

EKlogictrol

Reliable radio control systems

EK CUSTOMER SERVICE CENTER BULLETIN

Date: April 30, 1976

Subject: Updates for '76

A. Changes in radio units

1. Catalog
2. Instructions
3. Transmitter circuit changes
4. Receiver circuit changes
5. New battery pack configurations and switch harnesses
6. Modifications for cycler use

B. New Parts Price List

To: All EK Warranty and Associate Customer Service Centers

There has been made many minor changes and some not so minor for this year's systems. First the catalog illustrates a new uniform look of the transmitters showing all units with the square chrome bezels for the stick assemblies, all black trim and auxiliary control levers, and a new antenna mount for the new 9-section, 40 inch antenna.

The instruction sheets for all units have been combined into one manual which is amply illustrated. Page 17 is the break-down drawing for servos and replacement parts chart. You will note the new seven digit order numbers. These are explained in the new Parts Price Listing. Page 18 illustrates the transmitter stick assembly with the new part numbers.

TRANSMITTERS - Ref.: B-681, B-682, B-683

All EK transmitters have had several changes in the electronics to improve reliability. These changes are referred to by number on the schematics and correspond to the following:

- a. To improve triggering stability, the 100 ohm resistor in battery supply filter network was changed to a 47 ohm.
- b. Another 15 u.f. filter capacitor (order number 664-3500) has been added in parallel with the existing 15 u.f. capacitor. This provides further insurance against RF feedback resulting in wall-to-wall pulses at lower battery voltages and resulting higher impedance.
- c. To insure against intermittent contact of the "on-off" switch, there are now two contacts making on the +10 volts side of the switch.
- d. The negative side of the battery is now directly grounded to the chassis to allow a secure ground and free another set of contacts for the positive (+) side of the switch.
- e. Also note the schematic insert of the low voltage charger network as used in '75 and '76 radios. Only the Super-Pro transmitter features wired-in batteries, all other systems use the snap-in type. See the attached "Nicaid Conversion Kit" instructions for wiring changes in the charger circuit. This differs slightly from the one shown in Service Bulletin 10-15-75 in that the dropping resistors (100ohm and 390ohm) connected

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in parallel now use the no. 2 (previously unused) pin of 3 pin connector (204-1030) as a wiring post so that a simple shorting plug will allow only the receiver battery pack to be charged or with it's removal and the (200-5000) connector plug into the battery charge connector to charge both transmitter and receiver batteries simultaneously.

RECEIVERS - Ref.: B-684, B-685

The most significant change to the 1976 EK receivers is the new CMOS integrated circuit decoder. The CMOS decoder allows stable operation of the receiver down to 3.5 volts (or the approximate voltage of the receiver battery with a cell out). In spite of this advantage, several of the Champions, Super-Pros, and Rangers had a couple of problems. These were 1) shifting of the neutrals at close range and 2) dropping of pulses at a high frame rate (short control pulses).

The first problem of shifting neutrals was caused by pulse distortion at the base of Q8 on schematic 684. This was solved by changing the 4.7 u.f. capacitor to a 22 u.f. capacitor at the base of Q8. This change is denoted by a number (1) in the schematic and the parts layout.

The second problem of the decoder dropping pulses is caused by insufficient delay of the reset (or clear) signal at pin 8 of the CMOS chip. This was solved by changing the 47K resistor to an 82K resistor. This is number (2) in the schematic and parts layout.

Seven different airborne battery pack configurations are available as listed in the '76 catalog. The dry cell pack should be used only with three servos or less due to possible interaction resulting from higher battery internal impedance. All battery packs now feature the EK polarized connector with the center tap (2.4 volts) white wire connected. This allows any one of the seven configurations to be used on any '76 system through use of a common switch harness. In addition, through the use of two new and special switch harnesses these same seven battery configurations may be used with EK radios from '68 to the present. Switch harness (200-9070) fits '68-'71 Log III and Pro Series systems, number (200-9120) fits '70-'71 Logictrols and Champions and '71-'75 LRB systems, and number (200-9120) is for '72-'76 Champions and Super-Pros and '75-'76 Rangers. All battery connectors are color coded with a black plug pin block (205-2200) and a red plug base (205-2400) which matches the corresponding colors on the battery end of the switch harnesses.

See enclosed Service Bulletin concerning connecting "cyclers" to EK radios.

Also enclosed is the new computer number Parts Price List. Effective June 1, 1976 all parts orders should use these numbers to expedite your order. Orders not using the new computer numbers after Jan. 1, 1977 may have extreme processing delays. Through your cooperation we hope to decrease the time for the parts you order to reach you which in turn makes for happier customers and makes us happier too.

Thank you,

Don Downing

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