RM
EQUIPMENT REPORT

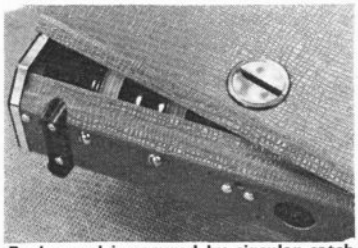
We look at the latest from Fleet –incorporating COSMOS integrated circuitry

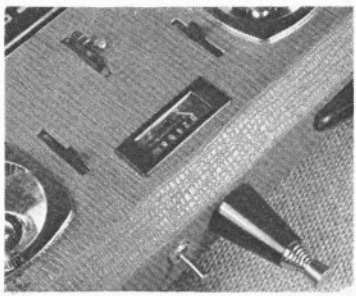
The Digi-Fleet 'Custom II'

THE Digi-Fleet 'Custom II' is the latest radio control system from Fleet, and samples were brought into the RM offices recently by Derek Olley ('Mr Fleet' himself). We found it a most pleasant and well constructed piece of equipment. Two samples were provided; a "six" and a "four", of similar basic design, operating on 30/20 KHz spacing for any of the 12 normal spot frequencies, on 27MHz., by means of instantly changeable plug-in crystals. Amplitude modulation is employed, as currently standard.

In a short range test, it was found to better the suggested distance of 10 yards separation for operating standard and so-called "split" (30/20 KHz spaced) frequencies alongside.

The system comes with the option of either 500mA nicads or PP7 dry battery operation for the transmitter, and 500 or 250mA nicads or pencells, for the airborne pack. For this reason the charger, when supplied, is external, and of dual output design.





Back panel is secured by circular catch. Right: fifth (centre) and sixth (top) functions.

TRANSMITTER

The newly styled transmitter goes further, as we shall see, than the attractive finish, where blue-grey "basket-weave" vinyl-clad aluminium forms a basic case, with nicely moulded and shaped end-caps of matt black plastic, and bright trim. It feels most comfortable and well balanced, the stick action being positive and even, and the trims smooth.

The general control configuration is orthodox, with trims on the inner and lower edges of the chrome finished stick escutcheons. On the six-function transmitter, auxiliary control is by means of a lever, centrally placed, and the "retract" function is by means of a toggle-switch operating fore-and-aft, to the right of the aerial, on top. A battery state meter is positioned centrally near the top, and the shrouded on/off switch is at top left.

Access to the inside is gained via a large back panel, locked by a coin-actuated moulded circular catch. The stick units are of ball-and-yoke configuration, with metal centring arms and expansion springs. These units are readily converted from throttle ratchet to elevator centring mode by transferring spring and brake pad. The standard configuration, as supplied, is throttle-left (mode B—or mode 2, whichever way you look at it).

The electronics are neatly accommodated on a small p.c. board, lower right, with the nicad pack at the left. The aerial is supported at the bottom of the case, as well as by an attractively moulded upper insulator at the top of the case. Unlike the rest of the equipment in this range, the transmitter includes two COSMOS i.c's.

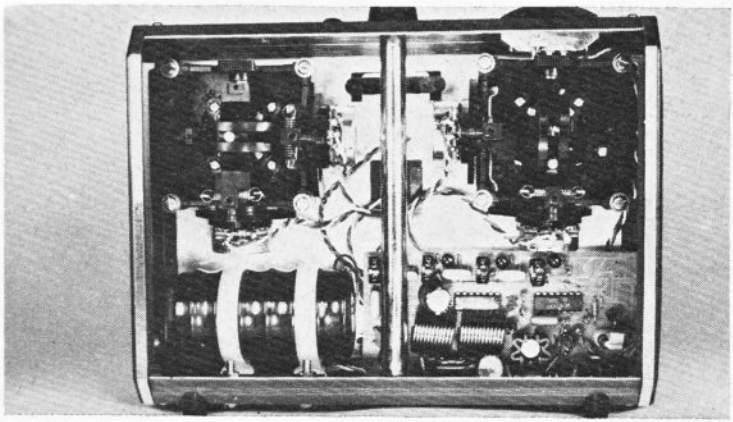
Size: 7¾ × 5½ × 1 7/16 in. thick. Sticks project 1 9/10in. and aerial 1½in. extending to 50in.

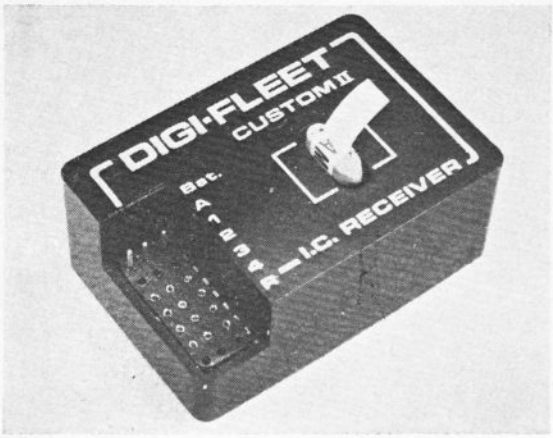
Weight: 1lb.13oz. (nicad version).
Stick effort: typically 3.5oz.
Throttle increments 12 (trim equivalent: 2 increments).

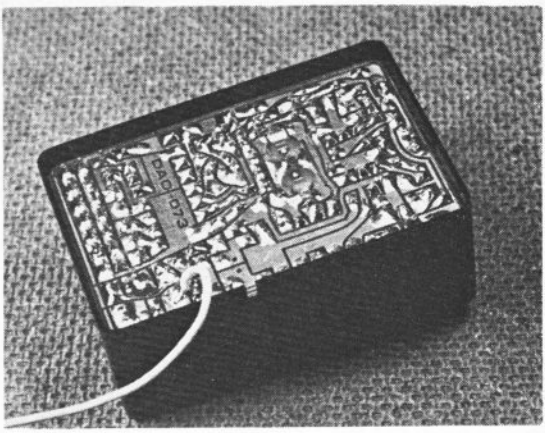
RECEIVER:

Now much more compact than previous models, and encased in a stepped plastic case which allows the cables to plug in neatly, the receiver is light, and may be classed as miniaturised. Of single deck construction, it has screened twin R.F. coils, a VHF i.c in the receiver section and a Cosmos type in the

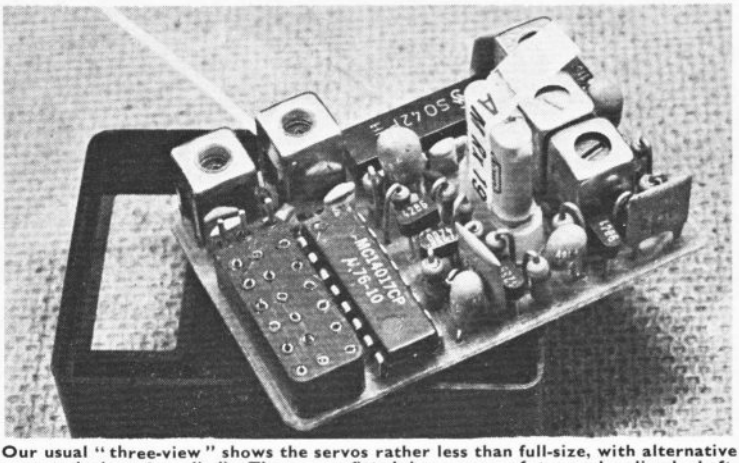
Small p.c. board houses all the electronics (four-function Tx shown here), and the aerial goes to bottom of case for rigid mounting.



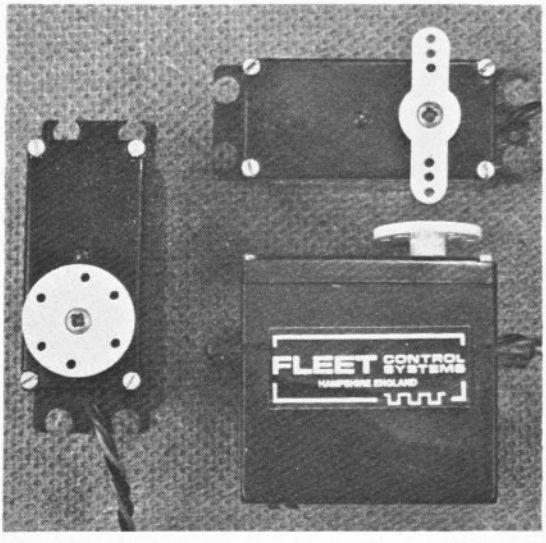




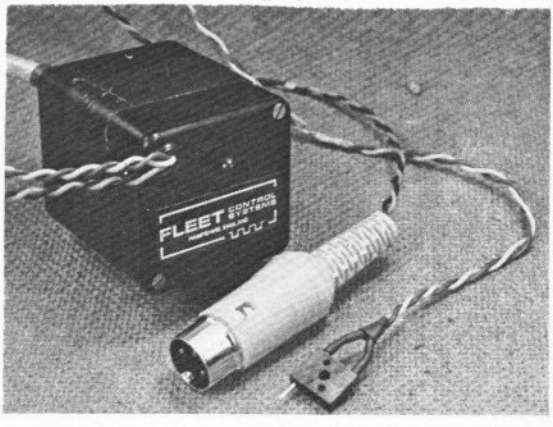
The very compact receiver incorporates the block connector for power and servos —seen clearly in the shot below where the case has been removed. Note aerial exits from side of the case.



Our usual "three-view" shows the servos rather less than full-size, with alternative output devices (supplied). These are fitted by means of tapered splined shaft.



Charger has LED indicator on receiver pack output and, as shown below, uses DIN plug connector for transmitter.



decoder stage. A block connector, carrying all external connections, is mounted on the end of the board and the crystal socket centrally placed in the receiver area.

The moulded case has a support tube to ensure that the crystal enters its socket cleanly and does not touch adjacent components. A silk-screened legend includes input and channel output identification linked to a clear set of instructions in the handbook.

Size: 2$\frac{1}{16}$ x 1$\frac{3}{8}$ x $\frac{13}{16}$in. including connector block, (plugs project $\frac{3}{8}$in.).

Weight: 1.2oz.

Current: 12mA.

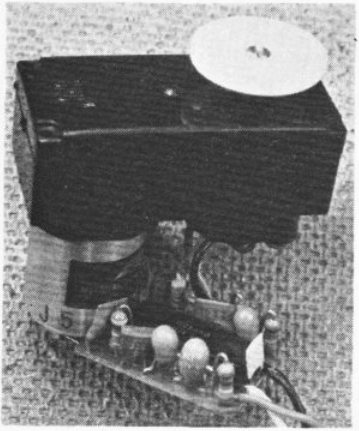
SERVOS

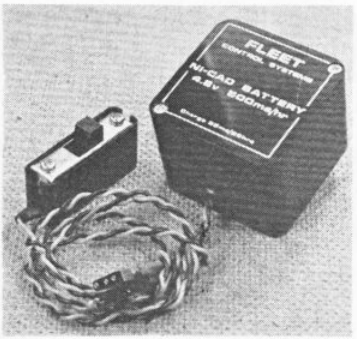
Standard servos supplied use S.R.C. FPS-3 mechanics which have optional linear rack output conversion tops, that also reverse the direction of the output. (FPS-7 reverse-action servos can be supplied to order, and there is a retract servo—FPS6, winch; FPS-8 and FPS-9 electric motor speed controller and reverser) The amplifier is mounted on the motor and has SRC419P i.c. with associated discrete components alongside it.

The action is smooth and even, with a fast transit speed and adequate throw in both linear or rotary mode. The rotary discs and arms fit a tapered, splined shaft so that offset may be incorporated. The discs also have a selection of offset holes for double differential applications, such as might be used for ailerons.

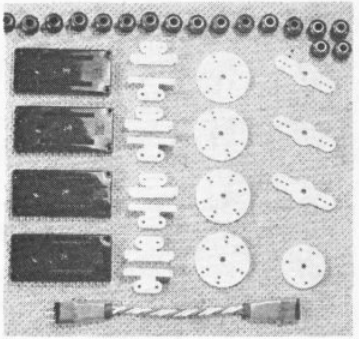
The cables have miniature round gold-plated pins, in polarised configuration, and the plug itself has a neat lug at the side to aid withdrawal without pulling the leads. The leads themselves are tripple sleeved for support and a short extender lead is supplied for aileron connection, so that the receiver may remain undisturbed when installation dictates.

Size: 1$\frac{7}{16}$ x $\frac{1}{4}$in. lug each disc or linear output





Latest electronics are used in servo, as shown in close-up, left. Above is the airborne nicad pack, with harness and switch



Alternative outputs and extension lead. Below servo mounting trays supplied.

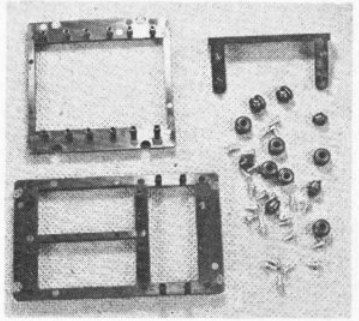
lug x $\frac{3}{8}$in. wide, cable 8$\frac{1}{2}$in. to plug top (cable exits above lugs).
Weight: 1.4oz. including cable and plug.
Throws: disc $\frac{9}{32}$in. large disc: $\frac{7}{16}$in., arm: $\frac{9}{16}$in. plus $\frac{3}{8}$in. trim, other trims pro rata. linear throw $\frac{3}{8}$in. plus $\frac{1}{16}$in. trim.
Transit: fast (.35sec) with no overshoot, negligible lag or float.
Power: maximum 4lb.

NICAD AND HARNESS

A 500mA disc type pack of nicads is supplied as standard, in a square nylon box, complete with switch and charging leads. 225mA cells are available for use with two-function outfits, or where reduced endurance is acceptable on three or four-function applications. A two-pin polarised charging socket is wired to a separate lead from the nicad pack—not, as is currently done, from the switch—thus it is *important* to have the switch in the "off" position for charging.
Size: 1$\frac{17}{32}$ square x 1$\frac{1}{4}$in. deep, cable 8in. to switch plus 7$\frac{1}{2}$in. to receiver, charging lead (live) to nicad: 6in.
Weight: (including leads and switch) 4 oz.
Airborne weights: (500 type nicad) four function: 11.2oz., with all fixing trays; 12oz. (225 type nicad saves 1.5oz. Bare 2-function with this pack is 6.7oz.).

ACCESSORIES

A set of mounting trays, and screws and grommets, aileron extension lead, and sets of linear conversion tops for the servos are provided with all 4-6 function sets. A dual charger comes with nicad sets, but must be purchased separately when converting from dry batteries. It is mains operated and has dual outputs with an L.E.D. indicator in the receiver pack output. There is no indicator on the charge or transmitter when the latter is on charge, but the meter on the transmitter indicates battery state (when switched on) rather than R.F. output—important when using dry batteries.



MANUFACTURER AND SERVICE

Fleet Control Systems Ltd., 47 Fleet Road, Fleet, Hants. Service Centre: 14, Oakwood Road, Bracknell, Berks.