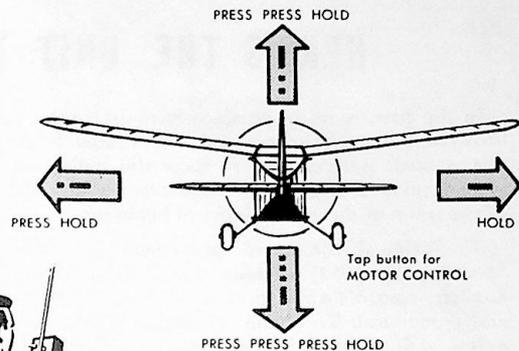


The greatest milestone in Radio Control history!

An amazing new **Bonner** product is now available.

Now Bonner Provides
 Single Channel "Full House"
MULTI-CONTROLS
For Everybody!



First buy one VariComp, learn to fly with Rudder Only

BONNER MOTOR CONTROL UNIT (may be added anytime as control system "grows").

FUEL TANK

BATTERIES

RECEIVER

TALEY

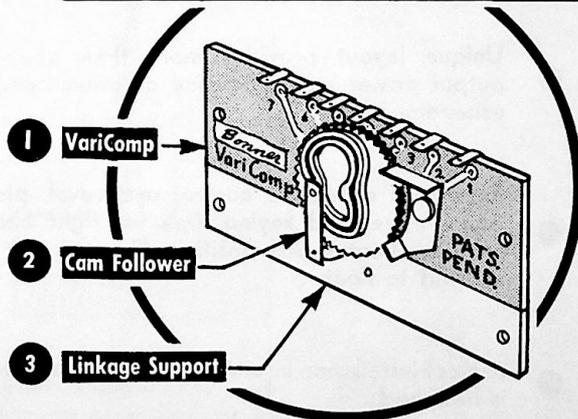
Then add another VariComp and advance easily and economically into top notch, multi-control flying of a standard that once was restricted to a small number of technically minded experts who could use expensive, complicated equipment.

The Bonner VariComp is a versatile and powerful compound escapement that can be used in every type of single channel control system from Rudder Only through Cascade Multi. One VariComp will provide rudder control and will also operate quick blip engine control and another control off the 3rd position.

The model sketched above uses two VariComps to provide rudder-engine-elevator control and there is one unused control circuit which can trigger a bomb drop, aileron control, or whatever is desired.

It is possible to cascade any number of VariComps to provide an unlimited number of controls. Adding a Bonner Servo Switcher enables the VariComp to trigger servo followers for heavy duty operations.

THESE 3 UNITS FOR \$8.95



BONNER SPECIALTIES 2900 Tilden Ave. Los Angeles 64, California

HERE'S THE UNIT THAT IS MAKING R/C HISTORY!

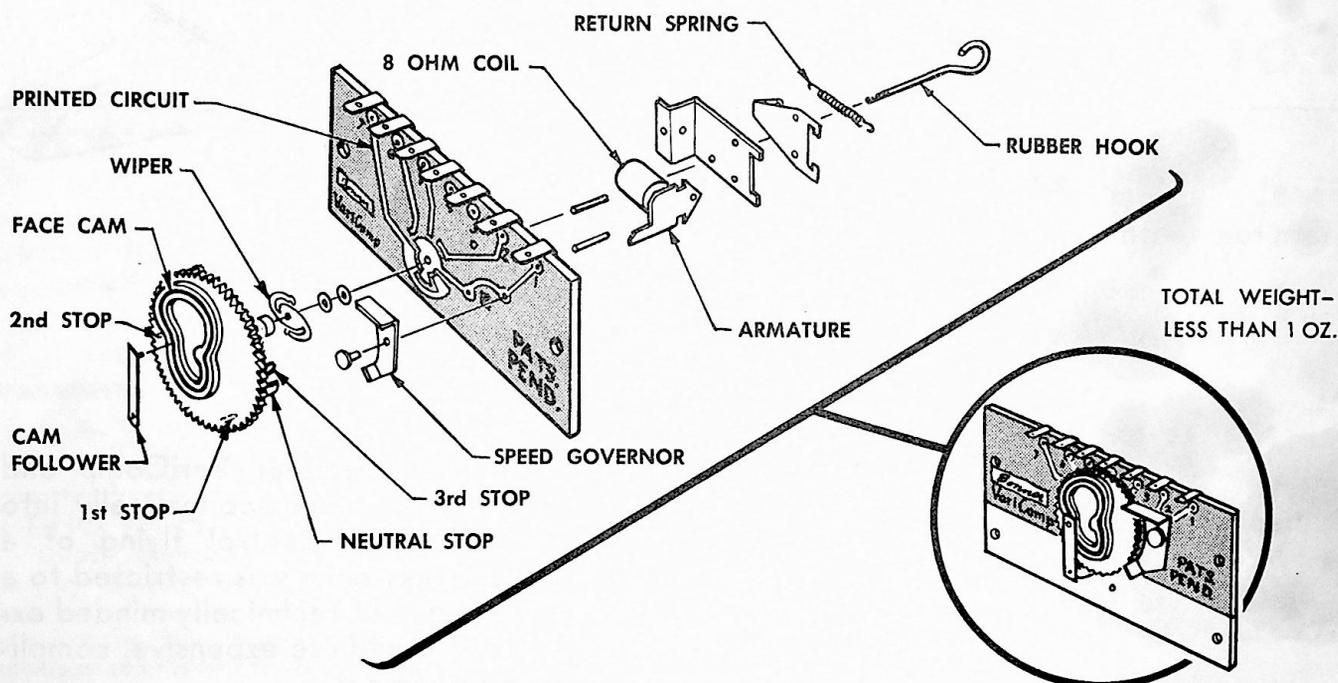
In the past, a really satisfactory multi-control system always involved heavy equipment and complicated hook-ups. Despite this, a small number of very successful multi-control airplanes were developed, but the effort and expense kept such projects out of the realm of the vast majority of hobbyists.

The original compound escapement (produced by Bonner Specialties in 1952) enabled thousands of R/C fliers to add auxiliary controls while still keeping their airplanes simple, light, and economical. To obtain complete separation of all controls, a few skillful modellers altered their Bonner Compounds to permit cascade operation. Many important contests are being won by simple, economical airplanes with cascade control systems.

In 1952 an intense research program was started by the Bonner

Co. to determine the best way to provide all the controls a modeller could want at a price he could afford. A great many systems were bench tested and flown. There are several ways to operate a "full house" system off of just one escapement, but this was discarded as a production item because the model would "jump" between controls and there would be a longer time lapse between repeated rights and repeated lefts, as all controls would have to cycle through instead of just the rudder. All tests indicated that the item which would help modellers the most, to attain top-notch R/C flying is a more powerful compound escapement which can be used in any system from rudder only through cascade multi, and finally Bonner VariComp became a production item.

Truly a new era of R/C history has been started by the company that produces the world's finest escapements.



- Most versatile R/C actuator. Use in any system.
- Uses loop of 1/4" rubber with a double row of knots!
- Unique layout provides more than double the output power and efficiency of other compound escapements.
- Face cam eliminates control overtravel, provides equal travel and keying time for right and left, provides neutral 3rd position. Controls are never allowed to float.
- Perfect installation insured by linkage support which is furnished.
- Bonding is automatically built in.
- Rugged layout and construction. Speed wheel-cam unit of heat-treated nylon will last many times longer than the usual metal speed wheel.
- VariComps may be removed from airplane at any time without disturbing linkage or linkage support. It's a real convenience to connect up all wires before VariComp is installed in airplane.
- Very positive switching insured by printed circuit and spring pressure of wiper. Cascaded VariComps will work even when under water!
- Works equally well in all positions (may be mounted horizontally as shown or vertically, or at an angle, etc.).
- The VariComp makes possible the first light weight, really satisfactory, multi-control system.

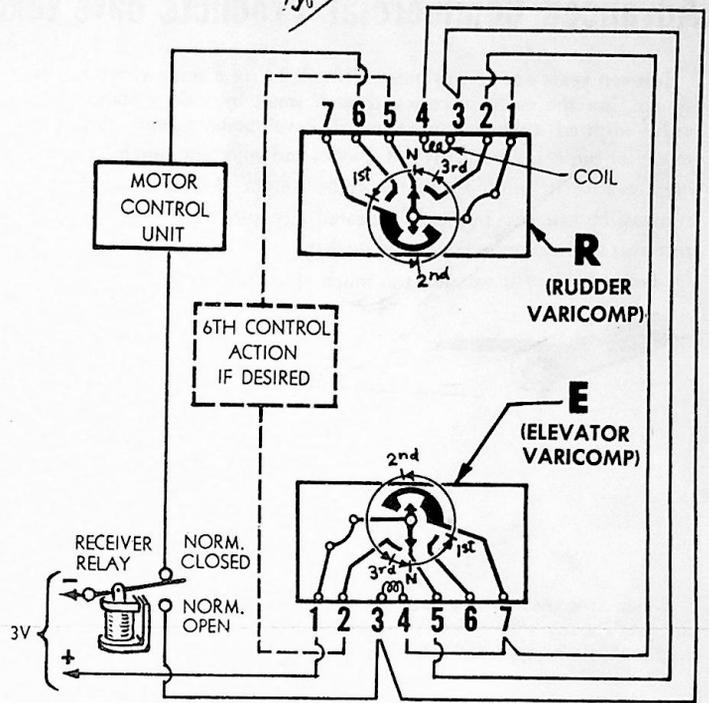
Installation and Operation are Extremely Simple and Foolproof

Never before has an R/C system been so easy to install. Even a "full house" multi system can be quickly and easily rigged. Here's all the modeller has to do:

1. Connect wires to the numbered terminals.
2. Attach VariComp and linkage support flush against bulkhead.
3. Attach cam follower to end of linkage.

Each VariComp is supplied with easy-to-follow, illustrated instructions which show how to install all of the many control systems that the VariComp is suited for, and also provide information needed for successful flying.

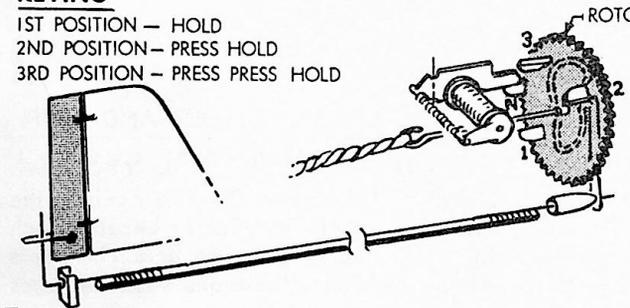
Since modellers might enjoy knowing why the VariComp performs as it does, a complete run-down of every phase of operation is shown below.



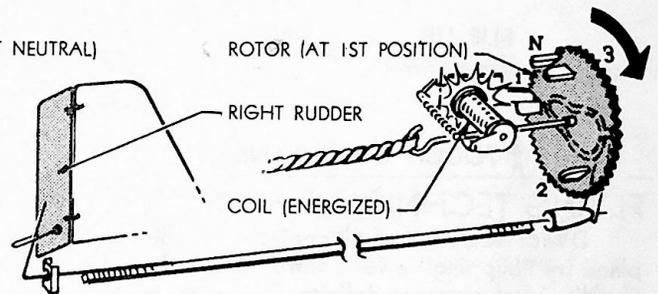
Instructions show hook-ups for every type of control system (cascade shown here).

KEYING

- 1ST POSITION — HOLD
- 2ND POSITION — PRESS HOLD
- 3RD POSITION — PRESS PRESS HOLD

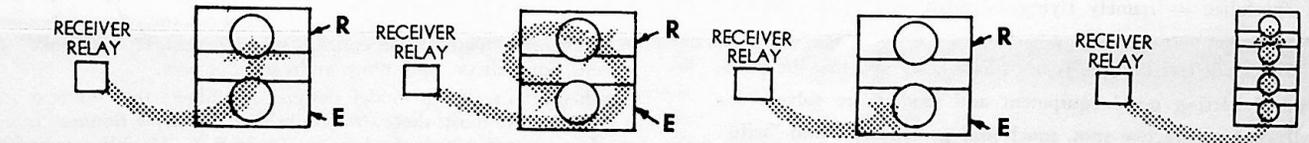


1 Here is a diagram of the VariComp in the neutral (no signal) position.



2

Now the flyer presses his transmitter button. This causes the receiver relay to pull down and connect power to the VariComp coil. By keying as indicated the flyer can catch the VariComp in any of its 3 positions. Anybody can key easily on the first try if he remembers to keep the time lapse between the press signals short.

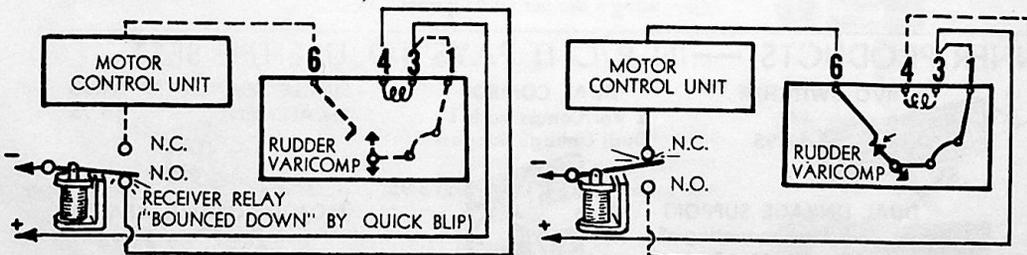


3 In advanced cascade, multi-control systems the circuit passes through E to reach R.

Then when R is caught in its 3rd position, E is energized and leaves neutral.

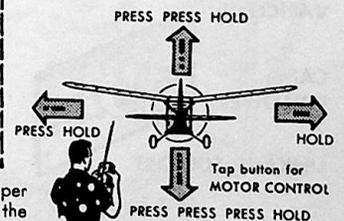
When E is off neutral, the circuit to R is broken and the current just goes to E until E returns to neutral.

The same principle can be applied to any number of VariComps. Action starts at top of stack and works its way down. If flyer stops the signals at any point in the stack, controls return to neutral.



4 For quick blip motor control, the flyer taps the transmitter button to release the rudder VariComp from neutral.

Just after leaving neutral the rudder VariComp wiper brushes past the motor control contact #6 to "trigger" the motor control unit. On a longer PRESS signal the relay would still be down so no power would get to the motor control unit.



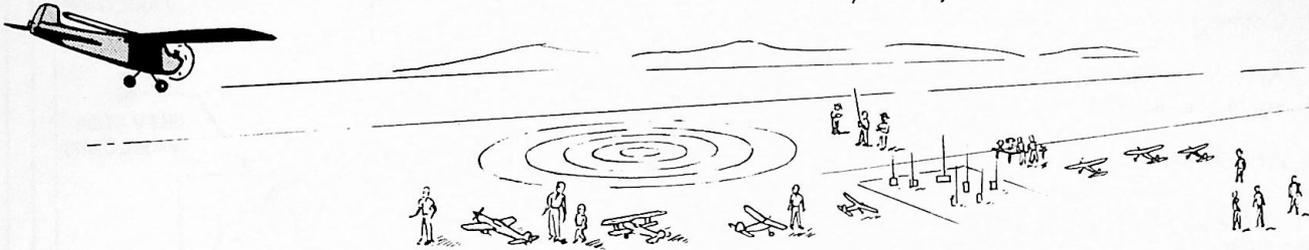
Top notch flying on single channel

Advanced Commercial Products have taken the Guesswork out of R/C Flying

Just ten years ago it was quite difficult to rig a radio control system, but the early successes, though small by today's standards, inspired tremendous technical development. Now any modeller can easily build an R/C model and enjoy top-notch flying, because in addition to the light weight Bonner control systems, he can also buy pre-fabricated airplane kits, and radio receivers and transmitters of good quality.

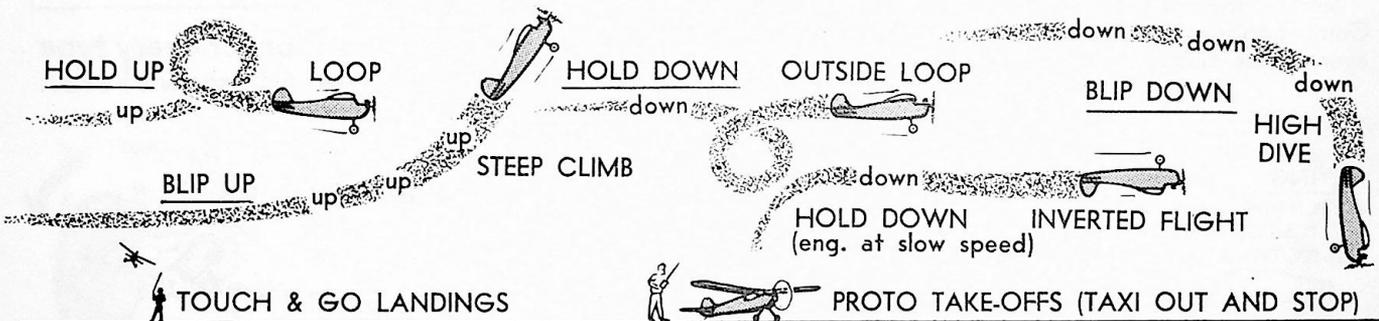
From the first it was not too much of a problem to get satis-

factory radio operation. The real stumbling block was the control system—transferring the radio signal into control surface movement. When the first Bonner escapements were produced in 1949, modellers were quick to discover that here at last was an actuator which could be depended upon for top quality and performance. The Bonner Company is proud of its pioneering contributions to the R/C field and of its insistence on absolute perfection of every unit ever produced. Special pride is taken in the new VariComp which no doubt will usher in a great new era of R/C history.



When it comes to deciding what type of airplane to build, there are many possibilities. Generally a beginner should start with one of the typical high-wing designs built from a kit. The

availability of the VariComp for light, multi-systems should help to popularize smaller R/C models because it's now possible to do "full house" aerobatics with a small, light-weight model.



FLYING TECHNIQUES WITH THE NEW, "FULL HOUSE", MULTI-CONTROL SYSTEM

Direct selection of all controls provides the first really satisfactory, low cost, R/C flying. The flier controls the plane by "blipping" a full control action. This is an easy, natural way to fly a remote controlled airplane because each "hold" signal causes a definite change of course and the flier soon learns to get the degree of control action he wants by making the "hold" signals longer or shorter or by using them faster or slower. This flying technique soon becomes automatic and the flier thinks only about what his airplane is doing and where he wants to put it.

In R/C there are three exciting phases in which a modeller can specialize — namely flying, aerodynamics, and gadgets.

Most modellers like the flying phase best, now that the problems of getting good equipment and models are solved. It's really fun to practice spot, touch and go landings, and "wild" precision aerobatics. Formation flying and dogfighting are becoming more popular as different radio frequencies become more widely used.

In aerodynamics there is constant development. The model on our cover is typical of one new trend to shoulder wing designs. The gadget-minded modellers can now use a cascade system when experimenting with aileron control, wheel brakes, laying smoke screens, bomb drops, and things undreamed of now.

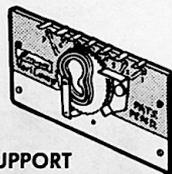
Whether it's flying, model design, or gadgets that interests a modeller the most, there's no doubt that "to buy a Bonner" is the best way to insure the best results in R/C. Modellers who eventually plan to go in for the more complicated and expensive systems should first familiarize themselves with R/C by using a Bonner multi-system.

USE THESE FINE BONNER PRODUCTS — IN R/C IT PAYS TO USE THE BEST

VARICOMP

CAM FOLLOWER

LINKAGE SUPPORT



All 3 for \$8.95

SERVO SWITCHER



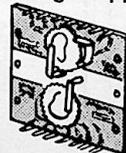
\$3.95

DUAL LINKAGE SUPPORT
For flush mounting of
two VariComps



\$1.45

DUAL COMBO
2 VariComps with 1
Dual Linkage Support



\$18.95

SINGLE SELF-NEUTRALIZING
ESCAPEMENT



\$6.95

MOTOR CONTROL BRACKET



\$2.95

MOTOR CONTROL UNIT — \$9.95

ALL BONNER PRODUCTS ARE UNCONDITIONALLY GUARANTEED

BONNER SPECIALTIES, 2900 Tilden Ave. Los Angeles 64, California