

TABLE OF CONTENTS

Introduction.....	1
Inventory.....	1
Warranty.....	2
Warranty Validation.....	2
GENERAL INSTRUCTIONS-----	
Transmitter stick configuration and adjustment.....	3
Operating Frequencies.....	3
Special Instructions for LRB and Super Brick.....	4
Optional Single Function Charger.....	4
LRB-3 Wiring Hook-Up.....	5
Ranger Wiring Hook-Up.....	6
LRB-5 and Super Brick Wiring Hook-Up.....	7
Champion Wiring Hook-Up.....	9
SUPER PRO ONLY-----	
Super-Pro Wiring Hook-Up.....	10
Expanded Scale Voltmeter.....	11
Optional Buddy Box Operation.....	11
Special Instructions for Toggle Switch adjustment.....	12
OPERATION-----	
Checking System Operation.....	13
Range checking your system.....	13
Receiver Antenna Installation.....	14
Frequency flag installation.....	14
Learning to Fly.....	14
Optional Receiver and Servo mounts.....	15
EK accessories.....	16
SERVICE-----	
Exploded view of Servos.....	17
Exploded view of Stick assembly.....	18
Return for Service Letter.....	19
EK Service Centers.....	21

EKlogictrol

Reliable radio control systems

INTRODUCTION

Congratulations on having acquired the finest digital proportional system money can buy. Our systems are the latest in both electronic and mechanical technology. The airborne size allows tidy installation in both large and small models.

The electronics are contained in small compact high impact cases for protection and ease of installation. Properly cared for, your new system will give you many hundreds of hours of trouble free operation.

INVENTORY

Carefully remove all the components from the shipping container, saving the container and packing. The following components are provided with your Radio system as standard equipment, however your specific system may vary depending upon options selected.

ITEM	LRB-3	RANGER	LRB-5	CHAMP	S-P
1. Transmitter	1	1	1	1	1
2. Transmitter Antenna	1	1	1	1	1
3. Receiver	0	1	0	1	1
4. "Uni-Pak" brick	1	0	1	0	0
5. Receiver Battery case	dry	dry	nicad	nicad	nicad
6. Nicad Charger	0	0	1	1	1
7. Warranty Card	1	1	1	1	1
8. DC Charge cord	0	0	1	1	1
9. Small rubber grommets	0	8	8 or 4	16	16
10. Large rubber grommets	4	0	4	0	0
11. Wheel output arms	3	3	4	4	4
12. Offset output arms	3	3	4	4	4
13. Switch harness	1	1	1	1	1
14. Servo extension cable	0	0	0	1	0
15. Screws for transmitter	4	4	4	4	4
16. Set frequency flags & buckle	1	1	1	1	1
17. Uni-mount	UM-9	UM-8	UM-9	UM-6	UM-6
18. Aileron mount	0	0	AM-4	AM-4	AM-4
19. Plug Retainers	3	2	4	2	2
20. Servos (SM standard)	2	2	4	4	4

NOTE: Any shortages of parts should be reported to your dealer immediately.

LIMITED WARRANTY FOR EK LOGICTROL SYSTEMS (NON-TRANSFERABLE)

EK Products guarantees all EK Logictrol systems to be free from defects in material and workmanship and agrees to remedy any such defect or to furnish a new or equal part in exchange.

This warranty remains in effect for a period of 1 year from date of purchase. This warranty does not apply to the system or any part thereof subjected to misuse, service other than normal, damage in transit or handling. EK assumes no liability for damage to equipment or to property resulting from crash of your model, or any other damage to the system or any part thereof whether caused by possible equipment failure or not. Any evidence of tampering with, modification to, or attempted repair by other than authorized EK warranty service centers automatically voids all warranties. Seller shall not be liable for any consequential or special damages caused by any defect in the material or workmanship other than the liability of the seller to repair any such defect or to furnish a new or equal part in exchange.

In addition, we warranty the service for EK Logictrol systems as indicated below. Furthermore, we guarantee that your service charge for each instance after the 90 days will be limited. This means, we are standing behind our product 100% for one full year and even allowing crash damage, under normal service, for a period of 90 days:

1. 90 days unconditionally - postage charge only.
2. Following 90 days - maximum charge \$25.00 plus postage.
3. Following 6 months - maximum charge \$35.00 plus postage.
4. Within 30 days after the expiration of the first years warranty, the system may be returned to the factory for a complete check-up and rewarranty, under the original schedule, for a fee of \$50.00.

WARRANTY VALIDATION

To validate your EK-Logictrol one year warranty, you must do the following:

1. Fill in all the information required on the two part post card.
2. Have your dealer sign the warranty card.
3. Attach one copy of the bill of sale which includes dealers name and address.
4. Mail the warranty card with a copy of the bill of sale to EK PRODUCTS within 10 days of purchase.

Failure to comply with these few simple steps may result in the following:

1. Unnecessary delay in servicing process.
2. Delay in warranty application or warranty period shortened (if you don't provide authentic date of sale we use our shipping date!)
3. Warranty cancellation for cause.

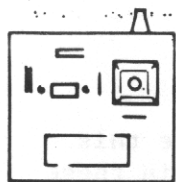
If it ever becomes necessary to return your radio for service, please be sure to include the service record card with the unit; otherwise you may be charged for the work performed. We suggest that you tape the service record card inside the back of the transmitter.

All warranty servicing must be performed at the factory or EK Warranty Service Centers located within continental boundaries of the United States.

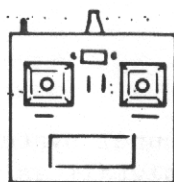
When returning individual components or systems, include the following:

1. Written description of the failure (use form provided or hand written note.)
2. Packing list of items returned.
3. SERVICE RECORD CARD.
4. Always return complete system, except when a servo only malfunctions.

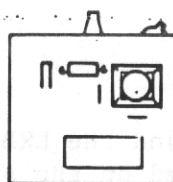
NOTE: To avoid C.O.D. charges, please remit adequate return shipping charges. Any excess amounts will be credited to your account.



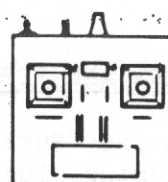
1-3



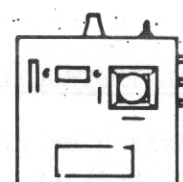
2-5



1-5



2-7



1-7

TRANSMITTER STICK CONFIGURATION AND ADJUSTMENT

EK Logictrol transmitters are available with two separate stick configurations. One is designated as a single-stick and the other as a two stick.

Single Sticks

The (1-3) has a two function control stick located on the right front of the transmitter. The third function is controlled by a positionable lever found on the left side of the transmitter front.

The (1-5) and (1-7) have a three function control stick and separate positionable function levers, corresponding to the number of channels. Rudder on this arrangement is controlled by twisting action of the large control knob. THE TRIM FUNCTION IS LOCATED ON THE BACK SIDE OF THE KNOB.

Dual Sticks

The (2-5) has a two function control stick on each side of the transmitter. The left stick is normally used for throttle and is detented (clicks as it is positioned) for that purpose, in the vertical plane only. The (2-5) has an additional channel control lever on the top left side of the case.

The (2-7) is similar to the 2-5 except it has a toggle switch in lieu of lever for retracts plus two additional channel control levers on center bottom of front case.

Special Notes

An exciting and exclusive feature of your system is the independent adjustment of spring tension on the control sticks. Remove the back of transmitter and locate the allen screw 326-1500 (CS-019) as shown in pictorial drawing of control stick parts assembly. Use a small ordinary screwdriver or allen wrench to turn the allen screw in or out to adjust the "feel" of the stick to your liking. The allen screw is set at the factory, but this is really an individual taste sort of thing. Once the set is to your liking, replace the back transmitter cover.

NOTE: If you prefer to have throttle on the right stick, refer to conversion instructions in Service portion of this manual.

OPERATING FREQUENCIES

NOTE: It is illegal to operate a transmitter without a Citizens Band license on the 27 mHz and 72 mHz bands. Form #505 for obtaining this license is available from your dealer or the nearest Federal Communications Commission office, if not included in your shipping carton.

The following frequencies have been granted by the FCC for use in MODEL AIRPLANES ONLY, it is illegal to use them for any other type of radio control models: 72.080 mHz, 72.240 mHz, 72.400 mHz, and 75.640 mHz. Frequencies shared by model airplanes, boats, and cars are 72.160 mHz, 72.320 mHz, and 72.960 mHz.

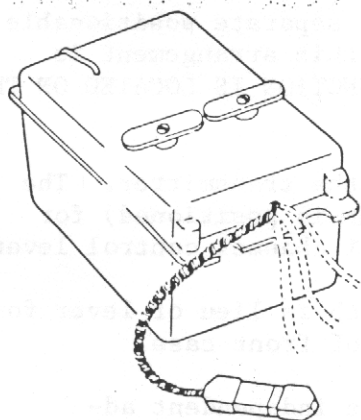
Systems are also available on 53.0, 53.1, 53.2, 53.3, 53.4 and 53.5 mHz for those people who hold proper amateur licences. (minimum of technician licence required)

SPECIAL INSTRUCTIONS FOR LRB AND SUPER-BRICK

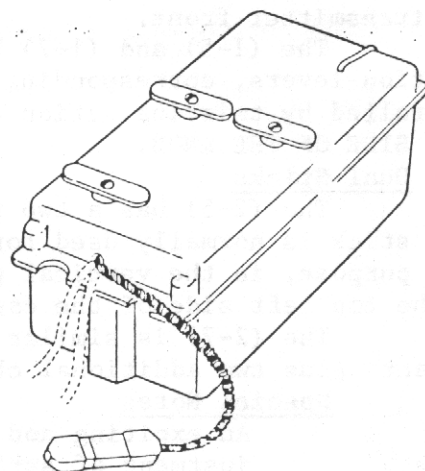
Switching plug - both the "Super-Brick" and the LRB-5 channel systems have this special feature. The switching plug is located on the short pigtail as shown in these drawings. Note that the top edge of the plug has a wedge shape which aligns with its connector. In this position, the "Super-Brick" or LRB-5 works normally. Example: TL transmitter will have aileron and elevator functions on right stick, motor and rudder on left stick.

When the aileron servo is removed for 3 channel operation such as in a trainer or glider, rudder and elevator will be on opposite sticks. To return the rudder function to the right stick - remove, rotate 180°, and re-insert the switching plug. Now the rudder and elevator are on the right stick.

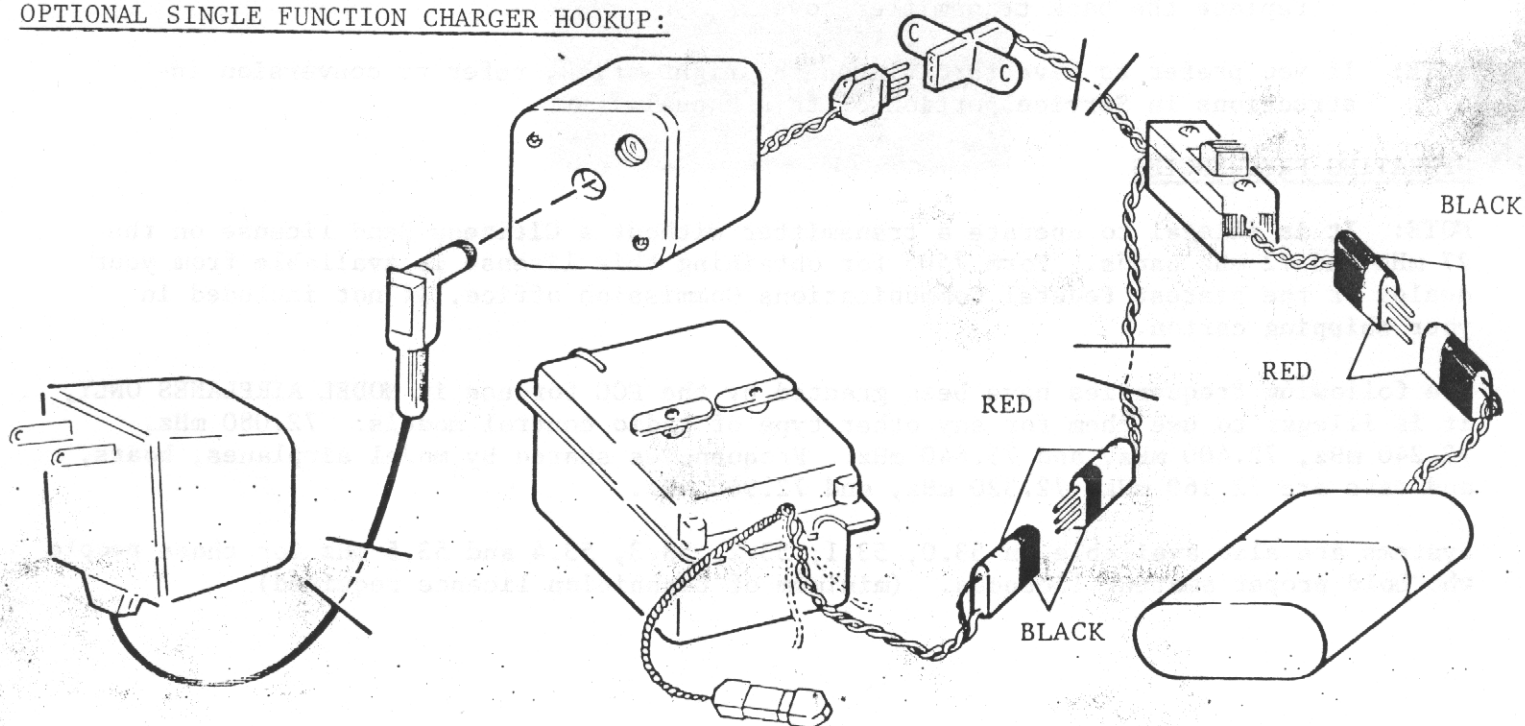
With the switching plug reversed as described above the 4th servo can be reconnected and the system will then have aileron and rudder coupled.



NOTE: SYSTEM CANNOT BE OPERATED
PROPERLY WITH PLUG REMOVED

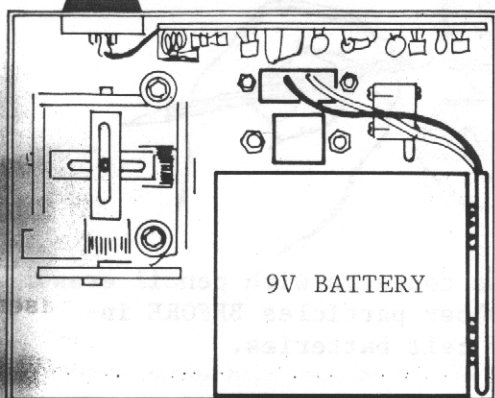


OPTIONAL SINGLE FUNCTION CHARGER HOOKUP:



LRB-3 WIRING HOOK-UP INSTRUCTIONS

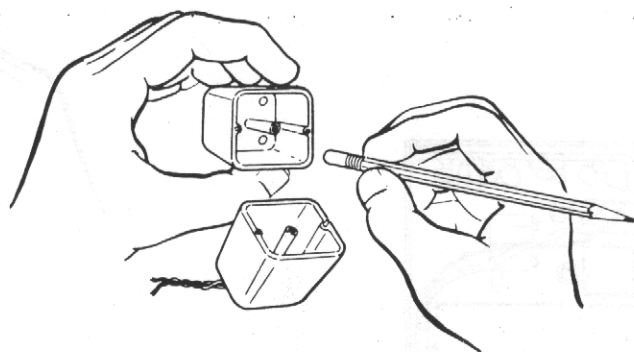
Fig. 1



Install transmitter battery with snap connector toward outside as shown above.

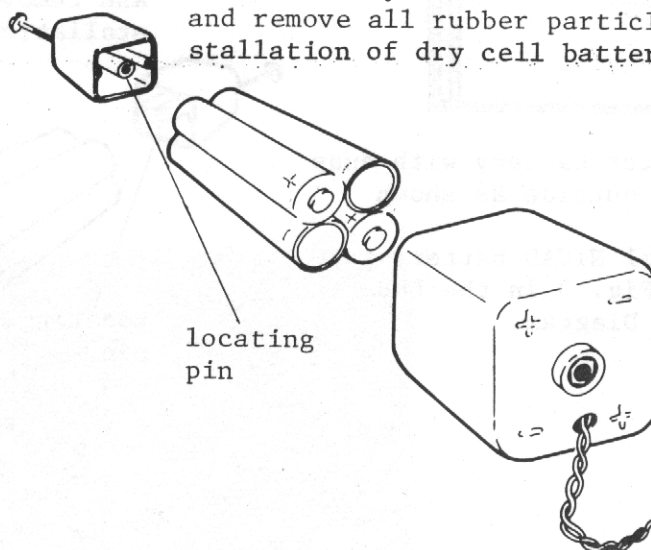
NOTE: An optional NICAD battery is available; see Fig. 3 in the LRB-5 and SUPERBRICK DIAGRAM.

Fig. 2



Clean battery case contacts with pencil eraser and remove all rubber particles BEFORE installation of dry cell batteries.

Fig. 3



Install batteries by carefully observing the polarity (+ or -). Align the locating pins before closing case. REPLACE DRY CELLS WHEN VOLTAGE DROPS TO 4.2 V WITH SYSTEM "ON".

Fig. 4

Observe color code and pin alignment when connecting your systems for operation. All connections must be mechanically secured before flight. We recommend the use of 210-3200 (PR-3) plug retainers for this purpose.

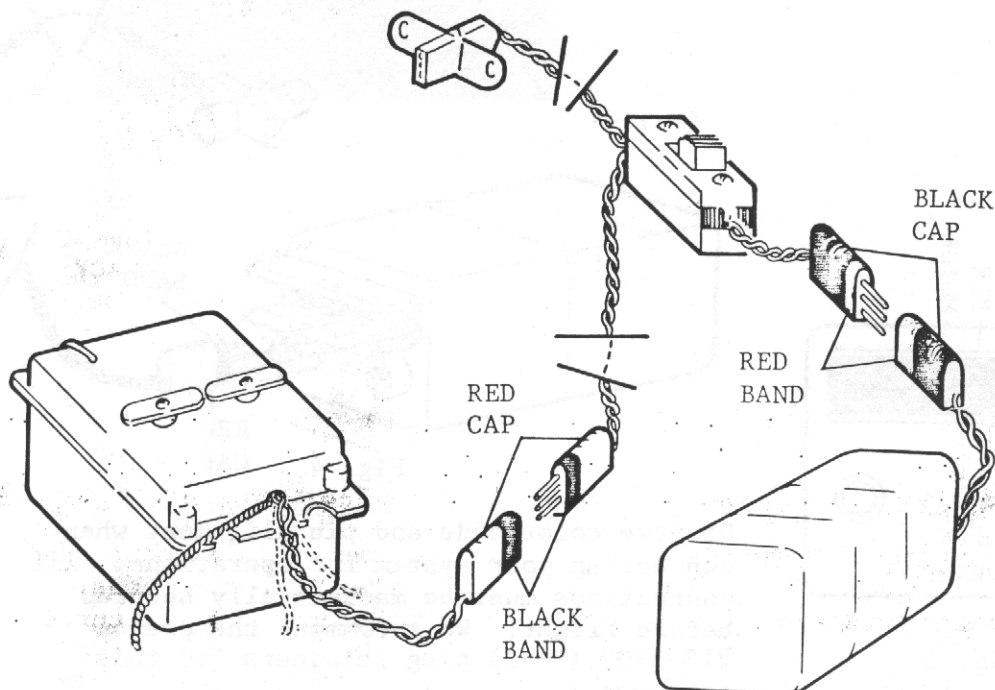
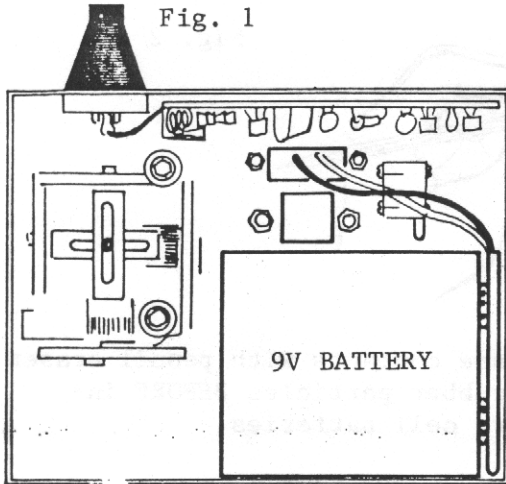


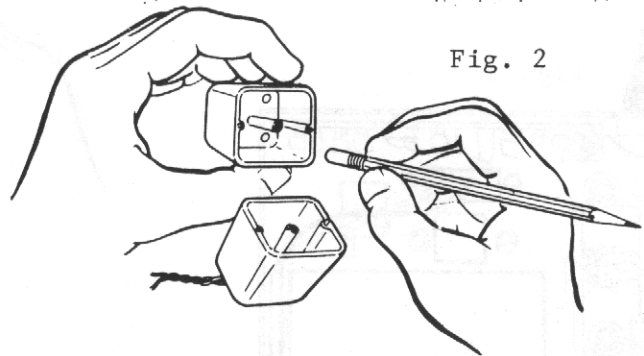
Fig. 1



Install transmitter battery with snap connector toward outside as shown above.

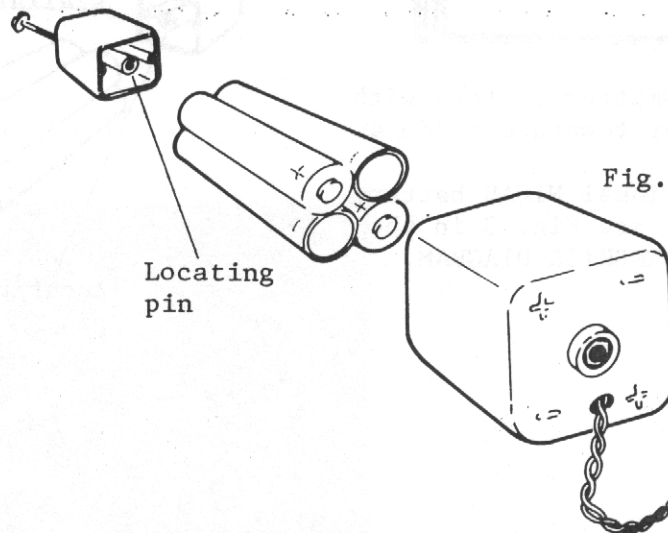
NOTE: An optional NICAD battery is available: see Fig. 3 in the LRB 5 and SUPERBRICK Diagram.

Fig. 2



Clean battery case contacts with pencil eraser and remove all rubber particles BEFORE installation of dry cell batteries.

Fig. 3



Install batteries by carefully observing the polarity (+ or -). Align the locating pins before closing case. REPLACE DRY CELLS WHEN VOLTAGE DROPS TO 4.2 V WITH SYSTEM "ON".

Fig. 4

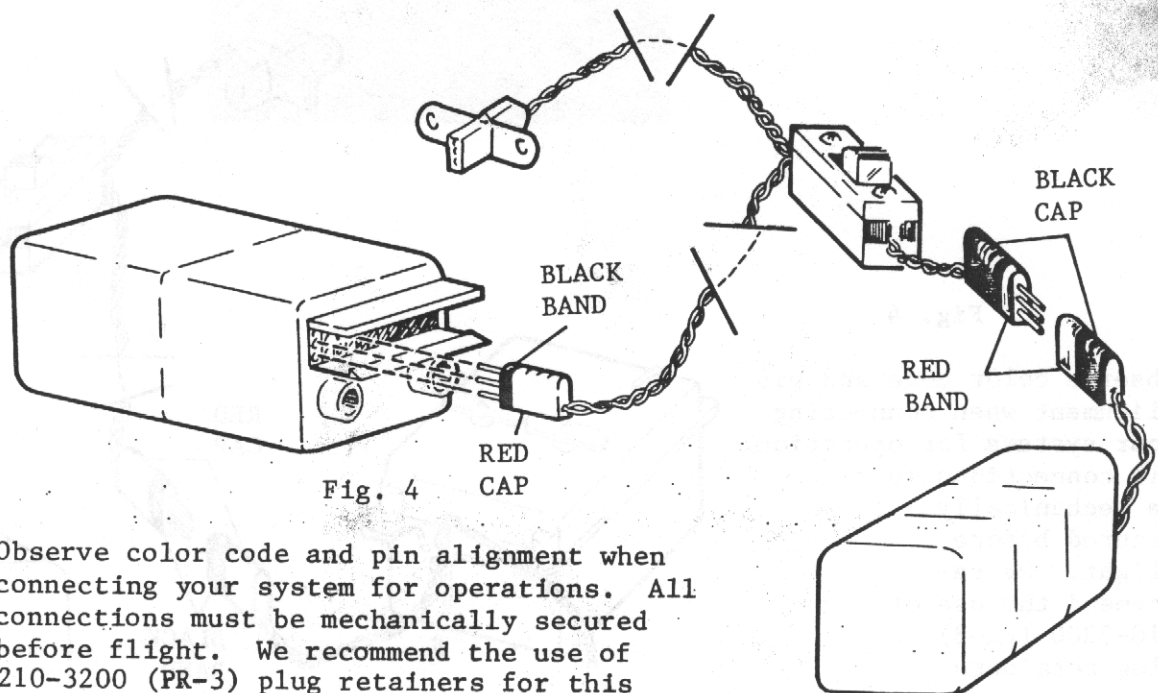
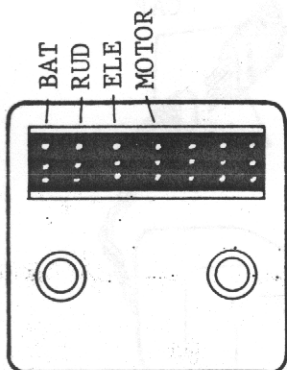


Fig. 5



Observe color code and pin alignment when connecting your system for operations. All connections must be mechanically secured before flight. We recommend the use of 210-3200 (PR-3) plug retainers for this purpose.

LRB-5 & SUPER-BRICK WIRING HOOK-UP

Fig. 1

Receiver Hook-up

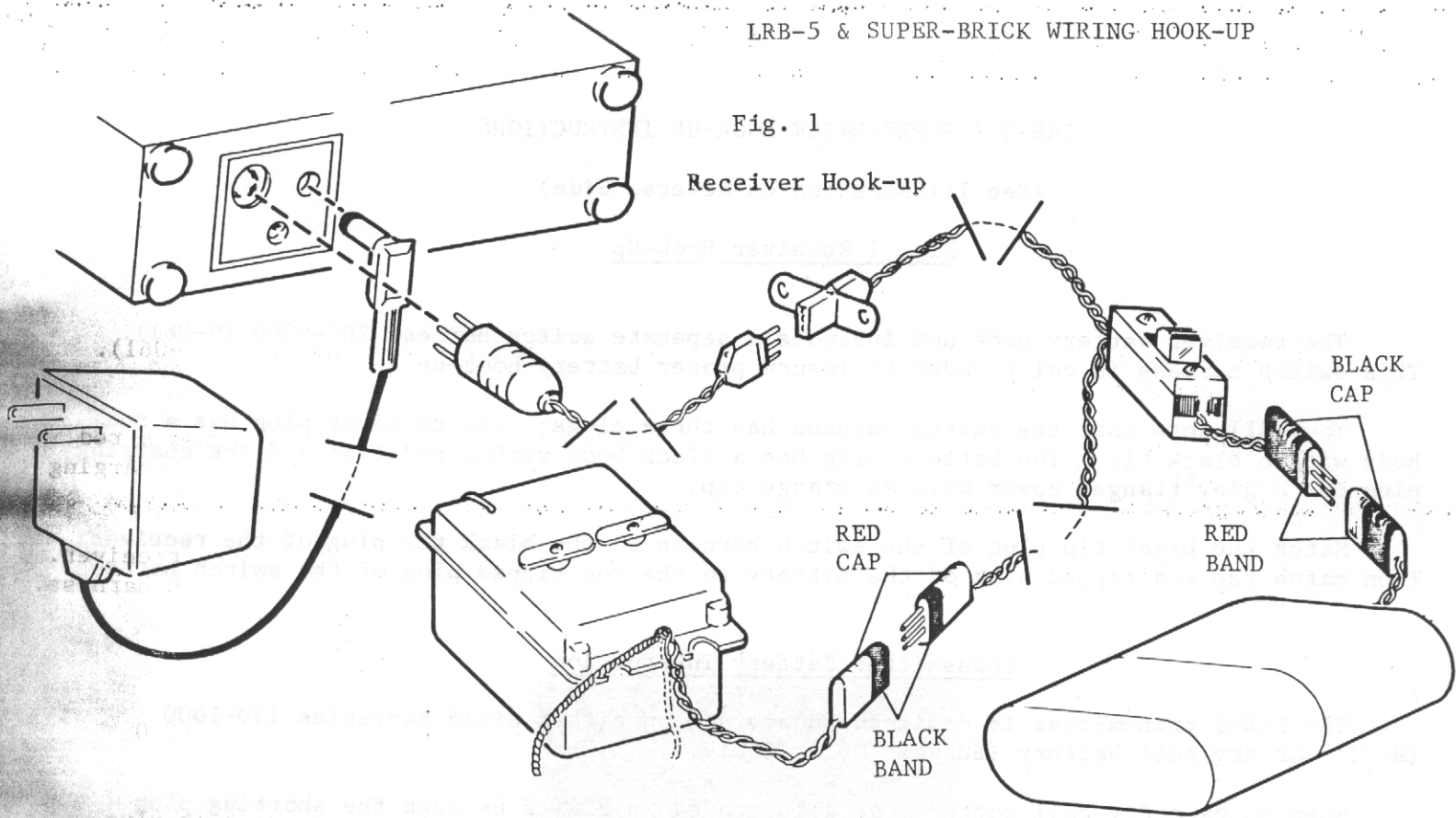


Fig. 2

NICAD BATTERY HOOK-UP IN TX

BATTERY CLIPS

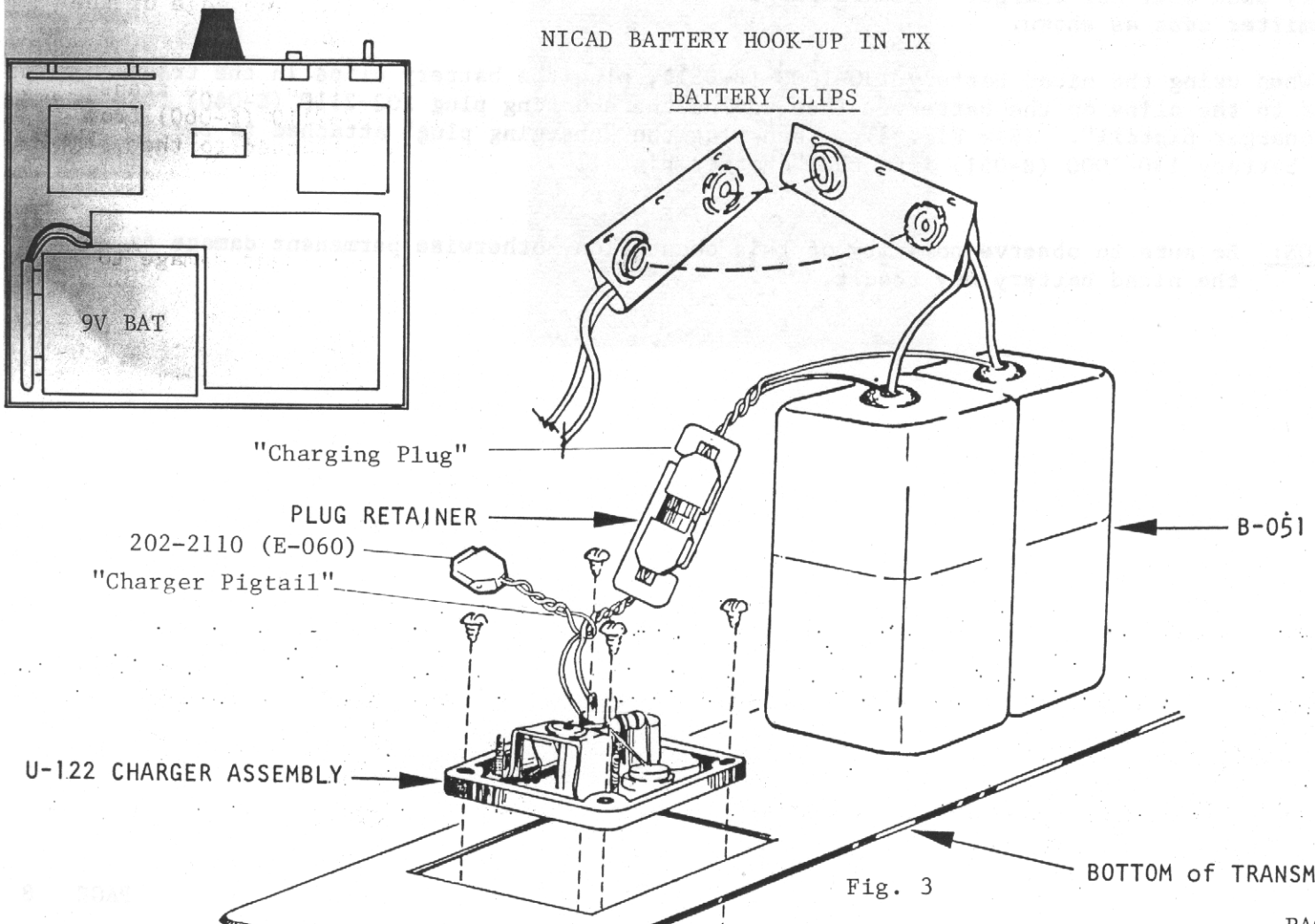


Fig. 3

BOTTOM of TRANSMITTER

LRB-5 & SUPER-BRICK HOOK-UP INSTRUCTIONS

(See Illustration on Reverse Side)

Fig. 1 Receiver Hook-Up

The receiver battery pack now includes a separate switch harness 200-9200 (U-061). This switch harness is color coded to insure proper battery hook-up.

You will note that the switch harness has three plugs; The receiver plug has a red body with a black tip; The battery plug has a black body with a red tip; and the charging plug has a grey flanged cover with an orange tip.

Match the black tip plug of the switch harness to the black tip plug of the receiver. Then match the red tipped plug of the battery to the red tipped plug of the switch harness.

Transmitter Battery Instruction

The LRB-5 transmitter is designed to operate on either nicad batteries 130-1000 (B-051) or dry cell battery (Burgess D6 or equiv.).

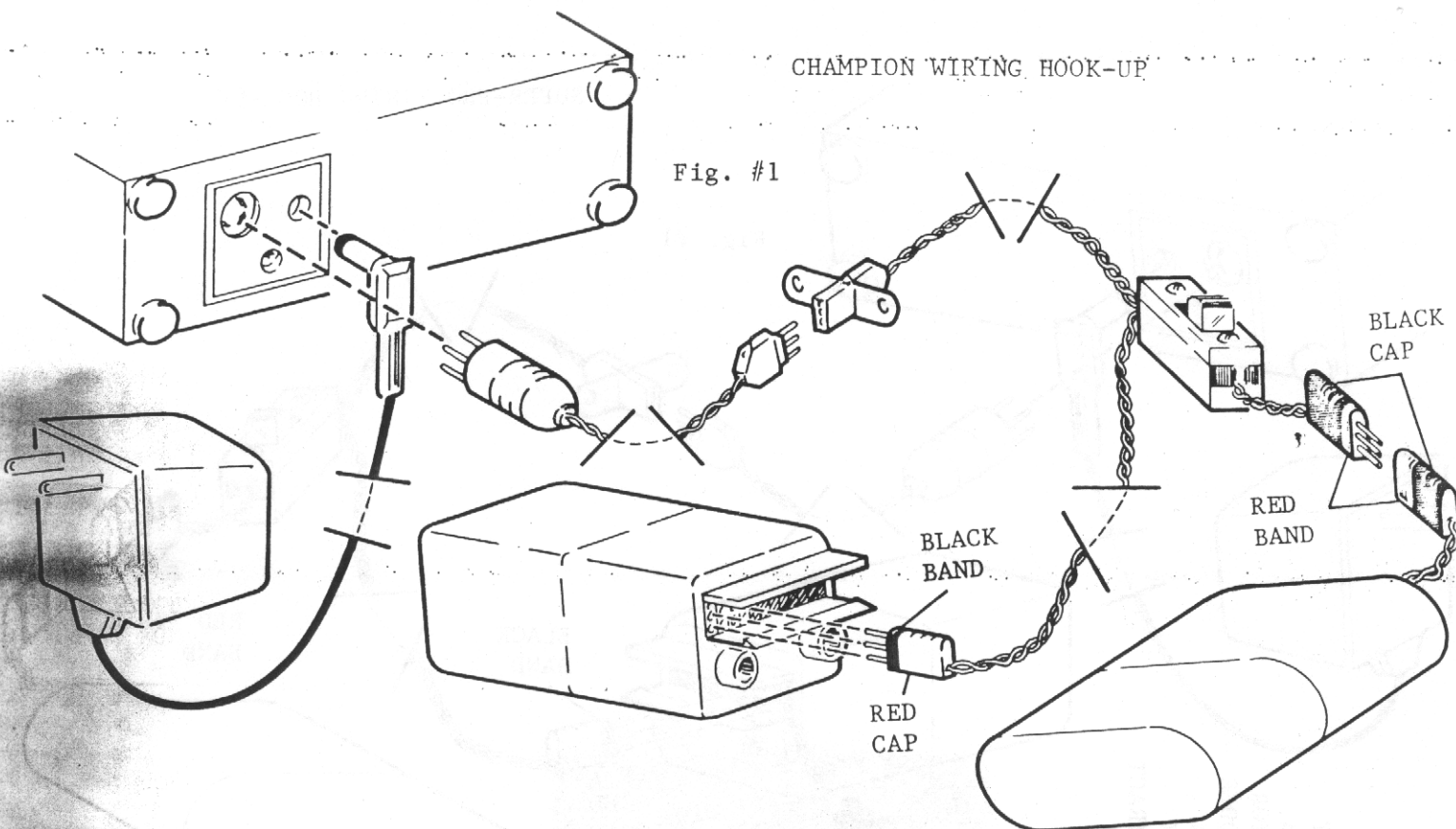
When using a dry cell battery, as illustrated in Fig. 2 be sure the shorting plug 202-2110 (E-060) is plugged into the end of the "charger pigtail". Otherwise the receiver battery pack will not charge. Install the dry cell with snaps toward outside edge of the transmitter case as shown.

When using the nicad battery 130-1000 (B-051), plug the battery clips in the transmitter to the clips on the battery. Then unplug the shorting plug 202-2110 (E-060) from the "charger pigtail". (See Fig. 3). Then plug the "charging plug" attached to the nicad battery 130-1000 (B-051) into the "charger pigtail".

CAUTION: Be sure to observe polarity of this connection, otherwise permanent damage to the nicad battery may result.

CHAMPION WIRING HOOK-UP

Fig. #1



Receiver Hook-Up

The receiver battery pack now includes a separate switch harness 200-9200 (U-061). This switch harness is color coded to insure proper battery hook-up.

You will note that the switch harness has three plugs; the receiver plug has a red body with a black tip; the battery plug has a black body with a red tip; and the charging plug has a grey flanged case with an orange tip.

Plug the black tip plug of the switch harness to the receiver block as shown in Fig. #1.

Fig. #2

Channel placement in the receiver

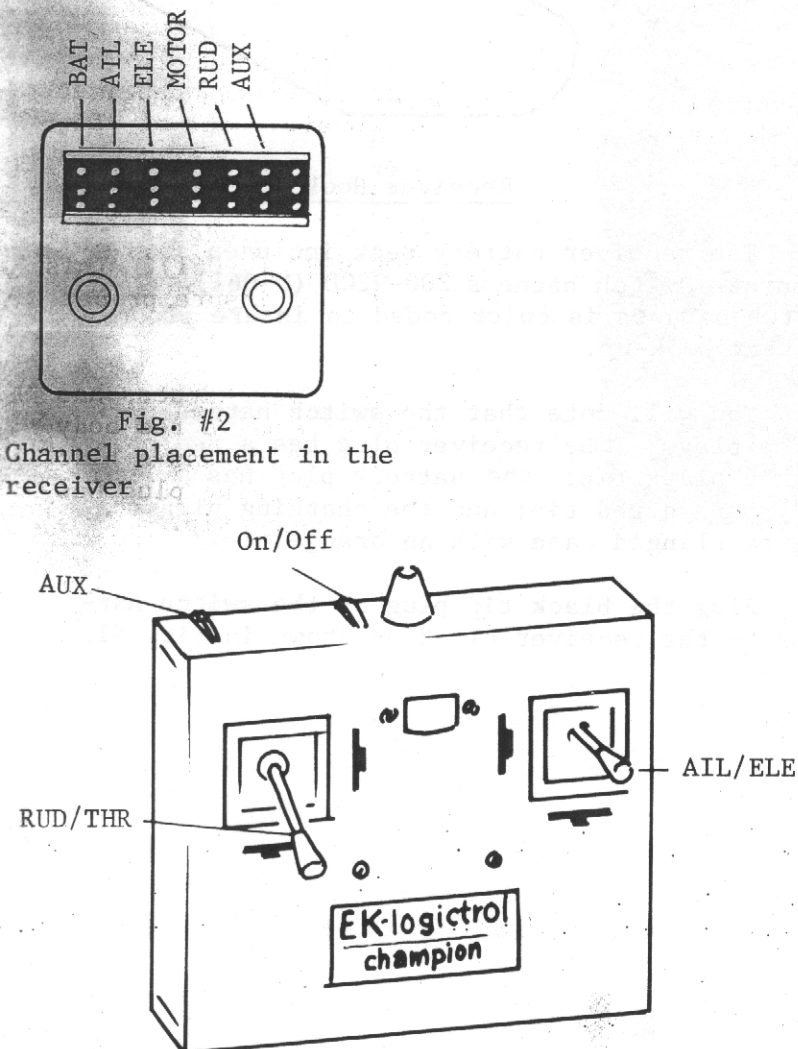


Fig. #3

Channel placement on a 2-5 transmitter

SUPER-PRO WIRING HOOK-UP

Fig. #1

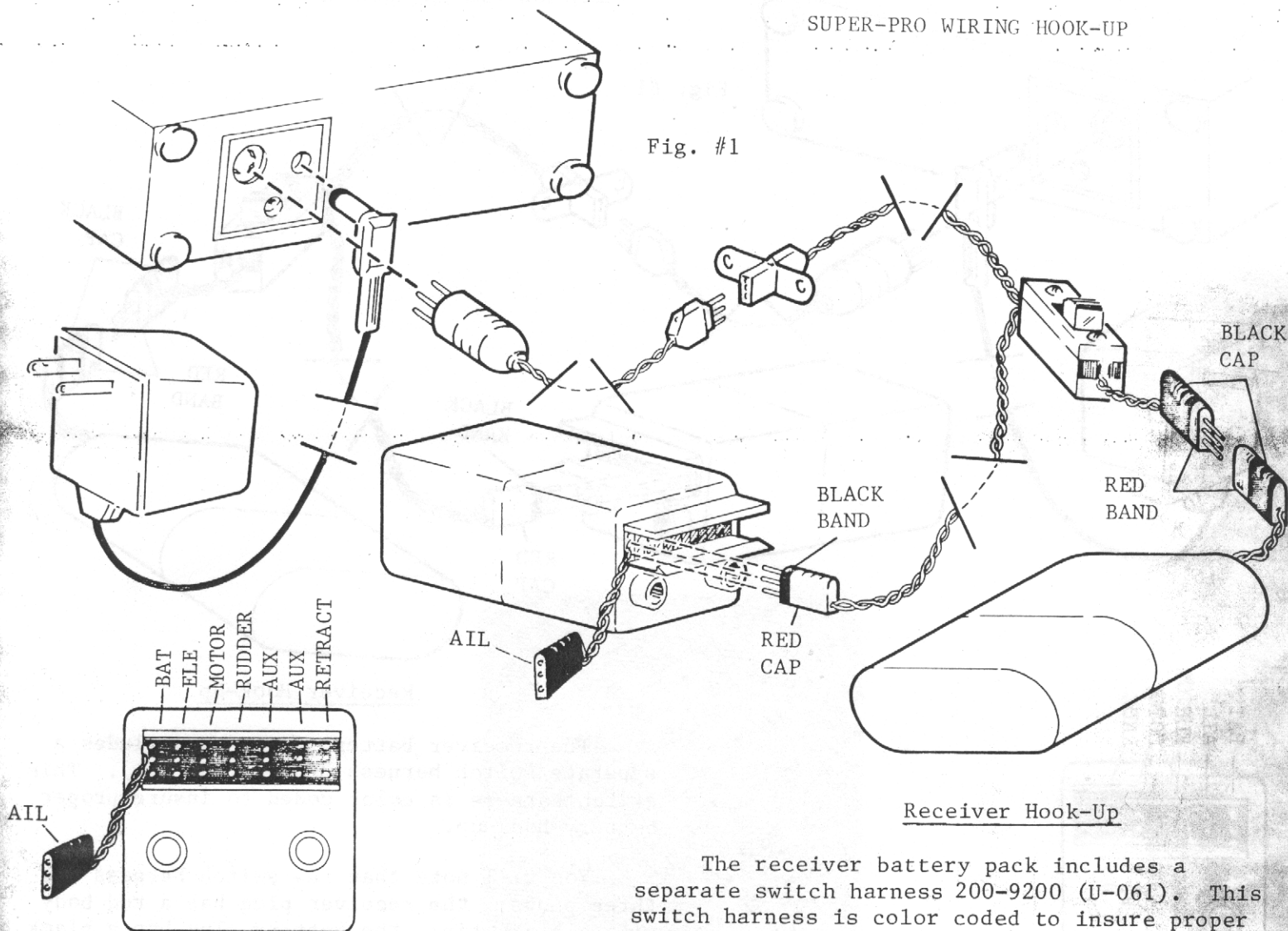


Fig. #2
Channel placement in the receiver

Receiver Hook-Up

The receiver battery pack includes a separate switch harness 200-9200 (U-061). This switch harness is color coded to insure proper battery hook-up.

You will note that the switch harness has three plugs; the receiver plug has a red body with a black tip; the battery plug has a black body with a red tip; and the charging plug has a grey flanged case with an orange tip.

Plug the black tip plug of the switch harness to the receiver block as shown in Fig. #1.

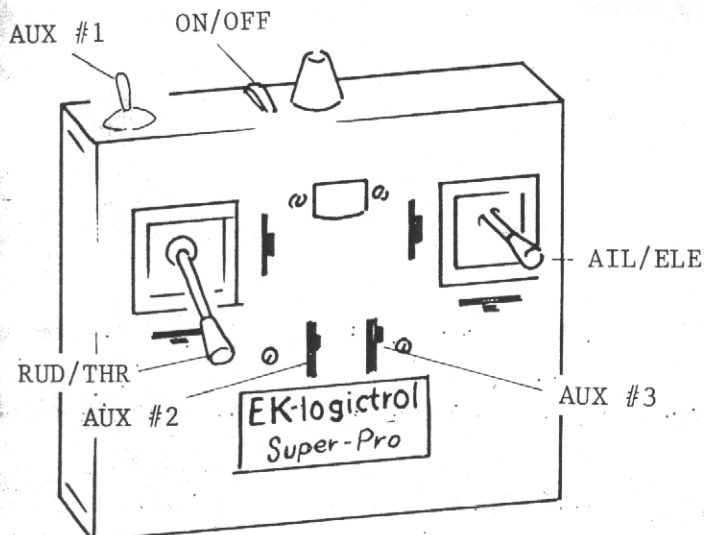
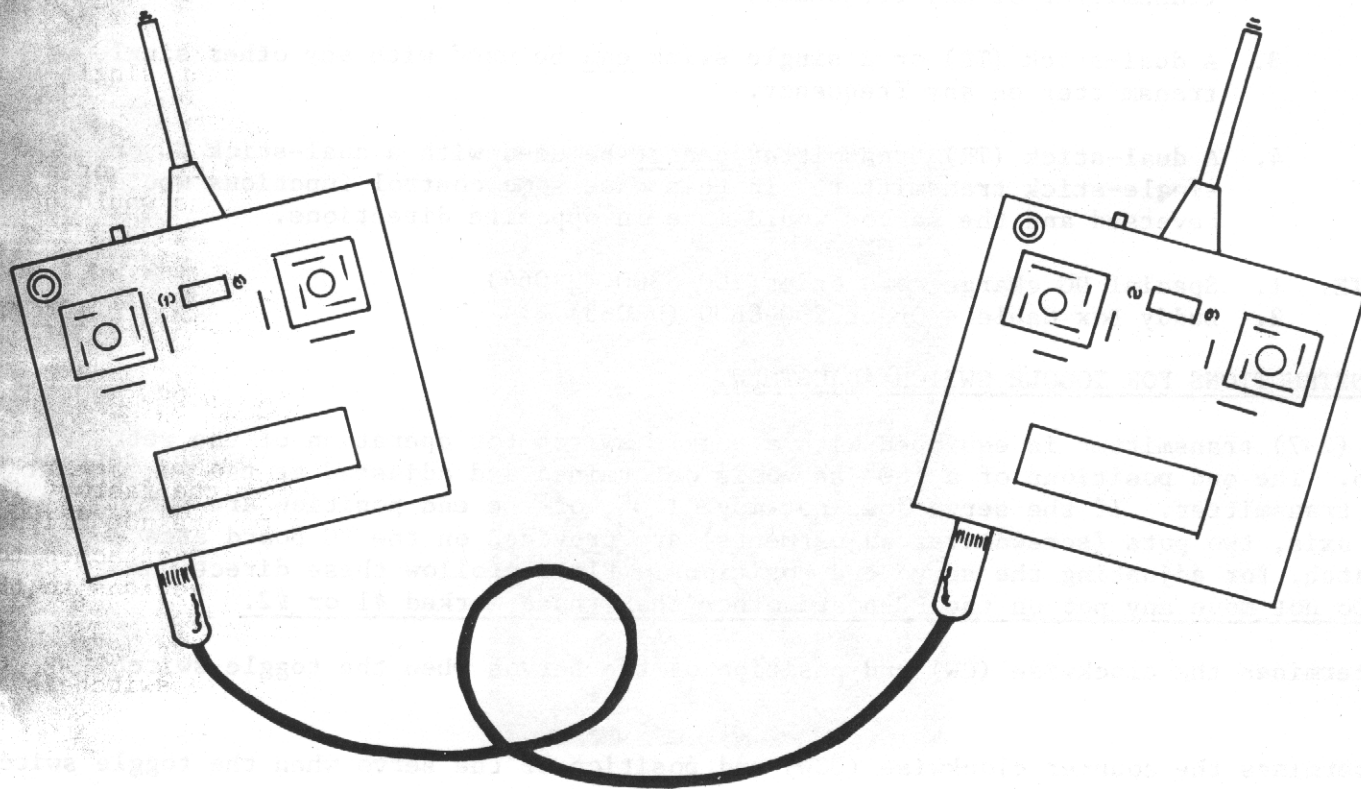


Fig. #3 Channel placement on the transmitter

EXPANDED SCALE VOLTMETER

The Super-Pro transmitter is equipped with another EK exclusive feature called the "Expanded Scale Voltmeter" (ESV). Optional on other transmitters if equipped with NICADS. An ESV is a meter that will show a small predetermined voltage difference over a large percentage of the meter face. The meter has incorporated a circuit to expand the movement in response to changes in battery voltage. The meter should, after a charge, be at full scale. During the last 1/2 of your battery charge, you should see that the needle will fall quite rapidly. The battery is discharged when at center scale of the meter. Never fly with the meter lower than 2/3 scale.



OPTIONAL BUDDY BOX OPERATION (SUPER-PRO ONLY)

Transmitters with Buddy Box provision differs from other transmitters in that a different plug is mounted on the bottom of the transmitter that permits both a special DC charging harness and the Buddy Box cable to use the same plug. This is a 6 pin-polarized and rounded type.

The buddy box cable when plugged into two similar transmitters permits an instructor holding the master transmitter to transfer control to the slave transmitter by depressing the push button switch located directly above the left control stick on a dual-stick transmitter or on the top right on a single-stick transmitter. The master can regain control on release of the push-button.

The RF is only transmitted by the master transmitter and the receiver used must be the one tuned to the master transmitter.

The interconnecting cable permits the encoder in the slave to be switched to replace the encoder in the master. The cable end with a red band identifies the plug that must be mated with the master transmitter. In addition, the slave end of the cable when mated with the slave transmitter, turns off the R/F output of the slave transmitter.

The Buddy Box feature can only be used with similar transmitters which have similar stick arrangements as listed below: NOTE: 1972 and on Super-Pro transmitters cannot be used with 1973 Champion or Super-Pro transmitters without a modification of the 1973 transmitter.

1. A dual-stick with throttle on the left (TL) can be used with any other TL transmitter of any frequency.
2. A dual-stick with throttle on the right (TR) can be used with any other TR transmitter of any frequency.
3. A dual-stick (TL) or a single stick can be used with any other single-stick transmitter on any frequency.
4. A dual-stick (TR) transmitter cannot be used with a dual-stick TL or a single-stick transmitter. In this case some control functions would be reversed and the servos would move in opposite directions.

- NOTE:
1. Special DC charge cord order 200-8300 (U-064)
 2. Buddy Box Cable - Order 200-8600 (U-065)

SPECIAL INSTRUCTIONS FOR TOGGLE SWITCH ADJUSTMENT

Your (2-7) transmitter is equipped with a toggle switch for operation of the retract landing gear servo. The end positions of a 180° servo is determined and adjusted at the factory in both servo and transmitter. If the servo does not move 180°, or the end position are not aligned with the servo axis, two pots (screwdriver adjustments) are provided on the PC board attached to the toggle switch, for adjusting the servo end positions. Please follow these directions to the letter. Do not move any pot on the PC board other than those marked #1 or #2.

Pot #1 determines the clockwise (CW) end position of the servos when the toggle switch is rearward.

Pot #2 determines the counter clockwise (CCW) end position of the servo when the toggle switch is forward.

Connect receiver power pack to the receiver and plug in the 180° servo in the end (7th) plug position, farthest from the power plug. Remove back of transmitter and turn on both transmitter and receiver.

Step #1. With the switch in the rear position, observing the servo output arm, adjust Pot #1 for correct position.

Step #2. With the switch in the forward position, adjust Pot #2 for position of output arm 180° from position in step #1.

Step #3. Check #1 and #2 for proper position 180° apart and aligned with servo axis.

NOTE: Do not attempt to adjust the pots when using a standard 90° travel servo.

NOTE: CHARGE NICAD BATTERIES FOR 24 HOURS PRIOR TO OPERATION.

CHECKING FOR PROPER SYSTEM OPERATION

The following steps should be observed when placing your system in operation:

1. Verify that all switches are in "OFF" position.
2. Connect servos into their respective 3 pin polarized receiver plug. (see diagrams)
3. Insert receiver battery plug into its respective 3 pin socket.
4. Screw transmitter antenna into plastic fitting located on top of transmitter.
5. Turn transmitter "ON".
6. Turn receiver "ON".

System is now ready to operate and you can observe proper operation of all servos by moving respective control sticks.

NOTE: If system fails to operate, check for proper installation and that the receiver battery switch is in the "ON" position. If system fails to operate or operates for only a short period and then stops; or servos run in one direction, this may indicate discharged (dead) batteries.

After proper operation has been verified, the following procedure should be followed in turning system "OFF":

1. Turn receiver battery-switch "OFF" first.
2. Turn transmitter switch "OFF".

NOTE: Always turn transmitter "ON" first when putting system in operation and turn transmitter "OFF" last when turning system "OFF". Failure to observe this sequence can result in possible damage to the servo gear train if local interference is present.

RANGE CHECKING YOUR SYSTEM

All range checking should be done outdoors and away from large metal objects and overhead wires. Have all persons stand at least 10 feet from model.

1. Place the model with receiver antenna perpendicular to direction of range checking. (approximately 10" above ground)
2. Remove antenna from transmitter. (Antenna off operation is permissible for range check or short periods of operation)
3. Turn "ON" transmitter and receiver, then check that all controls are working at close range.
4. First hold the transmitter upright, waist high in both hands and at a 45° angle to vertical position with antenna nub toward the plane, then operate elevator control while moving away until servo response becomes erratic.

NOTE: You may experience some erratic servo response at various positions between maximum range. This is normal and is caused by signal reflection from surrounding objects.

5. Continue to back off until control is lost. Move toward the model until control is regained. This distance should be approximately 30 steps for 72 mHz and 53 mHz band, and slightly less for the 27 mHz band.

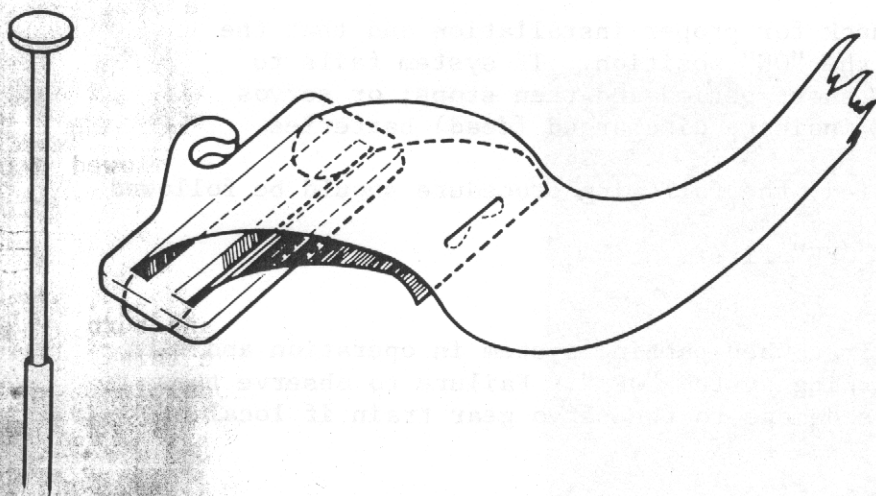
RECEIVER ANTENNA INSTALLATION

Proper installation of the antenna will insure optimum system performance. (For a quick and tidy installation, we recommend EK's antenna mounting hardware set 210-1400 (AMH-1). The receiver antenna length should never be shortened or lengthened, as the receiver has been factory tuned to this exact length as received. When installing, route it as far away from the servos as is convenient. Normal installation is to come directly out of the top of the fuselage and back to the top of the vertical stabilizer. Any excess length should be left trailing the rudder. Never double the antenna over on itself more than 1/8" as this will effectively shorten its length. Tying a knot in the antenna is OK.

FREQUENCY FLAG INSTALLATION

NOTE: It is your responsibility to insure that the frequency flag color corresponds to the transmitter frequency as shown in the table below:

<u>FREQUENCY</u>	<u>RIBBON COLOR</u>
26.995	Brown
27.045	Red
27.095	Orange
27.145	Yellow
27.195	Green
27.255	Blue
53.100	Black & Brown
53.200	Black & Red
53.300	Black & Orange
53.400	Black & Yellow
53.500	Black & Green
72.080	White & Brown
72.160	White & Blue
72.240	White & Red
72.320	White & Violet
72.400	White & Orange
72.960	White & Yellow
72.640	White & Green



LEARNING TO FLY

We recommend that an experienced modeler help you. Much can be written about the pros and cons, but nothing can be written that will insure success like the advice of an experienced flyer.

Additional information about the hobby is published in booklet form and advertised in modeling magazines. One such article is called "RADIO CONTROL FROM THE GROUND UP", this can be purchased from:

R/C MODELER MAGAZINE
P. O. BOX 487
SIERRA MADRE, CALIFORNIA 91024

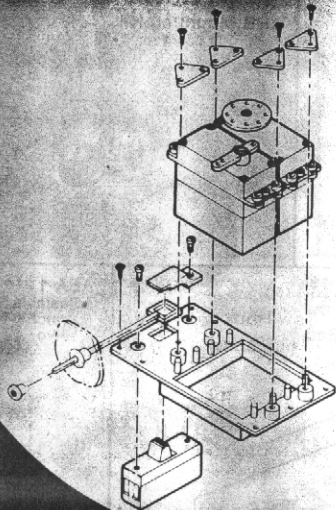
GOOD LUCK!

EK PRODUCTS, INC.

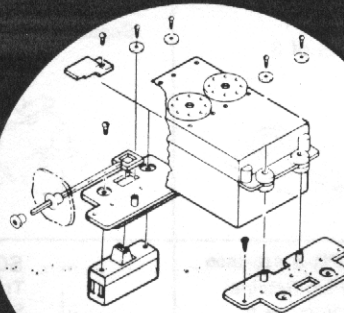
EK-accessory Uni-Mounts

ALL UNI-MOUNTS DESIGNED FOR SPECIFIED
RECEIVERS AND SERVOS

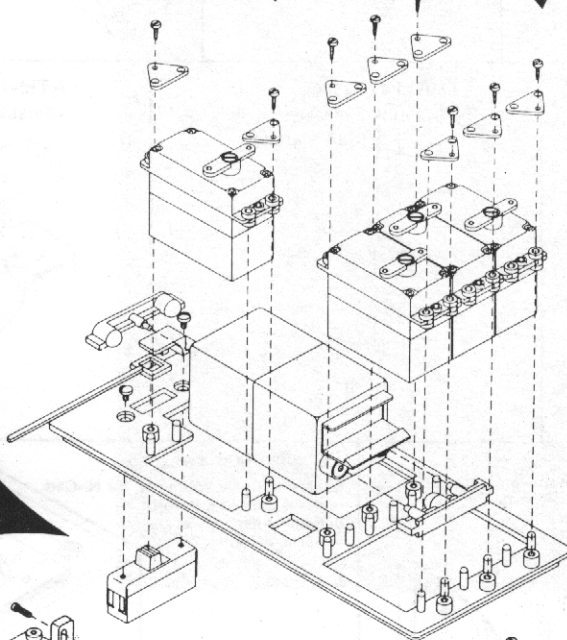
UM-10 (shown) 210-4500
Mounts 2 EK-SM servos and switch
(2 servos wide).
UM-11 210-4600
Mounts 3 EK-SM servos and switch.



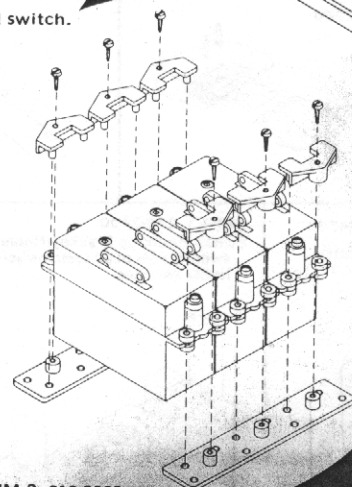
UM-9 210-4400
Mounts LRB "brick" and switch.



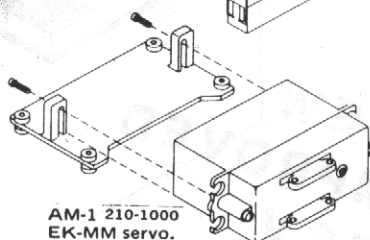
UM-6 (shown) 210-4100
Mounts 4 EK-SM servos, receiver, switch, etc.
(3 servos wide).
UM-7 210-4200
Mounts 4 EK-MM servos, receiver, switch
etc. (3 servos wide).



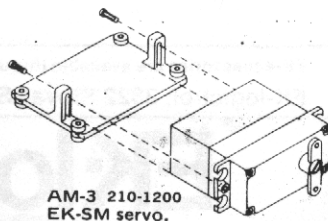
UM-3 210-3800
Mounts 3 EK-MM servos.



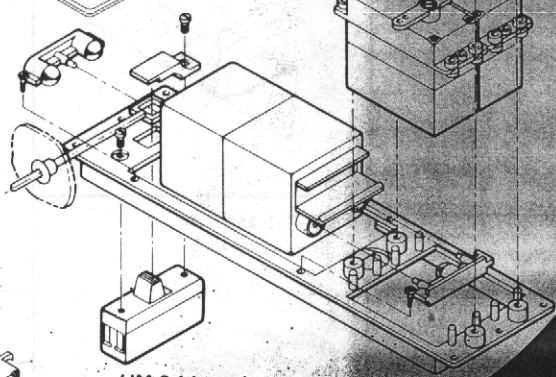
AM-1 210-1000
EK-MM servo.



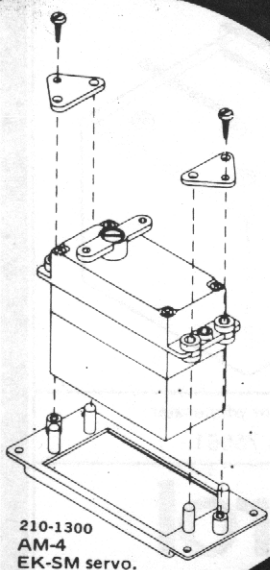
AM-3 210-1200
EK-SM servo.



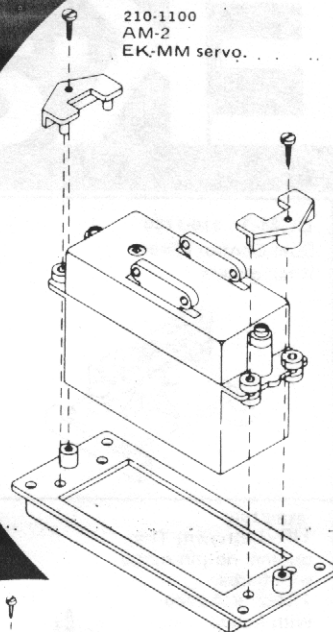
UM-8 (shown) 210-4300
Mounts 2 EK-SM servos, receiver,
switch, etc.



210-1300
AM-4
EK-SM servo.

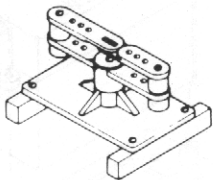


210-1100
AM-2
EK-MM servo.

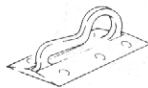


EK-accessories

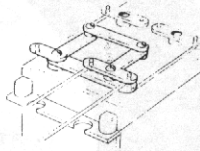
DCM-1 210-1700
Dual Control Mixer;
V-tail gliders



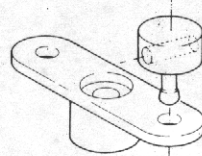
CPF-1 210-1600
Combat Fuel
Pinch-Off
PKG of 3



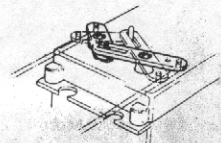
DCM-7 210-1800
Dual Control Mixer
Mounts on Super Brick
(Separate Mount Included)



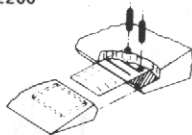
SRL-1 210-3450
Snap Retainer Lug
PKG. of 3



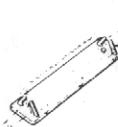
S-244 235-3160
Super Brick
Throttle
Crossover



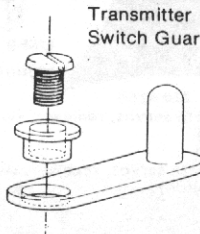
210-2100
HR-1 (Shown) The
original no-pin hinge
with barbs.
HR-2 210-2200
With holes



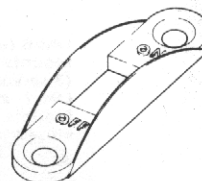
PR-3 210-3200
Plug Retainer
PKG. of 3



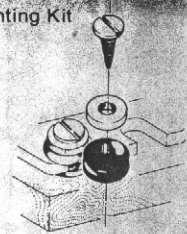
SG-1 210-3300
Transmitter
Switch Guard



SG-2 210-3305
(Noble) Transmitter
Switch Guard



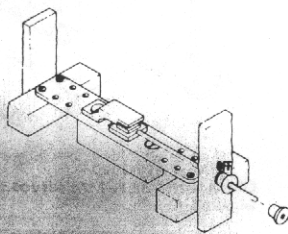
BMK-1 210-1575
LRB Mounting Kit



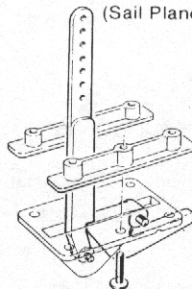
WSP-1 210-4700
Wing Skid Plate
PKG. of 4



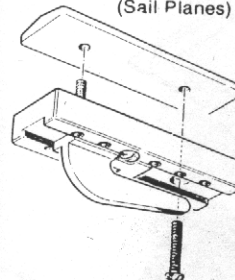
SMB-1 210-3400
Switch Mounting Bracket (Noble
switch); 95% of all systems use
Noble switches.



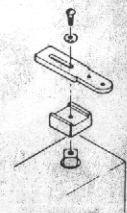
THR-1 210-3500
Tow Hook Release
(Sail Planes)



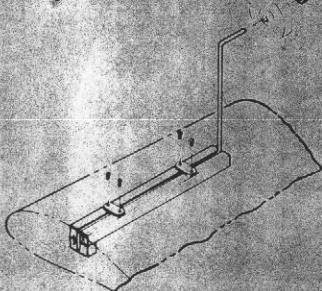
ATH-1 210-1550
Adjustable Tow Hook
(Sail Planes)



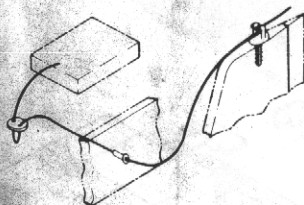
ASA-1 210-1500
Adjustable Servo
Arm; EK-SM
servo.



LGR-1 210-2300
Landing Gear Retainer.

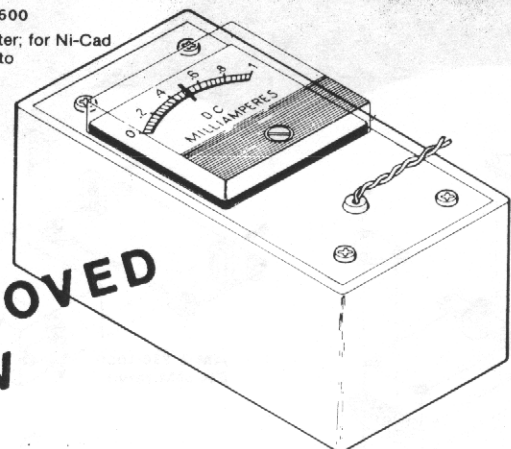


AMH-1 210-1400
Antenna Mounting Hardware (receiver).



ESV #M-006 150-1600

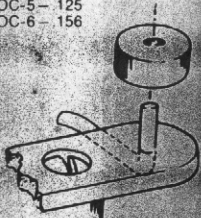
Expanded Scale Voltmeter; for Ni-Cad
receiver batteries; used to
determine capacity of
airborne receiver
pack.



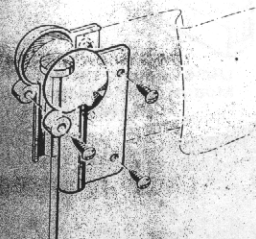
**NEW
IMPROVED
ESV**

POC
Push-on Collars:

POC-1 - 045 through .156 210-2400
POC-2 - .045 210-2500
POC-3 - .062 210-2600
POC-4 - .093 210-2700
POC-5 - .125 210-2800
POC-6 - .156 210-2900



FFR-1 210-2000
Frequency Flag
Retainer



EK-accessories are available through your area dealer or wholesaler
EK-logictrol, 3322 Stovall St., Irving, Texas 75061.

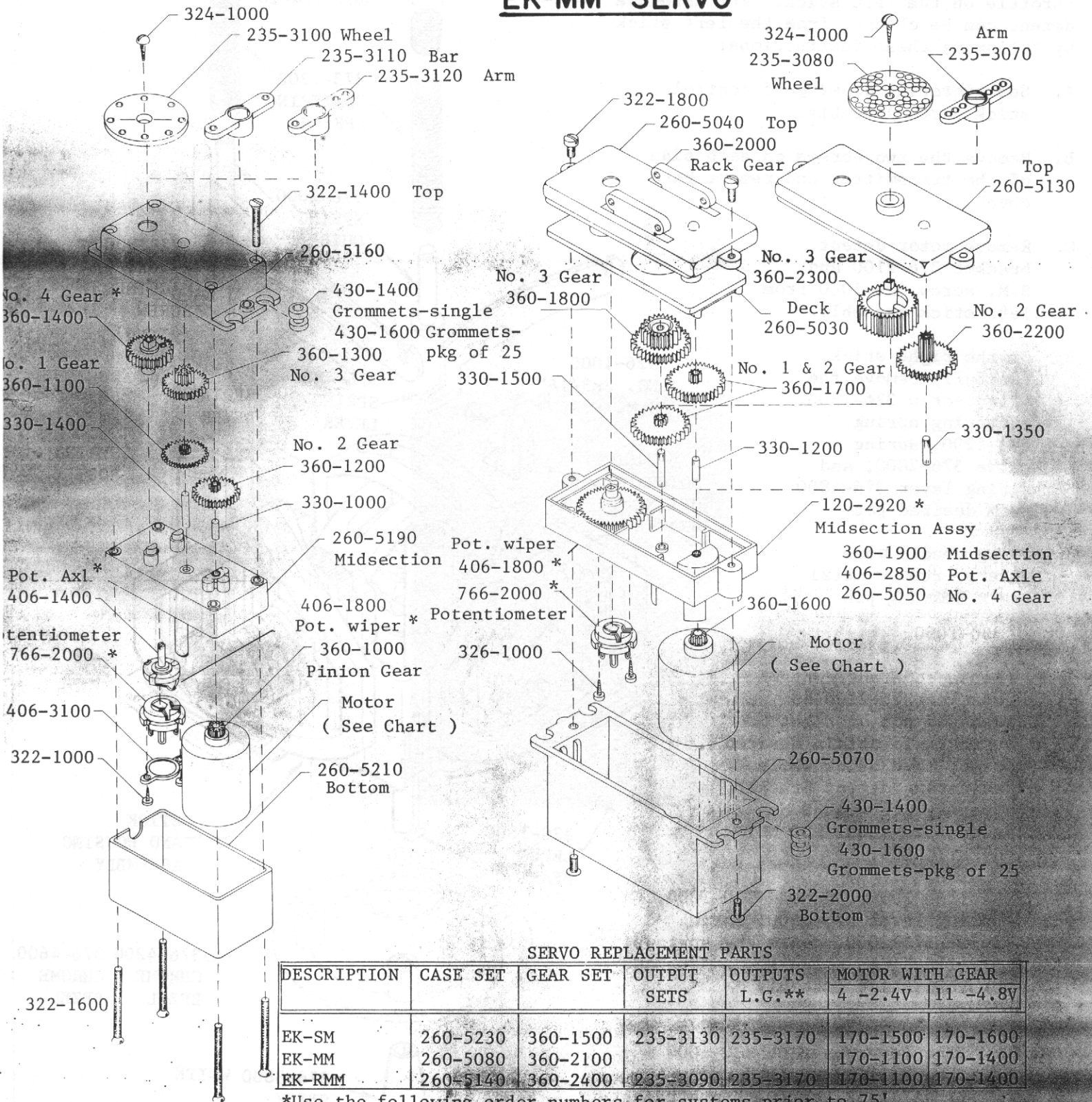
EK-logictrol

Reliable radio control systems

EK-SM SERVO

EK-RMM SERVO

EK-MM SERVO



SERVO REPLACEMENT PARTS

DESCRIPTION	CASE SET	GEAR SET	OUTPUT SETS	OUTPUTS L.G.**	MOTOR WITH GEAR	
					4 -2.4V	11 -4.8V
EK-SM	260-5230	360-1500	235-3130	235-3170	170-1500	170-1600
EK-MM	260-5080	360-2100			170-1100	170-1400
EK-RMM	260-5140	360-2400	235-3090	235-3170	170-1100	170-1400

*Use the following order numbers for systems prior to 75'

EK-SM			EK-MM & RMM		
YEAR	71'-73'	74'	YEAR	68'-74'	74'
Potentiometer	766-1000	766-2000	Potentiometer	766-1000	766-2000
Pot. axle with wiper	406-2500	406-2500	Midsection assy	120-2910	120-2910
No. 4 Gear	360-1401	360-1401			

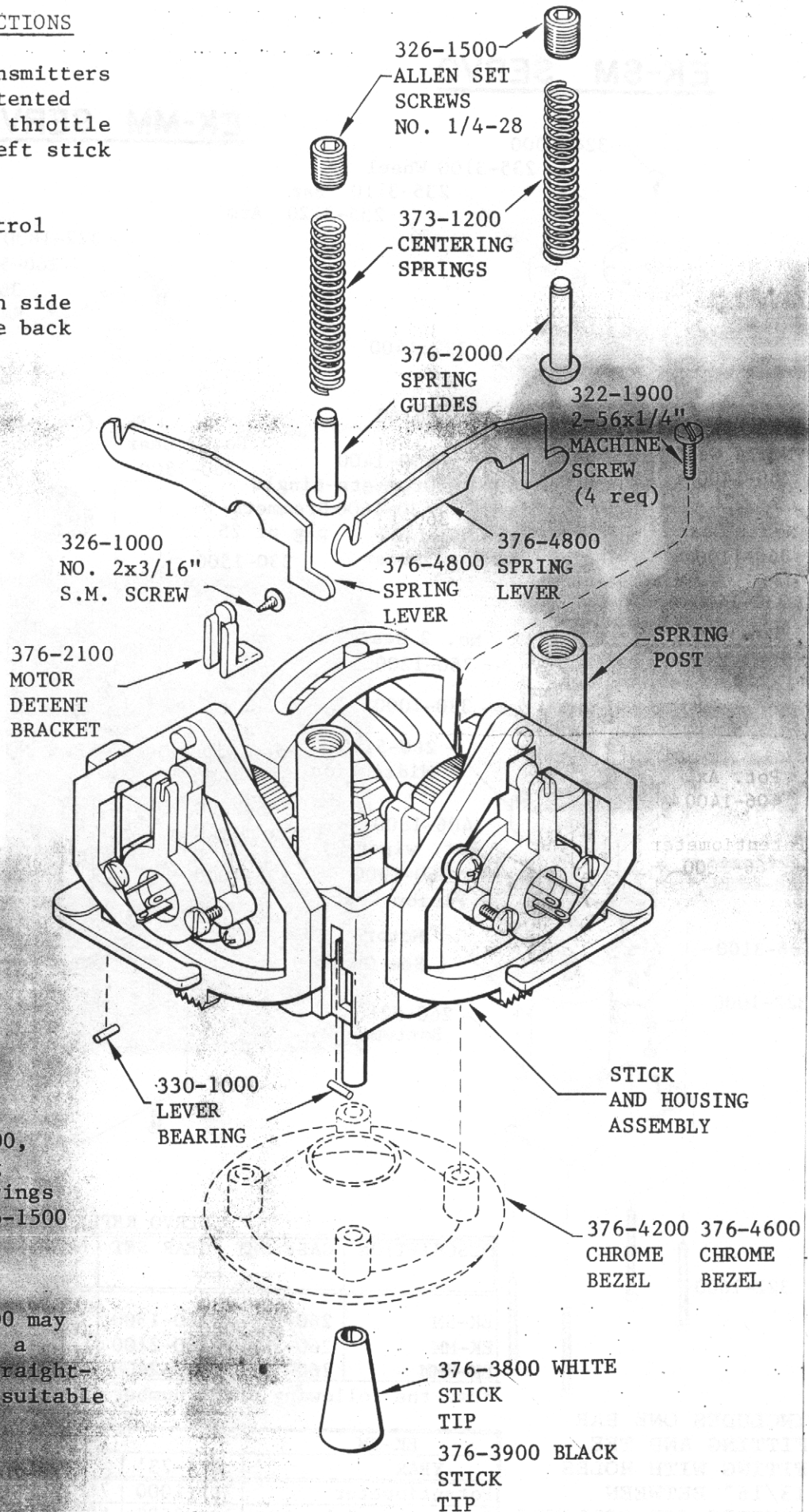
*INCLUDES ONE BAR FITTING AND TEE FITTING WITH HOLES 13/16" BETWEEN CENTERS FOR GOLDBERG TYPE RETRACTS

THROTTLE RIGHT CONVERSION INSTRUCTIONS

EK Logictrol dual stick transmitters are factory prepared with the detented throttle on the left stick. The throttle detent can be changed from the left stick by following these instructions:

- A. See pictorial drawing of control stick parts assembly.
- B. Remove the two screws on each side of the transmitter and remove back cover.
- C. Remove motor detent bracket 376-2100 and S.M. screw 326-1000 from left stick assembly.
- D. On the right stick, carefully remove the allen screw 326-1500, centering spring 373-1200, spring guide 376-2000, and spring lever 376-4800 from desired pot.
- E. Using needle nose pliers, remove metal lever bearing pin 330-1000.
- F. Replace detent control bracket 376-2100 on desired pot on right stick. To obtain desired mesh, move stick while adjusting detent bracket then secure with S.M. screw 326-1000. DO NOT OVERTIGHTEN.
- G. Replace lever bearing 330-1000, spring lever 376-4800, spring guide 376-2000, centering springs 373-1200, and allen screw 326-1500 on left stick assembly.

NOTE: The lever bearing 330-1000 may be easily installed using a small hook made with a straightened paper clip or other suitable small wire.





LOGICTROL CANADA LTD.
200 BANNERMAN AVE.
Winnipeg, Man., Canada R2W 0T4
PHONE (204) 582-1154
589-6321

3322 Stovall Street, Irving, Texas 75061

Phone 252-8680 AC (214)

IN CASE OF THE NEED TO RETURN YOUR UNIT TO ONE OF OUR SERVICE CENTERS, THE FOLLOWING INFORMATION WOULD BE HELPFUL:

SECTION I

DATE: _____ NAME: _____
ADDRESS _____ CITY _____ STATE _____ ZIP _____
PHONE: (Area Code) _____ How long have been in R/C? _____
TO BE RETURNED BY: Parcel Post _____, UPS _____, Pick-up _____, Other _____

SECTION II

Be careful and clearly identify facts and observations from suspicions and suppositions. If possible give cause and effect information which has been observed. Inadequate or misleading information leads to additional cost, delay, and possibly reduces the quality of the repair.

1. Date _____ / and time _____ problem occurred.
2. Geographic location at which problem occurred: _____

3. Description of problem: Was loss of control temporary? Did the model pitch up or down, right or left, motor speed vary? In what attitude was model at time the problem occurred? How far away from transmitter was model at the time of the occurrence? Did the problem repeat? Any other information relevant to the problem? _____

4. Did equipment appear to operate properly after this occurrence of the problem? _____

5. Was there any prior indications of an impending problem? Such as other having interference problems. _____

6. What is the repair history of your unit: Date, To whom set was sent, What was done, etc. _____

7. Your evaluation of what the problem is: _____

SECTION III

Equipment Inventory: All equipment returned for repair will be considered to require repair as needed to return to "new-working" condition unless you otherwise state below. All servos and receivers should be removed from mounting trays as well as all rubber grommets, linkages, clips, plugs, etc. We cannot be responsible for these small parts. Non-standard parts such as connectors, switches, etc. will be replaced at the owner's expense when deemed necessary to ensure compatibility with our test equipment or to ensure reliability of the equipment.

1. Please identify each servo as to control function. (Aileron, elevator, etc.)
2. When were the system batteries last charged? Date _____, number of hours they were charged _____, and approximate time of operation since last charge _____. Batteries should not be charged prior to submitting for repair as this may mask problems in charging circuits.
3. Specify what repairs are desired: _____

4. Specify what items are not to be repaired, adjusted or otherwise serviced: _____

EQUIPMENT BEING RETURNED

Type of equipment _____ Log I (64-65½), Log II (65½-67), Log III (68-69), Pro-Series (70-71), Logictrol (70-71), Champion (70-), LRB (70-), Super-Pro (72-), Ranger (75-)

Approximate date of purchase - Month _____ Year _____
Serial No. (On bottom of transmitter) _____ Frequency _____

Quantity	Item
1. _____	Transmitter(s)
2. _____	Receiver(s)
3. _____	Servo(s)
4. _____	Battery Pack(s)
5. _____	Switch Harness(s)
6. _____	Servo Extension Wire(s)
7. _____	AC and DC Cord(s)
8. _____	Shipping Box
9. _____	Service Record Card
10. _____	Antenna

THIS SHEET SHOULD BE RETURNED WITH YOUR UNIT.

SERVICE WARRANTY
and
HELPFUL SUGGESTIONS AFTER RECEIVING A SYSTEM FROM SERVICING

Service Warranty:

Any parts or work performed in servicing of a Logictrol system or part thereof at Logictrol International Corp., Irving, Tx., is guaranteed to be free from defects for a period of thirty (30) days from the return date to customer and Logictrol agrees to remedy any such defects at no charge other than shipping. This warranty does not apply to the system or any part thereof subjected to misuse, service other than normal, damage in transit or handling or any other damage to the system or any part thereof whether caused by possible equipment failure or not. Any evidence of tampering with, modification to or attempted repair by other than authorized Logictrol Service Centers automatically voids all warranties. Logictrol International Corp. shall not be liable for any consequential or special damages caused by any defects in the material or workmanship other than the liability of Logictrol to repair any such defects or to furnish a new or equal exchange.

Suggestions:

When you receive a system from servicing, it is a good idea to make a check before installing in a good model. No matter how hard we in servicing may try to find and correct all problems in a system, there is always the possibility that a problem did not show up, a component may fail, or just human errors may have been made. These are the reasons for a Service Warranty. In any case, a good procedure to follow is to charge the system completely then operate it at your leisure until the batteries become exhausted (servos become erratic or drive-off one direction). This is a good opportunity to note the transmitter meter position for future reference. What this checking does is to burn-in any components changed and gives an opportunity for any possible malfunction to show up on the ground, not in the air. You may elect to repeat this procedure several times for added insurance. When you decide that the system is ready to be test flown, don't put it into your newly finished super scale job that has over a years work on it. Either build, buy, or borrow an old beat-up-no-body-could-care-less test plane for test flying the system. Be sure that the plane is structurally sound and if possible has been flown before. Usually ten to thirty flights is considered a satisfactory check. You are then ready to try the system in that new super job. If all this seems like a lot of trouble, just remember the time and money involved in your plane, this extra effort is well worth it, agreed?

Happy Flying

Logictrol

INTERNATIONAL CORP.

Reliable radio control systems

To better serve you, LOGICTROL has
factory authorized and trained
personnel for both normal and warranty
repair at the following locations:

CALIFORNIA

Authorized Radio Control Service

915 North Main
Orange, CA 92667
(714) 639-8886
Chuck Moses

*E. O. Babb

1590 Norran Ave.
El Cajon, CA 92021
(714) 447-4115

Hobby Helper

1808 W. Buena Vista
Visalia, CA 93277
(209) 733-4732
(Richard J. Tristao)

L. R. Taylor & Co.

2083 1/2 Roscoe Blvd
Canoga Park, CA 91306
(213) 360-1178
(Lloyd R. Taylor)

Pacific Southwest R/C

1531 Finegrove Ave.
Hacienda Heights, CA 91745
(213) 333-8018
(R. C. Sales & Service)

*R. E. Orangethorpe, Suite J

Placentia, CA 92670
(714) 996-9730
(George Killeen)

R. L. Radio Service

9186 Haddon Ave.
Sun Valley, CA 91352
(213) 767-6492
(Russell Latiolais)

FLORIDA

*Field's Hobby Shop, Inc.

602 S. Edgewood Ave.
Jacksonville, FL 32205
(904) 388-8844
(Calvin Wollitz)

VC Marine & Hobby Supply

7102 South Shore Dr.
St. Petersburg, FL 33707
(813) 347-7675
(Vincent D. Carnevale)

GEORGIA

*Logictrol Southeast

P.O. Box 102
Avondale Estates, GA 30002
(404) 294-5169
(George Lamar)

ILLINOIS

RAF R/C Avionics

593 Berkley Dr.
Arlington Heights, IL 60004
(312) 255-3017
(Richard A. Frost)

*R/C Central

5724 W. Giddings
Chicago, IL 60630
(312) 545-9815
(Bob Love)

INDIANA

Model Avionics

133 Maple Wood Dr.
Noblesville, IN 46060
(219) 474-5688
(John Strawbridge)

KANSAS

KRD.

11001 W. 59th Terrace
Shawnee, KS 66203
(913) 631-8863
(Ken Wilson)

KENTUCKY

Louisville R/C Service Center

5318 Cynthia Dr.
Louisville, KY 40291
(502) 239-9171
(James P. Donovan)

LOUISIANA

R/C Servicing

111 Strasbourg
Lafayette, LA 70506
(318) 984-8287
(Bob Hunter)

MASSACHUSETTS

Aero-Designs

11 Ruggles St.
Westborough, MA 01581
(617) 366-0078
(Patrick Mullarky)

MICHIGAN

R/C Service Midwest

41889 Joy Rd.
Canton, MI 48187
(313) 455-1380
(Peter Waters)

MISSISSIPPI

H & B Models

319 West Main St.
Tupelo, MS 38801
(601) 844-7946
(Harry Arnold)

MISSOURI

*R/C St. Louis

9 Worthington Dr.
Maryland Heights, MO 63043
(314) 878-5404
(Earl J. Hitt)

NEW JERSEY

Chamberlin Electronics

84 B Yorktown Parkway
Whiting, NJ 08759
(201) 350-4231
(Ed Chamberlin)

NEW YORK

de Bolt Radio Control

49 Golden Ct.
Buffalo, NY 14225
(716) 633-6623
(Harold F. de Bolt)

Can-Air

2363 Est. Rue Beauvion St. E.
Montreal, Quebec
Canada H2G 1N3
(514) 729-1261
(Claude Hamelin)

Elgin Cycle & Hobby Centre

441 Talbot St.
St. Thomas, Ontario
Canada
(Pete McFadden)

Hobby Lobby Canada

Box 8550 Station C
Edmonton, Alberta
T5B 3G9 Canada
(Onyst Warwaurk)
(403) 479-1743

Liddies Electronics

109 Spruce Court
Thunderbay, Ontario
P7C 1X7 Canada
(807) 577-3096
(Bruce Liddle)

Orion Hobbies

230 B. Dalhousie Dr.
Winnipeg, Manitoba
Canada R3T 2Z1
(204) 269-8110
(Bud Thadani)

Rogers Hobbies

15 Lynwood Dr.
Stoney Creek, Ont.
Canada
664-4807
(R. Shivak)

Targetair Ltd.

R.R. N04
Moncton, N.B.
Canada E1C 8J8
(506) 855-9610
(Paul Melanson)

CHINA

C. K. Tse

P.O. Box 1622
Kowloon Central Post Office
Hong Kong
3-726728

DENMARK

*Silver Star Models

Sjaellandsvej 3
DK 9500
Hobro, Denmark
(Axel E. Mortensen)

ENGLAND

Mick Wilshe

97 Tudor Ave.
Watford Herts, WD2 4NW
England

FINLAND

Positronic Oy
PL 10
00031 Helsinki 33
Finland

ITALY

*Emme-Gi Elettronica S.R.L.

Via Sabaudia 8
04100 Latina, Italy

MEXICO

*Logictrol de Mexico

Lag. Culebron 18Y20 #32
Col. San Francisco
H. Matamoros, Tamps. Mexico

EK-Logictrol Servicio

Ing. J. Galindo Y Villa No. 285-D
Depto. 102
Jardin Baibueno Z.P. 9
Apdo. Postal 33-086
Mexico 9, D.F.

PANAMA

Transcontinental de Ventas

Apartado Box 8338
Panama 7, Panama
64-6186 23-5937

SOUTH AFRICA

Everett Hobbies

11A Rosina St.
Turf Club, Johannesburg
(Juni Marusch)

SPAIN

Brusquets

Sants 75-77
Barcelona (14) Spain

SWEDEN

*Borg's Hobby

Apotekaregatan 7
Linköping, Sweden

WEST GERMANY

*Pala
Fernesh-U Elektro-Fachgeschäft
675 Kaiserslautern
Steinstr 41, West Germany

For our full-line brochure and details of our one-year warranty, write: Logictrol
International Corp., P.O. Box 3565, 3300 Stovall St., Irving, Texas 75061 U.S.A.

*Indicates warranty work performed at these locations only.