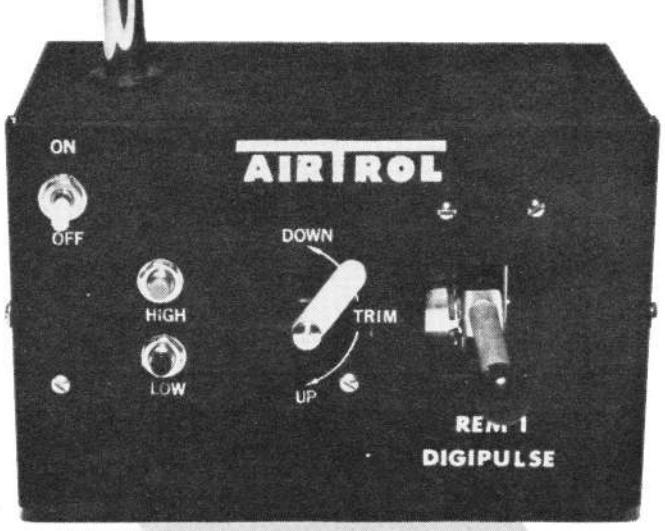

AIRTROL'S DIGIPULSE

Pulse Proportional With Built-in Sophistication . . .

RCM PRODUCT REPORT by Doug Tucker

ONE of the most interesting developments in the single channel proportional field is the new REM-1 system from Airtrol, 1001 Railroad Avenue, Adrian, Michigan 49221. Although basically a pulse system, the REM-1 Digipulse eliminates a great many of the less desirable features of the single actuator pulse proportional system. The servos are independent units, one each for rudder, elevator, and throttle, and have more power due to a higher gearing ratio of 236 to 1. The common "flutter" of simple pulse systems is almost completely eliminated. Response time is exceptionally fast due to the transistorized switching used. The only disadvantage we can see is the use of Micro Mo motors, which occasionally have a tendency to slip their internal gear shafts. These units were used, however, due to their small size, thus keeping this new unit to an overall minimum in both weight and physical size.

One of the major features of the REM-1 Digipulse is the fact that all control functions are simultaneous — including motor control! The fact that the throttle can be operated simultaneously with the rudder and elevator is due to the new decoder circuit which utilizes the standard rate and width for the rudder and elevator, but adds a tone control for the throttle function. The motor control buttons control the tone of the transmitted pulse and this, in turn controls the throttle function.

The decoder is a separate unit from the receiver and is completely transistorized with 18 transistors and 1 diode. The receiver is a relay type Controlaire SH-100, single channel superhet. The relay, however, does not switch heavy current so that there is no tendency to arc or burn the contacts. The receiver is wired to send its tone signal to the decoder to be used for motor control. The decoder, itself, draws no current and has no cut-off voltage, so that the decoder and servos will continue to operate as long as there is any life at all left in the battery pack.

As the batteries go down in voltage, the servos lose power. At approximately 2.5V they only move enough to get you back on the ground, if you happen to be flying at the time. Normal operating voltage is 5V center tapped for servos. The REM-1 system will operate approximately two hours on the 500 mah nickel cadmium pack supplied with the system. This is rated at a continuous operation. Two alkaline energizers are supplied in the battery pack for the receiver supply.

The transmitter utilizes a standard 9V dry cell battery. Its output is approximately 150 MW. Modulation is 85%. Tone range is from 300-600 CPS. Both the transmitter and the pulser are completely transistorized.

The original prototype of the REM-1 Digipulse had a considerable number of flights to its credit when we received it at RCM. The system, which weighs a total of 11 ounces complete, had been successfully flown in both a .40 powered P-Shooter by deBolt as well as a Lil Tri-Squire by Midwest.

Our overall impression of the original prototype is that it will definitely be a step forward in single channel pulse equipment, offering the modeler a powerful, reliable, and lightweight proportional system for under $200.

Airtrol's REM-1 Digipulse servo. Extremely small and powerful. Rudder, elevator, and motor.