.
 89 Power amplifier pentode.
 X-99 Sub. 30 but use 2 v. fil.
 101-D Like 01A. Sub. 71A or 30.
 247-A Triode, same as 27.
 485 Triode.
 841 Same as VT-51. No data.
 954 Acorn det-amplifier.
 956 Acorn RF pentode.
 957 Acorn triode.
 958 Acorn triode.
 185-R4 Raytheon Res. 3 pin.

ANY OF ABOVE at MRL for \$1.00 plus postage. More CAT. T-1.

SPECIAL TUBE PRICES.

Due to rarity of following tubes that aren't being made, we have to charge more for them. If it's possible to find them - you will have to pay about \$5 each.

01-A Lo-mu triode, as used in ancient sets. Rarely obtainable, altho years ago we sold bushels of them at 10¢ each! A 71-A may be substituted for 01-A. Or a 30 with a 10 ohm wirewound resistor in series with filament to cut 30 down to 2 volts DC battery voltage. See #30.

Special-Purpose Tubes

1A5gt Det-amp. pentode as used in MRL 1-tuber. 1.50
 1C5gt Det-amp. pentode as used in MRL 1-tuber. 2.00
 1Q5gt Det-amp. pentode as used in MRL 1-tuber. 1.75
 As 1-tuber kit is also for 6V6 tube with 6.3.v. fil. transformer - you can use this if desired. WD-11. 12. See VT-24/864.
 12-A. Substitute 71A as about the same values. Use a 30 with 10 ohm wirewound in series with filament to cut latter to 2 v.
 19. Sub. 1J6 and use an 8 pr. octal socket instead of 6 prong. Values same as 19.
 VT-24/864. 1.1 v. made for the Army during war and in original boxes. Sub. for WD-11, 12 but UX socket instead. Are less microphonic than old WD-11, 12. A11 tested before shipping. 2.25
 30. Direct from factory. 2 v. DC fil. UX socket. May be substituted for 01-A if 10 ohm wire wound res. put in series with filament. Special price of 2.00

ABBREVIATIONS IN ABOVE LIST.

Amp - amplifier; Det - detector; FW - full wave; HF - hi-frequency; HV - hi-voltage; HW - half-wave; mu - amplification factor of a tube; PA - power amplifier RF - radio frequency; UHF - ultra hi-frequency.

Our tube lists are always being changed as we find different numbers.

ASK US ABOUT TUBE SUBSTITUTIONS.

We started to make up a substitution list of tubes for ours in stock - but it was too big a job. Send in your list of tubes and we'll check our substitution lists. Types of tubes have been rigged by the hundreds, just by changing prong connections about - so they can sell you more of their tubes. This is a complication of the industry that should never have been allowed.

Note: Pentode power amp. tubes, as 1C5gt, etc. make excellent detectors or amp. RF tubes also make good detectors.

Always rotate tubes when removing from sockets. Don't plug tubes into a set with current on - or change tubes around. Have tubes tested at least once every six months.

Because the older tubes, like 01-A, X-99, 30, etc. are more fragile - do not drop them. The later tubes have so many elements, with their glass re-enforcements - that they are very sturdy and will stand lots of kicking around.

MRL LIKES TO HELP YOU.

We realize conditions are getting worse for the Experimenter. Nobody wants to work! Go into a store and the clerk doesn't care a darn about you. A local Lafayette clerk didn't know what a variable cond. was, nor care! Hi

Flem
FEB 1973
CATALOG

Receiving Tubes

Special-Purpose Tubes

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RECEIVING TUBES

MRL tubes tested on our modern Hickock tester and guaranteed to work OK; Tubes well packed, with minimum postage. Following prices based on our cost and way below wholesale. Many hard-to-get numbers will not be re-stocked, so order NOW! Often direct substitute tubes may be used - so send us list of tubes you require.

Following hard-to-get tubes used in our 1-tuber (HB-4), and interchangeable. Priced at

Type	Uses* (blanks sold)	LIST
1A5gt	Det., amp. pentode	5.30
1C5gt	Det., amp. pentode	5.30
1Q5gt	Det., amp. pentode	4.05
	Sold at MRL for 1.25	
	Sold at MRL for 1.50	

Following at \$1.00, plus postage:

0Z4	FW rect.	2.40
1A6	Pent. converter	5.00
1A7gt	"	5.75
1B3gt	TV HV rectifier	2.90
1C6	Pent. converter	3.00
1F4	Power pentode	3.00
1H5gt	Mod. amp. pentode	3.00
1H5gt	Dio., triode, amp.	4.15
1J6g	2-triode amplifiers	3.00
1K3gt	Pentode det.	1.20
1R6	" converter	3.05
1S4	Pentode det., amp.	4.35
1S5	2-det., pent. amp.	2.90
1T4, 1U4	Det., amp. same	2.90
1V	Diode pent. amp.	2.35
2A3	HW rectifier	5.85
2A5	Power triode (45 Ohm)	10.50
2A5	" pentode amp.	2.30
2A7	Pent. converter	3.65
2B7	2-dio., pent. amp.	3.40
2X1	HW rectifier	5.00
3A3A	HW rectifier	3.20
3BU8	2-pentodes, TV	3.55
3CB6	Pent. det., amp. TV	2.15
3C4	" power amp.	3.55
3C5	Beam power amp.	5.35
3S4	Pent. power, det.	3.20
3V4	" " "	2.50
5T4	2-diodes	7.95
5U4g	FW rectifier	2.10
5V6	" " "	3.30
5W4g	" " "	2.75
5Y6	" " "	1.75
5Z3	" " "	3.30
6AC	2 power triodes	3.00
6A7	Pentode converter	8.50
6A8	" " "	6.85
6AC5	Power triode	3.00
6AC7/1852	Pent. det., amp. TV	5.50
6AR5	900 mc. triode, HF	1.00
6AG5	Pent. det., amp.	2.75
6AG7	" power amp. TV	6.20
6AK5	400 mc. det., amp. HF	4.40
6AL6	2-dio. detectors, TV	1.95
6AM8	" " TV	3.45
6AU6	Beam pwr. amp., det.	2.15
6AR6	Pent. power amp.	2.05
6AR6	Beam	3.00
6AT6	2-dio., triode, 2-det.	1.90
6AT8	40 mc. trio-conv. TV	3.90
6AU4gt	Dio. HW rectifier, TV	3.60
6AU5gt	Beam power amplifier	4.30
6AU6	400 mc. det., amp. HF	2.10
6AV6	2-dio., triode, AVC TV	1.65
6AW8	Pentode, triode, TV	3.70
6AX4	HW rectifier, TV	2.65

Type	Uses*	List
6AZ3	Triode, Pentode, TV	5.55
6B8g	2-dio., 2-det., amp.	3.70
6BA6	" (same 6F7)	8.30
6BA8	HF det., amp.	2.00
6BC5	Pent. trio. amp. TV	3.85
6BE6	400 mc. det., amp. HF	2.35
6BJ6	HF converter, TV	2.20
6BL7	Pent. det., amp. HF	2.60
6BQ6gt	2-triode amp. TV	3.95
6BQ7A	Beam pwr. amp., det.	4.35
6BS8	2-triodes	3.95
6BU8	2-triodes, HF, TV	3.75
6BZ7	2-pentodes, TV	3.40
6C4	2-triodes, amp. VHF	4.00
6C5gt	150 mc. triode amp.	1.85
6C6	Triode	3.15
6CB6	Pentode det., amp.	4.80
6CD6g	40 mc. det., amp. TV	2.25
6CG7	45 mc. amp. TV	5.80
6CM7	2 triodes	2.45
6CU6	2 triodes, amp. TV	2.90
6CY7	Beam pwr. amp., det.	4.35
6D6	2 triodes, TV	3.05
6DB5	Pentode det., amp.	4.35
6DQ6	Beam pwr. amp. TV	5.30
6EA7	" " TV	4.15
6EX6	2 triodes	5.20
6G6	Beam PA-TV sub. 6CD6	8.00
6G6	" " "	1.30
6G6	" " "	2.85
6G6	" " "	3.60
6G6	" " "	3.00
6G6g	myo. amp. sub.	3.00
6G6g	Pent. pwr. sub. 6V6	4.50
6GH8A	Triode-pentode	3.20
6H5	Eye	3.50
6H6gt	2-dio., det., amp.	4.00
6J4	Triode	3.00
6J5gt	Trio. amp., det. (6C5)	3.65
6J6	600 mc. 2-triodes	2.80
6K5gt	Triode det., amp.	2.65
6K6	see 6V6	
6K7	Pent. det., amp.	4.65
6L7	Pent. converter	6.95
6N7	2 power triodes	5.00
6P7	2 diodes: triode	5.65
6R7g(t)	2-det., trio. amp.	5.45
6SA7	Pentode converter	4.30
6SD7gt	" det., amp.	3.35
6SH7	Pent. RF, HF, FM	5.35
6SJ7gt	Pent. det., amp.	4.15
6SK7	" " "	4.25
6SN7gt	2-trio. det. amp.	2.60
6SQ7gt	2-diodes: triode amp	3.80
6T8	3-dio.: triode det.	3.40
6U8	TV converter	3.30
6V6gt-g	Beam pwr. amp., det.	2.30
6W4gt	HW rect., diode, TV	2.40
6X4	FW rect. cathode	1.65
6X5gt	" " sim. 6X4	2.10
6XB	Triode, pentode, TV	3.15
6Y5	FW rectifier	4.50
6Z4/84	FW rect. cathode	2.95
7C4	HF triode	3.60
7E6	2-det., triode, amp.	4.05
7N7	2-trio. sim. 6SN7	7.55
10	Power triode	5.00
12-A	Detector, amplifier	5.00
12AE6A	2-diodes: triode	2.45
12AT6	" " "	1.85
12AT7	2-trio. converter, TV	3.05
12AV6	2-det.: triode	1.65
12AX4	HW rectifier	2.70
12BA6	HF det., amp., pentode	1.65
12BE6	Pentagrid converter	1.75
12BF6	2-det., amp., triode	2.20
12B7	Pentode amp. TV	3.05
12CN5	RF aml., det., auto.	3.45
12SA7	Pentagrid converter	4.30
12SJ7	RF pentode	3.00
12SK7	Pentode det., amp.	3.95

Type	Uses*	List
12SG7	2-det., triode amp.	3.75
12V6	Det., amp. sim. 6V6	2.90
12Z6	HW rectifier	3.00
19	2-triodes, det., amp.	3.70
22	Tetrode det., amp.	5.00
24-A	" " "	6.60
25A7	Rect., power pentode	5.00
25L6g	gt Beam power amp.	2.65
25Z5	HW rectifier: doubler	3.15
26	Triode amplifier	4.35
27	" det., amp.	4.35
31	Power pentode	4.00
32	Tetrode det., amp.	3.70
33	Power pentode, det.	3.35
34	Pentode det., amp.	3.50
35/51	Tetrode det., amp.	2.40
35L6	Beam power amplifier	2.40
35W4	HW rect., cathode	1.40
36	" " "	2.70
36	" " "	2.85
36	Tetrode det., amp.	4.35
37	Triode det., amp.	1.85
38	Power pentode	2.30
39/44	Pentode det., amp.	4.35
41	" " power	3.85
42	" " power amp.	3.85
43	" " "	4.15
45	Power triode amp.	2.15
46	2-grid power amp.	4.65
47	Pentode power amp.	5.30
50B5	Beam pwr. amp., det.	2.75
50C5	" " "	2.15
50L6gt	" " "	2.55
56	Triode det., amp.	1.90
57	Pentode det., amp.	4.35
58	" " "	4.35
70L7gt	Rect. beam pwr. amp.	6.95
71-A	Power triode, det.	5.00
75	2-dio. trio, det. amp.	6.80
76	Triode det., aml.	2.80
77	Pentode det., amp.	7.20
78	" " "	7.20
79	2-triodes	5.00
80	FW rectifier	4.20
81	HW	4.65
84	see 6Z4	
85	2-dio., triode, det. amp	4.35
89	3-grid power amp.	4.35
94	Triode det., amp.	7.20
954	Acorn pent. det, amp.	9.80

*Amp. - Amplifier; Cp1d - Direct coupled; Det. - Detector; 2-det. - 2nd det., AVC, amp.; Dio. - Diode; Dblr. - doubler; FW - full wave; HF - Hi-Freq.; HV - Hi-voltage; HW - half wave; Rect. - rectifier; Trio. - triode.

TRANSMITTING TUBES.

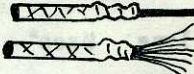
We have the following tubes in stock, from a special buy. All R guaranteed OK.

VT-62	8801A) 7 1/2 v. cw 25 w. 1/2 B-audio 45 w. Present net 10.90.
VT-224/RK-34	O-amp. phone, cw. Market about \$5.00.
1624	2 1/2 fil. 2 A. cw. 35 watts, AB audio 72 watts. Net 5.75.
1626	12.6 fil., .25 amp. amp., oscil. 4 watts. List 2.20.

ASK about tube substitutions. See "Flyer" for more tubes, sockets and accessories. Don't forget postage.

Builders' Supplies — Wire — Tubing — Connectors — Terminal Strips — Lugs — Solder

HOOKUP WIRE.



Pushback. Highest quality tinned wire, evenly drawn and very flexible. Easy to solder, especially with English Tri-sol. Has double cotton covering, with a paraffined damp-proof braid that slips back to solder. Following colors used as our standard when possible. This hookup wire works good with automatic wire strippers. Any length sold.

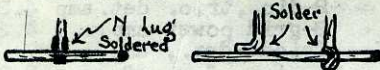
- #18 Solid. Yellow. For heavy fil. leads, RF tuning circuits and Hi-F. 26-1. 20 feet.....30
- #20 Solid. Black. For general wiring, fil. etc. 26-2. 20'...20
- #22 Solid. Blue. General use in a small space. 26-3. 20'...20

THERMOPLASTIC

WIRE FOR POINTS.

- #22 stranded plastic-covered. Ideal for sw. pts. to coils. Is easy to skin. Tins easily. Makes a neat job. 26-29. 20 ft.....30
- 20 Stranded plastic. Ideal for HF Lo-loss circuits, tuning, etc 26-11. #20 plastic. 20 ft.....30
- #18 Stranded plastic. Ideal 4 HF tuning circuits. Blue. Best. 26-13. #18 plastic. 20 ft. .40
- #22 Stranded Celatsite for Hi-V. wiring: small space. White. 26-16. #22 Celatsite. 20 ft.20
- #18 Solid plastic. Yellow. For RF and solid wiring or HF coils. 26-18, #18 plastic. 20 ft. .30

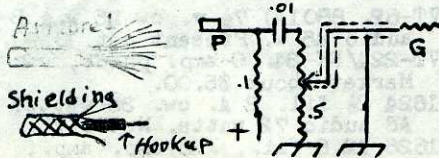
BARE TINNED COPPER BUSBAR.



All solid. Easy to handle. Is best for RF tuning circuits as connecting variable condensers, fixed crystals, etc. No insulation to push back. Solders easily with English Tri-Sol. Any length sold. Add postage. Round. Prices per foot:

#10 26-7. .06	#18 26-28 .02
#12 26-8. .05	#20 26-35. .01
#14 26-9. .04	#22 26-36. .01
#16 26-34. .03	#24 26-37. .01

#16 ARMORED & SHIELDING.



Shielding. Hookup. About 10 feet of length.

Shielding. Woven for 3/16 inch hole to fit over most hookup wires. Easy to solder onto. By grounding it, you reduce feedback and regeneration. Diagram shows use of Armored, or shielding to reduce audio howls in an amplifier. 26-10. Per foot .08

CAMBRIC SPAGHETTI TUBING.

Takes #18-18 bare wire. About 4K v. insulation. 26-24. Ft. .10 7/16" orange. Takes cables. Is real husky. 26-27. Special ft.05

PLASTIC SPAGHETTI TUBING

Tiny #20 wire. Black. Ideal 4 covering Diode, TRX leads, coil leads, etc. 26-33. Foot..... .04 Reg. #14 wire type (18-18). OK for corners. 26-22. Foot..... .06 3/16" hole. Black. Good for bunched leads. 26-26. Foot.. .05 3/16" hole Spaghetti 2 1/2" long. Same as above. 26-32. 10 pcs. .05

Spaghetti Bundles. About 23 assorted sizes and colors 8" in length. 26-30. 6 oz. wt. .40

TAPE.

Friction Tape. Standard for Radio, Electrical and Home repairs. Split it lengthwise for best results.

- 3/4" x 14 ft. 11-14. 3 oz. .15
- 3/4" x 60 ft. 11-16. 10 " .50

Rubber Tape. Wraps close around the joint. May be covered with friction tape. 3/4" x 23 ft. 11-17. 10 oz..25

Plastic Tape. For Electrical wiring. Hugs the joint and replaces friction & rubber tape combination.

- 3/4" x 20 ft. 11-54. 4 oz. .75

CABLE CLAMPS.



Holds bunched wires, 110 cords or cables in place. Screw holes. 26-14. 3/16" to 1/4" cable. .05



SCREW

TERMINAL STRIPS.

2-Terminal BP strip. 1" long. For A-G posts. 4-24. 2 term. .10

4-Terminal BP strip. 3 1/2" long. Same as above, except 4 screws. 4-3. 4-terminal BP strip. .15

5-Terminal BP strip as shown, with 5 screw connections. May be used on 1-tuber. 4-29. 2 oz. .20

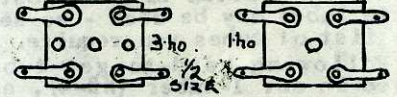
MRL 1-tuber Back strip and scale See Section Q.

TIE POINTS & BLOCKS.



Lug terminals riveted to 1/16" Bak. strips. Mount under base to hold condensers, resistors, etc. Prevents shorts- makes neat job.

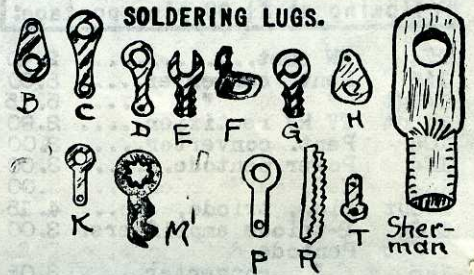
- 1 lug. 4-13..03
- 2 " 4-14..04
- 3 " 4-15..04
- 4 lug. 4-16..05
- 5 " 4-17..05
- 6 " 4-18..06



Mounting blocks are held below base by center screw & nuts. Same use as tie points. 4 lugs; 3 holes. 4-19. Each .05 4 " ; 1 " . 4-20. .05

BINDING POSTS.

See Section F.



SOLDERING LUGS.

Tinned copper. Solders easily. Fit #2-3 screw: T. Fit #4 " : F-K. Fit #6 " : B-C-E-G-H -P. Fit #8 " : D-M. Crimp - R. No less than 20 of any type sold - no assortments. Specify type.

- 26-20. Type? 20 for..... .20
- 26-25. Sherman lug. 3 for.. .05

Eyelets and Eyelet soldering lugs - see Section H.



A NEW SOLDER DEAL

Now smaller #18 size - easier to work. Dubois Trisol - the best. Made 1-lb Spools in England from Spanish lead and Malay tin. Melts about 358 F. Makes a quick and strong joint. 60:40 ratio. 26-17. 10 ft. solder for.....35 1 lb. spool, about 186 ft...2.95

Soldering Paste. Helps keep an iron tinned. Also helps general soldering. We furnish the best brands, like we use, as Kester, Nokorode, etc. 26-19. Can .25

More wire and fittings see CAT sections E-F-G-M.

Watch "Flyer" for changes and additions to this section.

DON'T FORGET POSTAGE.