

Here Is Your 1960 RC Catalog

We are happy to bring you our 1960 catalog. It contains many new items and has been completely revised to make it easier to find material listed.

Many new things are in the works. Among them are an 8 channel read transmitter and receiver for simultaneous operation being developed by Phil Kraft whose fabulous single channel receiver is finding very good acceptance in all parts of the country.

We invite your queries and will look forward to serving your R/C needs

Ace Radio Control

BOX 301
HIGGINSVILLE, MO.

Ace R/C East

3029 WEST CARY
RICHMOND, VA.

Ace R/C West

BOX 18
CARMICHAEL, CALIF.



BLACKWELL T 100 PLANE KIT

An entirely new concept in high-wing cabin design R/C model aircraft is the T-100 manufactured by Blackwell Models Manufacturing Co. of Canon City, Colorado. It offers clean lines, simplicity of construction, and dependable performance flight after flight and has already won many friends in R/C circles, particularly in the Colorado area. It is an ideal model for the beginner. The fuselage sides and cabin bulkheads are factory assembled. The advanced R/C modeller will also find the T-100 excellent for proportional control or full house systems. Wing area is sufficient to give good performance with heavier radio installations.

Fuselage doublers of 1/16" plywood run from the nose to the rear of the cabin bulkhead. Engine mounts are of maple interlocking the front of the fuselage. Engine mounts cannot be driven into the cabin. Wing spars are full depth, cut, notched for rapid rib assembly. Leading edges are full 3" balsa plank- ing. Wing ribs are copstriped, all features for a rugged wing structure built to withstand abuse.

The span is 54", has a wing area of 835

square inches. It is designed for engines of .15 to .19 displacement. The average wing loading is estimated at 14 ounces per square foot. Designed for rudder only, for intermediate, for proportional control, for full house systems. The T-100 is priced at what can be considered a very reasonable price at only \$9.95. An inspection of the kit revealed that this is some of the prettiest balsa that we have seen in any kit available at any price on the American market. \$9.95

SERVICE

In keeping with our policy of improving our service to our customers, we have, with the co-operation of an excellent R/C fan, opened a service center for the convenience of customers who experience difficulty in getting any Ace kit into proper operation, or if the receiver suffers a prank. Not just every service man for radio or TV is equipped or has the "know-how" required by R/C receivers and transmitters. An entirely different technique is required and we are proud to say that the operator of our Service Department has that technique. He is a licensed operator of long standing and has been in radio control since the early days. His service is fast, courteous and friendly. Service charge for all ordinary repairs is \$2.00 plus return postage. Should the unit require more than ordinary work, he will advise approximate cost of repair. In the event of defective components on the kit from Ace, it will be replaced without cost.

Ace Service Department
837 Eastern Avenue
Schenectady, New York

★ Transmitters

Effective November 15, 1959, docket #12902 of the FCC went into effect. This docket provides, very simply, that no longer may kits be assembled and tuned by individuals. They may still be assembled but all tuning must be done by, or under the supervision of, someone holding a commercial class operator's license.

We, at Ace Radio Control, still offer kits, however, we also offer all of our kits in assembled form so this will not present too much of a problem to you. However, all Ace R/C kits may be tuned and sealed by Dale Springsted, 837 Eastern Avenue, Schenectady, New York who operates our Service Center. There will be a fee of \$2.00 plus return postage for this service. This fee will not include any service work if service work is required.

All transmitters which are assembled now are being furnished sealed and with a certification testifying to the effect that they are on frequency as required by the new docket #12902.

Under no circumstances is it possible for an individual to replace crystals, make any tuning operation on the transmitter. All that is permissible is to turn the filament switch on and off and press the key.

All completed transmitters sold are certified to be within the tolerance standards as specified by the FCC regulations.

COMMANDER



The Commander transmitter swept the country and well it might for at \$9.95 as a transmitter kit, it is more powerful than many commercially available jobs. Housed in aluminum case, it comes complete with tube, crystal, and all required parts except for a 3 foot section of music wire and batteries. Has been built by R/C fans who have had absolutely no previous radio control experience and it worked right out of the box. With a fabulous pictorial diagram, it's a cinch to wire. 2 watts input. May be used with power supply and never become obsolete. It is not necessary to go to heavy equipment for dependability. If a kit is purchased, it must be assembled by someone holding a commercial operator's license. With punched screened cabinet only

\$9.95

With 26,995 or 27.145 crystal **\$10.95**
Custom built, tested, frequency-checked, and certified **\$18.95**

ALPHA TECH T-300



Alpha-Tech's T-300 transmitter. Powerful hand-held tone transmitter with detachable telescoping antenna, keying button, plus built in pulser socket. Socket was wired ready for connection of pulser or external batteries. 100% tone modulation. Sturdy handsome red anodized aluminum case. One hand operation of power switch. Crystal controlled. Conforms to FCC authorized Class C Citizen's band. Shipped with 26,995 mc crystal unless otherwise specified.

Extra strong glass melamine circuit board, long battery life, power input to final amplifier 1 watt, leading coil tunes antenna, contributes to long range, stable, drift-free at all frequencies, no transistors. Batteries required are 1½ volt A (Burgess 2D), two 6½ volt B (Burgess XI45), one 3A4 and one 3A5 tube. Size is 2 3/4" x 4 1/4" x 8". Weighs 3 pounds and 3 ounces with batteries. Transmitter includes antenna, male plug for pulser/external battery, tubes and crystal, complete instruction manual, less batteries.

DELTRON T109

\$39.95



The Deltron T109 tone transmitter is a long range Class C transmitter—crystal controlled for operation on 27.355. It has high radiation. Uniformity of output will give years of superior performance. Its audio output of 800 to 1000 cycles is especially designed to operate the Deltron R109 and will also operate most commercially available receivers. Comes complete except for antenna and batteries. Antenna is 36" length of 3/32 music wire available from your hobby shop.

Requires one Eveready 742 and two Eveready 447 for the A and B supplies. Size of the hand-held case is 5 5/8" x 8 7/8" x 2 7/8".

\$29.95

Transmitters, Continued

MARCYTONE



Marcy transmitter contains two 3A5's, an MOPA RF and multi-vibrator audio. Modulator has variable frequency so that the desired cycles for the MarcyTone receiver may be selected. Slight modification allows the unit to be used with other single channel audio receivers. Housed in handsome aluminized punched case 3" x 5½" x 8". Unit is expandable by plugging in either one of the control boxes. Comes complete with 13.6275 megacycle crystal, resistors, capacitors, tubes, everything required except for batteries and 3 foot section of music wire antenna. Complete combo kit which may be assembled by you but must be tuned by the commercial class operator. **\$19.95**

Assembled, tested, frequency-checked and certified **\$39.95**

MARCYTONE CONTROL BOX



Marcy 6 channel push button control box to instantly convert the Marcy single channel transmitter to 6 channel operation. Jack is provided in the transmitter and control box plugs in. Stable, provides six channels. Housed in handsome aluminized case, completely punched and ready to assemble with Chi Tel pots for reliability. **\$16.95**

MARCYTONE STICK BOX



MarcyTone stick box. Small hand-held case measures 2 5/8" x 4" x 1 1/4".

Unique box holds pots and plugs into the transmitter to convert to six channel operation. Gives positive stick action for left, down, right, up and slow and fast on motor speed. Strong centering neutral on both sticks. **\$17.95**

MARCY TWIN SIMUL



Marcy Twin Simul transmitter with dual tone generators are housed in a 3" x 5½" x 8" case. It is an MOPA type RF section with 3A5 amplifier. May be operated with push buttons or with pulser below for twin simul operation. Complete unit including transmitter and Twin Simul tone generator, designed for use with Marcy Twin Simul receiver, comes in highly pre-fabbed kit which may be built by you but must be tuned and tested by someone holding a commercial class operator's license. **\$37.95**

As above but with completely wired transmitter RF section and amplifier section but with Twin Simul tone generators still in kit form. **\$52.95**

As above but with wired Twin Simul tone generators. **\$62.95**

MARCY TWIN SIMUL TONE GENERATOR



Marcy Twin Simul tone generators housed in aluminized case 2" x 4" x 4" for converting existing MarcyTone equipment to dual operation. **\$17.95**

MARCY TWIN PULSERS



Marcy Twin pulsers. Stick control housed in small metal case. Plugs into Twin Simul tone generator for dual proportional flying. Motor control may be added using either full off or full on. **\$32.95**

Transmitters, Continued

MIN-X



The Min-X transmitter is skillfully constructed, extremely powerful, and is a hand-held tone-CW unit. It is a reliable MOFA circuit 100% modulated. Highest output, quality components, gold anodized case with two color name plates. Specifications—3V4 tube in output stage, 3A4 in oscillator and modulator. Housed in attractive 5½" x 7½" x 2½". Batteries required are one Burgess 4F 1½ volt, two Burgess XX45 67½ volt. Comes complete with telescoping chrome antenna.

Min-X transmitter is designed specifically to operate with companion Min-X receiver. Transmitter will also operate any CW or tone type receiver. \$38.50

MC 250B



MC250B transmitter, 3A4 tube in a very simple rugged and stable circuit, 2½ watts input, crystal controlled, 27½ megacycles. Green hamertone case 3" x 5½". Uses two Burgess XX45, one S4F or their equivalents. Completely built up, tested, frequency-checked and sealed. \$16.95

With assembled 20-250 power pack \$27.95

MC 250T



MC250T tone transmitter designed specifically for the MC100T receiver. Uses two 3A4 tubes. Metal hand-held case 3" x 5½" x 8". Beautiful hamertone finish. Comes with small telescoping antenna. Ready to operate less bat-

teries. Batteries required are two Burgess XX45, one S4F or their equivalents. Completely assembled, tested, frequency-checked and certified \$22.95

WAG DUAL



While at first glance the WAG Dual transmitter appears quite complicated, closer study of the schematic reveals that it is in four sections. There are two twin 3V4 pulsers, two-tube audio modulators, and two-tube MOFA transmitter. By building a section of this at a time, the complexity is cut down. Because of the precision required, quite a number of 5% tolerance resistors are used. Individually measured capacitors are furnished in matched pairs for pulsers and modulators for uniform results.

Basic MOFA transmitter section contains wound coils, RF choke, air type trimmer, resistors, capacitors, crystal sockets, DPST, sockets, etc., pre-fabbed base. May be wired by you but must be tuned by someone holding a commercial class operator's license. This particular unit may also make a very handsome CW transmitter or may be modulated with a single tone modulator for a good tone transmitter. \$6.95

Basic pulser-modulator section kit contains matched pairs of condensers individually measured, 5% resistors, sockets, two DPST switches, push switch, six Allen-Bradley pots, four with lock nuts, 8 wire cable, plug and socket, pre-fabbed chassis. \$16.95

Deluxe combo. Basic combo kit, basic transmitter, basic pulser-modulator, 8 x 10 x 10 case, seven 3V4's, one 3B4, crystal, 112" antenna, new Sigma relays, improved stick control box with punched, silk-screened case. \$74.95

Completely assembled, tested, frequency-checked and certified and sealed. \$104.95

50-54 megacycle version is available at the same price as above. Please specify.

★ Receivers, Single Channel

ALPHA TECH R300

The Alpha-Tech Model R-300 features what is said to be the world's strongest assembly. Fiberglass component board, specially designed aluminum case. Attractive red anodized scratch-proof finish. Size is 1 1/4" x 1 7/8" x 2 7/8". Weight is 3 ounces. One 1 1/2 volt pencil for A and one 30 volt for B is the recommendation. Complement is one 600T tube, two high-gain transistors. Circuit is compensated for temperature variations and transistors are bias-stabilized. "Trans-tone" circuit uses 250 milliwatt transistors and finest miniature electrolytic capacitors to deliver stable, reliable performance. Low idling current means long battery life. .8 ma idle. 4 to 5 ma on signal. Antenna 24" whip or wire recommended. Non-critical tuning. Simple one tuning slug—once tuned, stays tuned! Will follow faithfully the fastest pulsing. Receiver comes completely assembled with 7 pin plug—ready to operate, DPST slide switch for installation, 7 pin receptacle, phone jacks, complete instruction manual. Must be used with an audio transmitter but the use of the Alpha Tech T300 transmitter is recommended because it will take full advantage of the Alpha-Tech's high selectivity. Due to its high Q tube detector design, the receiver displays amazing ability to separate radio signals of nearby frequencies. This feature is normally available only in heavy, expensive superhetrodyne type receivers, however, Alpha-Tech units have been used successfully for tee-at-a-time model airplane flights without interaction. One receiver is tuned to 26,985 mc and the other to 27,255 mc with transmitters to match. Completely assembled \$39.95

KRAFT TONE



The fabulous Kraft tone receiver responding to 400 to 600 cycles per second which features a current rise using only 22 1/2 volts of battery. Utilizes a 600T detector, three transistors, a printed circuit board—undrilled, and all components required for a deluxe parts package. According to all reports from Ed Lorenz and others throughout the country, it has received the most fabulous reception of any receiver of the tone variety that has been kitted. A check with Phil Kraft, the designer, noted one or two

improvements over the circuit as it originally appeared in March, 1959, Model Airplane News. These changes have been made. Features an exploded view of the receiver as well as step by step instructions so that it is very difficult for even a beginner to go wrong. We consider this one of our best kits and one of our best buys. Must be used with a tone transmitter of a type capable of producing 400 to 600 cycles per second. MarcyTone transmitter may be adapted. Only \$19.95

COMMANDER



By using the famous McEntee Simple Single circuit with subminiature parts, an utterly reliable receiver has been made which is being used by the beginner and expert alike. Simple, easy-to-follow instructions give you reliable performance which has been checked out on the ground in excess of one-half mile. Housed in small plastic case for crash-resistance, comes complete with tube and Gem relay. Measures 2" x 2 7/8" x 1". Requires 1 1/2 volts A and 45 volts B. Thousands of satisfied customers with comments ranging from wonderful to terrific. Get yours now! Must be used with CW or carrier type transmitter.

Complete kit with Gem standard relay	\$7.95
Complete kit with Gem micro relay	8.65
Custom built	12.95

COMMANDER CONVERSION

Many requests have come in for a conversion kit to transistorize the Commander Receiver. This circuit first appeared in Grid leaks all about a year ago and has been tried in all parts of the country with terrific success. The conversion is quite simple to do and only requires a matter of about an hour to wire completely. The transistorized Commander features a .5 to .8 mil idle which, upon receipt of signal, rises to 4 or 5 mils through the relay for really respectable relay action. It has been tested on the ground in excess of 3,000 feet and temperature checked in excess of 130° and has been proven utterly reliable. Conversion kit consists of all components required to make the conversion as well as complete instructions to make it easy. Considering the many thousands of Commanders that are in the hands of satisfied customers, we feel we are offering a service by making the conversion kit available. Includes transistor. Only \$2.50

Receivers, Single, Continued

COMMANDER INSTA KIT

Commander installation kit makes installation in planes, boats, and cars a cinch. Insta-Pak holds your receiver, relay, and all batteries in a crash-resistant plastic box measuring 4 5/8" x 3 1/2" x 1 1/4" which will fit into most H/C installations. May be completely water-proofed for boats. Weight with Commander receiver and all batteries and wire is only 10 ounces. Compact, interchangeable other receivers may also be installed. Contains plastic box, Acme #14, two Acme #6A, hookup wire, RCA jacks and plugs, 8bv 7 prong plug and socket and instructions. Less receiver. \$2.50

DELTRON T109



Micro miniature all-transistorized tone operated, designed for operation at 27 megacycles. It has a usable tuning range of from 26 to 29 megacycles. It is in a rugged crash-proof metal case with low current drain when idling which rises to 4 or 4.5 mils. Uses only one single subminiature 32 1/2 volt battery. The Burgess Y15 will last for many flights. Provides a total end receiver and battery weight of just 2 1/2 ounces. In larger installations, the Burgess U15's are recommended. Receiver and battery weight with U15 is just over 3 ounces. Size is 1 3/4" x 2 1/4" x 3/4". Designed for operation with 100% modulated transmitter having an audio signal of between 600 and 1000 cycles per second as the Deltron T109 produces. Receiver, completely assembled \$29.95

GAZISTOR



Gazistor uses 1X61 or 6X1054 first stage with 6X222 transistor in second. First stage idles at about .5 mils with transistor drawing only a bit of current. With CW signal, the first stage drops, transistor triggers relay. Very compact in design. Kit is complete with everything needed except tube, transistor, and relay. Uses 1 1/2 volts A and 45 volts B. Must be used with CW or carrier type of transmitter.

Basic kit \$ 3.95
Combo kit, tube, transistor relay 14.50

LORENZ DIODE

The Lorenz Diode has many friends throughout E/C. It is one of the earliest receivers which features current rise. By using diodes between the first and second stage of the receiver, it is possible to run first stage at an idle of .1 mil and still keep the second stage cut off to 0. Diodes smooth out and amplify the voltage produced by the bias so that much less bias is required. Means much longer tube and battery life. Greater sensitivity and range. Uses a 6X1054 and a 6X5672 or 1AG4 in the second stage. Requires 1 1/2 volts A, 45 volts B. Complete kit to build the Lorenz two-tube along with diodes, capacitors, and special parts \$ 5.50

Combo kit, tubes and Gem relay \$15.30
Custom built with tubes and relay 20.50

MARCYTONE



MarcyTone single channel receiver measures 2" x 2 7/8" x 1". Weight is under 3 ounces. Responds to audio signal only. Kit includes tube and three transistors, relay, filter, all capacitors and resistors, wound coil, drilled base. Must be used with transmitter of the MarcyTone type. Requires 30 volts of B and 1 1/2 volts of A. \$18.95

MC100S



The popular MC100 receiver has been redesigned so that it uses printed circuitry. Complete with 384 tube and Gem relay. Wired and tested. Easy to tune and will stay tuned over long periods of time. Lowest priced American made unit on the American market. \$11.95

MC100T

MC100T--tube and transistor tone receiver at 1000 cycles per second uses 1 1/2 volts A and 30 volts B. Features a current rise, has only a 13 mil filament drain, comes completely assembled. Must be used with a transmitter capable of 100% modulation at 1000 cycles per second such as the MC250T. \$20.95

Deluxe, housed in metal case \$24.95

Receivers, Single, Continued

MIN X



Min-X receiver introduces a new standard to the radio control field. The receiver features new all-transistor circuitry and weighs only 2½ ounces with case and plug. Size is 1" x 2 1/16" x 2 3/8". You can fly all season on 50¢ worth of receiver batteries. Simplified tuning procedure. 30 day warranty. The all-transistor receiver with the reliability of tube receivers. Flight-tested for months across the nation under all temperature conditions. Must be used with a transmitter capable of 600 cycles per second at 100% modulation such as that furnished by Min-X. \$39.95

TR 4.5



The TR 4.5, an all-transistor 27 mc receiver, is sure to appeal to the advanced radio control enthusiast. It has many fine features including reliable operation over a wide temperature range, high current change, ultra-economical battery life. It is sure to win many friends! All required components have been assembled and the total price is less than if individual parts are purchased individually. Package includes three special transformers, a special Gen relay, four transistors, and all wound coils, top grade resistors and capacitors. Epoxy resin fiber glass printed circuit board contains the parts placement guide to make assembly easier than would be expected.

The TR 4.5 is housed in a special lightweight aluminum case to make a compact unit measuring 2" x 2 7/8" x 3/4". Weight is slightly over 2 ounces. Requires only 4½ volts of battery and idles at two mls which, upon receipt of modulated signal of 400 cycles per second at 100%, rises to 35 to 40 mls for really reliable operation. Also, it

may be used quite successfully on 3 volts although the current change is not as great.

It is available only from Ace Radio Control by a special arrangement with the designers, Don Kamm and Red Costlow. An Ace exclusive designer-approved kit. Complete parts package—nothing else to buy! Must be used with transmitter capable of producing 400 to 600 cycles per second, 100% modulation. Only \$22.95

TECH TWO 27



A deluxe kit of all parts exactly as specified by the designer, Howard McEntee, for the Tech Two 27. You receive all the required components, two tubes, a transistor, diode wound coil, transformer, choke, flea clips, RCA type RFC. Just as outlined in the construction article in American Modeler, April, 1959. Picture shown here copyrighted by Street & Smith, 1959 and reproduced by permission. This is a CW type receiver. Unlike other two-tube receivers of this type, it uses hard-tubes in both stages for a current rise through the final transistor. Requires 1½ volts of A and 22½ volts B. Complete deluxe kit. \$21.95

WAG SINGLE AUDIO



Complete kit of parts to build the WAG audio tone receiver designed for heavily modulated audio signal. Will not be affected by interference from base or stray signals from CW transmitters in the area as easily as straight CW. Slightly more complex than a CW receiver but pays off in trouble-free operation. No sensitivity adjustment, is as easy to tune as your portable radio. Complete kit of parts as detailed by the designer. Uses 1U5, 1U4, and 3V4 tubes. Must be used with an audio type of transmitter, capable of producing 400 cps at 100% modulation. Complete kit of all parts less tube and relays with drilled, punched chassis \$5.95

Combo kit, drilled chassis, set of tubes, and Gen relay \$14.50

★ RECEIVERS, Multi Channel

WAG DUAL RECEIVER KIT



We've had the pleasure of working very closely with Dr. Walter A. Good in the development of kits for his dual proportional R/C system. Ace has been given the exclusive kitting rights to the receiver and transmitter and these are designer-approved kits. The WAG dual receiver kit contains submini tube sockets, epoxy resin fiber glass bases completely drilled with over 100 holes, all capacitors and resistors including the 5% values, Federal #1215 high back resistance diodes, wound tank coil, #6152 RFC, wire, plugs and sockets, spaghetti, solder and instructions for wiring and tuning. The most complete kit we have ever offered. Remember, it is approved by Dr. Good for your protection. It is not recommended for beginners or those with limited R/C experience. Kit saves you more than \$3.00 on parts if purchased separately or individually. May be had for either 27 mc or 50-54 mc. Be sure to specify frequency desired. Must be used with WAG dual transmitter as listed elsewhere in this catalog.

Basic kit, less tubes and relays \$15.95
 Combo kit, basic kit, tubes, and 3 Gen 39.95

MARCY TWIN SIMUL KIT



A simple, fool-proof dual channel simultaneous receiver designed by Marcy Inkmann, developer of the MarcyTone single and 6 channel receivers. You can use either channel for push button or pulse flying since each channel may be pulsed simultaneously up to 20 cycles per second. Marcy's Twin Simul receiver kit contains 8007 tube, three 7003T's, two Gen 5E relays, two filters, and all other required components. Weight is under 5 ounces. Unit measures 2 1/2" x 3 5/8" x 1 7/8". Must be used with the Marcy Twin Simul transmitter listed elsewhere. Complete kit \$27.95

MARCY SIX CHANNEL KIT



6 channel MarcyTone receiver. In this designer-approved kit, Ace offers a fabulous new audio system developed by Marcy Inkmann. In development over five years, the system has been thoroughly flight-proven and since it has been on the market, hundreds of letters have been received from satisfied customers.

By using simple filters instead of expensive toroids, cost is held down. Filters have a band-width of at least 200 cps so that transmitter drift is no problem and you have no constant adjustment worries and can devote your time to flying.

6 channel MarcyTone receiver consists of two sections. One is completely self-contained RF detector amplifier section. Housed in plastic case, it measures 1 3/4" x 2 1/4" x 2 1/8". Coupled to filter and relay deck which provides the channels required. This measures 1 1/2" x 4" x 2". Overall weight is under 10 ounces. Two unit installation makes for flexibility and is very versatile. Complete kit contains drilled bases, all filters transistors, tubes, capacitors, resistors, relays, everything except batteries.

Recommended for use with the MarcyTone transmitter and 6 channel control box only.

Batteries required are 1 1/2 volts A and 30 volts B. The use of the largest batteries that the unit will carry is recommended. \$55.95

MARCY BASIC RF AF SECTION

Basic RF detector and AF unit is available separately. Filters may be purchased in numbered frequencies so that two to six channel equipment may be built as desired by the more experienced. Contains all parts including tube, two transistors, but no filters or relays. \$11.95

MARCY TESTER

6 channel MarcyTone tester. With a flick of the switch, fast tuning is provided. Unit simply plugs into receiver and provides testing ease. Comes complete with moving magnet 8-5 mc and six position selector switch housed in aluminum 2 x 3 x 5 case. Only \$10.95

DUAL SPDT



Serve makers—Mickey Mouse experts—here is the switch you've been looking for. Provides two SPDT snap action switches with silver points which may be operated by cams, levers, or what have you. Measures $7/8" \times 7/8" \times 1"$ and weighs less than $1/2$ ounce. Many R/C applications. Only .25

WAG DUAL CONTROL BOX



There have been so many requests for separate control boxes for the WAG dual system that we are selling them separately. This is the same quality of stick box that is used with the WAG dual system utilizing 1 meg 60° pots so that no special gearing is required. This simplifies the construction and makes for trouble-free operation. Available separately less cord and plug. \$7.95

CONVENTIONAL CONTROL BOX

Conventional stick control box is also available with 100K 60° pot and a 1 meg 60° pot for conversion of your pulser or the WAG pulser listed elsewhere. This comes to you less cable and plug but with completely prefabricated box. Just as the WAG dual. \$7.95

WAG PULSER

This electronic pulser designed by Dr. Walter Good provides the basic system for proportional control which may be housed in your transmitter. Uses two tubes in a multivibrator system and parts are individually checked to assure balance. May be used with either 1A54 or 3V4 tubes.

May be used with Robot Junior for single channel, dual proportional or may also be used with any of the many Galloping Ghost systems involving the use of a Mighty Widget. Both rate and width are fully adjustable. Allen-Bradley linear taper pots are used to insure excellent performance. May also be used for rudder only. Basic kit consists of matched components, two AB pots, but is less tubes and case. May be used with conventional control box listed elsewhere for true stick control action. \$5.95

TRANSISTORIZED MODULATOR



Here is a modulator which may be used to modulate your present WOPA type transmitter such as the Aristol WOPA, the Lorenz WOPA, the WAG dual RF section and many others currently available. Completely transistorized, is temperature stable, will produce audio of 400 to 600 cps depending upon which size capacitor is used. Three different capacitors are provided. Kit comes to you with printed circuit base, all components required to make up this modulator which will give you 100% modulation at 400-600 cps. Unit is exceptionally small. Measures $1 5/8" \times 2 1/4"$ and is approximately $1/2"$ thick. May be housed in plastic case or bolted to the interior of transmitter. Requires no extra batteries. Uses the transmitter batteries to give the tone. Is quite easy to convert your transmitter with this modulator. \$6.95

WORTH SIMPLE SIMUL PULSER



If you've been wanting to go multi with proportional rudder and elevator and have shied away from the WAG TTFW, the Simul-Simul by John North as described in July, August, and September, 1958 Model Airplane News is just the thing for you. It will convert any single channel CR or audio receiver and transmitter which is capable of being pulsed up to 10 cycles per second into a simple, yet very effective proportional rudder and elevator plane. Motor control may be added with a minimum of complexity. The Simul-Simul kits are approved by John North and are complete in every detail, including 25 resistors and individually matched capacitors where required. Chicago Telephone pots are used for reliability and dependability. All metal parts are punched and formed. Case is of aluminum material for sturdiness and lightness. Measures $4 \times 5 \times 6$. Pulser portion and batteries are completely contained inside the case. Cures any RF interaction tendency. Full stick type of control. Complete with two subminiature tubes, Sigma relay, everything required except batteries. In the plane, a simple Mighty Widget motor may be used as an actuator or the Robot Junior will provide both rudder and elevator. \$21.95

★ Books -- Other Publications

GRID LEAKS, RC DATA SERVICE

A new and unique idea for the R/C fan was introduced in October, 1957 with the publication of "Grid Leaks--R/C Data Service".

It has met with a smashing success. The subscription list is constantly expanding. It is strictly confined to R/C with a brand new concept of R/C news.

R/C Data Service is published on 8 1/2 x 11 paper so that it may be punched for a three ring binder so that circuits, as presented, may be readily filed and instantly available. It brings to the serious R/C fan a brand new idea of building up a very practical library of R/C literature and informative material. Articles in Grid Leaks are designed for both the beginner and advanced amateur.

Top contributors such as Dale Springsted, John Worth, E. J. Lorenz, Jerry McGeorge and many others have made contributions to Grid Leaks in the past. The names of these in future issues is in a "Who's Who in R/C?"

Grid Leaks--R/C Data Service will present new ideas and circuits for gadgets and devices, receivers and transmitters from simple single channel equipment to multi-channel. It's a must for every serious R/C'er.

Volume II is currently in production and, unless otherwise specified, the subscription will begin with the latest issue published. Subscription price is a very reasonable \$2.00 for a 10 issue subscription. It is published once every two months.

NOTE! Back issues of Volume I have been re-run and are available but, because of the limited press run, the price is somewhat higher than the cover price. Obviously, a re-run costs more to re-run but the consistent demands from the field caused a re-run. Volume I, Numbers 1 through 10 are available at 35¢ per copy. Quantities limited.

SCHEMATICS

The schematic collection offered previously is no longer available due to the fact that the most popular schematics are being completely revised during 1959. However, any receiver or transmitter schematic of an Ace kit may be had by mailing it and remitting 10¢ each except for the WAG Dual units and Kraft. The then current schematic will be sent.

WAG DUAL SCHEMATICS

Since the magazine issue in which the WAG Dual receiver and transmitter instructions appeared is no longer available, Dr. Good has suggested that Ace make the instructions separately. They are offset printed and contain many helpful kinks not in the original articles.

Transmitter instructions	\$1.00
Receiver instructions	.30

RC HANDBOOK

Here's a book that skips theory and gets right down to the business of putting radio control systems together so they will operate your model planes, boats, trucks, etc.

By Edward McKies, American Modeler's R/C editor, it's in his down to earth style and is enjoyable reading.

Concentrates on construction detail of a number of R/C units. It also covers the hitherto neglected field of trouble shooting radio control systems. Whether or not you know radio, this is a book for everyone interested in R/C.

For the first time, it combines the necessary practical information on radio with detail instructions on mechanical construction. \$2.25

MODEL RADIO CONTROL



This new book shows you how!

Here is a completely revised book, "Model Radio Control" by E. L. Safford which replaces the old version which was a popular Gernsback seller. Goes into theory and also delves into very practical applications of some R/C circuitry. Gernsback's new #74 replaces Safford's old #43. It has 192 pages and will make a very valuable addition to your R/C library. There is enough theory, background, and general information to provide both the beginner and expert with material that he can easily adapt to his own use. Only \$2.95



★ 50 MC. Equipment

COMMANDER 50 TRANSMITTER

Here is the newest member of the Commander family. The Commander 50 is designed for the advanced R/Cer who wants to get on the Technicians or other licensed bands. It was designed by Ed Lorenz and uses a 3A5 in an MOFA circuit for utter stability. Comes with a 32.5 mc crystal. Handsome aluminum hand-held case 3" x 5 1/2" x 8", made of sturdy metal. Requires meter for effective tuning, although tuning eye is provided for indication of final tuning of amplifier stage. Complete with 3A5, crystal and case, but less antenna and batteries. Requires 3 foot section of music wire, 1 4P and 2 AA45 or equivalent batteries for sturdy, stable 50 mc hand-held transmitter.

With punched screened case \$11.95

LORENZ 50 RECEIVER

The popular Lorenz two tube receiver works 50-54 mc quite well. Same action as 27 model featuring a current rise in second stage. The design is as developed by Ed Lorenz. Basic kit contains drilled, eyeletted base, all resistors, capacitors, wound tuning coil and RFC with full directions. Must be used with CW transmitter such as shown above.

\$3.50

Combo kit with tubes and Gen relay \$13.50

TECH TWO 50 RECEIVER



At last! The Tech Two 50, as detailed by Howard McEwen in the 1957 Air Trails Annual. This receiver created quite a stir at the 1956 Nationals when Howard ran flew it. Has absolutely no sensitivity setting, uses only two tubes for a very low filament drain, follows fast pulsing, is as sensitive as a gas-tube, provides a current rise on signal without the use of bias batteries, is operated by any dependable 50 mc CW transmitter. Offered with commercially wound transformer, color coded for easy hook up in the receiver.

Basic Tech Two 50—Contains wound coil, diode, resistors, capacitors, punched base, two tube sockets, Miller 6152 50 whr RFC, switch, 5 prong plug & socket, and especially wound transformer, less tubes and relay.

\$8.45

Combo Tech Two—with CK333 and 1A04, Gen standard relay \$15.95

★ Escapements

BONNER 5N

A simple self-neutralizing action for rudder only or as elevator or motor control for throttle engines when worked off either compounds or in multi work. Size is 1" x 1 1/2" x 1 1/4". Weight is 5/8 ounces \$5.95

BONNER VARICOMP



A versatile and powerful compound escapement. Can be used in every type of single channel control systems for rudder only through cascaded multi. One Varicomp will provide rudder control, blip engine control and another control off another third position. Size with linkage support is 2 1/8" x 1 1/4" x 1 1/4" deep. Weight is 1 1/8 ounces with support and follower. \$5.95

Two Varicoms provide rudder, engine, elevator control and an extra control which can be used to trigger some other device. Comes complete with linkage support and two cam followers. Size with dual support is 3 3/8" x 3" x 1 1/4" deep. Weight 2 ounces \$18.95

Extra dual linkage supports \$ 1.45
Extra cam followers .15

BONNER R.E. VARICOMP

The R. E. Varicomp is a compound escapement which has virtually the same action as other Bonner compound escapements except that it has an elevator tripped in which gives up elevator allowing both rudder and trip elevator action from one escapement. Printed circuit switching also allows quick blip engine control and cascading with other Varicoms.

\$9.75

COBS 5N



Used primarily for rudder only operation but may also be used as a two-position motor control. Size is 1 3/8" x 2" x 5/8". Weight is 3/4 ounce. \$5.95

COBS 3P

Same as above but provides 3 positions for motor control, high, medium, and low. Control is progressive. There is no neutral. Size is same as foregoing. \$5.95

★ Escapements, Continued

Pilot Control



Stick type control box which will work with any transmitter. Counts the correct number of pulses when stick is moved to correct position. Designed primarily for the Cobb system of the Selector 4 with Cobb Slim Line Servo but may also be re-worked to work with most compound escapements. Clock-work driven \$12.95

Selector 4

\$8.95

SEE KIT
FOR
INSTRUCTIONS



Basic escapement for a system which will give five channel operation on a single channel radio. Used by itself, it will provide selective right and left rudder and will operate a secondary escapement. When used with the Cobb Slim Line Servo and motor control escapement, it will provide left and right rudder, up and down elevator, and motor control. Size is 1 3/8" x 2 5/8" x 3/8". Weight is one ounce. \$8.95

ARISTOMATIC COMPOUND



More and more satisfied boat owners are recommending the Aristomatic compound to their friends. Here is a unit which has a self-contained electric motor for the very low drain plus a special integral switching which gives the equivalent of two-channel operation with simple single-channel equipment. Includes electrical switching action, forward, stop, reverse, stop, mechanical direction control, left, neutral, right, neutral. Operates on 3 to 6 volts. Complete with instructions. \$10.95



SERVO
\$8.95

For use with the Selector 4 escapement or from two channels for rudder, elevator, or motor. Either self-neutralizing or trimmable. Printed circuit base, nylon gears, operates on 3 volts. Size is 7/8" x 1 3/4" x 2 3/4". Weight is 1 1/2 ounces. \$8.95

★ Servoes

The Electro series of servos listed below all have the same general physical shape and physical size which is 1 3/8" x 1 1/2" x 2 1/2". Weight is 1 1/2 ounces. No overrun regardless of voltage with the new Electro brake. Mount in any position for use with any transmitter and receiver.



COBB ELECTRO 5N

This is an electro as the name implies. It is driven by a motor instead of a rubber band. It performs the same function as the 5N escapements listed in the escapement section with the exception of the fact that no rubber band is required. The manufacturer claims that it is four times as powerful as any other escapement tested. \$8.95

COBB ELECTRO 3P

This three-position servo performs the function of the three-position escapement except that it uses an electric motor instead of a rubber band for drive. \$8.95

COBB ELECTRO COMPOUND

This Cobb Electro Compound performs the same function as the compounds listed under escapements except that it is electrically driven. Has an electronic brake. Cannot overrun! \$9.95

COBB ELECTRO 4

The Electro 4 is the same size and weight as the other members of the Electro family. The unit gives four selective positions. Two for use with direct connection to the control surface such as rudder. The other two for operating another servo or actuator by means of electrical contact. It also has a provision for operating a quick blip engine escapement or servo with no signal. \$11.95

COBB MICRO MULT



The Cobb micro multi servo developed and tested over 1,000 flights. Manufacturer guarantees to be the best multi-servo available at any price. Weight is 2.1 ounces, size is 1 1/4" x 1 1/2" x 1 1/2" high. Voltage may be from 1.2 to 4.5. Current used at 3 volts—no load: 80 ma; 1 pound load: 160 ma; stall: 350 ma. Maximum power developed is 4 1/2 pounds. Single unit housing of tough plastic, virtually crash-proof. \$9.95

★ Servos, Continued

ED CLOCKWORK



Just it for boats! The Aristo clockwork actuator is imported from England and provides the muscle power to move boat rudders without any electrical or rubber power. It is clockwork wound and provides 3N escapement type action. Unit is compact and is quite readily mounted and will work in the largest of boats providing the power required. \$11.95

HILLCREST MOTOR CONTROL



Model Plastic Products, manufacturers of the Hillcrest battery boxes, are now announcing a throttle control servo. Weight is 1 1/2 ounces. It operates on 1 1/2 to 4 volts. Nylon and metal gears. Completely enclosed for dust protection. Measures 2 1/8" x 1 3/8" x 1 3/16". Features a spring-loaded disc clutch that will let you control engine speed manually without turning on receiver or transmitter. Unit may be used on Veeo and K & B throttles or Brance and RotoValves. Designed for multichannel work \$5.95

BONNER DURAMITE



The Bonner Duramite servo is completely new! Develops over four pounds of thrust. Has a versatile mounting with a fine adjustment screw. Features Bonner's own motor which was built especially for servo use. May be used for self-neutralizing, trimmable, or proportional radio control systems. Voltage is 2 to 4 1/2. Has 5/8" travel. Winding is 3 ohms. The shock test is 50 G's. Vibration test is 500 to 800 cycles per second. Measures 1 5/8 inches wide, 3 inches long, by 1 inch deep. \$12.95

Bonner Servo Finion Gear	.20
Bonner Servo Crown Gear	.50
Bonner Combination Gear	.35
Bonner Duramite Motor as used foregoing	3.95
Bonner Nylon Adjusting Screw	.15

★ Actuators

Pulse systems will give proportional control. In most cases, the actuator will follow the control stick or knob on the pulser; that is, if the stick is moved a little bit to the right, the actuator will follow a little bit to the right in direct proportion to the degree in which the stick or knob is turned. Pulser is generally an electronic keying switch for the transmitter and is used in place of the regular push-button. Most contacts of the receiver relay are used and neutral is had if the pulses from the transmitter are equally on and off. If one contact is closed longer than the other, the actuator and motor will pull the rudder harder to one side than the other resulting in a turn. The ability to control this pulse width creates true proportional control. Pulse rate variations are used in getting proportional rudder and elevator.

FLYBALL ACTUATOR



The Flyball Actuator, as developed by Brayton Paul has been used in proportional work for a number of years. It is available in two models. One with only the actuating device, coupling, and spring for use on your board with your own motor. This is Model A-1. Motor of the Hi-Drive or Mighty Widge type may be used. The completed model, tested and assembled with a Hi-Drive motor on a base is also available.

Model A-1, coupling, spring and actuator \$2.45

Model AC-1, assembled, tested with Hi-Drive motor on base \$2.95

ROBOT JUNIOR

A simple, light, but very powerful actuator for the Galloping Ghost system to provide dual proportional effects on rudder and elevator. The Robot Junior is recommended to be used with the Worth Simpli-Simul or a WAS type pulser using a conventional control box for true stick action. Complete installation instructions included with the Robot Junior for both rudder and elevator for proportional control. Simpler dual systems are the answer for the R/C novice to build and use. Required voltage 3 to 6 volts, 250 ma average at 4 1/2 volts. Pulse rate 3 to 10 times per second. Size is 2 x 2 1/2 x 1 1/2. Weight is two ounces. \$9.95

★ Actuators, Continued

ROBOT SYNCHRO



The Robot Synchro is designed for proportional systems using pulsers of the MAG type. It will not waggle the surfaces as do other actuators when it is pulsed at 5 cycles per second. Will follow pulser with true control to the degree desired for smooth action in flight or float. Weight is 5 ounces but this is not objectionable for large ships. Size is 2 1/8" x 2 1/8" x 2". Voltage required is 3 to 6 volts. Current 250 ma neutral, 300 ma in extreme control positions. \$19.95

SAGE ACTUATOR



Here is, without a doubt, one of the finest actuators ever made. Using a plastic magnet, this is the first one which is self-neutralizing upon receiving no current. Without springs, dual coil winding features exceptionally low drain. Draws 60 ma on 3 volts and 90 ma on 4 1/2 volts. Size is 1 3/4" x 2 1/4" x 1 1/2". Weight is 3 ounces. \$9.95

SOUTHWESTERN ACTUATOR



The Southwestern Actuator is designed for trouble-free operation of model planes using proportional control system based on pulse width. It may be used with any CW or audio receiver and transmitter which is pulsed with the MAG or any other type pulser. Motor is made from Alnico V and coils are wound with Formvar wire. Plastic housing, weighs 1 3/4 ounces. Size is 1 x 1 x 1 1/2 inches. \$5.95

★ Motors

DURAMITE



Bonner Duramite motor as used in his new servo manufactured to the highest specifications in this country. Features exceptionally low drain, oilite bearings, 93% silver brushes, nylon housing, weight is 1.2 ounces, winding is 3 ohm, voltage from 2 to 4 1/2. \$3.95

MICRODYNE

Cobb Hobby has introduced a micro dyne gear motor with the gear reductions of 6 to 1 and 36 to 1 available in this one motor. May be used for pulse applications or other applications where exceptional torque and low drain are required. \$2.95

MIGHTY MIDGET



The Mighty Midget motor comes with a built in 7 to 1 gear reduction. Extra gears are available so that additional reduction may be had. Uses 3 to 6 volts in most applications although 1 1/2 may be also used to satisfactory operation in smaller systems. Weighs just under two ounces. Size is 1 5/8" x 1 5/8" x 1 1/2". Replaceable brushes on terminals. Current consumption is 150 ma. \$2.95

Extra 7-1 reduction gear set .45
Extra brush sets .25

NYLON GEARS

Your search for nylon gears is over! Ace has located a manufacturer who produces a quality gear at a reasonable price. Shim of brass tubing will allow fitting—gears are 1/8" thick and 48 pitch. Indestructible, require no lubrication.

No.	Teeth	Dia. Hole	OD
N1	12	3/32"	8/32"
N2	24	1/8"	17/32"
N3	36	3/16"	24/32"
N4	48	3/16"	1-1/32"
N5	80	Only 20¢ each 3/16"	1 3/4"
		Only 35¢ each	

★ Field Strength Meters

BASIC FSM KIT

Every transmitter needs a field strength meter to determine how much RF is being put into the air. The new and improved Ace FSM may be housed in this all-plastic case and used to plug into your regular multimeter. A 0-5 meter movement is recommended. May also be housed in small aluminum case with a meter for a permanent installation. Kit consists of wound coil, trimmer, bypass, diode and wiring instructions. **\$1.50**

BASIC TRANSISTORIZED FSM

With the use of a transistor amplifier, the regular FSM listed above will work highly satisfactorily with 0-5 milliamper meter movements because it provides an amplification factor of 10. May be housed in your multimeter or may be made into a separate instrument with the use of a permanent meter and aluminum case. Kit consists of the parts as supplied in the field strength meter above plus transistor to provide the amplification factor. **\$2.85**

GYRO FSM AND MONITOR



Here is a combination field strength meter and tone monitor. Meter used is 500 ua type and FSM monitor is tunable from frequency ranges of 25 to 34 megacycles.

Housed in a handsome gray hammetone aluminum case, unit measures 2 1/8" x 3" x 5 1/4".

Cases with telescoping antenna, has a tone monitor jack on front of cover into which earphone may be plugged to listen to the audio being put out by your transmitter. No batteries are required. High sensitivity diode provides good reading on the meter.

Completely built up, no batteries required, ready-to-go **\$12.95**

RELAY ELIMINATOR

Brayton Paul relay eliminator completely eliminates the need for a relay in receivers of the Lorenz type. No more contacts to clean, no more adjustments to make, crash-proof, requires only 1 mil input to pull up to 1 amp through the actuator. May be used in application where an SPST relay would be used. **\$6.95**

★ Power Supplies

The cost of dry batteries is increasing constantly and many R/C fans are getting rid of the high cost by using power converters or power supplies in their transmitting and receiving equipment.

FOR TRANSMITTERS

Gyre's transistorized, 6 volt in, 135 volts out at 25 ma. Features a compact unit and is designed to work especially well with the ABC 2 ampere hour batteries listed elsewhere in this catalog. For hand-held transmitters. Size is extremely compact. Measures 2" x 3 1/2" x 1 1/2" thick. Uses CBS transistors. Completely assembled. **\$20.95**

MC 20 power supply is one of the finest two volt power supplies available. Output is 180 or 150 volts at 40 ma. The A voltage is variable and can be made to supply 1 1/2 volts for from one to five tubes. Is completely filtered. Model 20 is for large, ground-based units. Measures 3 1/2" x 5 1/2" x 4 3/8". Kit **\$11.95**

Completely assembled, tested and guaranteed. **\$19.95**

MC 20-250 has same features as above. However, its measurements are slightly smaller so it may be placed in a hand-held cabinet. 3" x 5 1/2" x 4 2/3". Kit **\$11.95**

Custom built, tested, and guaranteed **\$19.95**

6 volt power supply. In response to many requests, we carry a 6 volt power supply using a vibrator. May be used with a 6 volt car battery or a section of your 12 volt battery. Chassis is 3" x 5" and is 4 1/2" tall with vibrator and electrolytic and will fit into the Commander cabinet. Feature high grade transformer and top-grade components. Output is 180 volts at 30 ma.

Gumbo kit contains mounted transformer, vibrator, rectifier, adjustable resistor, electrolytics on pre-fabbed chassis and all required components. **\$8.95**

FOR RECEIVERS

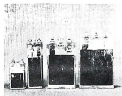
Gyro B pack delivers 30, 45, or 67 1/2 volts from 3 to 6 volts input. Size is 1 1/4" x 1 1/2". Weighs only 1/2 ounce. Wired **\$10.95**

MC model 45R power converter with an input of 3 volts and output is 30 volts. With 4 1/2 volt input, output is 45 volts. Maximum load is 5 ma. Size is 1 5/8" x 2 1/2" x 5/8". Weight is 3/4 ounce. Wired. **\$11.95**

Special cup core transformer for the MC power converter with schematic for making your own. **\$3.00**

★ Rechargeable Batteries

ABC NICADS



ABC Battery Company offers rechargeable life-time batteries which are ideally suited for the hobbyist. In several sizes. The 1 ampere hour job is ideally suited for servo use. The 2 ampere battery is just it for powering transistor power converters of small hand-held transmitters. The larger 5 ampere hour is fine for glow-plug starting and larger installations in boats etc. All may be used in boats as well.

The ABC battery is rechargeable and almost completely maintenance-free and will provide a continuous power source in extreme low overall cost. The ABC battery may be charged from one cell of an automobile battery. Nothing else—not even a meter—is required. Recharging may be done at any stage of the discharge cycle. These are removed from surplus equipment. Original cost to the government was quite a bit higher than our price. Quantities are limited and sizes may vary somewhat from those listed. All ABC batteries are completely filled and come to you in a charged condition.

ABC 1 amp hour 1 1/8" x 2 1/4" x 5/8" \$4.95
 ABC 2 amp hour 1 1/8" x 4" x 5/8" 5.95
 ABC 5 amp hour #1 4 9/16" x 2 5/8" x 3/4" 4.95
 ABC 5 amp hour #2 4" x 2 1/8" x 15/16" 4.95

ARISTO 64



Aristo 64 batteries. Imported to replace N78 so popular for boats. Rated at 6 volts, 4 amperes. Measures 2 1/4" x 3 1/8" x 1 5/4". Comes dry charged. Needs to be filled with 1.275 electrolyte. \$4.75

EVEREADY N46



Eveready N46 is a sealed nickel cadmium battery. 450 milliamp hour. Standard pencil AA size. Weighs only slightly more than a pencil. Voltage is 1.2. Rated at 450 mile with suggested drain of 45 mile. However, tests indicate that up to 250 or 300 mile may be pulled out of the battery but that it will go down faster than its rated 450 milliamp hour life. \$2.95

MAGNALUX

Magnalux cells. Manufactured for a filament type cigarette lighter, these lead-acid cells are fine business for R/C. Highly praised by Ed Lorenz and Ted Strader in recent columns. Do not have the life or the drain usage of silvercells or nicads but may be re-used many times provided drain is kept low. May be charged at a charge of 50 ma for a longer life. Sturdy plastic leak-proof case.

Regular size \$.75
 Heavy duty 1.00

WILLARD BB54A



Willard BB54A battery. 2 volts at 28 ampere hour rating. Comes dry charged. Fill with 1.275 electrolyte. Measures 3 x 3 3/4 x 5 1/2 inches. \$5.95

YARDNEY SILVERCELLS



For years, Yardney silvercells have been the choice of discriminating modelers for filament and servo or actuator use. They are light in weight and are rechargeable 50 to 100 times. Will pay for themselves in active R/C work. Now shipped parcel post. Completely filled and charged. 1.5 volts. \$6.00

★ CHARGERS

ARISTO

Aristo battery charger with selector switch. Charges 2, 4, and 6 volt wet cell batteries. Heavy duty transformer and rectifier. Compact, has a ventilated metal case, features indicator lamp and selector switch for correct charging rate. 110 volt AC input. \$7.95

GYRO NICAD

Gyro C-300 has a variable resistor to provide continuous current change from 10 ma on up to 2 amps. Transformer coupled. Contains a milliammeter which is used to meter the amount of voltage being fed to the batteries in charge. Handmade made. A deluxe item. Fine for all sized batteries. \$13.95

MC CHARGERS

MC 2 volt charger designed primarily for the HBS4A type of battery. It will give the required voltage at 1 amp to provide the charge necessary for these two volt cells. While economically priced, this is a quality unit. \$6.95

MC 2-6 volt charger keeps your two or six volt batteries in the best shape. The MC charger will charge either two or six volts at two amperes. Will also charge NTB batteries at .5 amp which is important to their life. Simply plug MC charger into 110 volt AC socket. Completely built, tested, and guaranteed. \$11.95

GROGAN NICAD

Nickle cadmium battery charger. Here is an inexpensive charger designed especially for Voltablock nickle cadmiums although it may be used with other nicads as well. Will provide current in mile from 0 to 300 merely by changing an ordinary lamp. It was designed by Bill Grogan of the MC/RC and is available in an easy-to-wire kit form, completely prefabricated. Kit includes line cord and plug; 300 mil selenium rectifier; lamp socket, but no lamp; alligator clips; hookup wire; punched, silk-screened cabinet. \$4.95

Wired and tested \$6.95

DRY BATTERY REJUVENATOR

Improved model of our battery rejuvenator will keep your flying batteries in airplanes in tip-top shape much longer. Experts estimate that dry batteries may be rejuvenated approximately three times their normal life if carefully rejuvenated after each use. Rejuvenator may also be used to re-charge Magnalux cells. A truly fabulous buy at this price.

Kit form \$3.25
Wired and tested \$4.75

★ COMPONENTS

ANTENNAS

New telescoping antenna—chromium plated, 37½" long. Just fine for hand-held jobs. Telescopes down to 9". Has mounting bolt. Complete with plastic case. \$1.00

3 section 9½ foot, takeapart surplus type for ground based cabinets with top of the cabinet mount \$2.95

112" telescoping antenna. A really deluxe item. With stand offs for side mount ground based cabinets. Used in TAD Duala \$4.95

BASE MATERIAL

1/16" Synthene linen base, cut to your specifications. Per square inch .02

1/16" Epoxi resin fiber glass, cut to your specifications. Per square inch .05

Receiver blanks, receiver base cut to our stock size 1 1/2" x 2 1/8", 1 3/4" x 2 1/4", 2 1/4" x 4", 2" x 2 1/8". .10

Epoxi resin cut to 2½" x 4". Each .30

Copper laminate on epoxi glass, cut to your specifications. Per square inch .15

BATTERY BOXES

LCME

Approved fibre on all connections
Spring tempered aircraft aluminum
Pretinned solder lugs
Mounting holes provided

#2A—for 2 miniature penicils .40
#5—for 1 regular penicil .30
#6A—for 2 regular penicils .40
#7—for 3 regular penicils .65
#10—for 2 medium C cells .50
#14—for 2 22½ volt batteries .50
#17—for 1 short 30 volt battery or for the Magnalux wet cell .50
#19—for 1 long 30 volt battery .40
#20—for 2 long 30 volt batteries .60

BETA

BETA BATTERY BOXES

Model "A"
and "B" & "C"

Model A. A spot-welded aluminum battery box with spring-loaded terminals giving large contact area. Easily mounted. Will fit smallest of planes. Will supply 22½ or 45 volts for B, 1½ or 3 for A, and 1½ to 6 volts for servos. Holds two 22½ volt C-15 type and six penicils. Measures 1 3/16" x 2 1/2" x 2 1/8". \$1.95

Model B holds one 30 volt and six penicils. Just fit for MarcyTone and other receivers requiring 30 volts. Measures 1 1/8" x 2 5/16" x 3 1/8". \$1.95

BATTERY BOXES CONTINUED

HILLCREST



Two pencil model	.45
Two medium cell	.45
Four cell penlite. Bottom half now made of unbreakable nylon.	.95
Flat pack R/C battery boxes. $4\frac{1}{2} \times 2 \times 5/8$ ". Sliding cover holds cells in place. Light weight. Lugs are provided to anchor leads.	
Type A. Holds six pencils	.95
Type B. Holds two pencils and two $22\frac{1}{2}$ volt U-15 size hearing aid batteries	.95
Type E. Holds four pencils plus two Y-15 $22\frac{1}{2}$ volt B batteries	.95
Cover for Hillcrest flat pack boxes	.25

VOLTABLOCK



Here is the battery holder as shown in Model Airplane News, April, 1959 by Fred Stong of CG Electronics. It's quite simple to use for four V0.500's or four V0.250's and is designed for servo operation with V0.500's. It measures $3\frac{1}{2} \times 1\frac{1}{2} \times 1$. .95

BOXES, PLASTIC

Just the ticket for housing your equipment or your receiver. Light weight, high impact, in five popular sizes. Order by number.

FB #1 $1\frac{5}{8} \times 2\frac{1}{8} \times 1$	.10
FB #2 $2 \times 2\frac{7}{8} \times 1$	.15
FB #3 $3\frac{1}{2} \times 4\frac{5}{8} \times 1\frac{1}{4}$	.25
FB #4 $1\frac{3}{4} \times 5\frac{1}{2} \times 1\frac{1}{4}$	.15
FB #5 $2\frac{5}{8} \times 3\frac{3}{8} \times 2$	.25

CAPACITORS

SURMINI ELECTROLYTIC IEL

Submini electrolytics where small size is required.

50 volt. .25. 1, 2, 3, 5, 10, 20, 25 mf	.75
5 volt, 100 mf	.75
5 volt 60 mf	1.00

CAPACITORS CONTINUED

.1 moulded plastic.30	.25 moulded plas.	.30	
.005 Mica	.25	.01 Mica	.25

For matched pairs for use in audio work or pulser systems, double unit price and add 10%. Pair will be matched - 25.

SILVER MICA

Submini El Mence Duramite in most popular RF sizes. 2.2, 5, 6.8, 10, 15, 33, 50, 75 mf each .25

GOODALL SURMINI CAPACITORS

1, 2.2, 5, 6.8, 10, 15, 22, 33, 47, 50, 100, 120, 150, 220, 330, 470, 680 mf each	.15
.001, .002, .005, .01, .02, .03 mf each	.20
.05	.25
.1 Tobe paper. Measures $1/4 \times 5/8$	.45
.25 Astron paper. Measures $3/8 \times 5/8$	.65
.5 Aerovite paper. Measures $3/8 \times 1\frac{1}{8}$	.75

AIR TRIMMERS

15, 25, 35 mf	.60
50, 125 mf	1.25
Ceramic trimmers, 4-30 mf,	7-45
mf each	.60

COMPRESSION TRIMMERS

Arco 469 750 mf	.75
Arco 308 1380 mf	.90

CASES

These are made to our specifications and are finished with a distinctive aluminite finish aluminum for lighter weight and heat dissipation in the hot sunshine--exclusive with Ace for a real beauty of a case.

#01-- $1\frac{5}{8} \times 2\frac{1}{8} \times 1\frac{1}{8}$	1.40	#2-- $3 \times 4 \times 5$	1.95
#1-- $2 \times 3 \times 4$	1.45	#3-- $3 \times 5 \times 2$	2.45
#1A-- $2 \times 3 \times 5$ aluminum	.85	#5-- $7 \times 8 \times 10$	3.95
#1B-- $2 \times 4 \times 4$	1.65	#6-- $8 \times 10 \times 10$	4.95

WAG receiver can be made of aluminum $1\frac{15}{16} \times 2\frac{3}{8} \times 4\frac{1}{8}$ with lid and self tap screws \$1.45

CLEVITE TRANSFILTERS

Here is something brand new in the radio field. Used by hams for superhet applications in the place of IF cans. The transfilter is a very small light weight inexpensive. Sold exclusively by Ace R/C. Temperature stable piezo electric units that can replace the inter-capacitance, transformer and inductive elements--frequency is at resonance at 455 KC; bandwidth is at 40 to 75. Furnished with specifications

TF-01	1.10
TO-01	1.25

CHOKES



National R33 type in 10, 50 and 100 ohm	.45
Miller 6152, 30 ohm	.45
2 ohm Ohmite	.40
Miller 250 ohm	.45
70 ohm Lateral Wound	.45
RCA type 10 ohm	.45
Miller 300 ohm	.45
Miller, 36 ohm	.45

COILS FORMS



CTC LSM 1/4" Red Dot Phenolic	.70
CTC LSM 1/4" Red Dot Ceramic	.85
CTC L53 3/8" Red Dot Phenolic	.70
CTC SPCE 1/4" PC form	.35
CTC LST-L 3/16" White Dot Ceramic	.85
ACE 1/4" Vibration Proof	.30
ACE 3/8" Vibration Proof	.60

ROUND COILS (please specify receiver)

Lorenz two tube, Commander, TR 4.5, Kraft	.85
Genietor, WAG, WAG Dual, MarcyTone, Tech	.50
Tech 27	1.25

MarcyTone filters providing an LC ratio to give 8 audio frequencies. These are calibrated coils each individually measured to make sure they are plus or minus 1% of the rated ops.

Channels 1, 2, 3, 4, 5, or 6 each	\$2.25
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QUENCH COILS



Commander II (also Mini for Mini Mac, for Hill, Graupner)	.75
Commander, etc.	1.10

CONNECTORS

2 prong Rhy plug and socket	.25
3 prong Rhy plug and socket	.25
7 prong Rhy plug and socket/shield	.45
9 prong miniature plug and socket/shield	.65
12 prong Cinch pl & skt as used WAG Xmt	.35
14 prong plug and socket	.50



Little Plug, standard phone plug	.50
Little Jax, Open Circuit	.30
Little Jax, Closed Circuit	.45
Tial Plug, 1/3 size of standard	.50
Tial Jax, Closed Circuit, 1/3 size	.30



MU-WAY snap connector, snaps together for positive connection. Many uses in R/C. May be used anywhere a single connection is required. Per pair

Submini gator clips insulated	.12
Mini-gator clips each	.10
Mini-gator insulators each	.12
Standard Alligator clips, red or black	.15
Insulated Alligator/rubber shield	.25



RCA type phone jack with two plugs	.15
Pin jacks for standard phone tip, red or black	.10
Pin jacks for tip of 1/8" antenna	.10
Phone tips, standard	.05



Snap on connectors for 67 1/2 volt B, pair	.15
Plug for 1 1/2 volt A battery	.15
Plug for 457 B battery	.15
#6 dry cell connectors pair	.05

CRYSTALS

In conformance with docket #11894 of the FCC, Ace has in stock several of the new crystals and all are to the tolerance of .005.

CRU 26,905	2.95
CRU 27,145	2.95
CRU 27,255	2.95
CRU 13,6275	4.25
CRU 13,4975	4.25
CRU 27,120 for Canada & Foreign	3.95
Petersen 29A 27,255	5.50
22 26 mc for 52 mc	3.95
Sockets for 29A CRU Crystals	.35
Sockets for 22 FT 243	.30

EARPHONES

ARISTO earphone complete with holder, wired plug, and closed circuit submini jack. Light weight, has high impedance of 2,000 ohms.

ACE Imported earphone has 2000 ohm impedance highest quality with cord. Does not have a plug or jack. Fits in ear	3.00
	1.75

FOAM RUBBER

Peen rubber 1/2 inch thick is now available in sheets just for the R/C modeler. Highly resilient, excellent for crash proof installation in planes, boats, or cars. Helps kill vibration difficulties.

6 x 6 sheet	.25
6 x 12 sheet	.50

HANDLES

Dress up your transmitter case and put on a handle for easier testing. Two models to choose from ranging from utility to beautiful.

H1--Utility type, cadmium plated, with mounting hardware. 4 inch centers	\$.15
H2--Beautiful polished brass as used with WAG Dual transmitters. 3 1/2 inch centers	\$.50

HARDWARE MISCELLANEOUS

Machine Screws

2/56 x 3/16	pkg of 10	.10
2/56 x 1/4	pkg of 10	.10
2/56 x 3/8	pkg of 10	.10
2/56 x 1	pkg of 8	.10
3/48 x 1/4	pkg of 10	.10
3/48 x 1/2	pkg of 10	.10
3/48 x 1	pkg of 8	.10
4/40 x 1/4	pkg of 10	.10
4/40 x 1/2	pkg of 10	.10
4/40 x 1	pkg of 8	.10
6/32 x 1/4	pkg of 10	.10
6/32 x 1/2	pkg of 8	.10
6/32 x 1	pkg of 6	.10
6/32 x 2	pkg of 4	.10
2/56 nuts, pkg of 10		.10
3/48 nuts, pkg of 10		.10
4/40 nuts, pkg of 10		.10
6/32 nuts, pkg of 10		.10
6/32 wing nuts, pkg of 2		.10

Self Tap Screws

#2 x 1/8"	pkg of 10	.10
#4 x 1/4"	pkg of 10	.10
#6 x 1/4"	pkg of 10	.10
Fahnstock clips, small, pkg of 3		.10
Polystyrene tube, 1/4 x 4		.10
Polystyrene tube, 3/8 x 4		.15
Lord Shock Mount		.20
Solder, Erwin multicore, 1 oz.		.25
Tuning screwdriver, 6 inch		.25



Tie lugs	#1	#2	#3	each	.03
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Cable Clamp 1/4"	2 for	.05
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EYELETS AND EYELET LUGS

	Die	Thickness		
SE-33	3/32"	3/32"	30 for	.10
SE-43	4/32"	3/32"	20 for	.10
SE-53	5/32"	3/32"	10 for	.10
SE-44	4/32"	4/32"	10 for	.10
SE-37	3/32"	7/32"	10 for	.10

EL1	1/2 flat 1/8 diameter hole	10 for	.10
EL2	1/4 L shape, 5/32" diameter	10 for	.10

Wooden balls, 5/16" diameter.	Fine for control boxes, antenna tops, etc.,	each	.02
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Dial Pointer Knobs, 1 1/4" long,	either red or black		.15
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Hillcrest Aileron Bell Cranks.	Made of nylon	Per pair	.45
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Bonner Tail Wheel Bracket.	Of nylon		.50
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Bonner Control Horn.	Nylon		.25
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Rev Counter.	Determines the RPM of engines	Uses vibrating reed principle. From 10,000 to 20,000 RPM may be measured	1.95
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ARISTO MULTITESTER



A combination multitester providing all ranges needed in R/C work. MA ranges are 0-1 0-5, 0-25, 0-50, 0-500, 0-1000. Voltages are 3, 10, 45, 135, 200. Resistances 100 ohm to 100K ohm. Measures accurate to $\pm 2\%$. Measures 4 5/8" x 3 1/8" x 1 5/8". Comes complete with carrying case and test leads. Completely wired. Only **\$16.50**

CASIE MULTITESTER



Another imported meter now available. Has DC and AC voltage ranges of 10, 50, 250, and 1000 volts. Measures resistances of 1 meg and 10K and has milliamp readings of 250 ma, 10 ma, and 250 ma. Housed in a case 1 1/2" x 3 3/4" x 5". Comes complete with test leads. Only **\$12.95**

TEST LEADS

Extra test leads for either of the above meters. Will fit standard pin jacks. One each of red and black wire. 40" overall including 5" test probe. Per pair only **.50**

STRADER APPROXI METER

Designed to be used with your 6-3 or 0-5 MA meter to build an inexpensive R/C tester. Checks voltages required in R/C testing and has two ranges to check continuity. Case and meter are not furnished. Basic kit consisting of all resistors, plastic tube for making test probe, miniature socket for a selector switch. Suggest a 2 x 3 x 4 cabinet (not in kit) to house this complete unit along with your meter. The 0-5 meter listed foregoing may also be used. Only **\$.95**

METERS

Moving coil D'Arsenval type for a highly precision meter. In black bakelite case. Mounts in 2 1/16" round hole. 0-5 MA. \$5.95
 Meter as above but with shunts to increase range to 10 and 50 MA. \$6.95
 Meter as above but with 25 MA shunt \$6.95

1-0-1 METER

These zero centering meters are ideal for single or dual proportional systems since they allow you to balance the swing of the proportional system so it is even on either side of center. May be hooked up to the relay of the transmitter for transmitter adjustment or hooked up to the relay of the receiver relay adjustment.

Unused surplus, manufactured by General Electric, moving coil.

They read low and high but are basic 1-0-1 movements. At the price that we have on them, they are an exceptional buy since they cost the government considerably more. \$4.95

POTENTIOMETERS

Type JU Linear Taper in either 100K or 500K or 1 Meg. With shaft \$1.45

Type JLD Linear Taper, with locking bushing, in 50K and 100K. SD shaft \$1.75

Type JUS0*. Special 60° movement for stick control boxes. Available in 1 meg and 100K. Eliminates the need for gears in stick type control box. Made as a special item exclusively for Acc. \$2.50

Chicago Telephone Pots. Linear taper. Made for Acc. 1K, 50K, 100K, 250K, 1M, 5M .85

Submini disc size pots, 100K \$1.25
 POT GUARDS .25

RECEIVER BASES

Linen bases punched and cyclotted for the receivers we kit are available separately. Specify which receiver base you desire.

Commander, Tech Two 27, Tech 50, Gasistor, MarcyTone single channel each .50

Lorenz Diode, set of 2 .75

Marcy Twin Simul 1.00

Marcy 6 channel, set of 3 1.50

TR 4.5 printed circuit board, epoxi resin base along with 1/32" insulating material, drilled. 2.50

Kraft receiver, printed circuit, epoxi resin base 1.75

Epoxi resin, drilled for WAG dual receiver One set of 2 bases 1.95

Aluminum, drilled and punched for the WAG single audio receiver 1.95

Kraft transmitter, drilled, single channel 3.95

RELAYS

LITTLE GEM

Standard Gem, 5,000 ohm coil, SPDT	\$4.25
Standard Gem, 7,500 ohm coil, SPDT	4.95
Micro Gem, 5,000 ohm coil, SPDT	4.95
Micro Gem, 7,500 ohm coil, SPDT	5.45
Standard Gem, 5,000 ohm coil, SPDT	5.95
Standard Gem, 50 ohm coil, SPDT	3.75
Standard Gem, 100 ohm coil, SPDT	3.75
Micro Gem, 350 ohm coil, SPDT	4.95

GEM RELAY PARTS

Spring	.20
Terminal Board (standard)	1.25
Terminal Board (micro)	1.70
Armature (standard)	1.00
Armature (micro)	1.25
SK Coil on frame	1.95
1.5K Coil on frame	2.45
Contact Burnisher	.70

W. S. DEANS

The new W. S. Deans Company SPDT relay is in stock. Measures .4 x .68 x .81 inches and weighs less than 1/3 ounce. Smallest and lightest suitable relay available for the H/C modeler in the low-price range. Armature contacts are silver palladium. Fixed contacts are nickel silver and excellent contact longevity is claimed even without the use of arc suppressors.

Average pull-in is 2.5 with drop-out 2 mls which means it should be used in receiver circuits which feature a current rise in excess of 3 mls.

Dean's relay, 5,000 ohm coil, SPDT \$4.25

SIGMA 5P

Because of the scarcity of the Sigma 4F relays due to defense orders and Sigma's deliveries being very spotty, we have secured the ultra-sensitive 5P, larger unit, but for pulse applications, it has much to be desired. At the ridiculous price of this brand spanking new unused surplus, it is a steal. Has two 8,000 ohm coils which may be series connected, paralleled, or a coil used by itself to give the desired change. Unit measures 1 3/4" x 1 5/16" x 1 11/16". Weight is 4 1/2 ounces. Balanced armature adjustable over a range of .5 milliwatts to two watts. Supply on these is limited. Price terrific! \$5.95

SIGMA 41F

Sigma 41F, same size as 4F. Adjustment is made by bending contact arms. Fine for use when current change is greater. Also may be used in pulse applications. Same as 4F in size and weight. Unused surplus, SPDT \$1.95

MIN-X REED

Measuring 3/4" wide x 1 1/2" long x 7/8" tall. High impedance model is in stock, in 8 channel. \$19.50. Other numbers to be had on special order only



RESISTORS

Stackpole newly manufactured 10% values. In most popular RTMA sizes each .10

5% values for use with critical spots in R/C applications. Gold Band. Available in the following sizes. 15K, 47K, 82K, 100K, 180K, 200K, 470K, 1M, 2M, 3M, 6.2M, 10M each .20

SOCKETS



7 pin miniature, wafer type .10
7 pin miniature, moulded .15
7 pin miniature, with shield .25
Octal 8 pin for 308 or 387 .55
Octal moulded as above .15
Submini hearing aid type 5 preng .20
Flex clips 4/106 12/256 50/1.00

SWITCHES



SPST, slide type, knife action .20
SPST, slide type, knife action .25
DPST, slide type, knife action .35
SPST toggle, regular duty type .50
SPST toggle, regular duty type .65
SPST toggle, heavy duty for amitter use .65
Push Switch, smooth action, cabinet use .50
Push Switch, cable use .75
Switchcraft 203, NO or NC (SPST) .75

TUBES TRANSISTORS DIODES

XP01	3.50	3B4	3.50
XP134	3.95	3B7	1.00
CK526AX	3.95	5H2 Diode	.95
CK1054	3.95	3D6	.95
CK5472	3.50	344	1.20
CK722	.99	354	1.40
CK705 1N66	.85	3V4	1.40
1B4	1.10	1N45 Diode	.45
1B5	1.10	1N66 Diode	.85
1U4	1.40	1N295 Diode	.45
1U5	1.40	#1215 Federal	.90
1V6	2.50	NE2	.15
2N185A, GE	2.25	NE51	.20
2N224, Philco	1.60	#47 Pilot	.15
2N236, Philco	2.10	#48 Pilot	.15
2N465, Raytheon	3.45	Ampex 6007	1.95
1AG4, Raytheon	3.95	CK521AX	1.25
1AR4	1.95	A01, Philco	1.90
3A4	1.40	T0037, Philco	1.50
3A5	2.25	1T1 International	.90

5500—500 MA Silicon Diode 1.32

ORDERING INFO

This catalog replaces all previous issues. Prices are as catalogued. We reserve the right to change any prices without notice, due to shifting markets. When ordering—remember we pay postage to individuals on all orders over \$3.00. Under \$3.00 require 50¢ handling fee. Minimum dealer net is \$10.00. COD orders require 10% deposit. Missouri customers, please add 2% sales tax.

TRANSFORMERS

CR60 subminiature input primary impedance 20,000 ohms, secondary impedance 10,000 ohms. Primary resistance 20 ohms, secondary resistance 90 ohms. \$1.63

SS07 type subminiature for use on receivers such as Pierce and Deol receivers or any circuit where high impedance must be dropped to low output. Measures 1/2" x 3/4" x 3/16". \$2.95

Power supply 2 volt input, 180 volts at 30 mls secondary. \$4.95

Power supply 5 volt input, 150 volts secondary. \$3.95

Ferroxcube cup core for receiver power converter by MC Manufacturing & Sales. Completely wound. With schematic \$3.00

WIRE

Banner 19 strand #24 hookup wire. Some of the smallest wire available. Available in 8 colors. Comes in a plastic package containing approximately a total of 24 feet of wire. Only .60

Alpha 16 strand #24 hookup wire, 10 colors, approximately 25 feet .45

8 wire cable containing 8 conductors of #22 strand wire for inter-connecting control boxes. Per foot .12

Magnet wire, enamel insulation. All even numbers from #14 through #40.

#14 per foot	.04	#16 per foot	.01
#18 and #20, per foot			.02
#22 through #40 per foot			.01
#20 solid, plastic insulation, per foot			.03
#24 solid, plastic insulation, per foot			.02

SPIRAL WRAP

Spiral Wrap—a nylon spiral which may be put around the existing wires you have in your installation to make the installation very much more neat and allow an easy lacing. It will accept up to 10 conductor wires. Per foot .15

SPECTRA STRIP

Here is a flat wire which contains 10 pieces of wire #24 AWG 19 strand. Comes in a strip to make multi-channel wiring very neat. It might quite easily be cut down to 10, 9, 8, 7, or how many conductors are needed. This is one of the greatest advances for radio control installation that we've seen. Per foot .30

Spaghetetti, fabric impregnated type 3 ft. .10

Acc Radio Control

BOX 301
HIGGINSVILLE, MO.

Acc R/C East

3029 WEST CARY
RICHMOND, VA.

Acc R/C West

BOX 18
CARMICHAEL, CALIF.