100 to 200 feet can be plugged into the bottom of the model slightly ahead of the center of gravity and connected directly to the radio receiver relay. The receiver and its battery should be removed or by-passed. A 22½ volt battery with an on/off SPST switch at the operator end of the cable will operate a 4,000 to 8,000 ohm relay with some two to three MA current in the model. A greater number of wires in the cable will permit other controls to be operated directly. If the radio relay and its battery can also be by-passed, then higher voltage and/or heavier wire such as No. 28 or 26 can be used to operate the model’s actuator directly.

The model shown is built for slow flying; it consists of a Carl Goldberg designed “LIL RASCAL” of 27” span with a second Rascal wing at 2’ less angle of attack on the fuselage bottom and 2¼ inches to the rear of the upper wing. The V strut of the kit is replaced by an I strut. Large diameter wheels further aft than those of the kit are used to improve take-offs and landings and a huge intake restrictor is used on .049 engines to reduce power. A simple eye dropper is used as fuel tank and timer.

The control system includes 10-ohm escapement coils mounted on the elevator approximately 5/32 apart with a 1/8 thick soft-iron nut cemented between them on the rudder. The pin portion of the vertical stabilizer is cemented but the rudder portion is left free to be warped by the action of the coils into left or right rudder. The balsa rudder will return to neutral by itself. One lead from each coil can be common. This makes necessary a threewire cable. When No. 30 enameled wire is used to make a 100 ft. cable and each coil resistance is 10 ohms, then 30 volts produces one amp current through the coil which is enough to operate the rudder. Using No. 32 enameled wire to make a 100 ft. cable (it will take 300 ft. of wire to make the cable) means that a 45-volt battery is required to give one amp current through each coil. A hand or electric drill can be used to twist the wires together into a cable: 1,200 turns for example, will put a twist every inch along a 100 ft. cable and keep the strands from separating. A SPST switch with center off such as Cutler-Hammer No. 7502-K 13 is mounted on a broken prop which serves as a handle. A three-prong connector is cemented about one inch forward of the CG on the bottom of the fuselage. The battery can be in the operator’s pocket and can be one which is near the end of its life as far as radio use is concerned.

Operation of the control with this small model should begin with low-powered free flights minus the cable. When a slightly climbing, with good straight gliding, flight pattern has been established, the cable should be connected and the control (Continued on next page)