ANY OTHER WAY IS OUT OF DATE

TRACKER II

INSTRUCTION

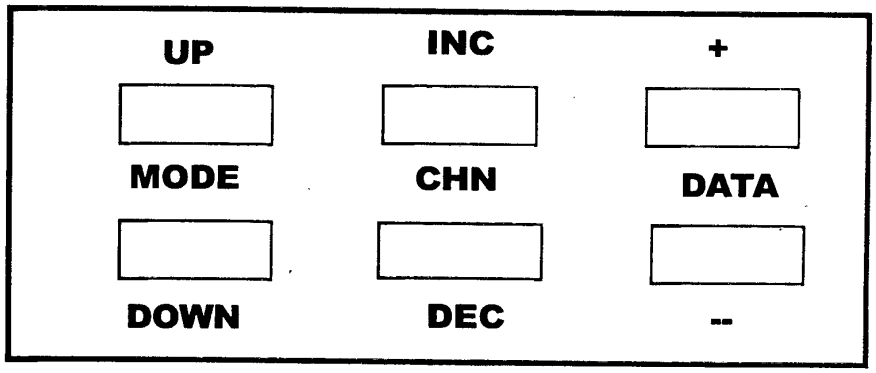
MANUAL

Written by Lewis Polk
Engineered by JK Kim
Concept Design by BM Song

1024 STICK STEPS
40 MGHZ PROCESSOR SPEED
99 MODEL MEMORY
3 - 2 WAY MIXES
BUILT IN FIELD SCANNER
SYNTHESIZED FREQUENCIES
NO MORE CRYSTALS

POLK'S HOBBY 698 S. 21ST STREET, IRVINGTON, NJ 07111

KEY MAP



Thank you for choosing the Polk Tracker II system. The development of this product took over 3 years and a patent was granted. Our unique system has a built in scanner in the transmitter to check your environment before you come on the air and coupled with our synthesized frequency generator makes for the ideal system for flying safety. Polk's has been making radios since the early 1950's and we have brought all of our experience to this system you have purchased.

FREQUENCY SYNTHESIZING, DUAL RATE MIXES, MODES, SERVO DIRECTION SCANNING, 99 MODEL MEMORY FAIL SAFE AND OTHER FEATURES

The scanning enhances safety of flight and the synthesized channel selection allows for tremendous convenience for the modeler as modules and spare crystals are no longer needed. For Hobby Retailers only one stock keeping item needs to be carried, which improves their stock turn. Since our frequencies are computer generated Polk's can provide this radio on any frequency available to modelers any where in the world.

The main purpose of this radio was to provide a flexible, reliable and precise system that would accompany the modeler through the 21st century. The "Tracker II" is capable of any new bandwidth regulations potentially proposed by the F.C.C., and the use of a P.L.L. (Phase Lock Loop) system of super narrow band transmission not possible on other radio systems.

We use the fastest computer chip yet to be used in the model industry too at 40 mghz and 1024 stick steps for smoother servo control.

Another feature of the 99 model memory allows for a practically unlimited of pre-sets designed for each model specifically. By keeping a spare receiver in each model you can save countless setup hours each time you want to fly or sail. Just number the receiver according to the model memory number for ease of use. We have done our best to make your hobby pleasurable, instead of a chore.

Yours truly,

Lewis Polk

POLK'S HOBBY 698 S. 21ST STREET, IRVINGTON, NJ 07111

TABLE OF CONTENTS
2003 Model

Polk's would like to thank Mike Base and Ross Woods of the Grand Prairie Model Aircraft Association of Texas for their assistance in the preparation of this manual. Also, Charles Hampton for his regular input from a pro flier's point of view and lifetime of experience as a model pilot.

YOUR RADIO'S SPECIAL FEATURES

50 CHANNEL SELECTABLE RADIO

Your new Polk radio utilizes a modern P.L.L. (Phase Lock Loop) circuit that gives the Tracker the capability to work on any legal channel frequencies available in any country to remote control a model. The value of this feature is incredible. You will never be restricted from flying due to overcrowding of one channel or suffer the elimination of one channel due to local interference.

USE YOUR RADIO AS A SCANNER

To detect interference at any model site to determine which channels are safe for you and your fellow modelers.

Use the scanner to look for channels that are effected by 3IM (third order imaging), while other radios are in use.

Perfect for club fields to scan the transmitter impound for radios left "on" or interference on a channel about to be used by a flier.

8 CHANNEL OPERATION

No matter how complex are your model needs this radio has the channel flexibility and capacity to allow you to operate any model you can build. After you assign the basic four channels (Aileron, Elevator, Rudder and Throttle), you still have four more channels for flaps, retractable landing gears, spoilers, brakes and other accessories.

3 PROGRAMMABLE MIXES

The ability of this radio to mix any channel to any other channel is technology equal to that used in modern airliners. For example, the following are possibilities for mixes.

You can have flaps that automatically couple to the elevator at the flip of a switch.

Mix your ailerons with your rudder to give you scale flight characteristics.

Spoilers that automatically deploy at reduced throttle settings.

PROGRAMMABLE SERVO REVERSING ON SEVEN CHANNELS

You can electronically change the direction of any servo using the control panel of the front of your transmitter. Two very important reasons for this ability are as follows:

1. You can install your servos in the most direct and functional way, to put the emphasis on the control linkage quality and simply reverse the servo's direction if necessary.
2. Since the change in direction is done through programming there are no mechanical switches to deteriorate and fail causing loss of signal as can happen with lesser grade radios.

DUAL RATES FOR AILERON AND ELVATOR

For a student pilot it represents the ability to desensitize the controls of a model while learning to operate it without making permanent changes.

ERGONOMICALLY DESIGNED CASE

The case of the transmitter has been carefully designed to give the maximum grip on the box while allowing your fingers freedom and flexibility to control you model smoothly, The extra width of the case allows even large hands the delicate touch needed.

ADJUSTABLE CONTROL STICK LENGTH, TENSION AND MODE

To allow for the ultimate comfort the stick's length is adjustable to compensate for this size of your hands and fingers.

The tension of the gimbals is also fully adjustable to allow for the user to tailor the feel of the sticks to the tension of their liking.

The mode is electronically selectable for throttle on the left (Mode 2) or on the right (Mode 1). All functions automatically change, but the spring on the throttle must be physically changed by opening the back of the radio.

THE RECEIVER

Our receiver, known as the "Seeker" is a marvel of advanced technology. The receiver seeks the frequency you have assigned to your transmitter and locks on to that frequency. The frequency must be an F.M. frequency and on the band pre-set by our factory, such as 72, 35, 75 and 40. Even when powered off the computer will retain the setting permanently untill changed by the user.

THE SERVO

Polk's only supplies one servo, since the use of particular style of servo is very personal and subjective. The servo supplied is an indirect drive gear train relieving stress on the gears and comes with a ball bearing for smooth, low drain performance. If you wish other check our web site for a special order for radio buyers.

BACK UP MEMORY

This radio features a permanent memory chip that retains all settings indefinitely even if the batteries are totally removed by re-charging or replacement. Even if your radio is turned off or back on your radio will immediately recover all of the original settings.

COUNTDOWN TIMER

A 60 minute countdown timer is built in to the programming of the radio. The screen comes up with the most common 15 minute display first, but is adjustable up to 60 minutes.

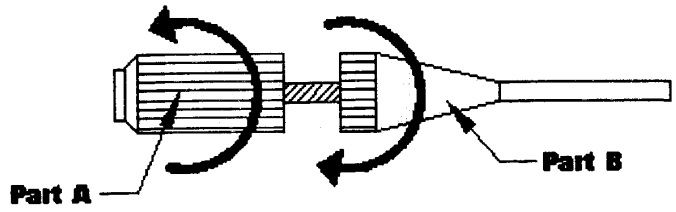
99 MODEL MEMORY

Your radio is capable of keeping 99 different model settings in memory, so we recommend you purchase an additional receiver for each model and store each set up available in the memory of the radio. By doing this you only need to select the model number associated to a particular model on the Transmitter, thus avoiding complicated trims, control throws, and servo direction settings. With such multiple setups, we recommend that label each model with the model number stored in the transmitter

OTHER FEATURES

CONTROL STICK ADJUSTMENT

There is about a 1/2 " adjustment of the length of the sticks of the transmitter's gimbals. They are adjusted by turning the bottom knurled section of the control stick clockwise, while gripping the end of the stick firmly. The bottom section acts as a stop nut and once loosened you can screw the end of the stick to the desired length and then re-tighten the lower section against the upper. Note that the stem of the stick has bands to denote the distance that the stick length has been lengthened. Use this to accurately match the sticks.



CONTROL STICK TENSION

Control stick tension is adjusted by removing the back of the transmitter case. First, you should remove the battery cover and battery. The rear cover is held in place by two screws on either side of the back of the case. Lift the back of the case off from the bottom. Locate the gimbals. Remember that when viewing the transmitter from the rear the right stick (aileron/elevator) will be on the left and vice versa depending on the mode.
In the upper left hand corner of the aileron/elevator stick are two small phillip head screws. Each supports the spring which provides the tension to the gimbal. If you are still unsure as to which screws to adjust, move the control stick while viewing the transmitter from the rear and you will see the tension springs extend and compress for the appropriate direction you wish to change. Adjusting the screw head at the top of the spring's support tower will adjust the tension. Turning the adjustment screws clockwise will increase the tension and vice versa.

TRIMS

Each of the four (stick controlled) channels have a trimming adjustment along side of the appropriate direction of action. These trims give a 15 degree of control authority in each direction to compensate for inaccuracies in the model or local conditions.

They shift the entire range of their channel's motion except for the throttle trim, which is adjustable only at the low motor end of the travel. After the initial test flights have been completed and the model trimmed, the individual servo trim settings can be saved according to one of the model numbers 1-99. After saving, then return the trim levers to neutral as a starting point for switching from one model to another. Refer to "TRIM MEMORY" later in this manual.

BATTERY CHARGING

Your tx and rx nicad batteries require a 24 hour charge the first time you use your radio and overnight thereafter. Your supplied charger has two L.E.D.'s built in to its case that will denote that the batteries are correctly connected and charging. The charging port for the tx is located on the left side of the case and the rx airborne plugs into the port on the rx switch. Refer to the diagrams at the end of this manual. to cycle the tx batt. it must be removed. Center of plug is plus(+)

UNDERSTANDING THE POLK 2-TRACKER SYSTEM

THE PURPOSE OF HAVING TWO TRACKS FOR PROGRAMMING IS TO ALLOW FOR THE TWO DIFFERENT REQUIREMENTS OF MODEL SET UP AND OPERATION.

At no time during the track 1 set up phase is there any R.F. output that could possibly interfere with another model in use. This set up is done completely off the air and includes such key setup features as:

1. **R.F. Channel Scanning & selection**
2. **Model # Selection**
3. **Model Copy**
4. **Stick Mode I or 2**
5. **Wing Mix Choice**
6. **Model Data Clear**
7. **Countdown Timer**

The second phase; Track 2 programming is done while safely on the air. After scanning for a clear channel it allows for the fine tuning of your earlier setup of track one.

For example, the effect of coupling flaps and ailerons can be seen while you move the sticks in the proper mixing mode.

All adjustments are visually accessible by replicating the flight stick movements and approximating the percentages of mix needed. Final adjustments need to be made after flight trials. PLEASE REMEMBER TO SAVE YOUR DATA BEFORE EXITING TRACK TWO AND TO ACCESS YOUR CHANGES YOU MUST TURN YOUR TRANSMITTER OFF AND ON AGAIN.

To access "Track 1" depress the "Mode [UP] key while turning the radio system's POWER SWITCH ON. The R/F scanning window should appear automatically and if not, repeat this procedure. To exit this mode you SAVE YOUR DATA AND THEN TURN THE TRANSMITTER "OFF" AND "ON" AGAIN.

To access "Track 2" you must depress both "Mode [UP] and [DOWN]" keys simultaneously, while the radio is already in the active mode. After completing your programming activities SAVE YOUR DATA AND TURN THE TRANSMITTER "OFF" AND "ON" AGAIN.

There is one additional sub mode in "Track 2" having to do with the assignment of mixes to any of the 6 switches lettered A-F. Later in the manual we will show you the normal switch assignments for a particular mix, but you have the flexibility to assign any mix to any switch.

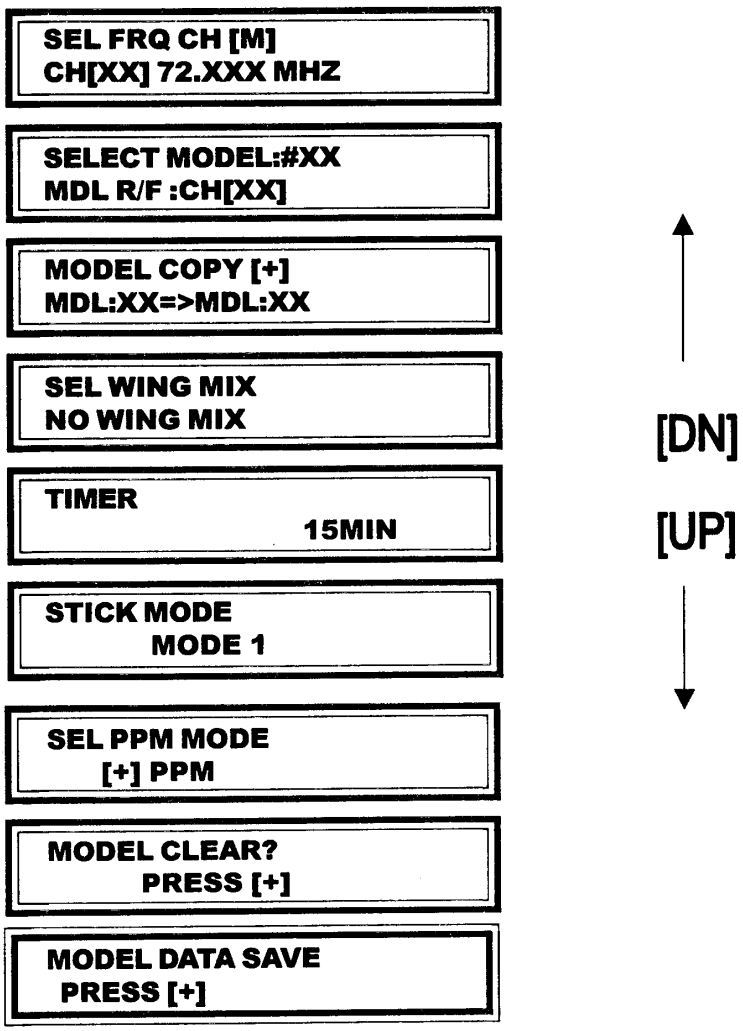
Remember, that choosing Stick Mode 1 instead Mode 2 (US) reverses almost all controls. Experimenation with your model before operation is crucial.

Finally, "Track 2" is an optional mode. For modelers who just want to operate without the use of the various optional mixes it is not necessary to program "Track 2". **"Track 1" is necessary for Scanning and R/F setup. Do not bypass this step!**

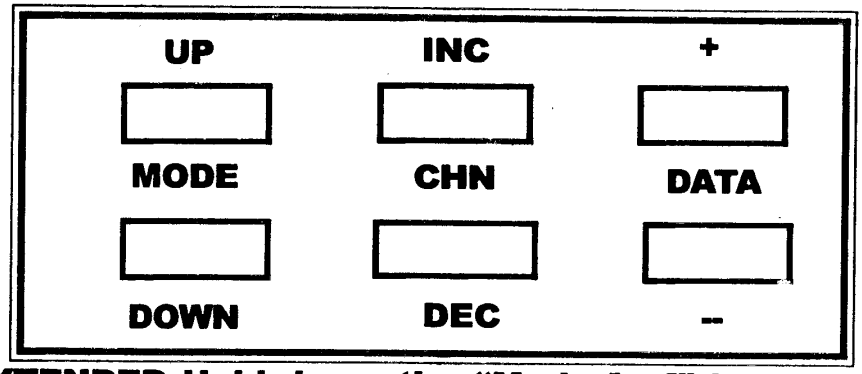
TRACK 1 - USER'S CONFIGURATION

To enter track 1 hold down the "Mode Up" key and turn the transmitter on. To move between the widows shown press either the mode up or down Key to cycle through the options.

SETUP TRACK #1



KEY MAP



TRACK1

FREQUENCY SELECTION

With the ANTENNA FULLY EXTENDED Hold down the "Mode [up]" key and turn on the T/X power switch, while it acts as a receiver and scans.

Press the "DATA [+] button to toggle between 'Manual (M)" and "AUTO (A)" mode selection of the scanning process. In the "Auto" mode the radio will scan through the entire list of available frequencies. A channel that is either busy or has interference will cause the display to flash "BUSY" and there will be a beeping sound to warn you of the problem. You cannot select a busy frequency, nor is your Polk Tracker transmitting at this point. To stop this Auto Mode scanning merely press the "DATA [-] or CHN [INC or DEC]" buttons. In the manual mode you may change from frequency to frequency by pressing the "CHN [INC or DEC]" buttons. Again, if a channel is busy you will be warned by the flashing of the screen and the beeping noise.

UPON SELECTING A FREQUENCY, PLEASE CHECK YOUR CLUBS BOARD TO MAKE SURE THAT NO ONE ELSE HAS PLANNED TO USE THAT FREQUENCY.

Take the pin and attach the appropriate flags that matches your pin selection. A beeping noise and flashing of your LCD screen will indicate busy channels. A busy signal will also show you the strength of the conflicting signal, so you can judge the source interruption problem.

MODEL SELECT - When the model selection is made.

Switch radio off then on

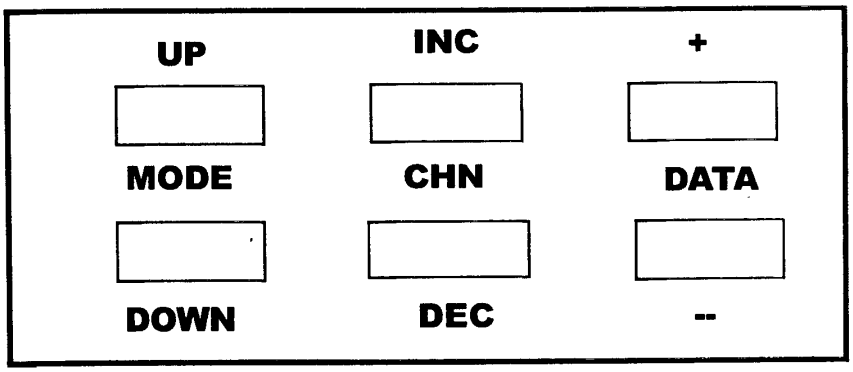
The Tracker allows for the selection of up to 99 models in memory. Use the Channel [INC} or [DEC] keys to move up and down between model selections. Polk's recommends that you label your models with a sticker, accordingly, using the same numbers as kept in memory to keep the settings unique to each model's special needs.

The original channel number for that model is shown and the radio will defaut to the models channel unless you save a new channel number.

When you are using a crystal controlled receiver, the channel must then be set in the frequency selection screen. The pulse shift (PPM mode +or-) must be set in SEL PPM MODE.

PLEASE REMEMBER TO SAVE YOUR DATA BEFORE EXITING (SEE DATA SAVE)

KEY MAP



TRACK 1 CONTINUED

Turn your transmitter power off. Your transmitter will remember your selected channel and model even if your were to remove and replace batteries through the use of special non-volatile CMOS memory.
Turn your TX switch back on. Your L.C.D. display will show the phrase "SCANNING" unless it has detected new interference signalled by flashing and beeping. After completing a self test your display will show your selected, clean frequency and model number.

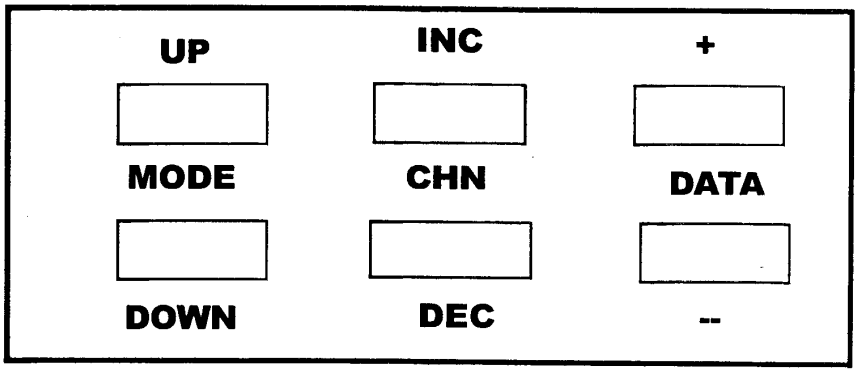
MODEL COPY - The Model # is selected by the prior window and the Copy To # is selected by the Channel [INC] and [DEC] buttons. Use numbers up in the 90's to experiment with and then copy back to the appropriate earlier number to match to your model when the settings are correct.

WING MIX SELECT - This window allows you to select one of the three pre-set mixes of "Elevon, Flaperon or V-tail". While this feature selects the mixes for you, the % of adjustments of the mix needs to be adjusted in "Track 2" and more instructions will follow at that point in the manual. The wing mixes are chosen by using the Channel [INC] and [DEC] buttons to cycle through the choices and back to the "NO MIX". The wing - mix choice only pertains to the model you are working on or have selected.

COUNTDOWN TIMER - This function provides a count down timer to sound a warning at any prescribed time from 60 to 1 minute. Usually, this is a reminder of an estimate of the fuel or battery time remaining, so that the model may be returned safely before the fuel runs out. The timer is cleared and set by the [+] key and the countdown is begun by pressing the [-] key and toggled to stop by pressing the [-] key as well.

PLEASE REMEMBER TO SAVE YOUR DATA BEFORE EXITING

KEY MAP



TRACK 1 (CONTINUED)

STICK MODE - The stick mode is purely a personal choice with Mode 2 being the most popular in the U.S. and Mode 1 in Europe. Basically, the throttle stick in the U.S. in Mode 2 is on the left and in Mode 1 it's on the right. All compensations are automatically handled by the computer and the only mechanical considerations is that the spring for the throttle stick and metal ratchet piece need to be moved according to the mode selected with these pieces being on the throttle stick. Just replace them in the same manner as the way they were when you removed them. To accomplish this you have to remove the back of the case, remove the batteries and the two screws that holds the case together. You only need to do this the first time you set up your radio.

SEL PPM MODE - This modes allows for the selection of a POS.(+) or NEG.(-) shift just press the DATA [+] keyfor +, DATA [-] key for -.
Futaba, Hitec = NEG (-) Jr, Airtronics = POS (+)

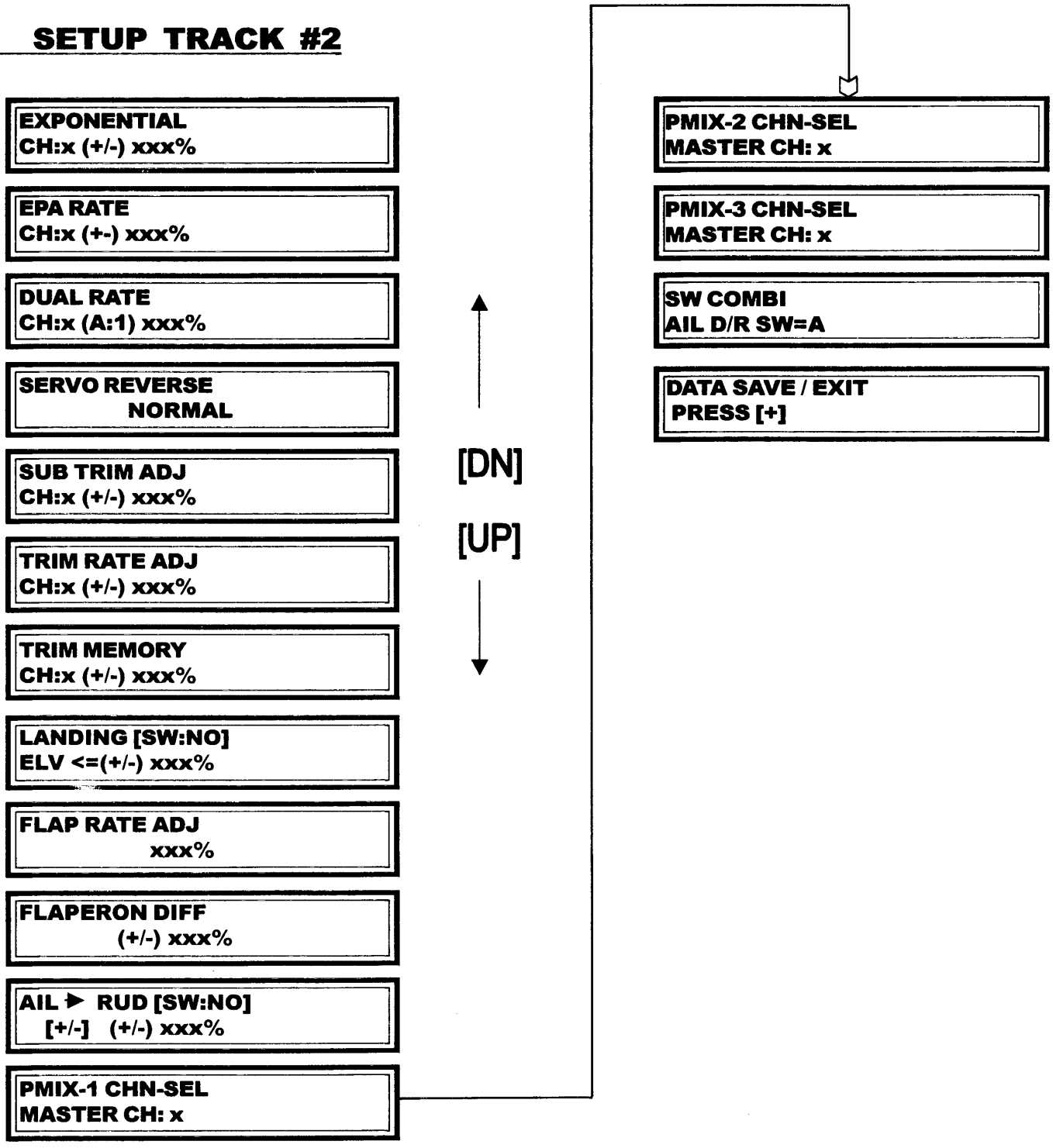
MODEL CLEAR ? - This mode allow for the clearing of all data for the model selected. If you made an error or just want to start over over for a new model, just press the DATA [+and-] keys simultaneously.

DATA SAVE - This function allows for the saving of all changes to the programming accomplished in this section. Failure to select this option will mean the loss of all data changes you have just made and is required to make the radio system operate with the newly programmed instructions. To save your data press the DATA [+] key.
THE ONLY TIME THAT THIS IS NOT NESSASARY WOULD BE WHEN JUST DOING A MODEL AND/OR FREQUENCY SELECTION.

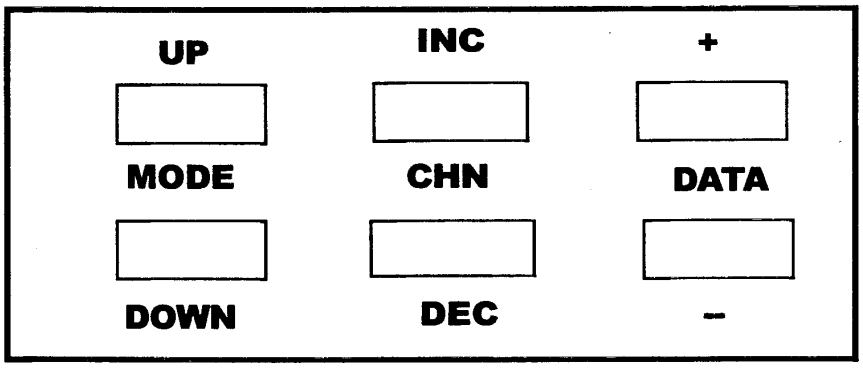
PLEASE REMEMBER TO SAVE YOUR DATA BEFORE EXITING THIS MODE AND THEN TURN THE RADIO TRANSMITTER OFF AND THEN ON AGAIN.

TO ENTER THE TRACK 2 press the "MODE" [up] and [down] buttons simultaneously, AFTER the transmitter is turned on. The receiver should be on and in the model. Press the 'MODE" [UP] or [DOWN] key to move through the windows. An explanation of the windows is shown below.

SETUP TRACK #2



KEY MAP



TRACK #2

EXPONENTIAL

EXPONENTIAL CH: 1 (2) +000%

PRESS [CHN - INC] TO SELECT CH:# 1>2>3>4
PRESS [CHN+DEC] TO SELECT CH:# 4>3>2>1

SWITCH POSITION

PRESS [DATA +] TO SELECT -100% TO +100%
PRESS [DATA -] TO SELECT +100% TO -100%
PRESS [DATA +] AND [DATA-] TOGETHER= 0% CLEAR

For channels 1,2 and 4:

"Minus" exponential percentages give the stick less sensitivity at the center position and more throw at the extreme position.

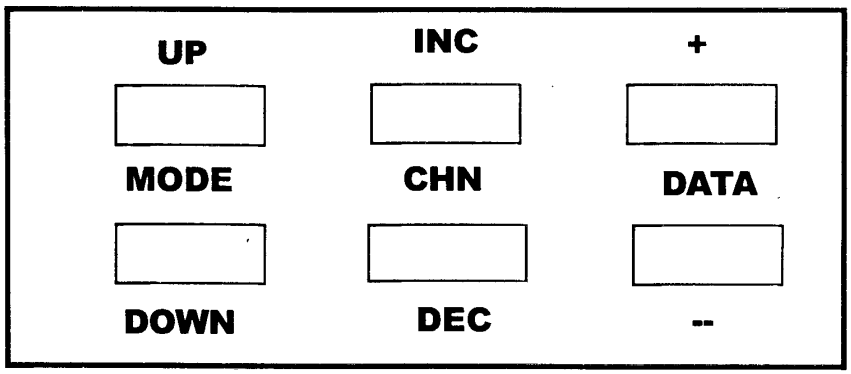
"Positive" exponential percentages give the stick maximum sensitivity at the center position and less throw at the extreme position.

Alternate exponential settings are available and are determined by the switches chosen to activate dual rates for these channels. See page 21 " Switch Combinations" and make selections.

It is now possible to program exponential percentages on each of these channels on both high and low rates as desired.

For Channel 3 (Throttle) MINUS percentage exponential decreases sensitivity at low throttle. POSITIVE percentage exponential has the opposite effect. There is no alternate (dual rate) switch for Throttle function.

KEY MAP



END POINT ADJUSTMENT

EPA RATE
CH: 1= (-) 100%

THROW SIDE INDICATORS (+ OR -)

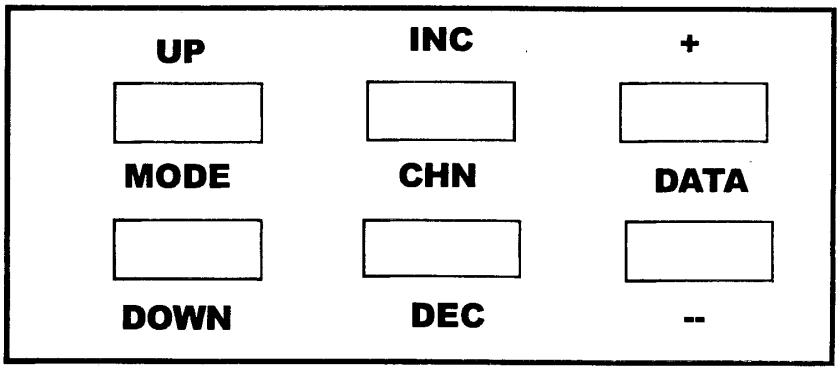
PRESS CHN - [INC] TO SELECT CH#1>2>3>4>5>6>7>8
PRESS CHN - [DEC] TO SELECT CH#8>7>6>5>4>3>2>1

PRESS DATA [+] UP TO 125%
PRESS DATA [-] DOWN TO 0%
PRESS DATA [+] AND DATA [-] TOGETHER
= 100% DEFAULT

This function allows end point adjustment of each of channels 1-8 servo travel. This is particularly useful for throttle servo to allow computer adjustment of servo linkages, rather than complex hardware adjustments. Adjustments of all linkages are easier on the computer and can be adjusted after test flight characteristics are known.

After selecting the desired channel to be adjusted, note that each channel has a MINUS and PLUS side of travel. The default value for channels 1-4 with both sticks in neutral position will be 100%. Moving the stick to the RIGHT OR UP will give the positive side of travel for each respective function. Channel 5 (landing gear) is two positions (1) or (2). Channels 6 and 7 are the rotary dials on on either side of the meter. Increasing the percentage (disreguarding any negative signs) increases the throw for the selected side of travel.

KEY MAP



DUAL RATE ADUSTMENT

DUAL RATE ADJ.
CH: 1(2)= - 100%

SWITCH POSITION

PRESS [CHN - INC] TO SELECT CH# 1>2>3>4
PRESS [CHN -DEC] TO SELECT CH# 4>3>2>1

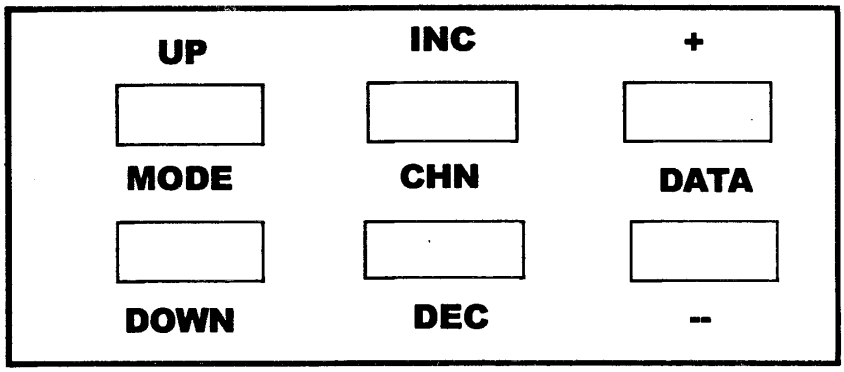
PRESS DATA [+] UP TO 125%
PRESS DATA [-] DOWN TO 0%
PRESS DATA [+] AND DATA [-] TOGETHER = 100%
DEFAULT

The most prevalent use of dual rate is to desensitize stick movement for beginners, so that over-control is minimized. Most dual rate settings are used in this manner, though each person will find different uses depending on the model's need. There is no dual rate for the throttle, since an alternate reduction of throw is not wanted on this function's movement. A 50% dual rate is suggested for most beginning modelers.

It is necessary at this time to select which switches (A-F) you intend to use to activate dual rates. See the page 21 on "Switch Combinations" and make your switch selections at this time.

While programming, you may select either switch position for low or high rates.

KEY MAP



SERVO REVERSING

SERVO DIRECTION
CH: 1 NORMAL

PRESS [CHN - INC] TO SELECT CH>1 >2>3>4>5>6>7>8
PRESS [CHN - DEC] TO SELECT CH>8>7>6>5>4>3>2>1

PRESS [DATA +] FOR NORMAL
PRESS [DATA -] FOR REVERSE

Earlier radios only had mechanical switches which became unreliable with time and caused radio failures. Thanks to the computer chip this reversing function is now 100% electronic and extremely easy to use. This function is ofen used for aileron servos.

SUB TRIM

SUB TRIM
CH: 1 =+ 0%

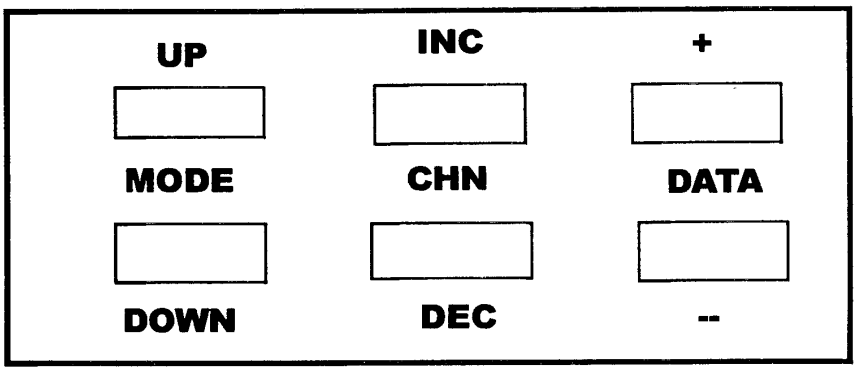
SUB TRIM OR SOFTWARE TRIM OF CENTER POSITION

PRESS [CHN - INC] TO SELECT CH#>1>2>3>4>5>6>7
PRESS [CHN- DEC] TO SELECT CH#>7>6>5>4>3>2>1

PRESS [DATA +] TO SELECT 0% TO 100%
PRESS [DATA -] TO SELECT 0% TO -100%
PRESS [DATA +] AND DATA -] TOGETHER = 0% CLEAR

This is a software trim, without trim levers. This means it is not necessary to reset trims when you change from model to model. This feature is especially useful for channel 6 (flaps), where there is no trim adjustment, so the following trim rates and memories are possible with the use of the computer.

KEY MAP



TRIM RATES

TRIM RATE CH: 1= 100%

PRESS [CHN - INC] TO SELECT CH # 1>2>4
PRESS [CHN - DEC] TO SELECT CH#4>2>1
PRESS DATA [+] UP TO 100%
PRESS DATA [-] DOWN TO 0%
PRESS DATA +[DATA -] TOGETHER = 100%
DEFAULT

Trim rates are similar to dual rates and desensitize the motion of trim. Once again the advantage of the computerized radio is to memorize the proper rates for up to 99 models, so that constant adjustments before each flight are not necessary.

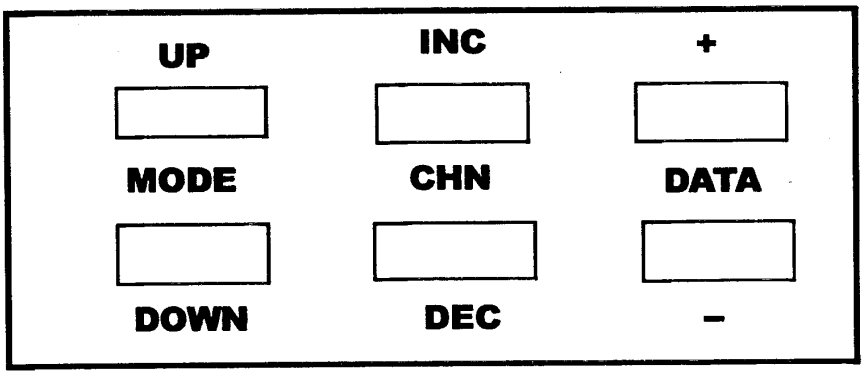
TRIM MEMORY

TRIM MEMORY CH: 1 + 100%

PRESS [CHN - INC] TO SELECT CH# 1>2>4
PRESS [CHN- DEC] TO SELECT CH# 4>2>1
PRESS [DATA+][DATA -] TOGETHER = 0%

Trim memory allows you to memorize the trim lever locations for channels 1, 2 and 4 (aileron, elevator and rudder) into the model number selected. After selecting the channel to be memorized press the DATA [+] key ONLY once. A PLUS or MINUS percentage will appear in the window indicating the position and percentage of that servo's travel to the side of throw the trim lever was moved. CAUTION; *If you press the [DATA +] key again the percentage will double (additive with each press of the key until you reach 100%.* Repeat the process for the other two channels if needed. The trim levers can now be returned to neutral and the model's trim will be correct with full trim travel. This allows for rapid trim changes without having to modify any linkage. Be sure to DATA SAVE before exiting Track 2 or the trim settings will be lost.

KEY MAP



LANDING 2-6 CHANNEL MIX

LANDING (SW = OFF) ELEV <= + 0%

SWITCH "*" IN POSITION 1 (OFF)
*= A, B, C, D, E, F

LANDING (SW = ON) FLAP <= + 0%

PRESS [CHN -INC OR DEC] TO TOGGLE TO "FLAP"

This function lowers flaps and moves the elevater to a predetermined position for landing, reducing the pilot's workload prior to landing. Percentage of throw for elevator and flap is set in the following manner:

PRESS [DATA +] TO SELECT 0% TO 100%
PRESS [DATA -] TO SELECT 0% TO -100%

Note: Switch "*" can be selected from switches A-F depending on the modeler's needs for a given model. See the "SW COMBINATION" window.

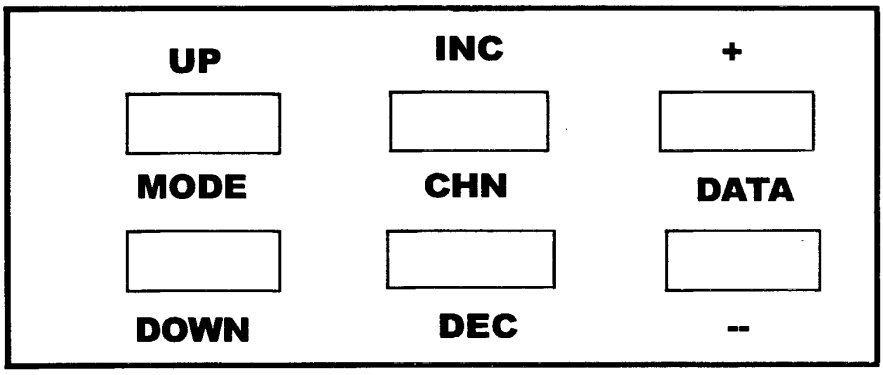
FLAP RATE ADJ.

FLAP RATE ADJ 100%

PRESS [DATA +] TO SELECT 0% TO 100%
PRESS [DATA -] TO SELECT 100% TO 0%
PRESS [DATA +] & [DATA -] TOGETHER FOR 100% DEFAULT

This function increases or decreases flap throw as required.

KEY MAP



FLAPERON DIFFERENTIAL

FLAPERON DIFF.
0%

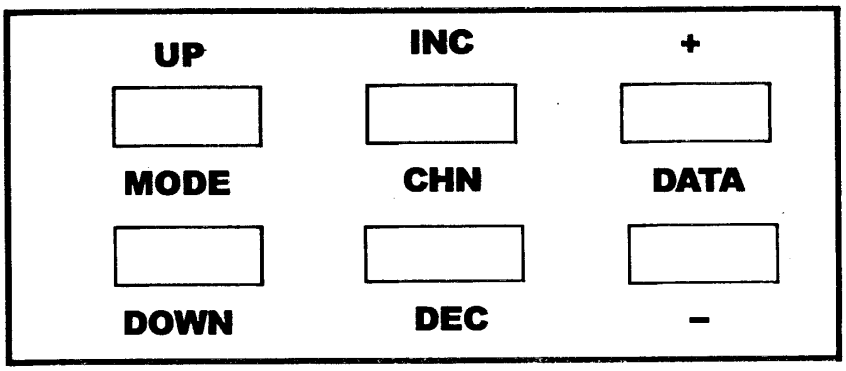
PRESS [DATA +] TO SELECT 0% TO 100%
PRESS [DATA-] TO SELECT 100% TO 0 %
PRESS [DATA +}[DATA -} TOGETHER = 100%
DEFAULT

NOTE: In order to function, "Flaperons" must be enabled on Track 1, "Wing Mix Select". Refer to that page of the manual.

This feature is most commonly used when full length or "Strip" ailerons are used on a model's wing, with one servo for each aileron. The servos must be plugged into Ch1 and Ch 6 of the receiver. With 50% differential, both aileron servos will move equal amounts UP and DOWN. With differential programing , one servo will travel further than the other in one direction and the opposite servo will travel further in the other direction, with the setup dependent on the pilot or model. When flaps are dialed down both ailerons will come down an equal amount while still functioning as ailerons.

NOTE: Once the correct combinations are determined for a particular model, care must be taken to plug each servo into the same channel numbers every time or you will find the throw and differential reversed. It is recommended that you number or color code the connections. Of course, SAVE YOUR DATA again to insure that the settings are kept safely in the memory.

KEY MAP



AIRLERON <=> RUDDER MIX CHANNELS 1-4

AILERON ==> RUDD MIX
(-) + 0%

Throw side indicator (+or -)

Press [CHN - INC] to proceed to step 2

Step 1 is to program the percentage of rudder throw diesired for each direction (side) of aileron stick movement. With the stick at neutral, the throw side indicator will be negative (left aileron)

PRESS [DATA+] TO SELECT 0% TO 100%
PRESS [DATA -] TO SELECT 100% TO 0%
PRESS [DATA+][DATA -] TOGETHER =0% CLEAR

Now move the aileron stick slightly to the right until the throw side indicator is positive (right aileron) and hold this position while repearing the percentage programming as before.

AILERON <== RUDD MIX
(-) + 0%

Press [CHN - INC] to proceed to step 3

Step 2 is to program the percentage of aileron throw desired for each direction (side) of the rudder stick movement. With the stick at neutral, the throw side indicator will be negative (left rudder). Repeat the same procedure as above.

Note: It is not mandatory to program both aileron to to rudder and rudder to aileron mixes. If that is your desire simply leave the percentage at ZERO.

AIL <=>RUDDER MIX
DISABLE

Step 3 is to enable or "turn on" this function. PRESS DATA [+] to toggle between "disable" and "enable".

The Aileron - Rudder mix is most commonly used to make coordinated-turn flying easier, where the particular type of model demands that a proportionate amount of rudder input accompany the aileron input to make a coordinated turn.

PROGRAMMABLE 2-WAY MIX

The Polk Tracker allows programming for three 2-way mixes on any three switches (A-F) available. The mixes are uni-directional (master/slaves mixes). The master channel will drive the slave's channel's servo as well as it's own, but manipulating the slave servo will not effect the master channel. Any combination of channels 1-8 are possible and by programming 0% for the third channel ("CH C"), any combination of just two channels is possible as well.

PROGRAM MIX (#1) MIX - MASTER (CH) : X

PRESS [DATA +] To select CH# 1>2>3>4>5>6>7>8
PRESS [DATA -] To select CH# 8>7>6>5>4>3>2>1

PRESS [CHN - INC]

PROGRAM MIX (#1) MIX - SLAVE CH: X

PRESS [DATA +] To select CH# 1>2>3>4>5>6>7>8
PRESS [DATA -] To select CH# 8>7>6>5>4>3>2>1

PRESS [CHN - INC]

PROGRAM MIX (#1) CH M=>S: + 0%

PRESS [DATA+] To select 0% to 100%
PRESS [DATA -] To select 100% to 0%
PRESS [DATA +}[DATA -} Together = 0%

PRESS [CHN - INC]

PROGRAM MIX (#1) CH M<=S : + 0%

REPEAT FOR MIX #2 AND MIX #3 AS NEEDED

SWITCH COMBINATIONS

SW COMBI AIL D/R SW=NO

Press CHAN [INC] or [DEC] to select function

AIL D/R SW = *	ELV D/R SW = *
RUD D/R SW = *	1-4 MIX SW = *
LANDING SW = *	PMIX-1 SW = *
PMIX-2 SW = *	PMIX-3 SW = *

Press DATA [+] or [-] to select switch (*)
A, B, C, D, E, F, OR NO

DATA SAVE PRESS [+]

The SEEKER II is compatitble with ANY FM transmitter

(no crystal matching)

For the past 2 decades there has not been any radical improvements in hobby radio technology. Mismatched combinations of different brands can possibly result in damage to your model.

The receiver is an extremely important part of your system, because of posible radio interference such as mirror image, 3 im, or pager swamping are caused by the receiver.

All receivers must be narrow band, but there is a tolerance +/- 10ppm (+/- 7khz), which requires the need for replacement crystals to be tuned by the same maker.

The SEEKER II has innovated a breakthrough, which changes the "old" relationship between the transmitter and receiver. The SEEKER II automatically adheres to any type or brand of FM transmitter within the narrowest of possible settings (typ. +/- 5ppm).

IMPORTANT CAUTIONS BEFORE SETUP

Do not setup with other transmitters within 10ft.

During setup all CH-1 levers (trim, dual rate, ect.) must be at neutral

SETUP

1. Connect the SEEKER II as shown in the diagram.
2. Hold set button , turn on receiver power switch (not supplied).
   CH-1 servo (aircraft=ailerons, boats=rudder)
   will move back and forth in small amounts.
3. Turn on transmitter with antenna fully extended and within 2-6 inches of the SEEKER II antenna.
   WHEN SERVO (LED) STOPS MOVING YOU ARE NOW CONFIGURED.

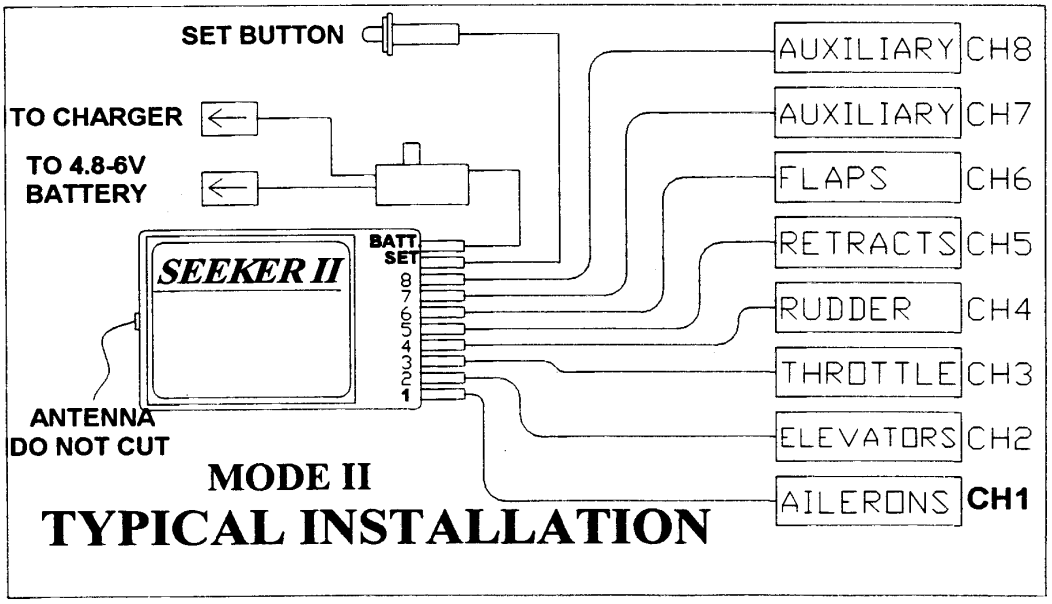
The SEEKER will keep the data even when the battery is removed.

To change frequency, repeat the procedure

SEEKER II

5 year limited WARRANTY

POLK'S HOBBY / LMP inc.
698 South 21st. ST.
Irvington, N.J. 07111



MODE II

TYPICAL INSTALLATION

POLK'S HOBBIES

72 MHz PLK13101
75 MHz PLK13102
35 MHz PLK13103
40 MHz PLK13104

FOR THE GLIDER PILOT

BUTTERFLY FLAPS ailerons up, flaps down

Plug right aileron servo in ch1
Plug left aileron servo in ch6
Plug flap servo in ch8

Track 2

1. servo direction: ch1 - nor, ch6 - rev, ch8 - nor
2. landing switch: [sw:F] flap rate 100%
3. aileron diff.: (50%)
4. PMIX-1: master: ch8 slave: ch1
   M=>S (+) 70% M<=S 0%
5. PMIX-3: master: ch1 slave: ch6
   M=>S (+) -100% M<=S 0%
6. SW COMBI: landing - sw=F PMIX - sw=f

Adjust SUB TRIM ch1((+) 100%)
Adjust TRIM MEMORY ch1((+) 60%)

OR, NOT BOTH PER MODEL

CROW FLAPS ailerons down, flaps down

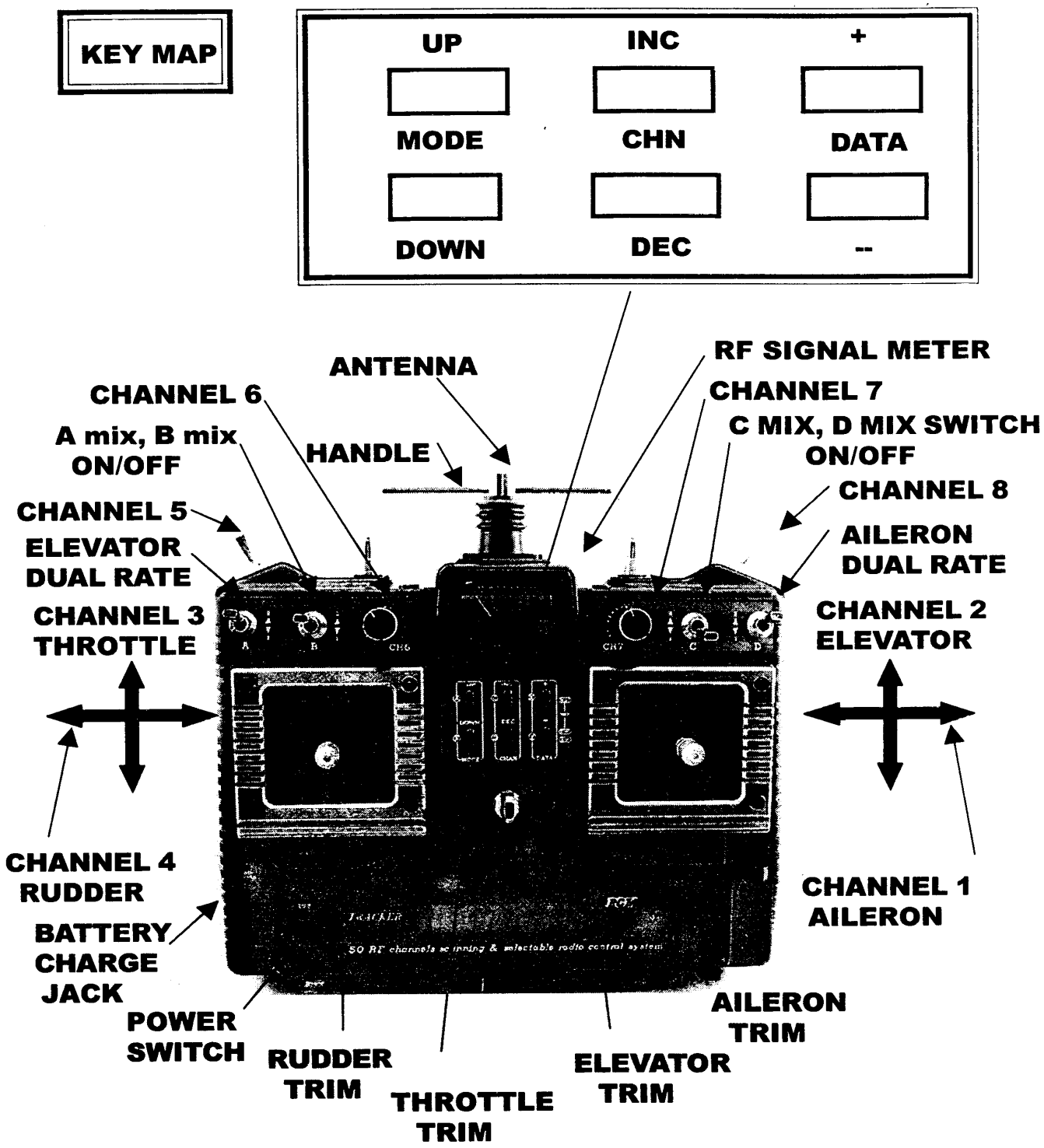
Plug right aileron servo in ch1
Plug left aileron servo in ch6
Plug flap servo in ch8

Track 2

1. servo direction: ch1 - nor, ch6 - rev, ch8 - nor
2. landing switch: [sw:F] flap rate -100%
3. aileron diff.: (50%)
4. PMIX-1: master: ch8 slave: ch1
   M=>S (+) 70% M<=S 0%
5. PMIX-3: master: ch1 slave: ch6
   M=>S (+) -100% M<=S 0%
6. SW COMBI: landing - sw=F PMIX - sw=f

Adjust SUB TRIM ch1 ((+) 0%)
Adjust TRIM MEMORY ch1 ((-) 100%)

Percentages may need to be adjusted to the model


KEY MAP
UP
INC
+
MODE
CHN
DATA
DOWN
DEC
--
ANTENNA
RF SIGNAL METER
CHANNEL 6
CHANNEL 7
A mix, B mix ON/OFF
HANDLE
C MIX, D MIX SWITCH ON/OFF
CHANNEL 8
CHANNEL 5
ELEVATOR DUAL RATE
AILERON DUAL RATE
CHANNEL 3 THROTTLE
CHANNEL 2 ELEVATOR
CHANNEL 4 RUDDER
CHANNEL 1 AILERON
BATTERY CHARGE JACK
POWER SWITCH
RUDDER TRIM
THROTTLE TRIM
ELEVATOR TRIM
AILERON TRIM