

AL-DIF (AILERON DIFFERENTIAL)

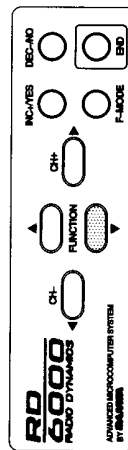
The RD6000 has the ability to control several aircraft "wing" types, including conventional single aileron servo, dual aileron servos on individual channels with electronic differential adjustment and delta (or "flying wing") configurations with Elevons. It is only possible to electronically adjust differential when using TWO CHANNELS for ailerons, with one servo on each side of the wing driving that wing's aileron. The AL-DIF (aileron differential) function only applies to the DELTA and FLAPE menu functions.

Differential refers to the ratio of up-down movement of each aileron. Many aircraft need more movement from the upward deflecting aileron than from the downward deflecting aileron in order to eliminate unwanted yaw when ailerons are applied.

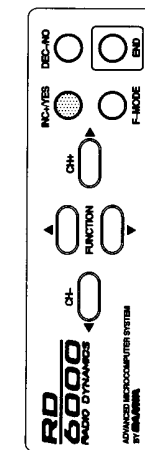
Note that differential for the SPOIR (Spoilons) function, that is used with sailplanes, is controlled by the L-DIF (landing differential) function. AL-DIF has no effect of SPOIR!

In the following example, we will assume you want to have separate servos for aileron control. Since you must have two servos to obtain electronic differential, the first thing to do is activate FLAPE (Flaperons) as indicated on page 50. You now have two channels assigned to the aileron/flaperon function. Plug these servos into CHANNELS #2 and #6 of your receiver. Note that both servos will respond equally when you move the transmitter's aileron control stick. (If you do not want the ailerons to act as flaps, select p-f on the Channel indicator, and disable the FLAP switch by setting FLAP EPA to 0%).

Press the FUNCTION → key to select the AL-DIF (aileron differential) screen.



Next, press the INC →YES key to set a value for aileron differential. In this example the differential is set to 50%. This means that the downwards-deflecting aileron will move half as much as does the upwards-deflecting aileron. The final adjustments will be determined by actual flight testing.

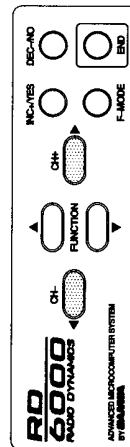


The above display shows the amount of differential that we have presently programmed. The range of adjustment is from -100% to +100%. Default is 0%. If the differential you set is in the wrong direction, i.e., less up-deflection than down-deflection, change the polarity of the value that you programmed by using the INC →YES or DEC →NO keys.

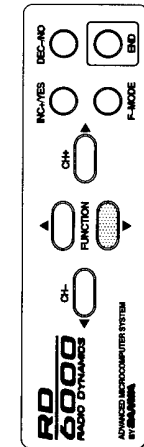
ALARMS D/R-A(DUAL RATE ALARM) THROTTLE STICK HIGH

The RD6000 offers an "ALARM" function to warn you if you turn your transmitter on while a Dual Rate Switch is activated, and another to warn you if you turn the transmitter on while the Throttle Stick is in any position other than Full-Low throttle. TH-HI! Will be displayed on the LCD screen until you place the Throttle stick in the full-Low position.

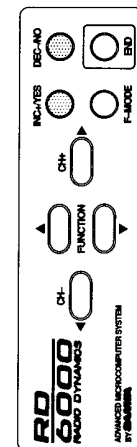
To activate the DR-A (Dual Rate alarm), press the ← CH - or the CH + → key to select "etc" on the Channel indicator.



Press the FUNCTION → key several times to scroll down the menu items and select the DR-A screen.



Next, press either the INC →YES or the DEC →NO key to set DR-A to ACTIVE.



If a Dual Rate switch is in the ON position when you turn ON the transmitter, an audio tone signal of 3 beeps will occur at approximately every 15 seconds until you turn off a dual rate switch.

If you wish, you can turn off the Dual Rate alarm by pressing either the INC →YES or the DEC →NO key to change DR-A to INHIBIT.

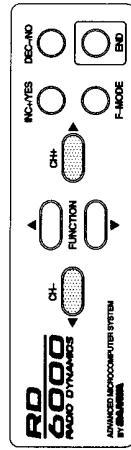
Note that the High Throttle Stick alarm is always active.

NOTE: The RD6000 transmitter will also sound an alarm if the power switch is left on for a period of time that exceeds 15 minutes.

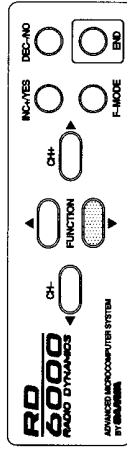
FLAPE (FLAPERONS)

The Flaperon function can be used to just obtain two separate aileron channels with a servo in each wing. It can also be used so that the strip ailerons act as flaps and deploy in a downward direction to create both lift and drag. In the following example, the ailerons will be programmed to act as flaps that are controlled by the FlapFL-EL switch.

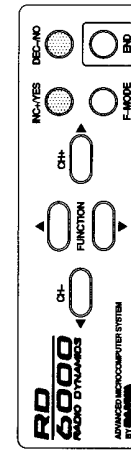
Press the $\blacktriangle$ CH - or the CH + key to select "etc" on the Channel indicator.



Next, press the FUNCTION $\blacktriangledown$ key several times to see the following screen.



Now, press the INC +YES or the DEC -NO key to set the FLAPE function to ACTIVE. The aileron stick will now operate two servos on receiver channels #2 and #6. Press the END key to return to the STW screen at the top of the menu.



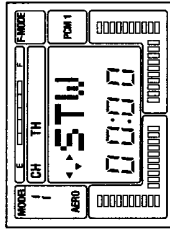
FAIL (FAIL SAFE)

The RD6000 transmitter provides the capability to program Fail Safe for all six channels. However, Fail Safe is ONLY available when you are using a PCMFM receiver and transmitting in the PCM 1 or PCM 2 Modulation mode. If you are transmitting PPMFM or PPMFM-Reverse, you will not be able to enable the FAIL SAFE function.

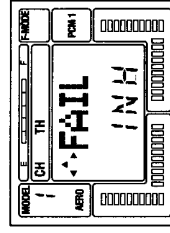
The Aitronics PCM receivers have the capability to be programmed to respond to RF signal interference by momentarily holding the last known good command. If the interference lasts longer than one second, then the receiver's microprocessor will drive the servos to the preprogrammed positions you previously set-up using the FAIL (fail safe) function.

To program Fail Safe, you first must select PCM 1 or PCM 2 Modulation for your specific type of receiver. See page 44.

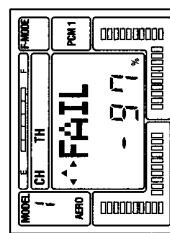
For example, if you want to set low throttle to occur if interference causes loss of signal at your receiver, select the TH (throttle) channel on the Channel indicator.



Next, press the FUNCTION $\blacktriangledown$ key to access the FAIL screen.



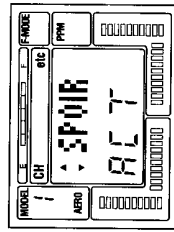
Now position your throttle stick in the low throttle position that you want for the Fail Safe position. Press the INC +YES key to set the position that the throttle servo will drive to upon loss of signal.



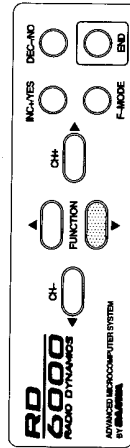
Continued...

L-DIF (LANDING DIFFERENTIAL)

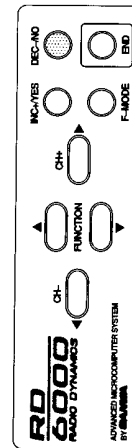
The L-DIF (landing differential) function enables the ailerons of a sailplane to be effective whenever both the left and right ailerons are raised when CROW or SPOIRON are used in landing. Typical thermal sailplanes require about twice as much of up travel than down travel of their ailerons in order to produce a coordinated turn. The RD6000 allows you to set the amount of differential aileron travel during the landing mode. To use L-DIF the SPOIR (Spoon) function must be set to Active. See page 47 and activate the SPOIR function.



Next, press the FUNCTION key to scroll to the L-DIF (landing differential) screen.



Now, press the DEC -NO key to set a value of -50% for L-DIF.



Note that the application of Landing Differential is controlled by the position of the FLAP (throttle) stick. As you bring the stick down and deploy your flaps, the aileron landing differential increases to the amount that you programmed. In the above example we set L-DIF to -50%. However, the polarity of the setting depends on your specific aircraft's installation, i.e., it can either be positive or negative.

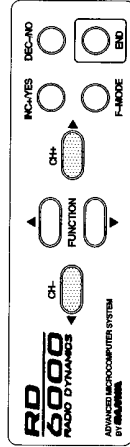
Move your aileron stick from side to side and observe the change in the ratio of up to down travel as you bring the FLAP stick down.

The range of adjustment of L-DIF is from -100% to +100%. To reset L-DIF to the default value of 0%, press both the INC +YES and DEC -NO keys simultaneously.

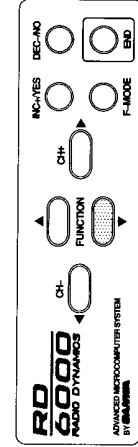
Flight testing will be required to determine the optimum setting for your L-DIF.

R -> A (RUDDER-AILERON MIX)

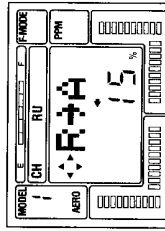
The RD6000 provides you with the capability to mix Rudder control with Aileron. The purpose of this mixer is to allow one transmitter control input to affect two flight functions. A common use would be in knife edge flight where you need a small correction in aileron to prevent roll coupling. To set-up such a mix, use the CH - or CH + key to select RU on the CH indicator.



Next, press the FUNCTION key several times to select the R->A (Rudder-Aileron Mix) screen.



Push the rudder stick to the right and note the small position arrows above the percent sign. Now, push the rudder stick to the left and note that the arrow indicates the direction of stick movement. If desired, you can set the amount of mixing for only one direction of stick movement or both directions as required for your model. Now, press the INC +YES key to set +15% for left rudder stick. If the aileron correction moves opposite to the direction desired, simply change the value to -15%. This will give the same amount of mixing, but in the opposite direction. The range of adjustment is from -100% to +100%.



With left rudder stick movement you now have 15% mixing of rudder with the aileron channel in one direction. Left rudder stick will now give a correction to ailerons PLUS give left rudder response, but right rudder will not cause any aileron movement. To program the mixer for both directions of rudder stick movement, you must put a value in for both directions of rudder stick movement as indicated by the arrows.

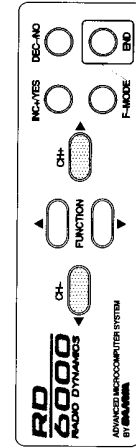
Press the INC +YES and DEC -NO keys simultaneously to reset R->A to 0%.

CLK (CLICK)

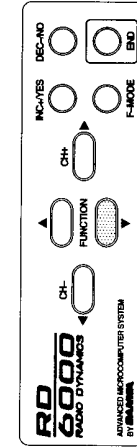
The RD6000 transmitter normally is set to emit an audio tone when ever the programming keys are pressed, when values are changed and when the stop watch function is started, stopped or reaches the final ten seconds of count-down.

It is possible to disable the "Click" or audio tone, using software settings. When the "Click" tone is disabled, ONLY the stop watch count-down will still cause an audio tone to be emitted.

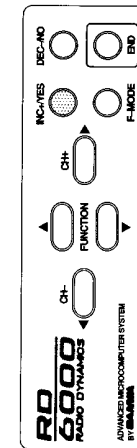
To set or disable the "Click" function, select "etc" on the Channel indicator using either the < CH - or the CH + > key.



Press the FUNCTION > key to access the CLK (CLICK) screen.



Press the INC +YES key to change the indication from ACT to INH, to disable the Click function, (pressing either the INC +YES or the DEC -NO key will toggle the function between "INH" and "ACT" settings

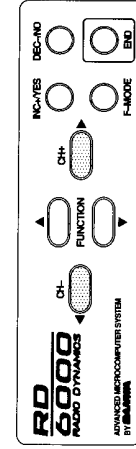


Press the END key to return to the STW screen.

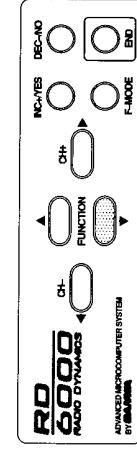
T-E (THROTTLE-ELEVATOR MIX)

The RD6000 allows for automatic adjustment of Elevator trim as you advance or retard the throttle (Flap) stick. This is a valuable option, as most sailplanes will need a change in pitch trim when ever flaps are deployed. By making this adjustment with an electronic mixer, the pilot does not have to alter the elevator digital trims each time flaps are used, and thus does not have to re-trim the elevators for normal flight. This feature can also be used on an engine powered model to make small elevator trim corrections as power is applied or reduced.

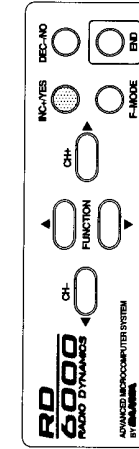
To use the T-E (Throttle-Elevator) mix, press either the < CH - or CH + > key to select TH on the CH indicator screen. (Note that you must be on the STW screen to move horizontally across the entire CH indicator screen).



Press the FUNCTION V key to see the following T-E screen.



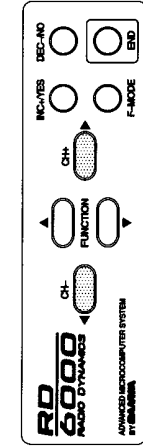
Press the INC +YES or the DEC -NO key to set a value for T-E mixing. The range possible is from -100% to +100%. For now in this example, press the INC +YES key to insert a value of 20% for the T-E mix. Flight testing will always be required to determine the optimum amount of mix.



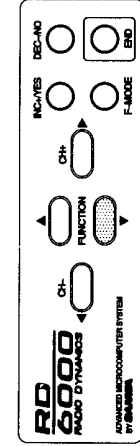
Press the INC +YES and DEC -NO keys simultaneously to reset T-E mix to the default value of 0%.

MOD (MODULATION)

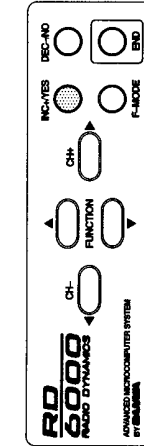
An extremely versatile feature of the RD6000 transmitter is the capability to select four different types of modulation. These are PPMFM for standard FM receivers; PCMFM-1 for the STYLUS PCM receiver; PCMFM-2 for the VANGUARD and INFINITY 660 PCM receivers; and PPMFM-Reverse for "other brand" receivers. To access the Modulation screen, press either the CH- or CH+ key to select the "etc." screen.



Next, press the FUNCTION key to select the MOD (modulation) screen. It will show PP indicating the present selection is PPMFM.



If you want to change the Modulation, press the INC +YES key and the presentation will change to the following screen. Note that the small Modulation Indicator on the right side of the screen will also show the present modulation selection when it is changed.

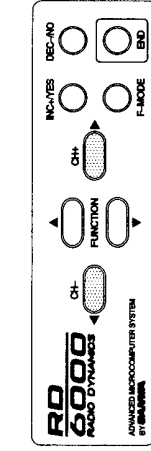


Press the INC +YES key to continue to select either PC 2 (PCMFM-2) or PPR (PPMFM-Reverse). When you select PPR the small Modulation Indicator will be blank. Press both the INC +YES and DEC -NO keys simultaneously to return to the default PP (PPMFM) modulation. Press the END key to return to the STW screen.

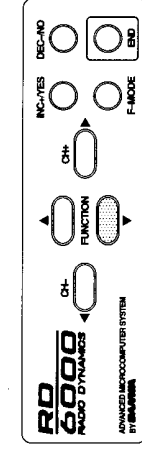
T-CUT (THROTTLE-CUT)

Another useful function provided by the RD6000 for engine powered models is T-CUT, Throttle Cut. Normally you set your throttle stick in the extreme low position and use EPA and the digital trim to obtain a steady low engine idle speed. However, if you want to stop the engine at the end of the flight you would have to use the throttle digital trim and later re-trim for proper idle. The T-CUT function solves this problem by providing a push button that, when pushed, overrides the throttle sticks low throttle position and drives your throttle servo to a lower position, stopping the engine.

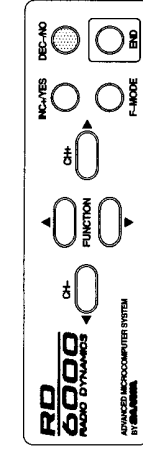
In order to use T-CUT, press either the CH- or the CH+ key to select TH on the Channel Indicator.



Next, press the FUNCTION key several times to obtain the following screen.

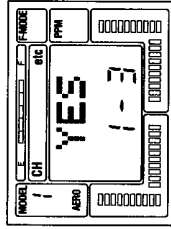
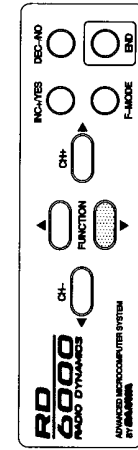


Press the DEC -NO key to set a value of -100%. Place the throttle stick in the extreme low position. Press and hold down the Throttle Cut push button located above the elevator/aileron stick assembly. The throttle servo will then rotate further to close the engines carburetor and stop the engine.

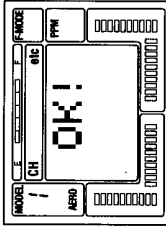
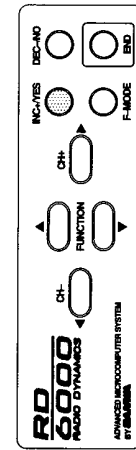


On the previous screen, the destination has been set to Model #3. **MAKE CERTAIN** that this model set-up is not one you wish to save, because when you copy the Model #1 set-up into Model #3, all data that was in Model #3 is replaced with the Model #1 data! At this point Model #3 data is still intact, so if you wish to change the destination for the copied data, do so before proceeding.

Press the CH + ▶ key to access the next screen as shown below. The "YES" will be blinking.



Press the END key to return to the CPY select screen.



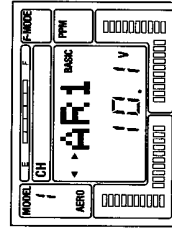
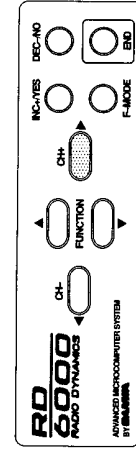
(R ₂ CH)	EL	Al	TH	RU	G	P/F	etc
	STW	STW	STW	STW	STW	STW	STW
	REV	REV	REV	REV	REV	REV	REV
	D/R	D/R	CNT	D/R	GYR	CNT	TYP
	CNT	CNT	EPA	EPA		EPA	RST
	EPA	EPA	CV/PH	EPA		CV/PH	BASIC (ON)
			CV/P3	R/LH		CV/P3	
			CV/P2	R/LM		CV/P2	
			CV/P1	R/LI		CV/P1	
			CV/PL			CV/PI	

PROGRAMMING FOR HELICOPTER BASIC

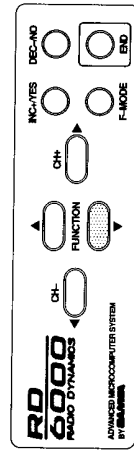
The RD6000 transmitter provides you with the capability to use either the BASIC programs or choose one with the ADVANCED features and functions. You can also modify the BASIC program to add to it features and functions from the ADVANCED program. You can also choose to not display, on the BASIC screens when BASIC is turned ON, the features and functions from the ADVANCED program that you do not want to use at this time.

Model #1 is setup with the BASIC AERO features (AR 1)
Model #2 is setup with the BASIC HELI features (HL 2)
Model #3 is setup with the BASIC AERO features (AR 3)
Model #4 is setup with the BASIC HELI features (HL 4)

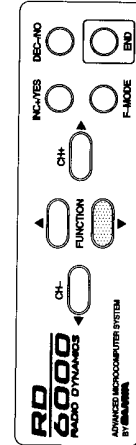
Turn the transmitter power switch ON and press the END key. The initial screen will show AR 1 which indicates the aircraft type as well as showing the NiCd battery voltage. However, since you are a rotary wing aircraft pilot, you want all of the transmitter set-ups to be rotary wing aircraft; therefore, the type must be changed from AERO to HELI.



Now, press the FUNCTION → key to access the SLV (Slave) screen. Use the INC +YES key to make the screen read FL (Flap).

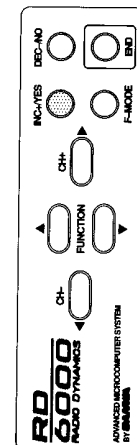


Next, press the FUNCTION → key to see the C-MIX 1 screen where you will set a value for the E-F mix.



You have the option of having the Slave servo (Flap) respond to an UP Elevator stick movement only; to Down Elevator stick movement only; or respond to stick movement in both directions. In this example you only want the Flap servo to cause the Flaps to go Down with an UP Elevator stick movement. This in effect will cause tighter corners in a square loop.

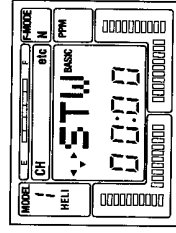
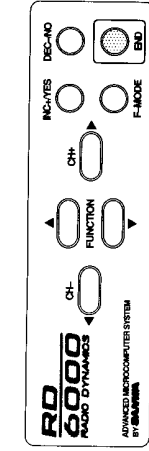
Pull the Elevator stick back and then push it forward. Note the change in the small arrows that are above the 0% reading which indicate the direction of stick movement. Press the INC +YES key to input a value as shown in the following screen for an UP Elevator command.



The range of adjustment is from -150% to +150%, which will make available the full range of servo travel for mixing. Push the Elevator stick to the Down position and hold it. Note that the mixing is 0% for the Down Elevator stick position since you did not set a value for Down Elevator. Hence, when you give UP Elevator the Flaps will go down, but they will not move with a Down Elevator command. The same thing holds true for any mixing that you program. Move the stick in the direction you want to have mixing accomplished and set a value, either negative or positive depending on how much and what direction you want the Slave servo to move.

In this example in order to use the E-F mixer, we must Turn ON the assigned switch for C-Mix 1. This is designated as the C-MIX 1/2 AI-RU MIX switch which is located above the left stick assembly. The switch can be used to turn ON or OFF either mix function. When the switch is in the UP position the E-F mix is Turned ON.

Press the END key twice to return to the STW screen. The same procedure as noted above can be used to change Model #3 from AERO to HELI.



HELICOPTER BASIC FEATURES

- Stop Watch
- Model Select
- Servo Reverse
- Dual Rate
- Center
- End Point Adjust
- Throttle Curves
- Pitch Curves
- Revolution Mixing
- Model type
- Data Reset
- Gyro Sensitivity Adjustment

• For description of how to program these functions, see BASIC aircraft section starting on page 15.

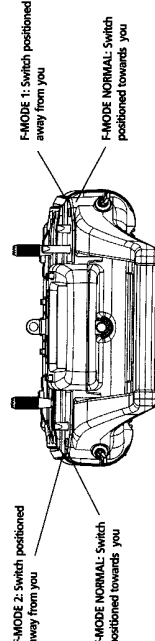
PITCH CURVES (FLIGHT MODES)

The RD6000 allows you to customize three distinct flight modes for each helicopter model.

The three pitch curves (flight modes) available for each helicopter model are:

- N.....NORMAL
- 1.....Select Curve One – IDLE UP
- 2.....Select Curve Two – THROTTLE HOLD

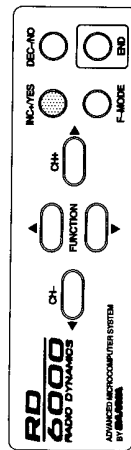
Selecting a pitch curve is done by activating the two FLIGHT MODE switches located on the top of the transmitter as shown below. The default positions are as indicated.



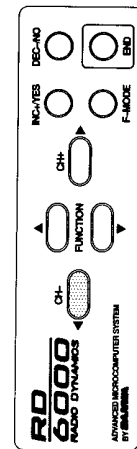
Note that BOTH F-MODE switches must be positioned towards you to select F-MODE NORMAL.

CAUTION: Flight Modes 1 and 2 are IDLE-UP modes. If either one is activated when you turn on the transmitter, an audio alarm will sound. You must always be aware of which flight mode you have selected before starting your engine or attempting flight!

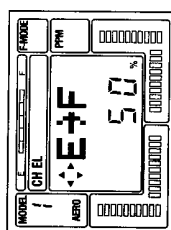
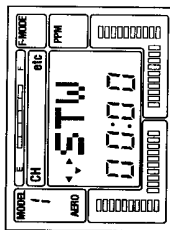
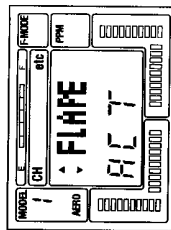
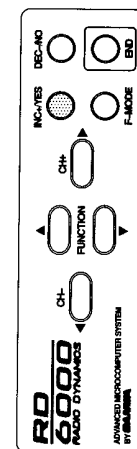
Press the INC-YES key to change INH (inhibit) to ACT (active).



Next, press the END key once to access the first screen on the "etc" column of functions. Use the CH- key to scroll to the left on the Channel indicator and select the EL channel.



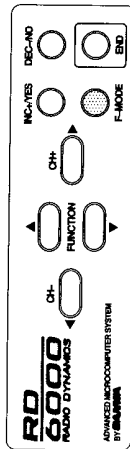
Use the FUNCTION key to scroll down to the E-F display. Press the INC-YES key to set a value for Elevator to Flap mixing. The range of adjustment is from 0% to 100%, i.e., from no mixing to maximum mixing. A good starting value would be about 50%. You can fine tune the amount after a test flight.



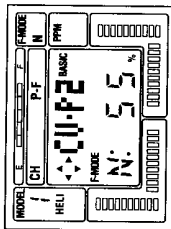
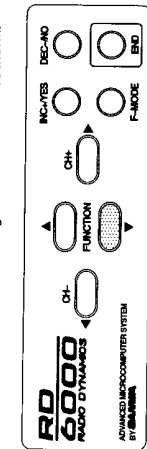
CAUTION:

Once you activate the E-F mixer by setting in a value, it will be active at all times, and the aircraft will respond to all control inputs since *you cannot* turn it On or Off with a switch. If you do not want the E-F mixer active at all times, then a better choice would be to use a switch activated COMPENSATION mixer that can be turned ON or OFF by using the appropriate switch. See C-MIX (COMPENSATION MIX-ERS) on page 39.

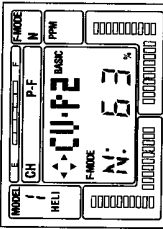
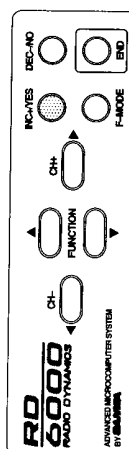
Press the F-MODE (flight mode) switch to toggle through flight modes, 1, 2, and Normal.



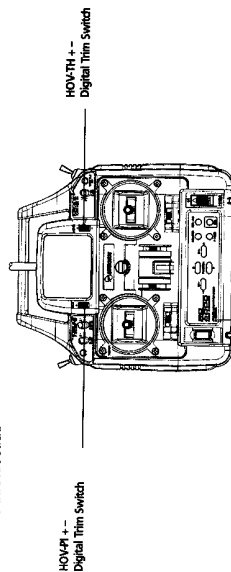
Now use the F-MODE switch to select the specific flight mode that you want to adjust. As an example, if you wanted to adjust CV-P2 in the Normal flight mode, press the FUNCTION V key to select CV-P2. The default value for the Normal flight mode of 55% will be shown.



Press the INC-YES key to set an increase in value or press the DEC-NO key to set a lesser value. Press both the INC-YES and DEC-NO keys simultaneously to return to the default value.

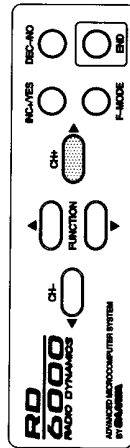


Fine tuning of the Hover Pitch setting is also available by use of the HOV-PT digital trim switch located above the throttle stick.

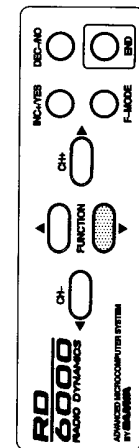


In normal operation you will usually set the approximate Hovering Pitch with the software in the Pitch screens; then adjust as needed for various weather and flying conditions with the HOV-PT (hover pitch) digital trim switch.

As an Example, to set Exponential for Elevator, access the EL Channel STW screen as shown below by using the CH + > key.

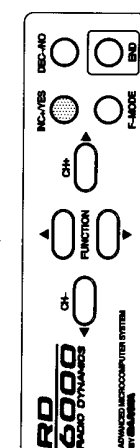


Now press the FUNCTION > key to select the EXP display for the Elevator Channel as shown below.



This screen tells you the present Exponential status of the Elevator channel and, when a Dual Rate/Exponential switch is set to ON position, the Exponential setting for that control function. The possible range for Exponential setting is from -100% to +100%. Note that 0% is linear. A negative value will speed up the response and it will make the stick movement more sensitive around the neutral position.

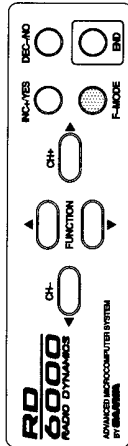
To set an Exponential rate in this example, turn the Dual Rate switch for Elevator to the ON upward position. Note that the display changed to Exponential #2. You can now set the value for the Elevator channel Exponential. Press the INC +YES key to set a positive value of Exponential function as indicated below.



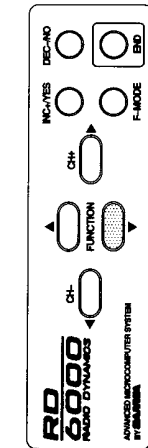
In the above example we set Exponential #2 to be 20% of the maximum for the Elevator channel. This is a good starting point for determining the suitability of Exponential Throw for your aircraft and flying style.

You can actually have two different Exponential settings if desired, i.e., one for switch position #1 and another for switch position #2. However, when you first start using Exponential Throw, it is usually best to leave the switch #1 position at 0%, which is linear throw.

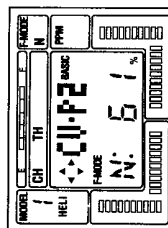
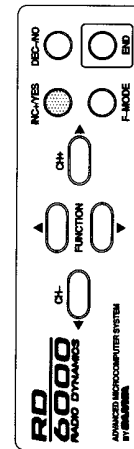
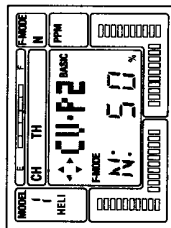
Press the F-MODE (flight mode) switch to toggle through flight modes, 1, 2, and Normal.



Now use the F-MODE switch to select the specific flight mode that you want to adjust. As an example, if you wanted to adjust CV-P2 in the Normal flight mode, press the FUNCTION > key to select CV-P2. The default value for the Normal flight mode of 50% will be shown.



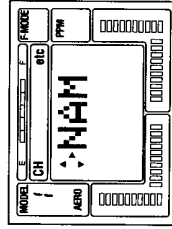
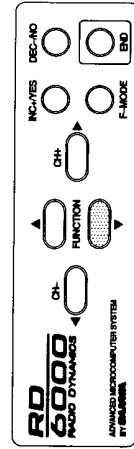
Press the INC +YES key to set an increase in value or press the DEC -NO key to set a lesser value. Press both the INC +YES and DEC -NO keys simultaneously to return to the default value.



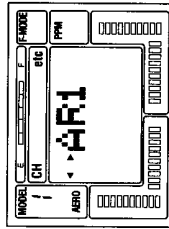
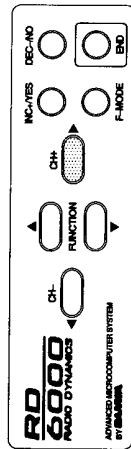
Fine tuning of the Hover Throttle setting is also available by use of the HOV-TH + - digital trim switch located above the right stick assembly. See page 67.

NAM (NAMING YOUR MODEL)

The RD6000 provides the capability for you to designate each of the four models you have programmed by use of a 3 digit name. Use the CH + key to select the "etc" screen. Press the FUNCTION key twice to select the NAM screen.



Now press the CH + key to select the screen for Aero model number one. The A will be flashing to indicate you can change that letter.

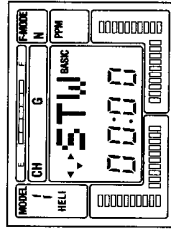
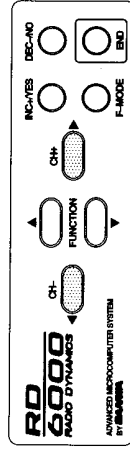


Press the INC +YES key to scroll through the letters of the alphabet and make a change in the first letter. You may use any combination of LETTERS (upper and lower case), NUMBERS, Colon(:), Dash (-), Character, or blank space to designate a model. When you have finished the first letter or number, press the CH + key to move to the next letter and set it in a similar manner. The DEC -NO key can also be used to change a letter or number in the opposite direction. Press both the INC +YES and DEC -NO keys simultaneously to return to the default setting of HL 1. Once you have completed designating your present model, press the END key twice to return to the "etc" column heading.

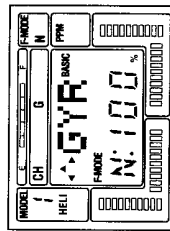
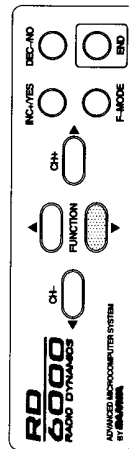
GYRO ADJUSTMENT

The RD6000 allows you to set the Gyro sensitivity of your helicopters gyro if it has that capability. The gain of the gyro can therefore be adjusted for all of the three Flight Modes. In this manner the pilot can adjust the gyro for a suitable level of sensitivity (gain) for one flight mode (for instance hover), and by changing to a different flight mode alter the sensitivity for either more or less stabilization. Note that you must be using a gyro that offers remote sensitivity adjustment.

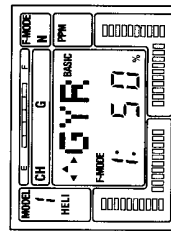
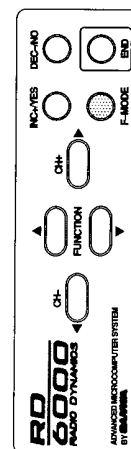
Press either the CH - or the CH + key to select G (gyro) on the Channel Indicator.



Now, press the FUNCTION key several times to access the GYR (gyro) screen. The display will look like the following screen when the Normal flight mode is selected.



To adjust the gyro sensitivity for a specific flight mode, press either the INC +YES or DEC -NO key. Default values are: Normal 100%, F.M. #1 50%, and F.M. #2 60%. The range of adjustment is from -150% to +150%. Press the Flight Mode switch to change from one flight mode to another.



Fine tuning of your gyro sensitivity for the various flight modes can be accomplished by flight tests.

TRM (TRIM MEMORY) STEP (TRIM AUTHORITY)

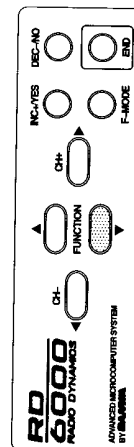
Refer to the Aircraft ADVANCED Menu Structure on page 27. Note that the RD6000 offers the Trim Memory Function on all four of the flight control channels. Trim Memory for Elevator, Aileron, Throttle, and Rudder is input by the Digital Trim keys or set when you use the INC +YES or DEC -NO keys to input trim.

Any trim that you set while your model is in flight by use of the Digital Trim keys will automatically be stored in memory for that specific channel and model, providing that TRM was previously turned ON in the OPTIONS section of the program. See Programming Aircraft: Advanced Functions, page 30.

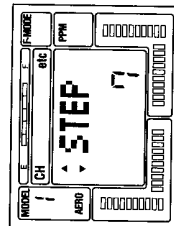
The Trim value in % that you set during flight is shown on the TRM screen for each Channel. In addition, there are bar graph indicators on the screen at all times that visually show how much trim has been set for Elevator, Aileron, Throttle and Rudder channels.

The amount that the Trim Function changes every time you press the Digital Trim key i.e., the Trim Authority, is variable, and it can be set by the user. For initial test flights of your model it is recommended that it be set at a value of 7 to allow for maximum ability to trim your model. After your first flight and your aircraft has been trimmed, you can then program a more precise adjustment for trim authority by use of the STEP function.

To change the Trim Authority, access the STW screen for EL as previously explained. Press the CH + key several times to select the "etc." screen. Now press the FUNCTION + key until you find the following screen that indicates STEP.



If you want to change the Trim Authority to a lesser number to make the Digital Trim keys less sensitive for a finer setting, press the DEC -NO key. If you want to increase the sensitivity to obtain a greater change, press the INC +YES key. The maximum value of Trim Authority is 15 and the minimum value is 0. CAUTION: If set to zero, you do not have any Trim capability.

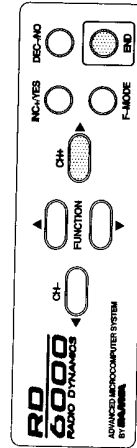


HELICOPTER ADVANCED OPTIONS

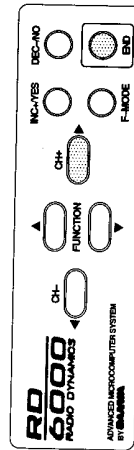
FUNCTION	DESCRIPTION
TRM (Trim Memory)	Trim can be programmed for each helicopter. The LCD provides an indication of the trim value, as well as the direction of the trim.
REV (Reverse)	Same as described in BASIC.
DIR (Dual Rate)	As described in BASIC.
EXP (Exponential)	This can be used to provide a mild servo throw around neutral, but the servo throw will increase as you increase stick movement.
CNT (Center)	As described in BASIC.
EPA (End Point Adjustment)	As described in BASIC.
TH-C (Throttle Curve)	When function is turned ON you can set the throttle curve.
PL-C (Pitch Curve)	When function is turned ON the pitch curves can be varied.
T-CUT (Throttle Cut)	You can set the point where the throttle can be cut.
RVL (Revolution Mixing Low Point)	The Low Point for revolution mixing can be set.
FAIL (Failsafe)	A PCM receiver has the capability to be programmed to respond to RF signal interference by holding the last known good command. If the signal is interrupted for more than one second, then the receiver can set the servos to the preprogrammed FAILSAFE positions.
NAM (Name)	You can use three letters to identify each model.
C-M1 (Compensation Mixer 1)	Compensation mixers can handle advanced mixing requirements.
C-M2	(Compensation Mixer 2) Same as C-M1.
STW (Stop Watch)	It can be used as a stop watch and to countdown to a preset time.
INT (Interval Timer)	This timer can be used to show the amount of time the transmitter has been turned on. If you desire, you can reset it to zero after charging the transmitter NICD pack.
STEP (Trim Authority)	The digital trim value authority can be set from 1 to 15. It is recommended when you first fly a model you use a value of 7 or more, to ensure sufficient trim is available.
TYP (Type of Model)	The type of model you want to fly, either fixed wing or helicopter can be selected.
SW-R (Switch Reverse)	All action by toggle switches on the transmitter can be reversed using this function.
CPY (Copy)	A setup for one model can be copied to another designated model number.
RST (Reset)	When this is used it will reset all set-up data to default values.
MOD (Modulation)	You can select either PPMFM, PCMFM-1 for STYLUS systems, PCMFM-2 for Vanguard and Infinity 660 systems, or PPMFM-Reverse for other brand receivers.
CLK (Click)	A beep sound can be heard every time you press a transmitter key. You can turn it on or off as desired.

PROGRAMMING AIRCRAFT ADVANCED FUNCTIONS

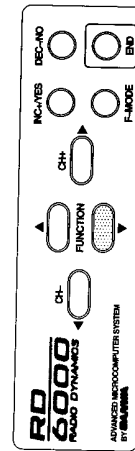
All of the FEATURES and FUNCTIONS for the BASIC RD6000 program are also contained in the ADVANCED program. Refer to that section for programming a model for Servo Reversing, Dual Rate, Center, End Point Adjustments, Model Selection, Model Type and Data Reset. To access the Aircraft ADVANCED Functions from the initial AR 1 Voltage screen, press the CH + key to obtain the STW screen.



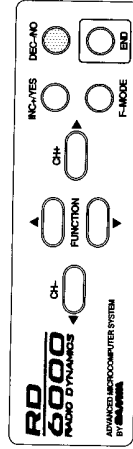
Now use the CH + key to move across the CH screen and select "etc.". Press the FUNCTION key to select BASIC. Now press the DEC -/NO key to turn BASIC OFF.



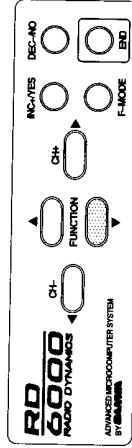
Press the FUNCTION key to select OPT (Options), which will give you the capability to Turn ON or OFF the specific functions you want to program.



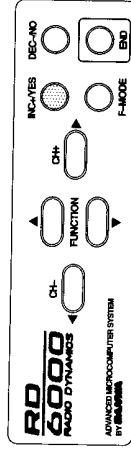
Now, use the CH + key to move across the CH screen and select "etc.". Press the FUNCTION key to select BASIC. Now press the DEC -/NO key to turn BASIC OFF.



Press the FUNCTION key to select OPT (Options), which will give you the capability to Turn ON or OFF the specific functions you want to program.



Press the INC +/YES key to obtain the menus of the OPTION Functions. The first one is TRM (Trim Memory) will flash and indicate ON. If you do not want to use the Trim Memory function, press the DEC -/NO key to turn it OFF.



Press the FUNCTION key to obtain the REV (Servo Reverse) screen. It will indicate it is ON however, you can turn it OFF as done above. All of the following Functions are selected in the same way. You can tailor your Helicopter ADVANCED program for individual models using any of the Functions you want ON or OFF by pressing either the INC +/YES or DEC -/NO key.

- | | | |
|------------------------------------|------------------------------|-------------------------------|
| DR (Dual RATE) | NAM (Name of Model) | RST (DATA Reset) |
| EXP (Exponential) | C-M1 (Compensation Mixer #1) | MOD (Modulation Selection) |
| CNT (Control Surface Center) | C-M2 (Compensation Mixer #2) | CLK (Beep Sound) |
| EPA (End Point Adjustments) | STW (Stop Watch) | B-F-S (Battery Fail Safe) |
| TH-C (Throttle Curves) | INT (Integral Timer) | DTM (Dynamic Trim Memory) |
| PL-C (Pitch Curves) | STEP (Trim Authority) | HOLD (Throttle Hold) |
| T-CUT (Throttle Cut) | TYP (Model Type) | SWH (Swash Mode) (CCPM) |
| RVL (Revolution Mixing) | SW-R (Toggle Switch Reverse) | ALL (All Functions Turned ON) |
| FAIL (Fail Safe for PCM Receivers) | CPV (Data Copy) | |

Press the END key twice to Exit the OPTION section of the program and obtain the STW screen.

NOTE: To be able to use a specific Function, it must be turned ON in the OPTION section of the program, made Active, Set, or a Value inserted for that Function that appears under EL, AL, RU, G, P-F, or "etc." sections of the program.

AIRCRAFT ADVANCED OPTIONS

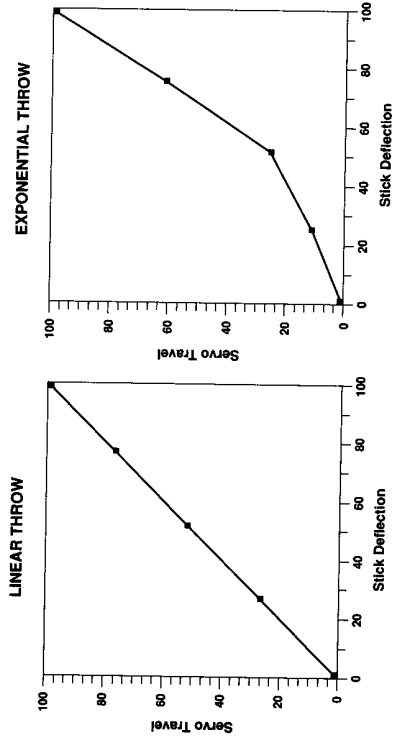
FUNCTION	DESCRIPTION
TRM (Trim Memory)	Trim can be programmed for each aircraft. The LCD provides an indication of the trim value, as well as the direction of the trim.
REV (Servo Reverse)	Reverses the direction of the servo throw.
DR (Dual Rate)	As described in BASIC.
EXP (Exponential)	This can be used to provide a mild servo throw around neutral, but the servo throw will increase as you increase stick movement.
CNT (Center)	As described in BASIC.
EPA (End Point Adjustment)	As described in BASIC.
E > F (Elevator to Flap)	When selected, it mixes the Elevator output to Flaps, i.e., the Flaps will move in conjunction with the movement of the Elevator control stick.
A > R (Aileron to Rudder)	This feature mixes the output of the Aileron channel to the Rudder channel and it is useful to provide coordinated turns with models such as a Piper Cub.
R > A (Rudder to Aileron)	The Rudder stick movements is mixed to the Aileron channel. It can possibly be used in knife-edge flight to take out any unwanted characteristics.
T > E (Throttle to Elevator)	The output of the Throttle channel is mixed to Elevator.
R > E (Rudder to Elevator)	The Rudder output is mixed to Elevator.
F > E (Flap to Elevator)	When your flaps are deployed, a small amount of elevator deflection can be used to remove any tendency for the aircraft to climb or dive.
T-CUT (Throttle Cut)	The point can be set where you want the engine throttle to be cut.
FAIL (Fail-safe)	A PCM receiver has the capability to be programmed to respond to RF signal interference by holding the last known good command. If the signal is interrupted for more than one second, then the receiver can set the servos to the preprogrammed FAILSAFE positions.
NAM (Name)	You can use three letters to identify each model.
C-M1 (Compensation Mixer #1)	Compensation mixers can handle advanced mixing requirements.
C-M2 (Compensation Mixer #2)	Same as C-M1.
STW (Stop Watch)	It can be used as a stop watch and to countdown to a preset time.
INT (Integral Timer)	This timer can be used to show the amount of time the transmitter has been turned on. After a recharge, you can reset to zero if desired.
STEP (Trim Authority)	The digital trim value authority can be set from 1 to 15. It is recommended when you first fly a model you use a value of 7 or more, to ensure sufficient trim is available.
TYP (Type of Model)	The type of model you want to fly, either fixed wing or helicopter can be selected.
SW-R (Switch Reverse)	All toggle switches on the transmitter can be reversed with this feature.

EXP (EXPONENTIAL HELI)

The RD-6000 allows the pilot to choose two settings for Exponential Throw for each of the primary flight channels, Elevator, Aileron, and Rudder.

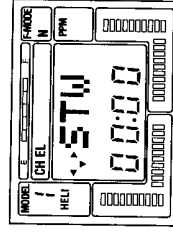
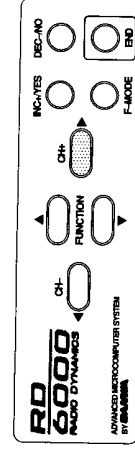
Exponential Throw is primarily used to isofteit or decrease, the control stick sensitivity of a control around the neutral point. With Exponential disabled, a control function servo will move in an amount proportional to the amount of control stick deflection, i.e., 50% stick deflection will result in 50% servo travel; 75% stick deflection will cause the servo to travel 75% of it presently set maximum throw. Exponential throw is available for all three of the helicopter flight Modes, i.e., Normal, FM, #1 and #2.

Exponential settings DO NOT change the amount of servo travel available at 100% stick deflection; rather they change the amount of servo travel that will occur with stick deflections less than 100%. The first 25% of stick deflection may be set to result in only 10% of total servo throw, making the control less sensitive around neutral. See the following illustrations.



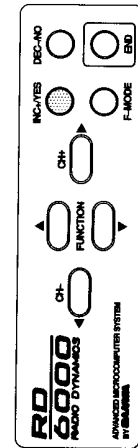
If you have not used Exponential functions before, you will want to start with a very small amount of Exponential (10 to 20%) to determine whether you like this sort of control response. Exponential is most useful where strong control response is desired at extreme stick positions, but softer response to small stick movement is desired in order to make very accurate, small corrections to flight path.

As an Example, to set Exponential for Elevator in Normal Flight Mode, access the EL Channel STW screen as shown below by using the CH + > Key.

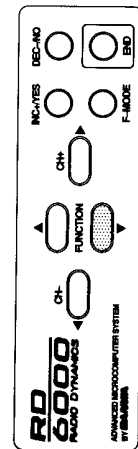


STW (STOPWATCH) Contd.

Use the INC +YES key to set a value for the Start of your count down; as an example set it at 10:00 minutes. The screen will look like the following illustration. If you want to decrease the time, use the DEC -/NO key. If you want to clear the time, press the INC +YES and the DEC -/NO keys simultaneously.



If you want to have the transmitter operate in the BASIC mode, perform the following steps. After you have set the desired countdown time, press the FUNCTION + key to return to the BASIC screen. Use the CH +YES or the CH -/NO key to turn BASIC back ON. (If you do not want to operate the transmitter in the BASIC mode, disregard this step). Press the END key to return to the initial AR 1 screen.



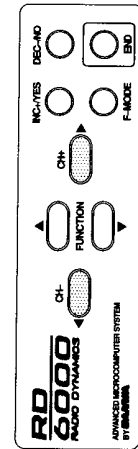
You can now start the Stop watch when you are on any of the Channel indicator screens that displays the STW screen and the time you previously programmed. Press the INC +YES key to start or stop the count down. When the time reaches 10 seconds, a tone will be heard, and one will also be heard every second as it counts down to Zero. When the timer reaches Zero, a steady tone will be heard, and it will start counting up. Press the INC +YES key and DEC -/NO keys simultaneously to reset the timer to your previously programmed time.

Note: To program a time, you must be in the BASIC OFF mode of operation.

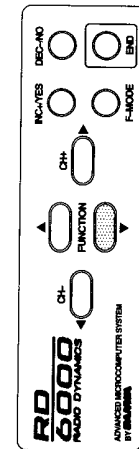
T-CUT (THROTTLE-CUT)

Another useful function provided by the RD6000 for engine powered models is T-CUT, Throttle Cut. Normally you set your throttle stick in the extreme low position and use EPA and the digital trim to obtain a steady low engine idle speed. However, if you want to stop the engine at the end of the flight you would have to use the throttle digital trim and later re-trim for proper idle. The T-CUT function solves this problem by providing a push button that, when pushed, overrides the throttle sticks low throttle position and drives your throttle servo to a lower position, stopping the engine.

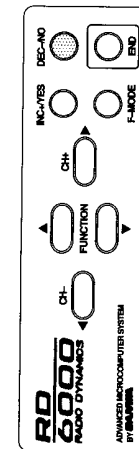
In order to use T-CUT, press either the CH - or the CH + key to select TH on the Channel indicator.



Next, press the FUNCTION + key several times to obtain the following screen.



Press the DEC -/NO key to set a value of -100%. Place the throttle stick in the extreme low position. Press and hold down the Throttle Cut push button located above the elevator/aileron stick assembly. The throttle servo will then rotate further to close the engines carburetor and stop the engine.

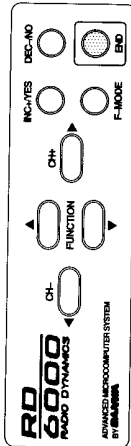
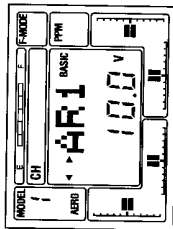


PROGRAMMING MODEL SELECTION

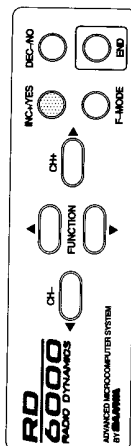
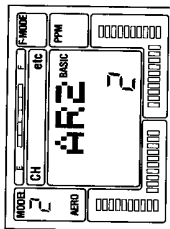
HOW TO SELECT MODEL SET-UPS: M-SL (Model Select)

The RD6000 has built in memory to store four model set-ups in any combination of model types. To use or modify one of the model set-ups you first must select M-SL in the BASIC program.

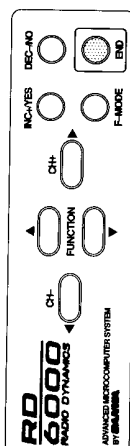
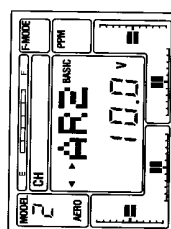
Assume that you want to select a second model. To do so, press the END key to bring up the initial screen that indicates transmitter voltage and model number.



Press the CH + key to scroll to "etc.". Use the FUNCTION key to select MSL. Next press the INC +YES key and the screen will flash MSL to indicate you can select a second model. Press the INC +YES key again to select the next or following model such as AR 2.



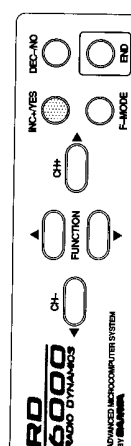
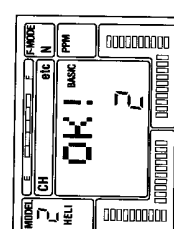
Press the end key three times to return to the initial screen which will show the model number and the transmitter battery voltage reading.



Note: If the model type is incorrect, i.e., HELI rather than AERO, continue with the model selection procedure. The Model TYPE can then be selected on the TYP screen.

TYP (Model Type)

To select the type of model you wish to program, press the CH + key to scroll to "etc.". Next press the FUNCTION key twice to select TYP. Now press the CH + key to select the next model type, either HELI or AERO. The screen will flash YES with type of model indicated on the Liquid Crystal Display (LCD). To confirm your selection, press the INC +YES key and the screen will indicate OK!



Press the END key three times to return to the initial screen that will then show your model number/type and transmitter battery voltage.

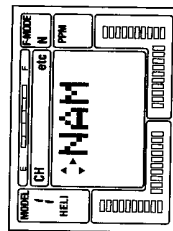
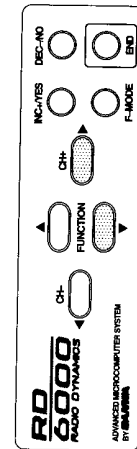
To test the action of your preprogrammed Fail Safe, place your throttle stick in the high throttle position. Then turn Off your transmitter power switch. Your throttle servo will drive to the low throttle position that you previously programmed. To return to the INHIBIT condition, press the INC +YES and the DEC -NO keys simultaneously.

The same procedure as indicated above applies to setting the Fail Safe positions for the other channels. For example, if you want to have a small amount of UP Elevator applied during Fail Safe, first select the Elevator channel on the Channel indicator. Then scroll down to the EL Fail Safe screen. Hold a small amount of UP Elevator and press the INC +YES key to program the amount of elevator you want for Fail Safe. Test as indicated above.

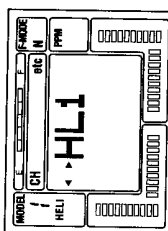
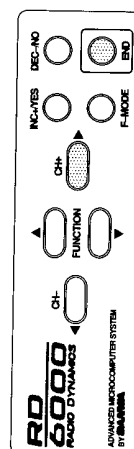
NOTE: If interference is present when Fail Safe is not active, in PCM Modulation, the receiver will "hold" the last command received until the signal is again established.

NAM (NAMING YOUR MODEL)

The RD6000 provides the capability for you to designate each of the four models you have programmed by use of a 3 digit name. Use the CH + key to select the left screen. Press the FUNCTION key twice to select the NAM screen.



Now press the CH + key to select the screen for Heli model number one. The H will be flashing to indicate you can change that letter.



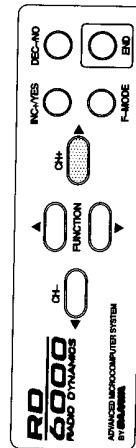
Press the INC +YES key to scroll through the letters of the alphabet and make a change in the first letter. You may use any combination of LETTERS (upper and lower case), NUMBERS, Colon(:), Dash (-), Character, or blank space to designate a model. When you have finished the first letter or number, press the CH + key to move to the next letter and set it in a similar manner. The DEC -NO key can also be used to change a letter or number in the opposite direction. Press both the INC +YES and DEC -NO keys simultaneously to return to the default setting of HLI. Once you have completed designating your present model, press the END key twice to return to the left column heading.

G (LANDING GEAR)

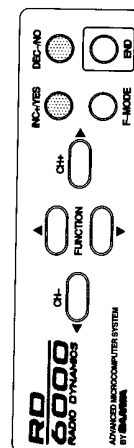
In most cases, (almost all cases in the past) the total servo throw for the landing gear function could not be set by the transmitter, because most retract servos are SWITCHED (non-proportional) servos. With these servos, mechanical adjustment is the only method available to ensure proper operation of the retracts.

Airtronics now offers a high Torque PROPORTIONAL retract servo, p/n 94739. With this servo and the RD6000 transmitters, End Point Adjustments for the retract servo are possible, independently setting the "Down" and "Up" lock positions in mechanical retracts, and precise adjustment of the air valve in pneumatic retracts.

To use this function, select the EPA function screen as shown earlier screen. Press the CH + key to scroll across the Channel indicator on the screen until you reach G (Landing Gear).

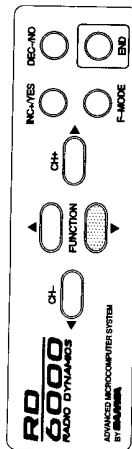


Note that you must set the value for UP and Down landing gear by use of the INC +YES and DEC -NO keys. Activate the Landing Gear toggle switch located on the upper left top of the transmitter when setting the values for the Landing Gear. You can vary each one from 0% to 150%. The default values for Landing Gear are -125% and +125%. To restore the landing gear channel to the default values, press the INC and DEC keys simultaneously.

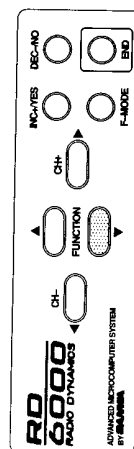


Press the STOP key to return to the STW screen.

Now, press the FUNCTION key to access the SLV (Slave) screen. Use the INC +YES key to make the screen read TH(Throttle)



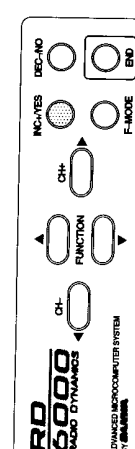
Next, press the FUNCTION key to see the C-MIX1 screen where you will set a value for the RU + TH mix.



Having selected the Master and Slave channels, the next step is to set the amount of mixing and the direction of the slave channels response to the Master channels transmitter control.

You have the option of having the Slave servo (Throttle) respond to a Right Rudder stick movement only, to Left Rudder stick movement only, or respond to stick movement in both directions. In this example you only want the Throttle servo to cause an increase in engine speed with Left Rudder stick movement.

Move the Rudder stick back and forth. Note the change in the small arrows that are above the 0% reading which indicate the direction of stick movement. Move the Rudder stick to the left so that the arrow indicates that direction of movement. Now, press the INC +YES key to set a value of 5% as shown in the following screen for a Left Rudder command. If the throttle servo moves the throttle opposite to the direction desired, simply change the value to -5%. This will give the same amount of mixing but in the opposite direction.



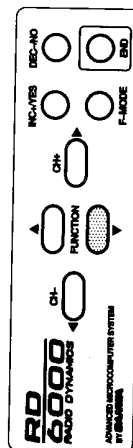
With the value and direction programmed you now have a +5% mixing of Throttle with Rudder in one direction, i.e., left rudder stick will now give up throttle response PLUS left rudder response, but right rudder stick will not cause any throttle movement.

The range of adjustment is from -150% to +150%, which will make available the full range of servo travel for mixing. Push the Rudder stick to the right and hold it. Note that the mixing is 0% for the

D/R (DUAL RATE)

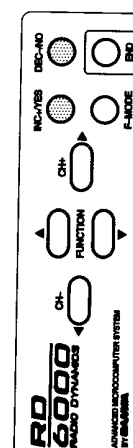
Dual Rate adjustments allow you to switch from your "standard" control deflection to a reduced amount of throw by simply flipping a switch. The Actual speed of signal processing and servo movement are not affected by the Dual Rate settings, only the amount of total throw available.

The RD6000 allows Dual Rate settings for Aileron and Elevator. To access the Dual Rate setting for Elevator when you are on the STW or REV screen, press the FUNCTION ← key to reach this screen.



The screen tells you the present rate status, and when a Dual Rate is set to the ON position, the alter-rate rate for that control function that is presently set in the program. It is important to understand that the term "Dual Rate" is used because it is an old and familiar description. We are showing an example for the Elevator channel, however, all of the other channels are set in the same way.

The Dual Rate setting can be varied from 0 to 150%. Default for Dual Rate 1 is 100%. We recommend you leave it at that setting and only change the setting for Dual Rate 2, i.e., when the Dual Rate Switch on the upper left side of the transmitter panel is turned ON. The normal convention for Dual Rate reduced throw is the switch in the UP position to turn ON Dual Rate. When you do so, note that the Screen will appear as follows. Press the INC-YES or DEC-NO key to increase or decrease the value. An initial setting of 50% is a good starting point and you can tailor it later following a test flight.



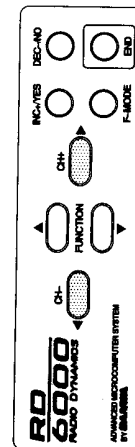
The Dual Rate switch for Aileron is located above the right stick assembly and is labeled AI DR and C-MIX 2. Aileron Dual Rate is programmed similar to that as done for Elevator. To set it for Aileron, place the AI DR switch in the upper position and use the DEC-NO key to reduce the value shown on the screen to something less than 100%.

CAUTION: Prior to taking off your model, check the position of both of your Dual Rate switches to make sure they are in the position you want!

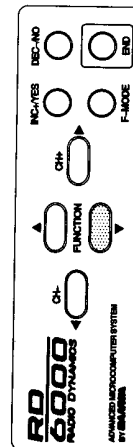
SW-R (SWITCH REVERSE)

The SW-R Function allows you to reverse the action of the five toggle switches located on your RD6000 transmitter. The default of the SW-R Function is in the NOR (normal) position. **CAUTION!** The switch reversal function is not selective. If you change it from NOR (normal) to REV (reverse), all switches will be reversed in their action!

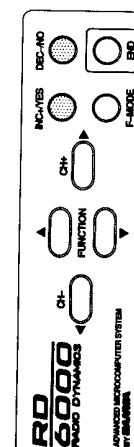
To access the SW-R Function, select "etc" on the Channel indicator using either the ← CH- or the CH+ → keys. (Note that you must be on the STW screen to move horizontally to "etc")



Press the FUNCTION → key to scroll down to the SW-R (switch reverse) screen.



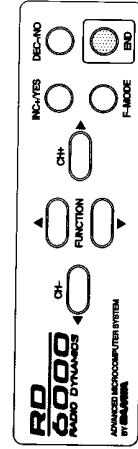
Now, press either the INC-YES or the DEC-NO keys to change the indication for NOR to REV. All switches on the transmitter are now reversed in their function. Press END to return to the STW screen.



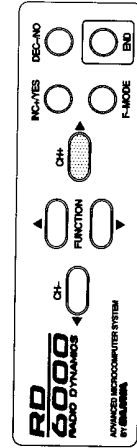
IMPLEMENTATION OF BASIC CONTROL FUNCTIONS

In this section you will learn how to implement the BASIC control functions, and tailor the servo movement and centering for each control.

Pressing the END on the front panel several times will bring you to the following screen, the Initial Screen that indicates the current model number, PPM modulation, and the transmitter NICd pack voltage.



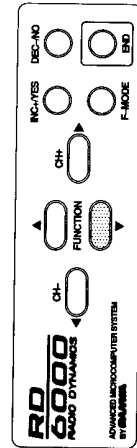
Press the CH + key to obtain the STW screen. The Elevator channel will appear on the upper part of the screen. The Model number and AERO will be present on the left side of the screen and the Stop Watch will indicate zero, since no time has been programmed.



REV SERVO REVERSING

The RD6000 allows you to electronically REVERSE the direction of rotation for each of the servos in use. This allows you to hook up your control linkages and pushrods in the most mechanically desirable manner, without regard to the direction of servo movement. After installing your linkages, check to see if any of the controls move in the wrong direction when you move the controls. If so proceed as follows for reversing the Elevator channel. Reverse for all other channels are done the same way.

Press the FUNCTION + key to arrive at the following screen:

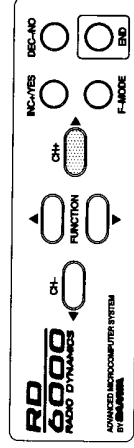


If the Elevator servo moves in the wrong direction, press the INC +/Yes key to reverse the servo. The screen will change from NOR (Normal) to REV (Reverse) every time you press the INC +/YES key. To move to the Elevator DR (Dual Rate) screen, press the FUNCTION + key.

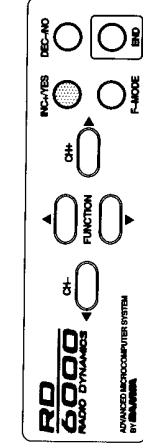
On the above screen, the destination has been set to Model #3. MAKE CERTAIN that this model set-up is not one you wish to save, because when you copy the Model #1 set-up into Model #3, all data that was in Model #3 is replaced with the Model #1 data! At this point Model #3 data is still intact, so if you wish to change the destination for the copied data, do so before proceeding.

Having selected both the data source (Model #1) and the desired destination (in this example Model #3), you can now proceed to confirm the copy function.

Press the CH + key to access the next screen as shown below. The "YES" will be blinking.

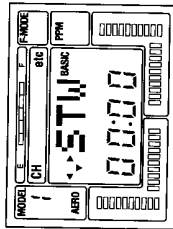
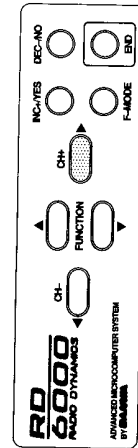


Press the INC +/YES key to confirm your data copy function. The screen will change to the following screen to inform you that the process has been completed, and that Model #1 and Model #3 now have the same data, (in this example Model #1).

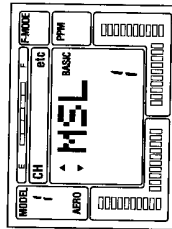
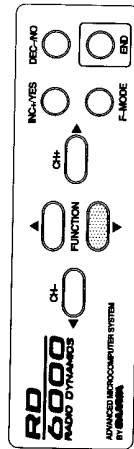


Press the END key to return to the CPY select screen.

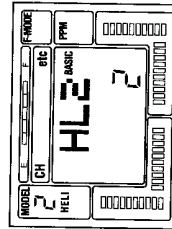
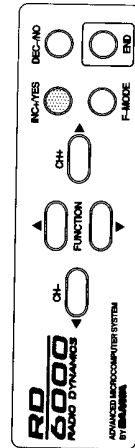
Press the CH + > key to scroll across the CH (channel) indicator on the screen to "etc".



Press the FUNCTION > key once to access the MSL (model select) screen.



Next, press the INC +YES key until the screen reads HL 2 (Heli model 2). Now press the END key and the screen will show that you have selected model number two which is a helicopter set-up. However, since you are a fixed wing aircraft pilot, you want all of the transmitter set-ups to be for fixed wing aircraft; therefore, the type must be changed from Heli to AERO.

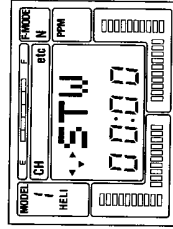
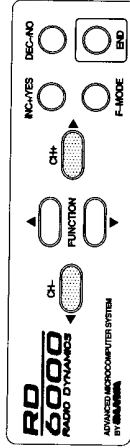


CLK (CLICK)

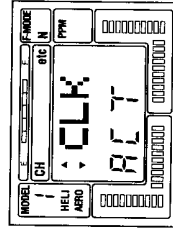
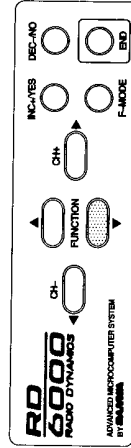
The RD6000 transmitter normally is set to emit an audio tone when ever the programming keys are pressed, when values are changed and when the stop watch function is started, stopped or reaches the final ten seconds of count-down.

It is possible to disable the "Click" or audio tone, using software settings. When the "Click" tone is disabled, ONLY the stop watch count-down will still cause an audio tone to be emitted.

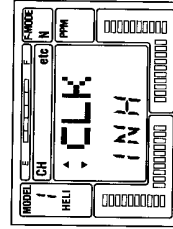
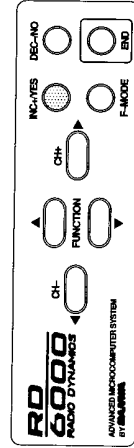
To set or disable the "Click" function, select "etc" on the Channel indicator using either the < CH - or the CH + > key.



Press the FUNCTION V key to access the CLK (CLICK) screen.

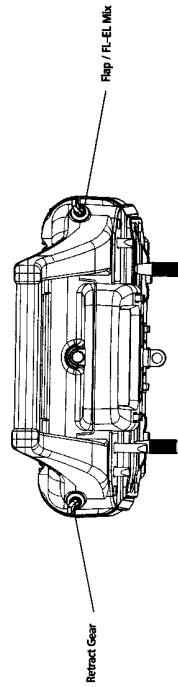
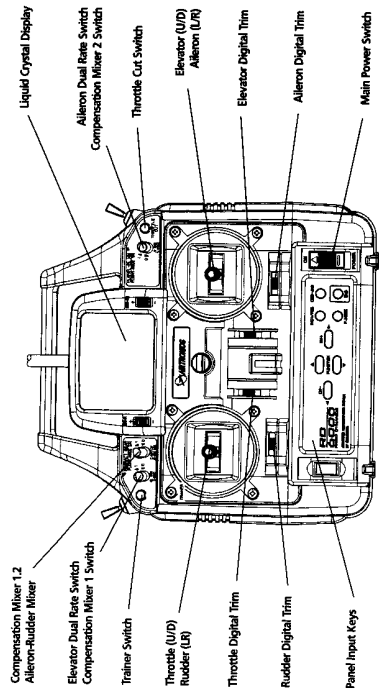


Press the INC +YES key to change the indication from ACT to INH, to disable the Click function. (pressing either the INC +YES or the DEC -NO key will toggle the function between "INH" and "ACT" settings).



Press the END key to return to the STW screen.

RD6000 USERS MANUAL-AIRCRAFT



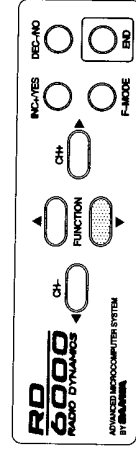
92777 RECEIVER CHANNEL ASSIGNMENTS		
Receiver Plug Number	Plug In Servo For:	
1	Elevator	
2	Alleron	
3	Throttle	
4	Rudder	
5	Gear	
6	Flap or 2nd Alleron Servo	
7/8	Battery	

HOLD (THROTTLE HOLD)

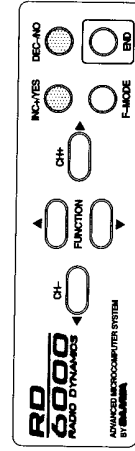
When the HOLD function is in INH (inhibit), Flight Mode #2 reverts to an IDLE-UP function. When the HOLD function is made ACT (active) Flight Mode #2 becomes the Throttle Hold setting.

Throttle Hold allows the pilot to practice and perform autorotation approaches and landings without actually killing the engine of his helicopter. Actual operation of your engine will be required to determine the optimum setting for autorotations. Generally the engine will be adjusted to a reliable idle speed that is low enough to disengage the clutch.

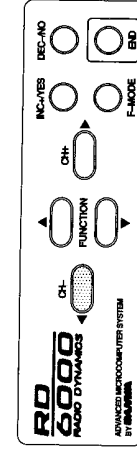
Press the CH + > key to select letc on the Channel Indicator. Now, press the FUNCTION + key and scroll down the menu to the HOLD function screen.



Press either the INC +YES or the DEC -NO key to change the screen to ACT (active). Then press the END key to return to the STW screen.

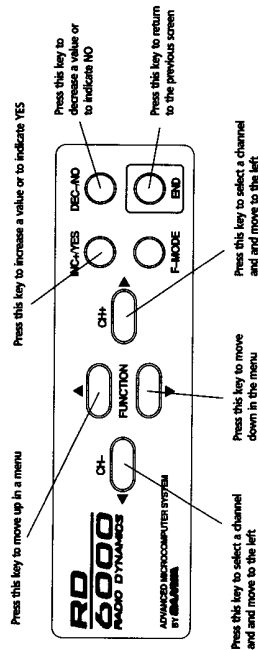


Use the < CH - key to select TH (throttle) on the Channel Indicator.



USING THE RD 6000 MICRO-PROCESSOR

Airtronics has invested a large amount of design effort to ensure that the powerful capabilities of the RD 6000 are as simple as possible to use. This manual has been written to offer the user complete instructions for either fixed wing aircraft or helicopter models. The manual is divided into three sections. One for Introduction, another for aircraft (both powered and sailplane), and one for helicopters. You only need to read the Introduction section and the one that applies to your type of model. In most cases all of the programming of a set-up is accomplished through the use of the input keys of the RD6000 transmitter. The function(s) of these keys are shown below.

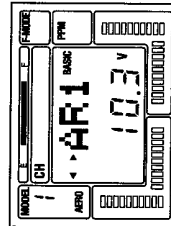


Note: Pressing the INC+YES and DEC-NO keys simultaneously will clear a setting, and return it to the default value.

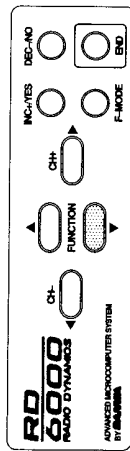
The RD6000 Micro-Processor program is divided into two sections. A BASIC section provides you with the capability to program set-ups for four models using standard features and functions. You can initially start flying your model using the BASIC program functions, which will satisfy the requirements of most flyers. The more experienced flyer may want to take advantage of the Advanced performance features and functions which are available on the RD6000 for both aircraft and helicopters when BASIC is turned OFF. All of the features and functions, both BASIC and the more advanced functions are addressed in this manual for each type of model.

BAR GRAPH VOLTAGE INDICATOR

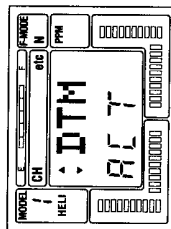
As a convenience, the RD6000 transmitter provides a Bar Graph transmitter battery voltage indicator at the top of the Liquid Crystal Display screen labeled "E" and "F". The "E" symbol indicates FULL and the "F" indicates EMPTY. You can consider it similar to a visible "gas gauge". The Bar Graph indicator is in addition to the normal battery voltage that is displayed on the main screen when ever you select either AR or HELI by pushing the END key twice. When the Bar Graph reads less than half, you should not fly until you recharge the transmitter.



Now, press the FUNCTION V key to scroll down the menu to the DTM screen.



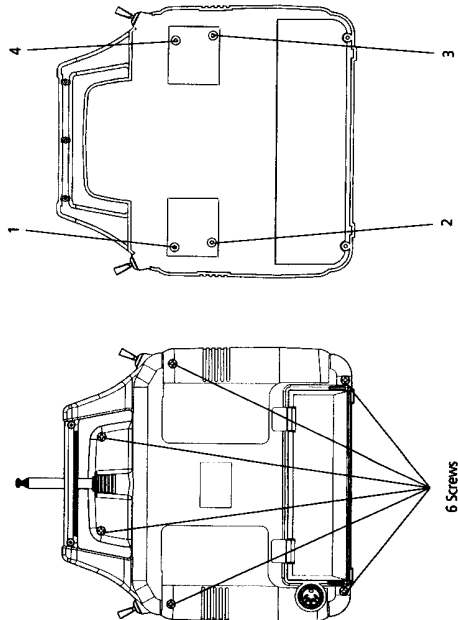
Press the INC +YES or the DEC -NO key to change DTM to ACT (active). Pressing either key will toggle the indication from ACT to INH. Press the END key to return to the STW screen.



Once activated, the Dynamic Trim Memory function is transparent to the pilot. Simply activate a Flight Mode, (for instance "Normal") and trim the aircraft for stable hover using the digital trim keys. Then, switch to another flight mode, and do the same as desired. Note that when you change flight modes, the servos affected by the DTM function will return to the original neutral position regardless of the value of trim set for the previous flight mode. However, the throttle channel is an exception to the rule. The trim that is set for one flight mode will affect all other flight modes. Also be aware that the throttle trim key only affects the low throttle position of the throttle servo. Throttle trim DOES NOT affect the collective pitch servo.

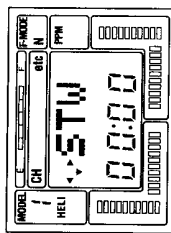
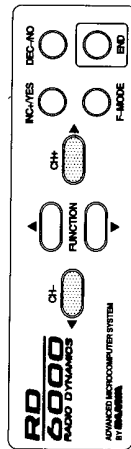
TRANSMITTER STICK TENSION ADJUSTMENT

To adjust the spring tension of the transmitter sticks you need to remove the back of the transmitter. First remove the NiCd battery pack from the transmitter. Now remove the eight screws that hold the case back in place, two at the lower back, two at the top of the back, two on the handle, and two near the antenna. Once the screws are removed swing the back of the case away from the transmitter, being careful of the Trainer plug wiring.

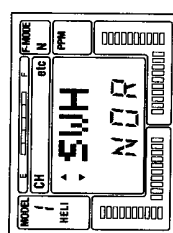
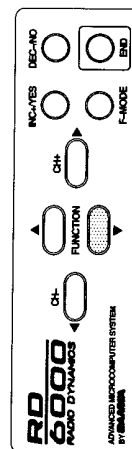


There are four locations for the stick tension adjustment screws. Your RD6000 will only have three screws installed because the stick controlling the throttle is ratcheted and has no tension adjustment. The #1 and #3 screws adjust the tension for the vertical motion of each stick. The #2 and #4 screws adjust the tension for the horizontal motion of each stick. To make the tension adjustment, use a small Phillips type screwdriver to turn the adjustment screws. Turning the screw clockwise will increase the stick tension; turning it counterclockwise will decrease the tension. Once you have completed your stick adjustments, replace the case back and install the NiCd battery pack.

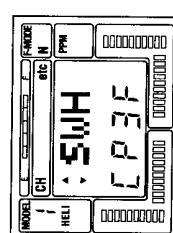
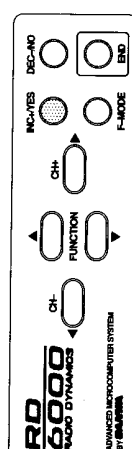
Press either the CH- or the CH+ key to select "etc" on the channel indicator.



Press the FUNCTION key and scroll down to the SWH (Swash Mode) screen. It will indicate it is in NOR (Normal).



To activate a specific CPCM mode, press the INC+ / Yes key once to select CP3b, three times for CP4b and once more for CP4b. If you want to return to NOR (Normal), press both the INC+ / YES and the DEC-NO keys simultaneously to select the default setting.



AIRBORNE COMPONENTS

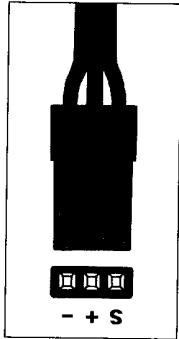
While your systems batteries are charging, you can familiarize yourself with the airborne portion of your radio. The airborne portion of the radio refers to any components which are mounted in your plane or helicopter and carried aloft when you fly. The airborne components consist of the receiver, which receives the signals from the transmitter, decodes them, and relays the commands to the servos; the servos, which are simply electronically controlled motors used to move the controls of the plane; the NICd battery pack, which provides power for the receiver and servos to operate; and the switch harness which allows you to turn the airborne package on and off.

PCM RECEIVER LOW VOLTAGE ALARM

The PCM receiver for the RD6000 has the ability to warn you when the airborne battery pack voltage drops below 4.1 volts. When the airborne battery arrives at this voltage, the throttle servo will move to a reduced throttle position for 0.5 seconds, then return to normal. This cycling of the throttle will occur about once each minute until you land and recharge the NICd battery pack. IT IS RECOMMENDED THAT YOU LAND IMMEDIATELY if the receiver failsafe warns you of low voltage conditions! If you wish to disable the Low Voltage Alarm, you can do so by inhibiting the B-F-5 Function in the Advanced portion of the RD6000 transmitters program.

CONNECTORS

Your RD6000 unit is equipped the new universal AIRTRONICS "Z" connectors which are color coded blue, and are electrically compatible with the receivers of other radio control system manufacturers. The connectors are rugged but should be handled with care. Note that these connectors are not compatible with older AIRTRONICS R/C equipment unless Adapter pin 99399Z is used!



"Z" CONNECTOR

AUDIO LOW VOLTAGE ALARM

Your RD6000 transmitter is equipped with an Audio Alarm which will sound whenever the transmitter batteries drop below 9.5 volts during transmitter operation. If the alarm sounds while you are flying, land immediately and don't operate the transmitter until it has been charged for 12 hours. The transmitter should normally operate 120 to 150 minutes before the alarm sounds. If the alarm sounds even after the batteries have been on charge for the required time it indicates that there is a problem with either the battery pack or the transmitter, and you should contact AIRTRONICS about service.

RD6000 / TYPE: AERO

MODULATION PPM / PCM1 / PCM2 / PPM-R

MODEL # MODEL NAME

C-MIX		MAS	SLA	VALUE	T-CUT	%
	1			←↑	STW	:
				→↓		
	2			←↑	STEP	
→↓						
OPT ALL ON	TRM	REV	D/R	EXP	CNT	EPA
	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF
	E→F	A→R	R→A	T→E	R→E	F→E
	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF
	T-CUT	FAIL	NAM	C-M1	C-M2	STW
	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF
	INT	STEP	TYP	SW-R	CPY	RST
	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF
	MOD	CLK	B-F-S	FLAPE	SPOIR	DELTA
	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF
	V-TAIL	AL-DIF	L-DIF	CR-LA	CR-RA	D/R-A
	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF
	SW-R					NOR / REV
	B-F-S					INH / ACT
	AL-DIF					%
	L-DIF					%
	CR-LA					%
	CR-RA					%
	D/R-A					INH / ACT
	BASIC					ON / OFF

ACADEMY OF MODEL AERONAUTICS 5151 East Memorial Drive Muncie, Indiana 47302

The Academy of Model Aeronautics (AMA) is a national organization representing modelers in the United States. We urge you to examine the benefits of membership, including liability protection in the event of certain injuries. The Academy has adopted simple and sane rules which are especially pertinent for radio controlled flight as the OFFICIAL AMA NATIONAL MODEL AIRCRAFT SAFETY CODE, which we have partially reprinted below:

1. I will not fly my model aircraft in sanctioned events, airshows or model flying demonstrations until it has been proven to be airworthy by having been previously, successfully flight tested.
2. I will not fly my model higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give the right-of-way and avoid flying in the proximity of full-scale aircraft. Where necessary, an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full-scale aircraft.
3. Where established, I will abide by the safety rules for the flying site I use, and I will not willfully and deliberately fly my models in a careless, reckless and/or dangerous manner.
4. I will have completed a successful radio equipment ground range check before the first flight of a new or repaired model.
5. I will not fly my model aircraft in the presence of spectators until I become a qualified flyer, unless assisted by and experienced helper.
6. I will perform my initial turn after take off away from the pit or spectator areas, unless beyond my control.
7. I will operate my model using only radio control frequencies currently allowed by the Federal Communications Commission. (See chart below) Only properly licensed amateurs are authorized to operate equipment on amateur band frequencies.

72 MHz BAND

CH #	Freq.	CH #	Freq.	CH #	Freq.	CH #	Freq.
11	72.010	21	72.210	31	72.410	41	72.610
12	72.030	22	72.230	32	72.430	42	72.630
13	72.050	23	72.250	33	72.450	43	72.650
14	72.070	24	72.270	34	72.470	44	72.670
15	72.090	25	72.290	35	72.490	45	72.690
16	72.110	26	72.310	36	72.510	46	72.710
17	72.130	27	72.330	37	72.530	47	72.730
18	72.150	28	72.350	38	72.550	48	72.750
19	72.170	29	72.370	39	72.570	49	72.770
20	72.190	30	72.390	40	72.590	50	72.790
						51	72.810
						52	72.830
						53	72.850
						54	72.870
						55	72.890
						56	72.910
						57	72.930
						58	72.950
						59	72.970
						60	72.990

INITIAL PREPARATION

PACKAGING:

The packaging of your Airtronics RD6000 Radio Control System has been especially designed for the safe transportation and storage of the radio's components. After unpacking your radio, DO NOT DISCARD THE CONTAINERS! You should set the packaging aside for use if you ever need to send your radio in for service, or to store your radio in case you do not plan to use it for an extended period of time.

NICd BATTERY CHARGING:

The first thing you should do after unpacking your RD6000 system is to charge the transmitter and receiver NICd batteries. You should charge the transmitter and receiver NICd batteries for 24 hours. Subsequent recharges should require only a 12 hour charge.

RD6000 / TYPE: HELI

MODULATION PPM / PCM1 / PCM2 / PPM-R

MODEL #

MODEL NAME

PL-CV	PL	P1	P2	P3	P4
N	%	%	%	%	%
1	%	%	%	%	%
2	%	%	%	%	%
2 (HOLD)	%	%	%	%	%

RV	PL	PM	PH	T-CUT
N	%	%	%	
1	%	%	%	STW
2	%	%	%	
2 (HOLD)	%	%	%	STEP

C-MIX	MAS	SLA	VALUE	SW-R	NOR / REV
1			←↑		
2			→↓		

TRM	REV	D/R	EXP	CNT	EPA
ONOFF	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF
TH-C	PL-C	T-CUT	R/L	FAIL	NAM
ONOFF	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF

C-M1	C-M2	STW	INT	STEP	TYP
ONOFF	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF
SW-R	CPY	RST	MOD	CLK	B-F-S
ONOFF	ONOFF	ONOFF	ONOFF	ONOFF	ONOFF

DTM	HOLD	INH / ACT
ONOFF	ONOFF	ON / OFF
DTM	HOLD	SWH
ONOFF	ONOFF	ONOFF

DTM	HOLD	SWH																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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RD6000 RADIO CONTROL SYSTEM

Thank you for selecting the Airtronics RD6000 Radio System. In designing the RD6000 we have made every effort to provide you with a radio that will allow you to extract the maximum performance from your powered airplane, sailplane or helicopter, while at the same time simplifying the task of setting up and adjusting your model. These instructions are written in great detail to help you understand what all of your RD6000 capabilities are. Because of the many features of the RD6000, this manual is quite long. Don't be intimidated! To actually use the system, you may only need to read the INTRODUCTION section, and study the section that applies to your type of aircraft. Each type of aircraft, i.e., fixed wing and helicopter has its own self-contained section describing each feature and its implementation.

Again, we appreciate your selection of an Airtronics Radio Control System and wish you many hours of flying enjoyment.

RD6000 TRANSMITTER SPECIFICATIONS:

Transmitter Type:	6 Channel, Dual Stick with propriety Microprocessor
Dimensions:	W: 7.5" x H: 8.0" x D: 2.5"
Weight:	1lb. 10ozs.
Power Output:	600 mWatts
Frequencies:	72 MHz
Modulation:	PPM/FM, PCM/FM and PPM/FM Invert
Power Supply:	9.6 Volt, 600 mAh Sanyo NiCd
Current Drain:	180 mA
Temperature Range:	0 to 160 degrees F.
Pulse Width:	1.5 ms (nominal)

RD6000 RECEIVER SPECIFICATIONS

Receiver Specifications:	92777 PPM/FM 7 Channel, Super Narrow Band, with Universal "Z" Connectors. (The following additional receivers are compatible if Part number 99399 "Z" Adapters are used): 92745 PPM/FM 4 Channel, Micro Super Narrow Band, 92765 PPM/FM 6 Channel, Super Narrow Band, 92065 PCM/FM 6 Channel, Super Narrow Band, or 92185 PCM/FM 8 Channel, Super Narrow Band receiver.
Receiver Sensitivity:	1.5 microvolts
Dimensions:	L: 2.25", W: 0.6", H: 0.82"
Weight:	1.2 ounces
Receiver Power Supply:	Four Cell, 4.8 Volt, 600 mAh Sanyo NiCd

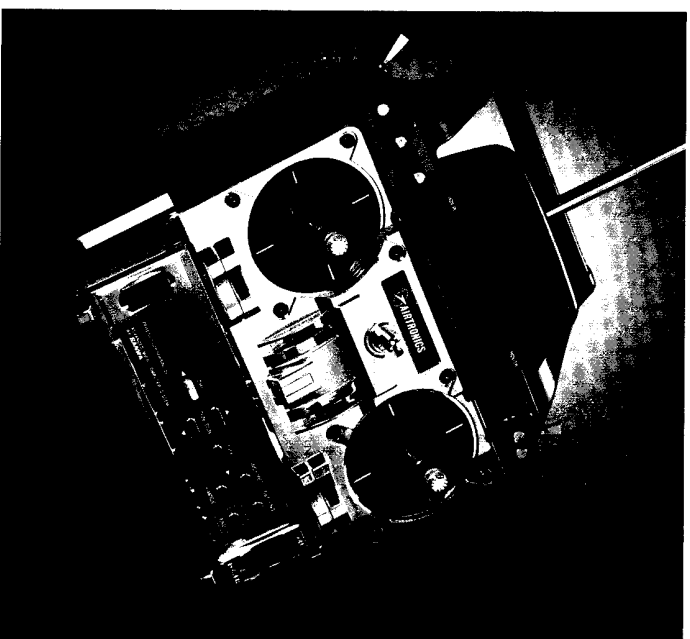
This equipment has been tested in accordance with the requirements contained in the appropriate Commission regulations. To the best of our knowledge, these tests were performed using measurement procedures consistent with industry or Commission standards and demonstrate that the equipment complies with the appropriate standards. Each unit manufactured, imported or marketed, as defined in the Commission's regulations, will conform to the sample(s) tested within the variations that can be expected due to quality production and testing on a statistical basis.

We further certify that the necessary measurements were made by Kansai Electronic Industry Development Center, Ikoma Emission Measurement Station, 10630, Takayama-Cho, Ikoma-City, Nara, 630-01 Japan.



RD6000

Radio System
Operating Manual



Airplane • Helicopter • Sailplane



GET THE ADVANTAGE

Airtronics Inc. 1185 Stanford Court, Anaheim, CA 92805 (714) 978-1895 Fax: (714) 978-1500

NOTES

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NOTES

RD6000 TRANSMITTERS FEATURES

The RD6000 narrow band PWM/FM n PCM/FM computer radio control system is designed for use by powered model, sailplane and helicopter pilots who demand a quality product. The RD6000 is packed with all of the capabilities that the beginner as well as the more advanced modelers demand for all three types of flying. It has the features available to get the most out of any type of model.

BASIC Program Features for all types of models (BASIC turned ON)

4 Model Memory	Model Type selection
Stop Watch	Center Adjust on El, A1, Th, RU and P-F
Digital Trims	Data Reset
Servo Reversing on all channels	LCD Transmitter Voltage Meter
Dual Rate on Elevator and Aileron Channels (Plus Rudder on Hail)	High Capacity Sanyo Transmitter/Receiver NiCd Batteries
Large Screen Liquid Crystal Display (LCD)	Adjustable Stick Tension and Length
End Point Adjustment on all channels	Low Battery, High Throttle and Power Alarms

AIRCRAFT ADVANCED FEATURES (BASIC turned OFF)

All of the features listed under the Program with the BASIC turned ON are also included in this Advanced Features section.

PWM/FM, PCM/FM and PWM/FM Reverse Modulation	V-Tail Mix
Exponential	Aileron Differential
Trim Memory	Landing Differential
Trim Authority (STEP) For Digital Trims	Crow
Sub Trim	Dual Rate Alarm
Model Naming (3 Letters)	Menu Options
Failsafe/hold (PCM Rx only)	Flap to Elevator Mix
Receiver Battery Failsafe (PCM Rx only)	Throttle to Elevator Mix
Low Battery Alarm	Rudder to Aileron Mix
Integral System Timer	Aileron to Rudder Mix
Data Copy	Rudder to Elevator Mix
Flap/ron Mix	Two Separate Compensation Mixers
Spoiler Mix	Switch Reverse
Elevon Mix	

ADVANCED HELICOPTER FEATURES (BASIC turned OFF) All of the features listed under the

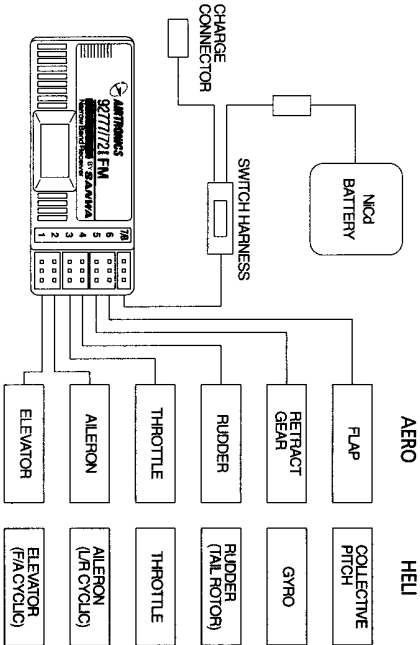
Program with the BASIC turned ON are included in this Advanced Features section.

High Point Throttle/Pitch Curve Adjust	End Point Adjustments on El, A1, Th and Ru
3rd Point Throttle/Pitch Curve Adjust	Trim Authority
2nd Point Throttle/Pitch Curve Adjust	Trim Memory
1st Point Throttle/Pitch Curve Adjust	Model Naming (3 Letters)
Low Point Throttle/Pitch Curve Adjust	Integral Timer
Revolution Mix High Point	Switch Reverse
Revolution Mix Middle Point	Data Copy
Revolution Mix Low Point	PWM/FM, PCM/FM and PWM/FM Reverse Modulation
Gyro	Menu Options
Dynamic Trim Memory	Flight Mode Switch
Throttle Hold	Failsafe/hold (PCM Rx only)
CCM	Battery Failsafe
Two Separate Compensation Mixers	Idle Up
Dual Rate Rudder	Throttle Cut
Exponential on El, A1, and Ru	

MODEL #MODEL NAME

SWASHTYPE	NORMAL	CP3F	CP3B	CP4F	CP4B	
CH	(1) EL	(2) AI	(3) TH	(4) RU	(5) G	(6) P
TRM	N	%	%	%	%	%
DTM	1	%	%	%	%	%
ACT	2	%	%	%	%	%
2(HOLD)	%	%	%	%	%	%
REV	NOR/REV	NOR/REV	NOR/REV	NOR/REV	NOR/REV	NOR/REV
D/R	N	%	%	%	%	%
1	%	%	%	%	%	%
2	%	%	%	%	%	%
2(HOLD)	%	%	%	%	%	%
EXP	N	%	%	%	%	%
1	%	%	%	%	%	%
2	%	%	%	%	%	%
2(HOLD)	%	%	%	%	%	%
CNT	%	%	%	%	%	%
EPA	↑	←	↑	←	N	↑
UP	%	LT	%	LT	%	HI
↓	%	→	%	→	2	%
DN	%	RT	%	RT	%	LO
FAIL	%	%	%	%	%	%
TH-CV	N	PL	P1	P2	P3	PH
1	%	%	%	%	%	%
2	%	%	%	%	%	%
2(HOLD)	%	%	%	%	%	%

AIRBORNE SYSTEM CONNECTIONS



The above diagram show how to connect the components of your RD6000 system together. At this point, your objective is to get the system operating on your workbench. Once connected, you must then refer to the corresponding diagram for your system, i.e., either AERO or HELI showing the transmitter control sticks' function.

SPECIAL NOTE: If you change modulation from PPM/FM to PCM, Channel #1 and Channel #3 outputs are changed as per the following table.

MODULATION	CHANNEL # 1	CHANNEL # 3
PPM/FM	Elevator	Throttle
PPM/FM-REV	Elevator	Throttle
PCM/FM-1	Throttle	Elevator
PCM/FM-2	Throttle	Elevator

PPM/FM will operate RD6000 pin 92777 FM receiver. PPM/FM-REV will operate other brand PPM type receivers. (Note that channel outputs for OTHER BRAND receivers may not be the same as indicated on the above diagram).

PCM/FM-1 will operate the STYLUS pin 92185 PCM receiver.

PCM/FM-2 will operate the INFINITY 660 and VANGUARD pin 92065 receivers.

MODEL #MODEL NAME

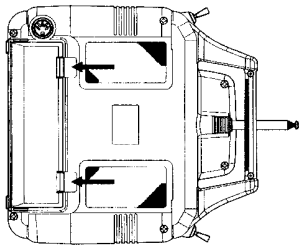
WING TYPE	NORMAL	DELTA	V-TAIL	FLAPERON
	SPOILER (GLID)	FLAPERON & V-TAIL	SPOILER & V-TAIL (GLID)	

CH	(1) EL	(2) AI	(3) TH	(4) RU	(5) G	(6) F
TRM	%	%	%	%	%	
REV	NOR / REV	NOR / REV	NOR / REV	NOR / REV	NOR / REV	NOR / REV
	1	%	/		/	
D/R	2	%	/		/	
	1	%	/		/	
EXP	2	%	/		/	
	1	%	/		/	
CNT	2	%	/		/	
	1	%	/		/	
EPA	2	%	/		/	
	1	%	/		/	
FAIL	2	%	/		/	
	1	%	/		/	

MIX	E→F	A→R	R→A	R→E	F→E	T→E
	%	%	%	%	%	%

TRANSMITTER BATTERY REMOVAL

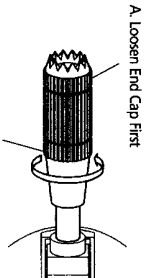
The NiCd battery pack in your RD6000 transmitter can easily be removed and replaced with a fully charged pack to extend operating time.
Additional packs are sold separately as an accessory item under the AIRTRONICS pn 95010.
To remove the pack, push down on the two ears of the battery door located on the rear of the Transmitter. The door can then be removed and the NiCd battery pack unplugged. Reverse the procedure to install a new pack.



CAUTION:
Observe the correct polarity when plugging in the NiCd battery pack.
If incorrect, damage to the transmitter will occur!

CONTROL STICK LENGTH ADJUSTMENT

The sticks in your RD6000 transmitter are adjustable in length and spring tension to allow you to tailor their feel to your personal preference. To adjust stick length, hold Part B with your fingers and unscrew Part A counterclockwise to loosen the two pieces. Now screw Part A in or out to the desired position, and lock it in place by screwing Part B against it. It is best to leave at least four threads inside Part A when screwed out to its longest length for the best mechanical security. Do not over tighten when you screw the two parts together.



THROTTLE HIGH WARNING

The RD6000 has a built in warning feature that will not allow you to use the transmitter if the throttle stick is not in the low position when you turn on the transmitter. If the throttle stick is not in the low position, when you turn it on, you will hear a continuous beeping sound and the display will read TH-HI! Pull the throttle stick down to the full low position. The normal menu will then be displayed and you can operate and/or program the transmitter.

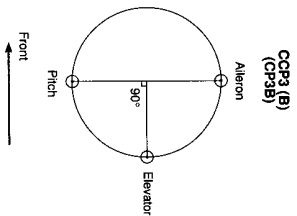
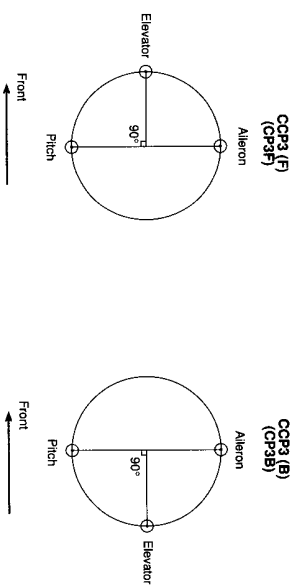
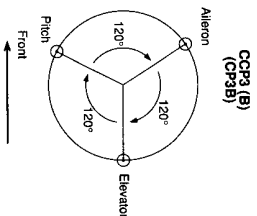
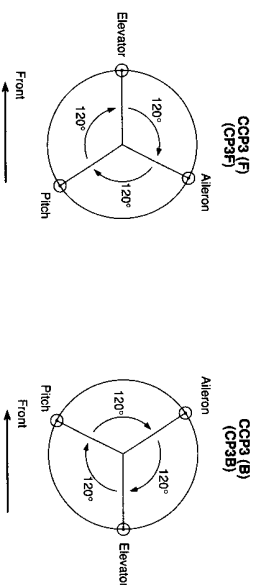
SWH (SWASH MODE-CCPM)

Your RD6000 allows you to select the SWH (Swash) mode of operating the main rotor pitch which is controlled by the Swash Plate moving up and down. When the Swash Mode is selected, the outputs of the Elevator, Aileron and Pitch servos are mixed to control the pitch of the helicopters main rotor. Cyclic Collective, Pitch Mixing (CCPM) can only be used on a helicopter that is designed for CCPM. The servos are mounted on the side frames directly under the Swash Plate with a direct linkage connection from the servo arm to the Swash Plate. This installation is designed to eliminate any stop that can occur with multiple linkages and levers. The three servos are mixed in various ways to obtain the control response that is needed for aileron, elevator and pitch control.

The RD6000 can control the following types:

- NOR** Normal type. The Elevator, aileron and pitch servos are independent of each other on the receiver channels.
- CP3F** Three Joint Balls are located in a triangle. The Elevator Ball Joint is located in front.
- CP3b** Same as CP3F except the Elevator Ball Joint is located in the back.
- CP4F** The Elevator Ball Joint is located at 90 degrees from the Aileron Ball Joint. The Elevator Ball Joint is located in the front.
- CP4b** The same as CP4F except the Elevator Ball Joint is located in the back.

The following drawings illustrate the various types of CCPM available with the RD6000

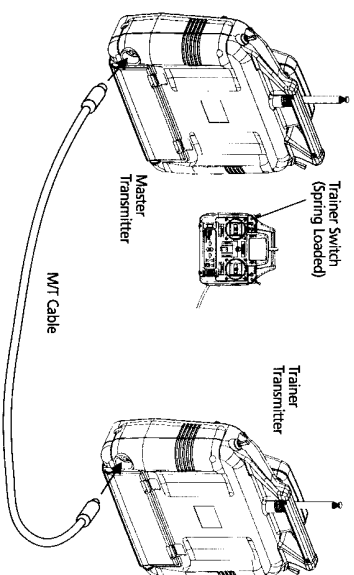


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TRAINER SYSTEM

The Trainer system in the RD6000 transmitter allows you to connect any two AIRTRONICS RD6000 together for the purpose of training a new pilot. You can also connect the RD6000 to either an Infinity 660, Radiant, Quasar or Vanguard PPM unit. The trainer cord to use the RD6000 with a Radiant or Vanguard is AIRTRONICS pin 97100. If you want to use your RD6000 with an Infinity or Quasar transmitter, use pin 97103.

In actual use, one of the two transmitters will serve as the Master and the second transmitter will serve as the Trainer. The Master transmitter is held by the instructing pilot, AND IS THE TRANSMITTER THAT MUST MATCH THE RECEIVER FREQUENCY INSTALLED IN THE MODEL. The trainer transmitter is held by the learning pilot, and does not need to be on the same frequency as the model. The frequency of the Trainer transmitter is unimportant because the switch of the trainer transmitter is NOT turned on during instructional flying. Normally during training, the instructor takes the model off and flies it to a reasonable altitude. While the Master/Trainer switch on the instructor's transmitter is left in its OFF position, the Master transmitter will have full control of the model. When the instructor is ready to begin training, he presses and holds the spring loaded switch on his transmitter which transfers control to the student.



(As long as the instructor holds his Trainer switch in the ON position, the model will respond to the commands of the Trainer transmitter sticks, allowing the pupil to fly the model. It is not necessary for the student to hold the trainer switch on the Trainer transmitter.)

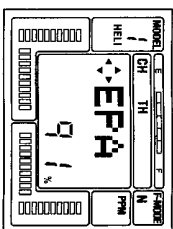
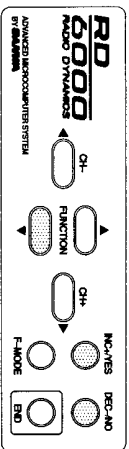
When the instructor desires to stop training, or if he feels that the student is in a situation that endangers the model, the instructor can release the spring loaded switch and control of the model will immediately return to the Master transmitter. To use the Trainer system, you must plug the appropriate Trainer cable into the back of both the Master and the Trainer transmitters. Turn on the Master transmitter and the Model. The cable will energize the encoder section of the Trainer transmitter. Once you have verified that both the Master and the Trainer transmitters will control the model when the spring loaded switch is in the appropriate position you are ready to start training.

NOTE:

Both transmitters must be programmed identically for the trainer system to function properly. All servos must operate in the same direction, centering, end points, and other settings such as type of Modulation must be identical.

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Press the FUNCTION – key to select the throttle EPA (end point adjust) screen. Then use either the INC +/TES or the DEC -/NO key to set the low Throttle position of your engine. Fine tuning of your idle can be done using the throttle digital trim key.



Flight Mode #2 is the Throttle Hold mode. When you activate the FM #2 switch, which is located above the left stick assembly, the throttle servo will change and hold the engine to the previously set idle position so long as you are in FM. #2.

CAUTION: Always be aware of the position of your Flight Mode switches when starting or operating your helicopter.

DTM (DYNAMIC TRIM MEMORY)

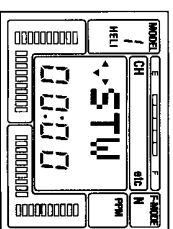
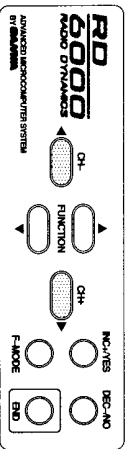
Dynamic Trim Memory (DTM) is an advanced function that can be used in conjunction with the Flight Mode OPTIONS. When activated Dynamic Trim Memory allows you to make trim changes while in any flight mode WITHOUT affecting any other flight mode or model.

Flight Modes are used to allow activation of the DTM function. The three flight modes are:

NORMAL
FM. #1
FM. #2

IDLE-UP
THROTTLE-HOLD

Activating DTM will allow trim changes made in one flight mode to affect ONLY that specific mode. To activate Dynamic Trim Memory, press the CH + or the CH - Key to select "etc" on the Channel indicator.



NOTE: In order for the DTM function to operate, you must first have the TRIM Memory function, in the OPTIONS section, turned ON.

BASIC FEATURES FOR AERO

FEATURE	DESCRIPTION
STW (Stopwatch)	It can be used as a stopwatch and to countdown to a preset time.
REV (Reverse)	This reverses the servo direction for a specific receiver channel.
DR (Dual Rate)	DR adjusts servo throw for the Elevator and Aileron servos.
CNT (Center)	It is used to center the control surfaces of the model. The recommended value should be no more than + or - 30 degrees. Use mechanical adjustments if it is greater.
EPA (End Point Adjustment)	Used to limit the maximum servo travel limits. The recommended setting is from 80% to 150%.
MSL (Model Select)	You can select any of the four models for which you have programmed set-up data.
TRP (Type of Model)	The type of model you are flying, i.e., fixed wing aircraft (AERO) or helicopter (HELI) can be programmed.
RST (Reset)	This function when used will reset all set-up data to default values.
BASIC	The BASIC functions can either be turned ON or OFF. When it is OFF, you are using the ADVANCED programming functions.

BASIC FEATURES FOR HELI

FEATURE	DESCRIPTION
STW (Stopwatch)	It can be used as a stopwatch and to countdown to a preset time.
MSL (Model Select)	You can select any of the four models for which you have programmed set-up data.
REV (Reverse)	This reverses the servo direction for a specific receiver channel.
DR (Dual Rate)	DR adjusts servo throw for the Elevator, Aileron and Rudder servos.
CNT (Center)	It is used to center the controls on the model helicopter. The recommended value should be no more than + or - 30 degrees. Use mechanical adjustments if it is greater.
EPA (End Point Adjustment)	Used to limit the maximum servo travel limits. The recommended setting is from 80% to 150%.
TH-C (Throttle Curve)	It sets the throttle curve.
PC-C (Pitch Curve)	The pitch curves can be varied.
RV (Revolution Mixing)	Revolution mixing points can be set.
TRP (Type of model)	The type of model you want to fly, either fixed wing or helicopter can be selected.
RST (Data Reset)	When this is used it will reset all set-up data to default values.
BASIC	The BASIC functions can either be turned ON or OFF. When it is OFF, you are using the ADVANCED programming functions.

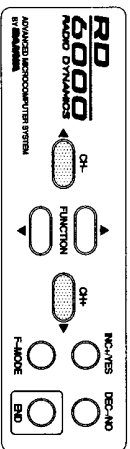
The BASIC features and functions are recommended for use when you are first learning to fly your model aircraft. The advanced flyer can switch the BASIC program OFF and use the ADVANCED features and functions that serious modeler's demand for control of their models. When the BASIC functions are turned OFF, all of the ADVANCED functions are then available to the modeler. All of the above BASIC functions are also included when you elect to use the ADVANCED functions. The following pages describe how to use the RD6000 Computer program.

B-F-5 (BATTERY FAIL SAFE)

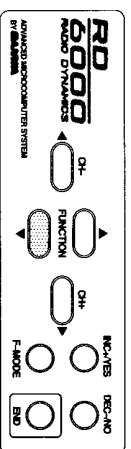
Your RD6000 offers a Fail Safe function to warn you of a low voltage condition in your receiver's battery pack. This function is only operable when using the AIRTRONICS PCM receivers, pin 92065 (Vanguard PCM), pin 92965 (Infinity 660 PCM), or pin 92185 (STYLUS PCM).

You first must select either PCM 1 or PCM 2 modulation. See page 44.

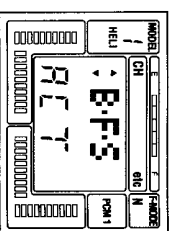
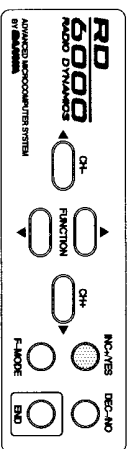
To activate the Battery Fail Safe program, select "etc" on the Channel indicator by using either the ◀ CH - or the CH + ▶ key. (Note that you must be on the STW screen to be able to move horizontally across the screen to "etc".)



Press the FUNCTION ◀ key to select the B-F-5 (battery fail safe) screen.



Next, press the INC +YES key to change the B-F-5 to "ACT", indicating that the Battery Fail Safe function is now active. (pressing either the INC +YES or the DEC -NO key will toggle the function between "INH" and "ACT" settings.)



When the B-F-5 is set to "ACT", the PCM receiver will monitor the receiver pack voltage to warn you when it reaches the target level, approximately 4.7 volts. When the airborne battery is at this point, the throttle servo will move to a low throttle position for one second and then return to normal. This cycling of the throttle servo will occur about once each minute until you land and recharge the NiCd battery pack. IT IS RECOMMENDED THAT YOU LAND IMMEDIATELY if the receiver fail safe warns you of low voltage conditions!

Press the END key to return to the STW screen.

AIRCRAFT BASIC MENU STRUCTURE

(Rx CH)	EL	AI	TH	RU	G	P/F	etc
STW	STW	STW	STW	STW	STW	STW	MSL
REV	REV	REV	REV	REV	REV	REV	TYP
D/R	D/R	CNT	CNT	CNT	EPA	CNT	RST
CNT	CNT	EPA	EPA	EPA	EPA	CNT	BASIC (ON)

NOTE: Use the ◀ CH - and CH + ▶ keys to move horizontally within the same function. Use the ◀ FUNCTION and ▶ FUNCTION keys to move vertically within the menu.

PROGRAMMING FOR AIRCRAFT BASIC

INITIAL SETUP OF TYP (MODEL TYPE)

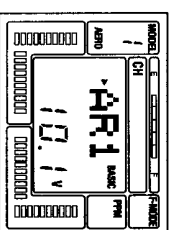
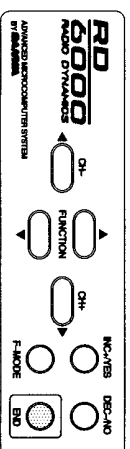
The RD6000 transmitter provides you with the capability to use either the BASIC programs or choose one with the ADVANCED features and functions. You can also modify the BASIC program to add to it features and functions from the ADVANCED program. You can also choose to not display, on the BASIC screens when BASIC is turned ON, the features and functions from the ADVANCED program that you do not want to use at this time.

When you receive your RD6000 unit, the transmitter is preprogrammed for both fixed wing aircraft model's as well as for helicopter models as follows:

- Model #1 is setup with the BASIC AERO features (AR 1)
- Model #2 is setup with the BASIC HELI features (HL 2)
- Model #3 is setup with the BASIC AERO features (AR 3)
- Model #4 is setup with the BASIC HELI features (HL 4)

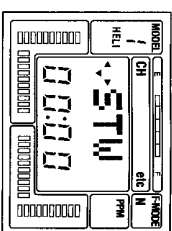
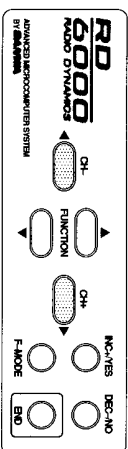
If you fly only fixed wing model aircraft, you probably will want to change all of the available model setups to AERO. To change the TYPE of model, use the following procedure:

Turn the transmitter power switch ON and press the END key. The initial screen will show AR 1 which indicates the aircraft type as well as showing the NiCd battery voltage.

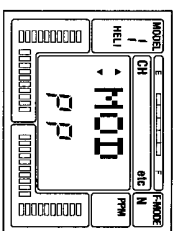
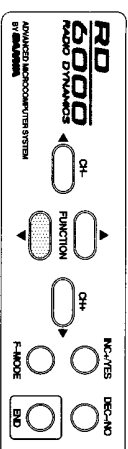


MOD (MODULATION)

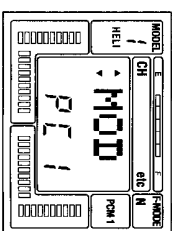
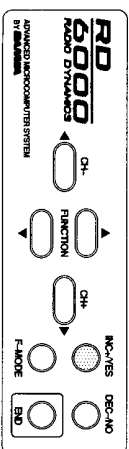
An extremely versatile feature of the RD6000 transmitter is the capability to select four different types of modulation. These are PMWFM for standard FM receivers; PCMFM-1 for the STYLUS PCM receiver; PCMFM-2 for the VANGUARD and INFINITY 660 PCM receivers and PMWFM-Reverse for "other brand" receivers. To access the Modulation screen, press either the $\leftarrow$ CH - or CH + $\rightarrow$ key to select the "etc" screen.



Next, press the FUNCTION ∇ key to select the MOD (modulation) screen. It will show PM indicating the present selection is PMWFM.

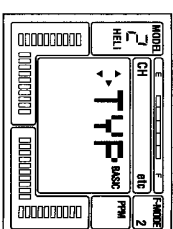
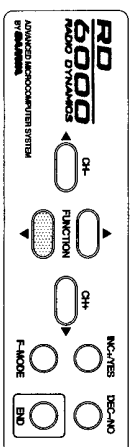


If you want to change the Modulation, press the INC +YES key and the presentation will change to the following screen. Note that the small Modulation indicator on the right side of the screen will also show the present modulation selection when it is changed.

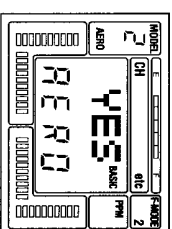
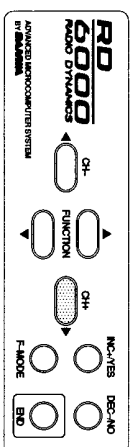


Press the INC +YES key to continue to select either PC 2 (PCMFM-2) or PP (PMWFM-Reverse). When you select PP the small Modulation indicator will be blank. Press both the INC +YES and DEC -NO keys simultaneously to return to the default PP (PMWFM) modulation. Press the END key to return to the STW screen.

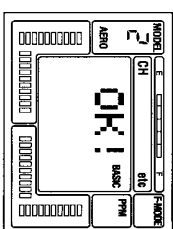
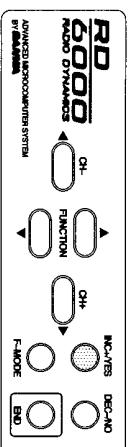
To change the TYPE of model, press the FUNCTION ∇ key to select the TYP (model type) screen.



Note that one of the small triangular indicators will be blinking to show that you should press the CH + $\rightarrow$ key. Therefore, press the CH + $\rightarrow$ key and the screen will change to read AERO with a flashing YES.



To confirm the change of aircraft type, press the INC +YES key. The screen will then change to read OK! As shown on screen below to indicate the model type has been changed from HELI to AERO for model #2. Press the END key twice to return to the STW screen. The same procedure as noted above can be used to change Model #4 from HELI to AERO.

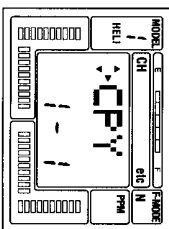
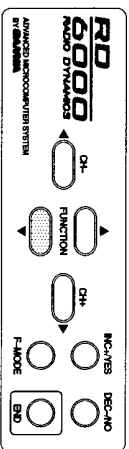
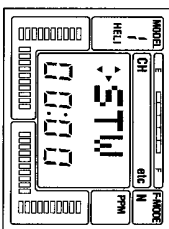
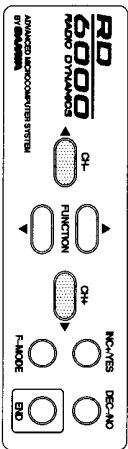


CPY (DATA COPY)

A valuable feature of the RD6000 is the Data Copy Function. With this function the entire set of control parameters for one aircraft can be copied from one model set-up into another. (For instance, if you have your aircraft program in Model #1 and nothing in Model #3, you can copy the Model #1 program into Model #3 with the copy function.)

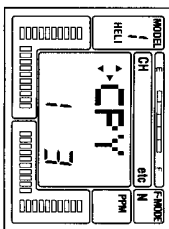
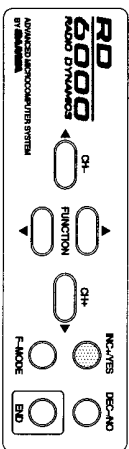
Having copied your control set-up, you can now use MSL (Model Select) to access the Model #3 program and then make control changes to that set-up. This allows you to experiment with different control options without changing your original parameters (in this example Model #1).

To use the CPY (copy) function, select "etc" on the Channel indicator using either the $\leftarrow$ CH $\rightarrow$ or CH $\leftarrow$ key. (Note that you must be on the STW screen to move horizontally across the screen to "etc".)



Press the FUNCTION $\blacktriangleright$ key to select the CPY (copy) Function.

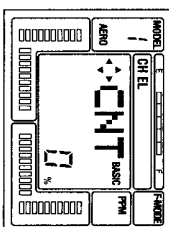
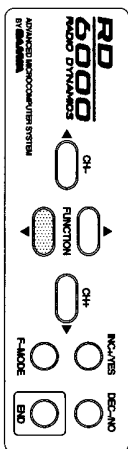
For this example, assume you want to copy the set-up of Model #1 (which you selected), to Model #3. The first number on the screen indicates the model number of the model you are copying. The second number indicates the destination of the model being copied. Press the INC+YES key to change the destination for the copy to indicate Model #3. Note that one of the small triangles is blinking which indicates there is another screen associated with this function.



CNT (CONTROL CENTERING)

Your RD6000 allows you to fine-tune the CENTER or neutral position of all flight control servos. After hooking up your controls and mechanically centering all linkages to the approximate positions, press the FUNCTION Y key to arrive at the following screen for the Elevator control.

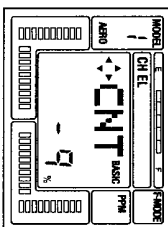
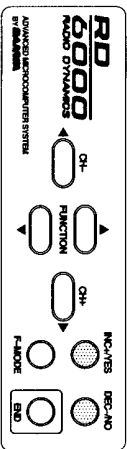
(Note that the Aileron, Throttle, Rudder and Flap centering operates in the same manner when you select that channel on the upper part of the screen. You can move across to the CNT function of each channel, as well as some of the other functions, by pressing the CH $\leftarrow$ key).



By pressing the INC+YES or the DEC+NO keys you can vary the value from 0 to + or - 100%. Default is 0%.

IMPORTANT NOTE:
It is desirable to adjust the control linkages as close as possible to the correct center positions, then use the CNT (Center) commands to "Fine Tune" the exact position of the control surface when the transmitter control is in neutral.

Using a very large amount of electronic centering adjustments will decrease the total throw available for that channel. In particular, centering adjustments greater than + or - 50% will tend to make the extreme stick position on one end less responsive!



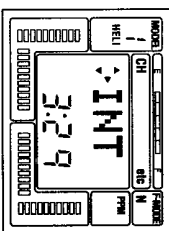
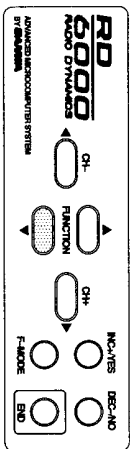
Right Rudder stick position since you did not set a value for right Rudder. The same situation holds true for any mixing that you program. Move the stick in the direction you want to have mixing accomplished and set a value, either negative or positive depending on how much and what direction you want the Slave servo(s) to move.

In the above example in order to use the Rudder to Throttle mixer, we must turn ON the assigned switch for C-Mix 1. This switch is designated as the EL D/R C-Mix1 switch which is located above the left stick assembly. In the default switch condition, when the switch is in the UP position, the Rudder to Throttle mix is turned ON.

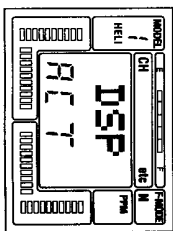
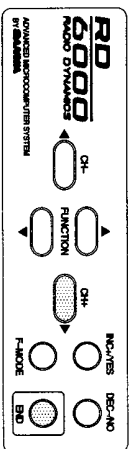
INT (INTEGRAL TIMER)

The Integral Timer function of the RD6000 is activated each time the Transmitter power switch is turned on, and continues to time up to 99 hours and 59 seconds at all times when the transmitter is turned on. This time will give an excellent indication of how many hours of actual use you RD6000 transmitter has accrued. Or, you may wish to re-set the timer to zero at certain intervals, for instance, each time you change the transmitter NiCd battery pack.

The INT (Integral Time) function is located in the "etc" column of the menu, directly below STW (set). Use the FUNCTION < key to access the INT screen. Note that it will have some indication of how long the transmitter has been operating. It may look like the following screen, but with a different time shown. The time will show a change for each elapsed second and minute. If you want to re-set the Integral Timer to zero, press the INC +YES and the DEC -NO keys simultaneously.



If you desire, you can display the Integral Timer function instead of the STW (stop watch) function on all of the Channel screens. To do so while you are in the INT screen, press the CH + > key to obtain the following screen.



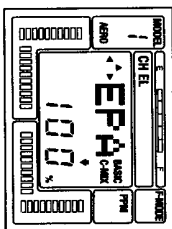
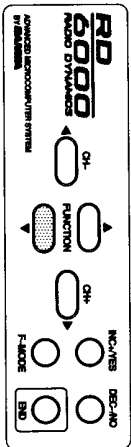
Press the INC +YES key and the bottom line of the screen will change from INH (inhibit) to read ACT (active). You can press either the DEC -NO key or the INC +YES key to change it back to INH. Most pilots prefer to have the Stop watch function displayed on all of their Channel screens, rather than the Integral Time; therefore, they leave the Integral Timer DSP at INH (inhibit). Press the END key twice to get back to the top of the "etc" menu column.

EPA (END POINT ADJUSTMENTS)

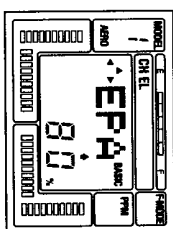
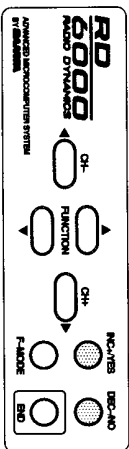
The RD6000 allows you to adjust the "End Points", or servo travel limits, for all flight channels.

In general, it is best to use as close to 100% servo throw as possible. This allows for the best possible resolution and centering of all control surfaces. However in some cases it is not possible to use full servo movement, such as those instances where short control horns must be used because of aircraft design considerations, or with fixed-length control horns such as a throttle arm.

Assume we want to adjust the EPA of the Elevator channel servo. To electronically do so, we first bring up the STW (Stopwatch) screen as previously instructed in INITIAL SET-UP. Next press the FUNCTION key four times to scroll down through the other screens and arrive at the EPA screen for the Elevator channel.



The EPA of the Elevator channel can be adjusted from 0% to 150%. To set the End Point for Up Elevator, pull back on the Elevator stick, let it return to neutral and then set the value for UP elevator while observing your model. Press the INC +YES or the DEC -NO keys to change the value of the End Point. Next, push down on the Elevator stick and hold it in the down position while setting the value for Down elevator control. Default for this channel is 100%. If you press the INC and DEC keys simultaneously, the reading will revert to the default value.



Note that the once you have selected the EPA screen for Elevator, you can move across the screen to adjust the End Points of the Aileron, Throttle, Rudder, Gear and Flap channels, by pressing the CH + > key. To adjust the End Points of the G (Landing Gear) channel and P-F (Flap) channel, you must have the appropriate toggle switch in the ON position. Both the UP and Down position can be adjusted for the Landing Gear. The Flap Down position can be adjusted by changing the polarity and the Landing Gear EPA.

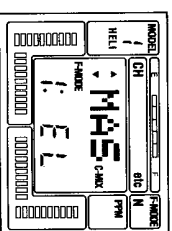
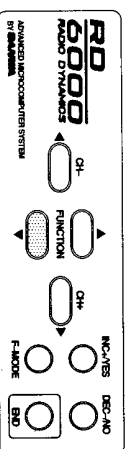
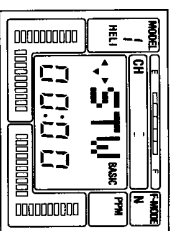
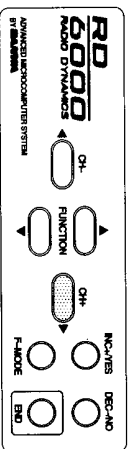
C-MIX (COMPENSATION MIXERS HELI)

The RD6000 Helicopter ADVANCED program has two compensation mixers available to handle advanced mixing needs. These are in addition to the pre-defined mixers. When the Helicopter mode of operation is selected, the separate switches labeled C-MIX 1 / E / DR and C-MIX 2 / AI / DR are used to turn on and off the Compensation mixers.

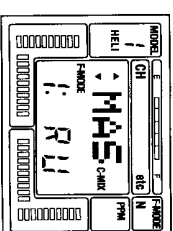
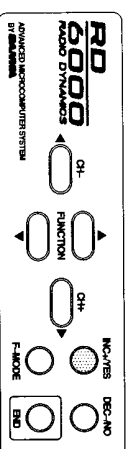
The purpose of a Compensation Mixer is to allow one transmitter control input to affect two flight functions. A common mix would be to set a mix so that tail-rotor inputs automatically create a slight increase in throttle to compensate for the added load, thus keeping torque to the main rotors constant. In the following example, C-MIX 1 is selected and used for Rudder to Throttle mixing which will be able to be turned on and off by the designated switch, C-MIX 1.

Remember, the Master channel is the channel that will drive both its own servo(s) AND the slave servo when the Master channels transmitter control is moved. The SLAVE channel servo(s) will respond to the Master channels transmitter control AS WELL as responding normally to its own transmitter control.

Press the CH + key to move across the CH indicator and access the "etc" screen.



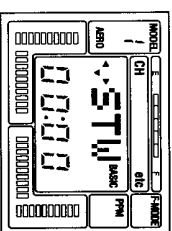
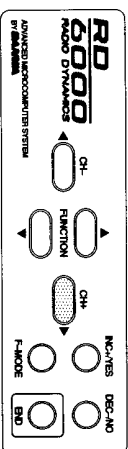
Press the INC +YES key to select RU as MAS (Master) in C-MIX 1. The Master channel will "drive" the selected Slave channels servo, in addition to its own servo. The Channels available are: EL(Elevator), AI(Aileron), TH(Throttle), RU(Rudder), GY(Gyro) and PI(Pitch).



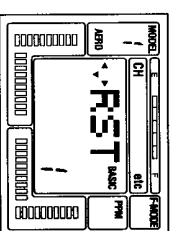
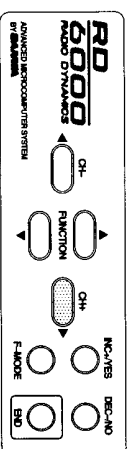
RST (DATA RESET)

If you want to "UNDO" all of your programmed parameters at one time, you can use the RST function. However, be certain that is what you want to do, since this function will reset all settings to the factory default settings. The RST function will only affect the specific model that you have selected. ALL OTHER Models in memory are unaffected by the RST function.

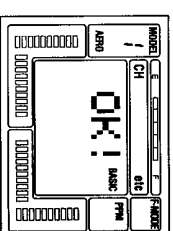
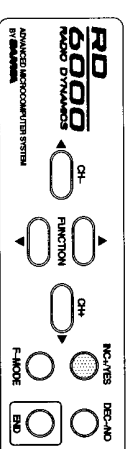
Press the STOP key to select the initial AR 1 screen that indicates the Transmitter NiCd pack battery voltage. Now, press the CH + to access the STW (Stopwatch) screen. This screen allows you to move up and down as well as left and right on the screen in the RD6000 program.



Press the CH + key several times to move across the CH indicator portion of the screen until it reads "etc". Now, press the FUNCTION + key three times to move down in the menu until you reach the RST (Data Reset) screen.



To RESET ALL DATA for this model to default settings press the CH + key and the screen will flash YES. Now, press the INC +YES key and the screen will indicate OK! All parameters on this specific model number have now been reset to default values. Press the END key twice to return to the STW screen.



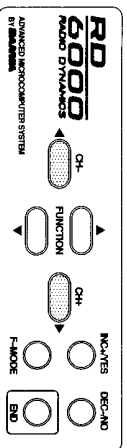
FAIL (FAIL SAFE)

The RD6000 transmitter provides the capability to program Fail Safe for all six channels. However, Fail Safe is ONLY available when you are using a PCM/FM receiver and transmitting in the PCM 1 or PCM 2 Modulation mode. If you are transmitting PPM/FM or PPM/FM-Reverse, you will not be able to enable the FAIL SAFE function.

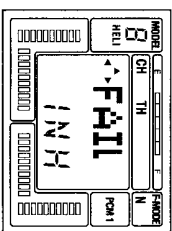
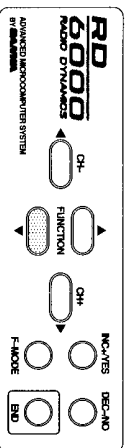
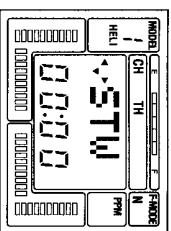
The Airtronics PCM receivers have the capability to be programmed to respond to RF-signal interference by momentarily holding the last known good command. If the interference lasts longer than one second, then the receiver's microprocessor will drive the servos to the preprogrammed positions you previously set-up using the FAIL (fail safe) function.

To program Fail Safe, you first must select PCM 1 or PCM 2 Modulation for your specific type of receiver. See page 88.

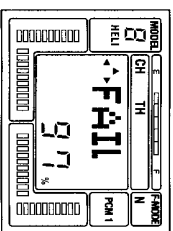
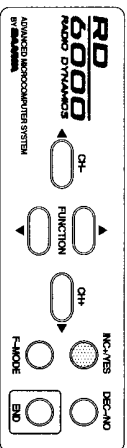
For example, if you want to set low throttle to occur if interference causes loss of signal at your receiver, select the TH (throttle) channel on the Channel indicator.



Next, press the FUNCTION ◀ key to access the FAIL screen.

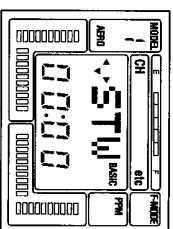
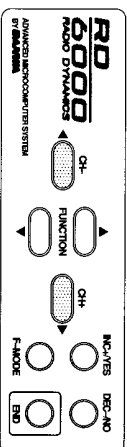


Now position your throttle stick in the low throttle position that you want for the Fail Safe position. Press the INC ◀/YES key to set the position that the throttle servo will drive to upon loss of signal.

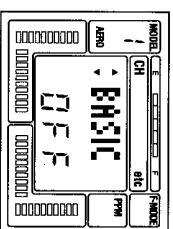
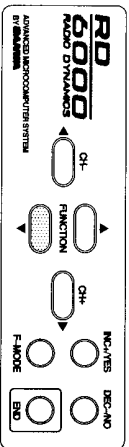


STW (STOPWATCH)

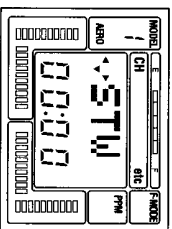
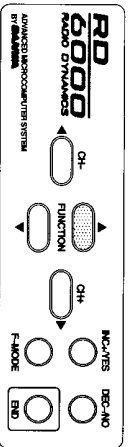
The RD6000 offers a built-in timer and allows the pilot to use the stopwatch function in either elapsed time mode or in a countdown mode of operation. To use the stopwatch, press either the ◀ CH - or the CH + key to select "etc" on the Channel indicator display.



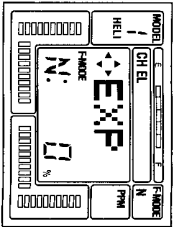
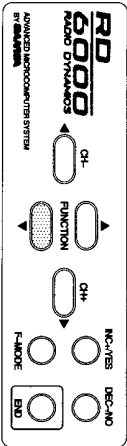
Next, press the FUNCTION ◀ key to select the screen that indicates BASIC ON. Press the INC ◀/YES key to turn BASIC OFF. You are now in the Aircraft ADVANCED Menu Structure.



Now press the FUNCTION ◀ key to scroll through the various screen until you find the STW screen with the flashing ▶ indicator. This is where you can set your stopwatch countdown time. The STW (set) screen is just above the INT screen as shown on the Aircraft ADVANCED Menu Structure, page 27.

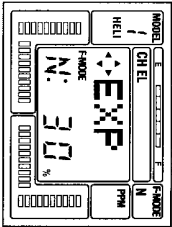
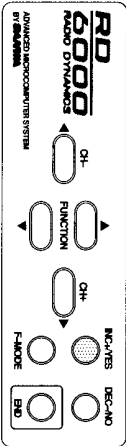


Now press the FUNCTION ◀ key to select the EXP display for the Elevator Channel as shown below.



This screen tells you the present Exponential status of the Elevator channel when the Normal Flight Mode has been selected. The possible range for Exponential setting is from -100% to +100%. Note that 0% is linear. A negative value will speed up the response and it will make the stick movement more sensitive around the neutral position.

To set an Exponential rate in this example for the Elevator channel, press the INC. +/YES key to set a positive value of Exponential function as shown below.



In the above example we set Exponential for the NORMAL Flight Mode to be 30% of the maximum for the Elevator channel. This is a good starting point for determining the suitability of Exponential Throw for your aircraft and flying style.

In general, large amounts of Exponential are useful only in instances where very large control surface deflection is required at extreme throw, while very small amounts of control response are necessary for smaller control stick inputs

CAUTION: Proceed with care when setting Exponential functions to ensure that you will have adequate control deflection available in any possible switch position. Setting Exponential to a very high or 100% setting will require very large stick movements to achieve small control responses. Always make sure that you are aware of the present status of any rate assignments that you have selected!

For the most flexibility in setting up an aircraft model to your liking, study the available options for Dual Rates, End Point Adjustments, and Exponential. The combinations possible when using these options allows for several possible set-ups. The Exponential for the Aileron Channel is set in the same manner as done for the Elevator.

AIRCRAFT ADVANCED MENU STRUCTURE

(Rx CH)	EL	AI	TH	RU	G	P/F	etc
STW	STW	STW	STW	STW	STW	STW	STW
TRM	TRM	TRM	TRM	TRM	REV	TRM	MSL
REV	REV	REV	REV	REV	EPA	REV	NAM
DIR	DIR	CNT	CNT	CNT	FAIL	CNT	MAS 1 (selectable)
EXP	EXP	EPA	EPA	EPA	FAIL	EPA	SLV 1 (selectable)
CNT	CNT	T>E	T>E	R>A	FAIL	F>E	MAS 2 (selectable)
EPA	EPA	T-CUT	R>E	FAIL	FAIL	FAIL	SLV 2 (selectable)
E>F	FAIL	A>R	FAIL	FAIL	FAIL	FAIL	STW (set)
FAIL	FAIL	FAIL	FAIL	FAIL	FAIL	FAIL	INT
							STEP
							TYP
							SW-R
							CPY
							RST
							MOD
							CLK
							B-F-5
							FLAPE
							SPOIR
							DELTA
							V-TAIL
							AI-DIF
							L-DIF
							CRUA
							CRRA
							DIR-A
							BASIC (OFF)
							OPT (ALL ON)

NOTE: Use the ◀ CH - and CH + ▶ keys to move horizontally within the same Function of the menu. Use the ▶ FUNCTION and ◀ FUNCTION keys to move Vertically within a column of the menu.

TRM (TRIM MEMORY) STEP (TRIM AUTHORITY)

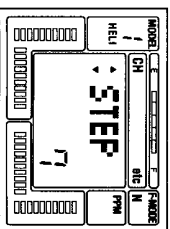
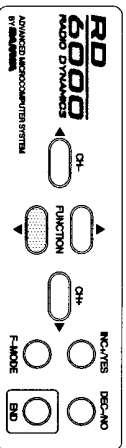
Refer to the Helicopter **ADVANCED** Menu Structure on page 72. Note that the RD6000 offers the Trim Memory Function on all four of the flight control channels, Trim Memory for Elevator, Aileron, Throttle, and Rudder is input by the Digital Trim keys when you use the INC +YES or DEC -NO keys to input trim.

Any trim that you set while your model is in flight by use of the Digital Trim keys will automatically be stored in memory for that specific channel and model, providing that TRM was previously turned ON in the OPTIONS section of the program. See Programming Helicopter Advanced Functions, page 74.

The Trim value in % that you set during flight is shown on the TRM screen for each Channel. In addition, there are bar graph indicators on the screen at all times that visually show how much trim has been set for Elevator, Aileron, Throttle and Rudder channels.

The amount that the Trim Function changes every time you press the Digital Trim key i.e., the Trim Authority, is variable, and it can be set by the user. For initial test flights of your model it is recommended that it be set at a value of 7 to allow for maximum ability to trim your model. After your first flight and your aircraft has been trimmed, you can then program a more precise adjustment for trim authority by use of the STEP Function.

To change the Trim Authority, access the STW screen for EL as previously explained. Press the CH + key several times to select the "etc" screen. Now press the FUNCTION V key until you find the following screen that indicates STEP:



If you want to change the Trim Authority to a lesser number to make the Digital Trim keys less sensitive for a finer setting, press the DEC -NO key. If you want to increase the sensitivity to obtain a greater change, press the INC +YES key. The maximum value of Trim Authority is 15 and the minimum value is 0. **CAUTION:** If set to zero, you do not have any Trim capability.

FUNCTION	DESCRIPTION
CPY (Copy)	A setup for one model can be copied to another designated model.
RST (Data Reset)	When this is used it will reset all set-up data to default values.
MOD (Modulation)	You can select either PCMFM, PCMFM-1 for STYLUS system, PCMFM-2 for Vanguard and Infinity 660 systems, or PCMFM-Reverse for other brand receivers.
CLK (Click)	A beep sound can be heard every time you press a transmitter key, it can be turned on or off as desired.
B-F-S (Battery FailSAFE)	If this function is activated when using a PCM receiver, the throttle servo in the aircraft will make when the receiver battery voltage drops and the determined point. This will give you sufficient warning to land before the receiver battery voltage gets too low to provide proper power to the air borne system.
FLAPE (Flaperons)	When this function is activated, and values set in, the ailerons will deflect downward as flaps.
SPOIR (Spoiron)	This is normally used with sailplanes. The Ailerons deflect upward simultaneously and act as spoilers. The throttle stick is used to control the spoilers.
DELTA (Elevons)	Ailerons operate as Ailerons and as well as Elevators. This function can be used with a flying type model such as one of the Bill Evans Similar series of models.
V-Tail (Rudder and Elevator)	This function provides control of a V-Tailed model such as the Beechcraft Bonanza. Two servos are required to operate the V-Tail.
AI-DIF (Aileron Differential)	More Up Aileron can be programmed than Down Aileron to prevent adverse yaw. A good starting value is a 2:1 ratio.
L-DIF (Landing Differential)	Use of L-DIF allows your Aileron control to remain effective whenever Crow or Spoiron is used in a sailplane during landings.
CR: LA (Crow Left Aileron)	Crow is used in a sailplane to raise the Ailerons to slow the model down. The Ailerons go up and the flaps go down. You can set the value for CR: LA.
CR: RA (Crow Right Aileron)	Same as above, but for the right Aileron.
DR-A (Dual Rate Alarm)	You can turn on the Dual Rate Alarm to sound an audible signal whenever the dual rate switches are in the ON position.
ALL	This function when activated by pressing the INC +YES key, turns ON all of the OPTION Functions.
BASIC	The Basic program can be turned ON for use with trainer aircraft, and later turned OFF as the flyer wants more functions for his models.
OPT (Option)	The Option part of the Aircraft Advanced program allows you to tailor the functions you want to utilize.
MAS (Master)	You can define what the Master Channel is in either one of the two Compensation Mixers, CM1 or CM2. The Master Channel will be mixed with the Slave Channel.
SLV (Slave)	The Slave Channel can be programmed in either of the two Compensation mixers.

B-F-5 (Battery Failsafe)

If this function is activated when using a PCM receiver, the throttle servo in the aircraft will cycle when the receiver battery voltage reaches a predetermined point. This will give you sufficient warning to land before the receiver battery voltage gets too low to provide proper power to the airborne system.

DTM (Dynamic Trim Memory) When activated, DTM will keep the trim memory for each flight mode.

Hold (Hold) Throttle Hold is normally used for Auto-Rotation and it can be turned on or off.

SMH (Swash Mode)(CCM) The main rotor pitch control can be accomplished by mixing the outputs from the aileron, elevator and pitch servos.

ALL This function when activated by pressing the INC + YES key, turns ON all of the OPTION Functions.

BASIC The BASIC program can be turned ON for use with trainer models, and later turned OFF as the flyer gains proficiency and wants more functions for his models.

MSL (Model Select) The same as described in BASIC.

OPT (Option) The Option part of the Helicopter Advanced program allows you to tailor the Functions you want to utilize.

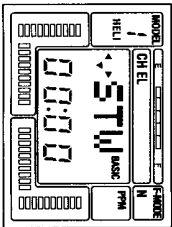
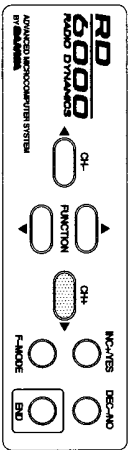
MAS (Master) You can define what the Master Channel is in either one of the two Compensation Mixers, CM1 or CM2. The Master Channel will be mixed with the Slave Channel.

SLV (Slave) The Slave channel can be programmed in either of the two Compensation Mixers.

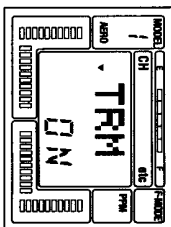
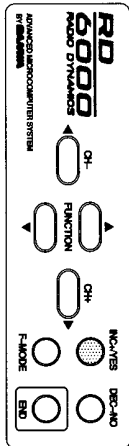
GYR (Gyro) If your gyro has sensitivity adjustment, it can be set for each flight mode.

PROGRAMMING HELICOPTER ADVANCED FUNCTIONS

All of the FEATURES and FUNCTIONS for the BASIC RD6000 Helicopter program are also contained in the ADVANCED program. Refer to that section for programming a model for Gyro, Rev Mixing, Pitch Curves, and Throttle Curves. To access the Helicopter ADVANCED Functions from the initial HL 1 Voltage screen, press the CH + + key to obtain the STW screen.



Press the INC +YES key to obtain the menus of the OPTION Functions. The first one is TRM (Trim Memory) will flash and indicate ON. If you do not want to use the Trim Memory function, press the DEC -/NO key to turn it OFF.



Press the FUNCTION - key to obtain the REV (Servo Reverse) screen. It will indicate it is ON however, you can turn it OFF as done above. All of the following Functions are selected in the same way. You can tailor your Aircraft ADVANCED program for individual models using any of the Functions you want ON or OFF by pressing either the INC +/YES or DEC -/NO key.

- | | |
|-------------------------------------|---------------------------------|
| DR (Dual RATE) | V-TAIL (Rudder/Elevator Mixing) |
| EXP (Exponential) | AL-DIF (Aileron Differential) |
| CNT (Control Surface Center) | L-DIF (Landing Differential) |
| EPA (End Point Adjustments) | GR-LA (Crow Left Aileron) |
| E + F (Elevator to Flap Mixing) | GR-RA (Crow Right Aileron) |
| A - R (Aileron to Rudder Mixing) | DR-A (Dual Rate Alarm) |
| R - A (Rudder to Aileron Mixing) | ALL (All Functions Turned ON) |
| T - E (Throttle to Elevator Mixing) | |
| R + E Rudder to Elevator Mixing) | |
| F - E (Flap to Elevator Mixing) | |
| T-CUT (Throttle Cut) | |
| FAIL (Failsafe for PCM Receiver) | |
| NAM (Name of aircraft) | |
| CM1 (Compensation Mixer #1) | |
| CM2 (Compensation Mixer #2) | |
| STW (Stop watch) | |
| INT (Interval Timer) | |
| STEP (Trim Authority) | |
| TRP (Model Type) | |
| SW-R (Toggle Switch Reverse) | |
| CPY (Data Copy) | |
| RST (Data Reset) | |
| MOD (Modulation Selection) | |
| CLK (Beep Sound) | |
| B-F-5 (Battery Fail Safe) | |
| FLAPE (Flapovers) | |
| SPOIR (Spoilers) | |
| DELTA (Elevons) | |

NOTE: To be able to use a specific Function, it must be turned ON in the OPTION section of the program, made Active, Set, or a Value inserted for that Function that appears under EL, AL, TH, RU, G, P-F, or etc sections of the program.

Press the END key twice to Exit the OPTION section of the program and obtain the STW screen.

HELICOPTER ADVANCED MENU STRUCTURE

(Rx CH)	EL	AI	TH	RU	G	PF	etc
STW	STW	STW	STW	STW	STW	STW	STW
TRM	TRM	TRM	TRM	REV	REV	MSL	
REV	REV	REV	REV	GYR	CNT	NAM	
D/R	D/R	CNT	D/R	FAIL	EPA	MAS 1 (selectable)	
EXP	EXP	EPA	EXP		CV-PH	SLV 1 (selectable)	
CNT	CNT	CV-PH	CNT		CV-P3	MAS 2 (selectable)	
EPA	EPA	CV-P3	EPA		CV-P2	SLV 2 (selectable)	
FAIL	FAIL	CV-P2	RV-H		CV-P1	STW	
		CV-P1	RV-M		CV-PL	INT	
		CV-PL	RV-L		FAIL	STEP	
		T-CUT	FAIL			TYP	
		FAIL				SW-R	

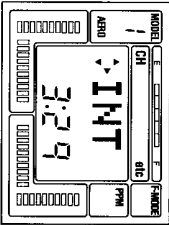
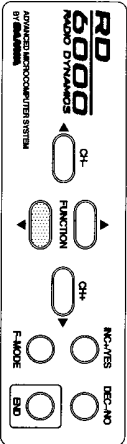
MOD
CLK
B-F-5
DTM
HOLD
SMH
BASIC (OFF)
OPT (ALL ON)

NOTE: Use the ◀ CH – and CH + ▶ keys to move horizontally within the same Function of the menu. Use the ▲ FUNCTION and ▼ FUNCTION keys to move Vertically within a column of the menu.

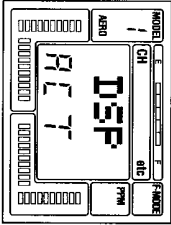
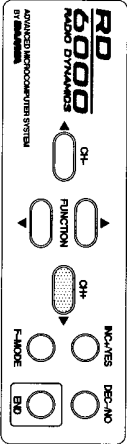
INT (INTEGRAL TIMER)

The Integral Timer function of the RD6000 is activated each time the transmitter power switch is turned on, and continues to time up to 99 hours and 59 seconds at all times when the transmitter is turned on. This time will give an excellent indication of how many hours of actual use you RD6000 transmitter has accrued. Or, you may wish to re-set the timer to zero at certain intervals, for instance, each time you change the transmitter NiCd battery pack.

The INT (Integral Timer) function is located in the "etc" column of the menu, directly below STW (set). Use the FUNCTION ◀ key to access the INT screen. Note that it will have some indication of how long the transmitter has been operating. It may look like the following screen, but with a different time shown. The time will show a change for each elapsed second and minute. If you want to reset the Integral Timer to Zero, press the INC +YES and the DEC -NO keys simultaneously.



If you desire, you can display the Integral Timer function instead of the STW (stop watch) function on all of the Channel screens. To do so while you are in the INT screen, press the CH + ▶ key to obtain the following screen.



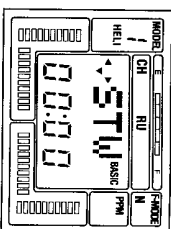
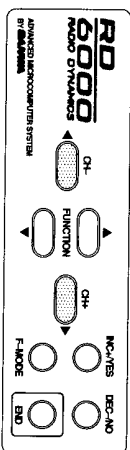
Press the INC +YES key and the bottom line of the screen will change from INT (inhibit) to read ACT (active). You can press either the DEC -NO key or the INC +YES key to change it back to INT. Most pilots prefer to have the stop watch function displayed on all of their Channel screens, rather than the Integral Timer, therefore, they leave the Integral Timer DSP at INT (inhibit). Press the END key twice to get back to the top of the "etc" menu column.

REVOLUTION MIXING

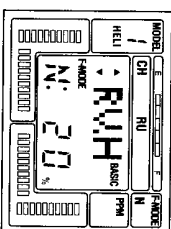
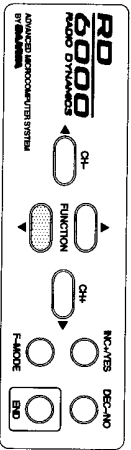
The RD6000 provides for setting Revolution Mixing for each of the three Flight Modes. Each Flight Mode has its own curve for adjusting tail rotor position in response to the throttlecollective stick movements. The default settings for RVH (Revolution Mixing High Point), RVM (Revolution Mixing Mid Point), and RVL (Revolution Mixing Low Point) are as follows:

FLIGHT MODE	RVH	RVM	RVL
Normal	20%	0%	-20%
FLM. #1	0%	0%	-2%
FLM. #2	0%	-5%	-10%

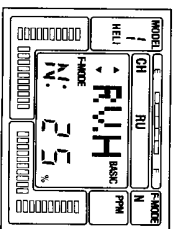
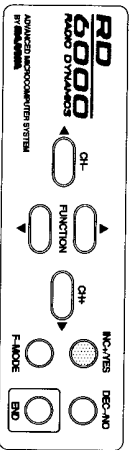
To program Revolution Mixing, press either the $\leftarrow$ CH - or CH + $\rightarrow$ key to select RU (rudder) on the Channel Indicator.



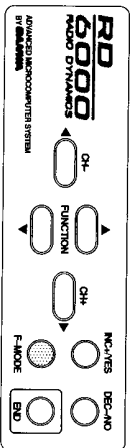
Next, press the FUNCTION $\blacktriangledown$ key to select RVH which is the revolution mixing high point.



Use the INC-/YES or DEC-/NO key to change the default value if you desire to do so for any of the three flight modes. In this example we have set RVH for the Normal flight mode to +25%.



The same procedure can be used to input values for RVM and RVL. Press the Flight Mode switch to select the different Flight Modes.

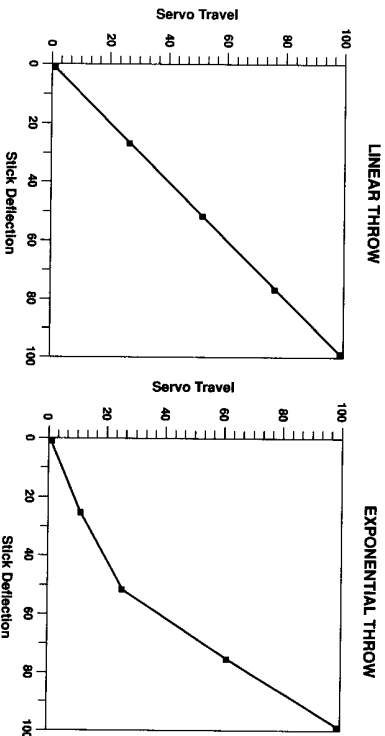


EXP (EXPONENTIAL)

The RD6000 allows the pilot to choose two settings for Exponential Throw for each of the primary flight channels, Elevator and Aileron.

Exponential Throw is primarily used to "soften" or decrease the control stick sensitivity of a control around the neutral point. With Exponential disabled, a control function servo will move in an amount proportional to the amount of control stick deflection, i.e., 50% stick deflection will result in 50% servo travel; 75% stick deflection will cause the servo to travel 75% of its presently set maximum throw.

Exponential settings DO NOT change the amount of servo travel available at 100% stick deflection; rather they change the amount of servo travel that will occur with stick deflections less than 100%. The first 25% of stick deflection may be set to result in only 10% of total servo throw, making the control less sensitive around neutral. See the following illustrations.



If you have not used Exponential functions before, you will want to start with a very small amount of Exponential (10 to 20%) to determine whether you like this sort of control response. Exponential is most useful where strong control response is desired at extreme stick positions, but softer response to small stick movement is desired in order to make very accurate, small corrections to flight path.

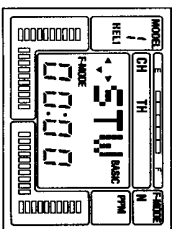
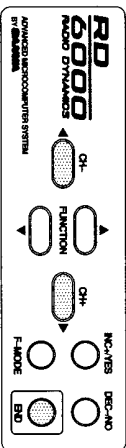
The switch positions for Exponential #1 and Exponential #2 correspond to the Dual Rate switch position(s) for Elevator and Aileron. Exponential #1 is with the Dual Rate switch in the Down, i.e., OFF position. Exponential #2 is with the Dual Rate switch in UP, i.e., ON position. (Note however, that you can leave the Dual Rate adjustments for Elevator and Aileron set at 100%, which is no rate, so that switching a Dual Rate switch ON will activate Exponential only.

THROTTLE CURVES (FLIGHT MODES)

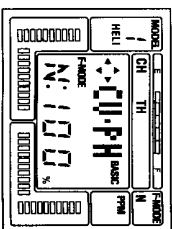
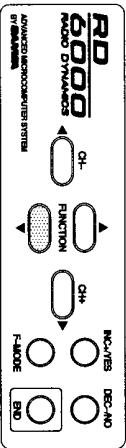
The throttle curve for each flight mode has five points that can be adjusted to suit your specific needs. Within each throttle curve these points are referred to as PH (high throttle), P3, P2, P1, and PL (idle). The range of values and default settings for each is shown below.

FLIGHT MODE	Curve Point	Minimum	Default	Maximum
Normal	PH	-25%	100%	125%
	P3	-25%	INH	125%
	P2	-25%	50%	125%
	P1	-25%	INH	125%
	PL	-25%	0%	125%
FM #1	PH	-25%	100%	125%
	P3	-25%	INH	125%
	P2	-25%	50%	125%
	P1	-25%	INH	125%
	PL	-25%	0%	125%
FM #2	PH	-25%	100%	125%
	P3	-25%	INH	125%
	P2	-25%	50%	125%
	P1	-25%	INH	125%
	PL	-25%	0%	125%

To program your throttle curves, press the ◀ CH – or CH + ▶ key to select TH on the Channel indicator.



Next, press the FUNCTION ◀ key and scroll down to the C/PH screen.

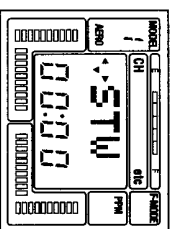
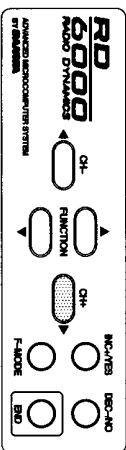


In general, large amounts of Exponential are useful only in instances where very large control surface deflection is required at extreme throw, while very small amounts of control response are necessary for smaller control stick inputs. One example of models for which large Exponential settings may be useful is the highly maneuverable "Competition FUN FLY" style models. For most sport and aerobatic models, an Exponential setting from +10% to +25% will give the desired "softness" around neutral.

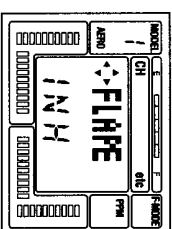
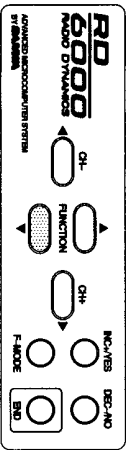
CAUTION: Proceed with care when setting Exponential functions to ensure that you will have adequate control deflection available in any possible switch position. Setting Exponential to a very high or 100% setting will require very large stick movements to achieve small control responses. Always make sure that you are aware of the present status of any rate assignments that you have selected! For the most flexibility in setting up an aircraft model to your liking, study the available options for Dual Rates, End Point Adjustments, and Exponential. The combinations possible when using these options allow for several possible set-ups. The Exponential for the Aileron Channel is set in the same manner as done for the Elevator. The AI DR switch located above the right stick assembly is then used when setting the Exponential Throw.

E-F (ELEVATOR TO FLAP MIXING)

When you use this function you can cause the Flaps to deploy when the Elevator control stick is moved up and down. It can be used with a separate Flap servo with an output on the receiver's Channel #6, or as Flaperons with two aileron servos on channels #2 and #6. This function is most commonly used for aerobatic models, where deploying Flaps (or Flaperons), with Elevator control can make for tighter corners on maneuvers such as the square loop. In order to use this function with the two aileron servo option you must first activate the FLAPERON function using the following procedure. Press the CH + ▶ key to access the "etc" display as shown below.



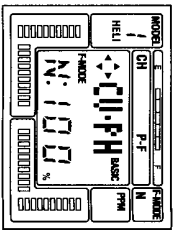
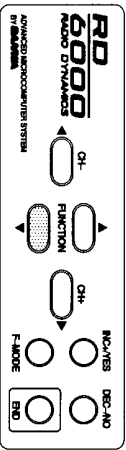
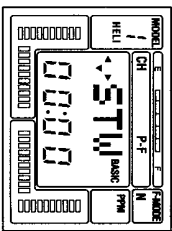
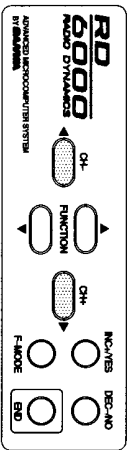
Now, press the FUNCTION ◀ key to select the FLAPE (FLAPERON) screen.



The pitch curve for each flight mode has five points that can be adjusted to suit your specific needs. Within each pitch curve these points are referred to as PH (high pitch), P3, P2, P1, and PL (low pitch). The range of values and default settings for each is shown below.

FLIGHT MODE	Curve Point	Minimum	Default	Maximum
Normal	PH	-25%	100%	125%
	P3	-25%	INH	125%
	P2	-25%	55%	125%
	P1	-25%	INH	125%
	PL	-25%	0%	125%
FM #1	PH	-25%	90%	125%
	P3	-25%	INH	125%
	P2	-25%	55%	125%
	P1	-25%	INH	125%
	PL	-25%	0%	125%
FM #2	PH	-25%	80%	125%
	P3	-25%	INH	125%
	P2	-25%	50%	125%
	P1	-25%	INH	125%
	PL	-25%	-5%	125%

To program your pitch curves, press the ◀ CH – or CH + ▶ key to select P-F on the Channel indicator.



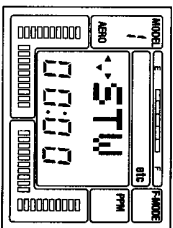
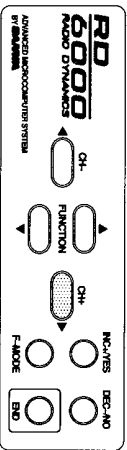
Next, press the FUNCTION ◀ key and scroll down to the CV-PH screen.

C-MIX (COMPENSATION MIXERS)

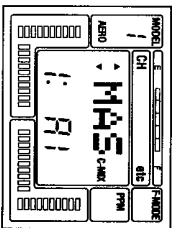
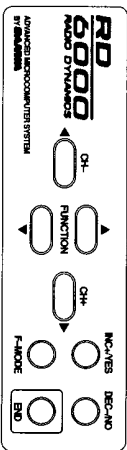
The RD6000 has two compensation mixers available to handle advanced mixing needs. These are in addition to the pre-defined mixers: Compensation mixers C-Mix 1 and C-Mix 2 share a common switch (C-Mix 1,2) to turn the mixer ON and OFF, when in the Aircraft mode of operation. If the Helicopter mode of operation is selected, the separate switches labeled C-Mix 1 E DR and C-Mix 2 AI DR are used for the Compensation mixers.

The purpose of a Compensation Mixer is to allow one transmitter control input to affect two flight functions. A common mix would be Aileron to Rudder to achieve coordinated turns without moving the rudder stick. However, the RD6000 provides a pre-defined mixer for this function. Another mixer example would be a switch controlled Elevator to Flap mixer as discussed earlier in the pre-defined E-F mixer. A possible short coming of that mixer was that it was on all the time and could not be turned on or off by a switch. In the following example, C-Mix 1 is selected and used for Elevator to Flap mixing which will be able to be turned on and off by the designated switch, C-Mix 1,2.

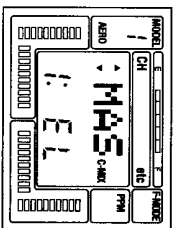
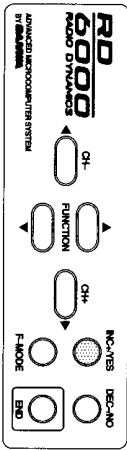
Press the CH + ▶ key to move across the CH indicator and access the "etc" screen.



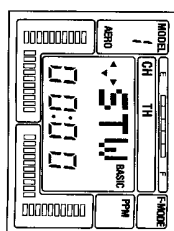
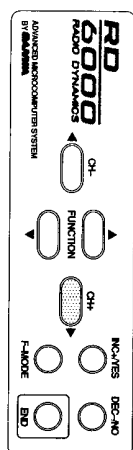
Next, press the FUNCTION ◀ key to select MAS (Master) C-Mix 1.



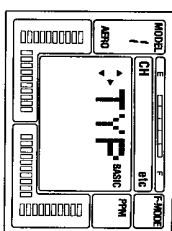
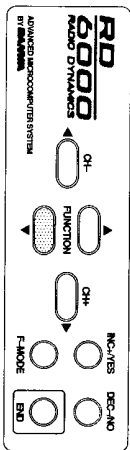
Press the INC +YES key to select EL as MAS (Master) in C-Mix 1. The Master channel will "drive" the selected Slave channels servo, in addition to its own servo. The Channels available are: EL(Elevator), AI(Aileron), TH(Throttle), RU(Rudder), GE(Landing Gear), and FL(Flap).



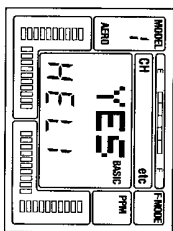
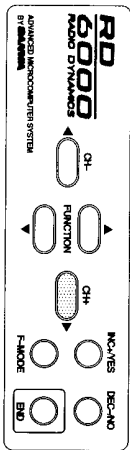
Press the CH + ▸ key to scroll across the CH (channel) indicator on the screen to "etc".



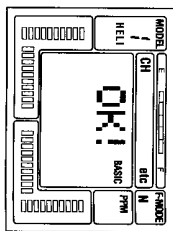
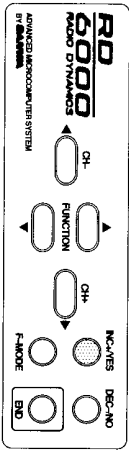
To change the TYPE of model, press the FUNCTION ◀ key several times to scroll down and select the TYPE (model type) screen.



Note that one of the small triangular indicators will be blinking to show that you should press the CH + ▸ key. Therefore, press the CH + ▸ key and the screen will change to read HELI with a flashing YES.



To confirm the change of aircraft type, press the INC+YES key. The screen will then change to read OK!

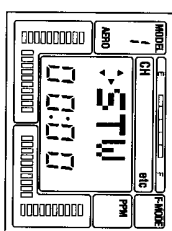
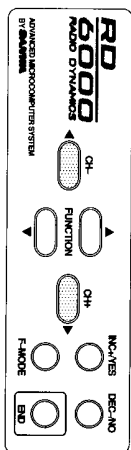


CPY (DATA COPY)

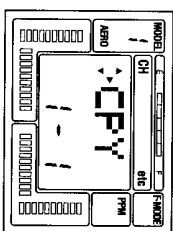
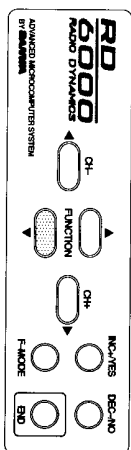
A valuable feature of the RD6000 is the Data Copy Function. With this function the entire set of control parameters for one aircraft can be "copied" from one model set-up into another. (For instance, if you have your aircraft program in Model #1 and nothing in Model #3, you can copy the Model #1 program into Model #3 with the copy function.)

Having copied your control set-up, you can now use MS1 (Model Select) to access the Model #3 program and then make control changes to that set-up. This allows you to experiment with different control options without changing your original parameters (in this example Model #1).

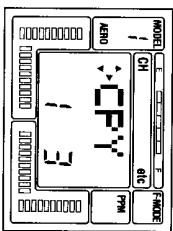
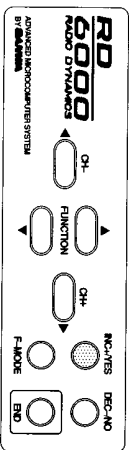
To use the CPY (copy) function, select "etc" on the Channel indicator using either the CH- or CH + ▸ key. (note that you must be on the STW screen to move horizontally across the screen to "etc").



Press the FUNCTION ◀ key to select the CPY (copy) Function.



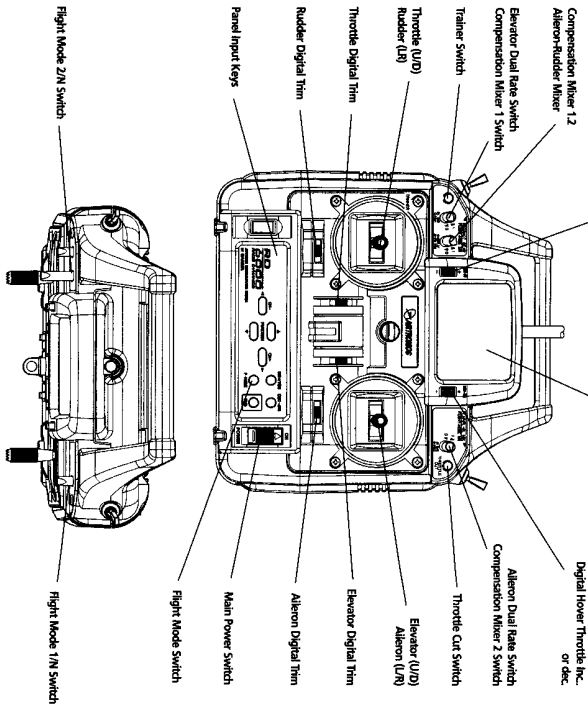
For this example, assume you want to copy the set-up of Model #1 (which you selected), to Model #3. The first number on the screen indicates the model number of the model you are copying. The second number indicates the destination of the model being copied. Press the INC+YES key to change the destination for the copy to indicate Model #3. Note that one of the small triangles is blinking which indicates there is another screen associated with this function.



RD6000 USERS MANUAL-HELICOPTER

Digital Hover Rich Inc. or
Dec.

Liquid Crystal Display



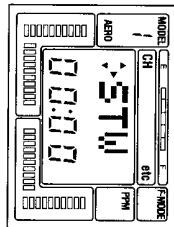
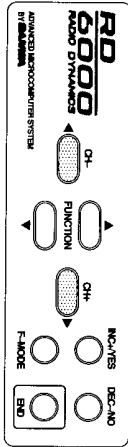
9277 RECEIVER CHANNEL ASSIGNMENTS

Receiver Plug Number	Plug In Servo For:
1	Elevator (F/A) Cyclic
2	Aileron (U/R) Cyclic
3	Throttle
4	Rudder (Tail Rotor)
5	Gyro
6	Collective Pitch
7/8	Battery

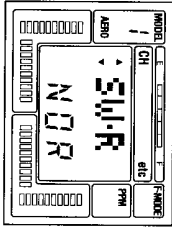
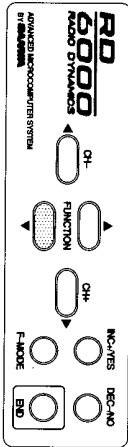
SW-R (SWITCH REVERSE)

The SW-R Function allows you to reverse the action of the five toggle switches located on your RD6000 transmitter. The default of the SW-R Function is in the NOR (normal) position. CAUTION! The switch reversal function is not selective. If you change it from NOR (normal) to REV (reverse), all switches will be reversed in their action!

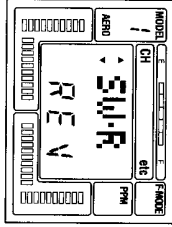
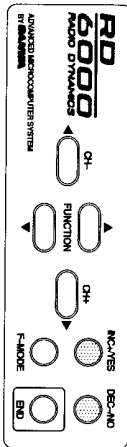
To access the SW-R Function, select "etc" on the Channel Indicator using either the < CH- or the CH + > keys. (Note that you must be on the STW screen to move horizontally to "etc")



Press the FUNCTION < key to scroll down to the SW-R (switch reverse) screen.



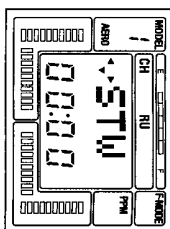
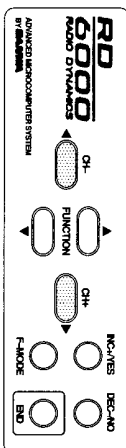
Now, press either the INC-RES or the DEC-AND keys to change the indication for NOR to REV. All switches on the transmitter are now reversed in their function. Press END to return to the STW screen.



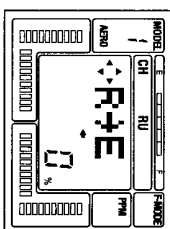
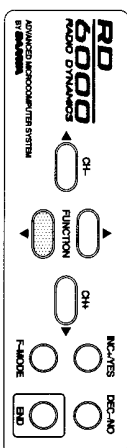
R+E (RUDDER-ELEVATOR MIX)

Another useful feature of the RD6000 is the ability to mix Rudder control with Elevator. As an example, if you roll your model over for knife edge flight so the wings are vertical, and the model needs some elevator correction to keep the model going straight, you can do it electronically using the R+E mixer.

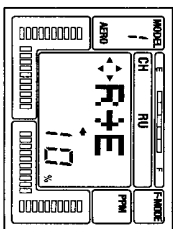
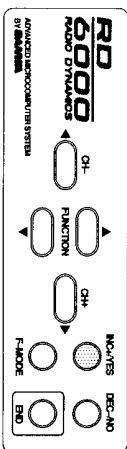
To set-up such a mix, press either the $\leftarrow$ CH $\rightarrow$ or the CH + $\rightarrow$ key to select RU on the CH indicator.



Now, press the FUNCTION $\rightarrow$ key several times to access the R+E screen.



Push the rudder stick to the left and right. Note the arrows that indicate the direction of stick movement. If you want to set a value for right rudder mix with elevator, push the stick to the right. Next, press the INC +YES key to obtain the necessary elevator correction. In the following example we set it at 10%. If the elevator moves in the wrong direction, change the polarity of the mix by using the DEC /NO key. The range of adjustment is from +100% to -100%. If you do not want any mixing to occur, press the INC +YES and the DEC /NO keys simultaneously to reset R+E to 0%.



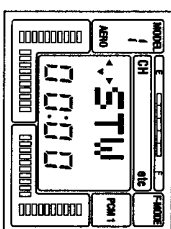
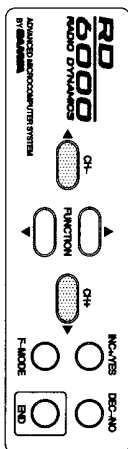
Flight testing will be required to obtain your optimum R+E mixing during knife edge flight.

B-F-S (BATTERY FAIL SAFE)

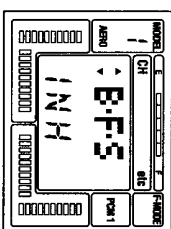
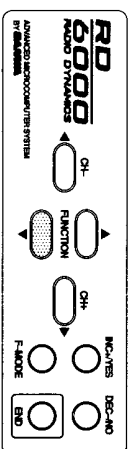
Your RD6000 offers a Fail Safe function to warn you of a low voltage condition in your receiver's battery pack. This function is only operable when using the AIRTRONICS PCM receivers, pin 52065 (Vanguard PCM), pin 92965 (Infinity 660 PCM), or pin 92185 (STYLUS PCM).

You first must select either PCM 1 or PCM 2 modulation. See page 44.

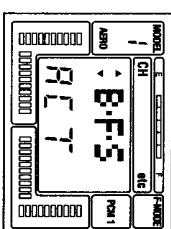
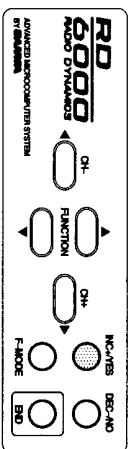
To activate the Battery Fail Safe program, select "exit" on the Channel indicator by using either the $\leftarrow$ CH $\rightarrow$ or the CH + $\rightarrow$ key. (Note that you must be on the STW screen to be able to move horizontally across the screen to "etc".)



Press the FUNCTION $\rightarrow$ key to select the B-F-S (battery fail safe) screen.



Next, press the INC +YES key to change the B-F-S to "ACT", indicating that the Battery Fail Safe function is now active. (pressing either the INC +YES or the DEC /NO key will toggle the function between "INH" and "ACT" settings.)



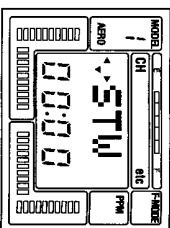
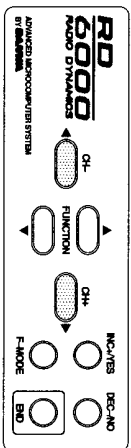
When the B-F-S is set to "ACT", the PCM receiver will monitor the receiver pack voltage to warn you when it reaches the target level, approximately 4.7 volts. When the airborne battery is at this point, the throttle servo will move to a low throttle position for one second, and then return to normal. This cycling of the throttle servo will occur about once each minute until you land and recharge the NiCd battery pack. IT IS RECOMMENDED THAT YOU LAND IMMEDIATELY if the receiver fail safe warns you of low voltage conditions!

Press the END key to return to the STW screen.

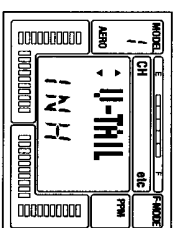
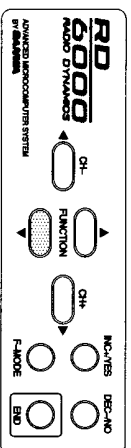
V-TAIL (RUDDER-ELEVATOR MIX)

The RD6000 transmitter has the ability to control sailplanes or powered models that utilize a V-tail control system. In these aircraft the two tail controls perform both as elevators and as rudders. Two servos and two channels (receiver channels #1 and #4 are required for V-Tail operation).

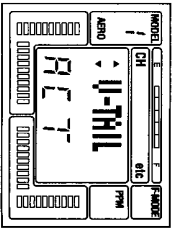
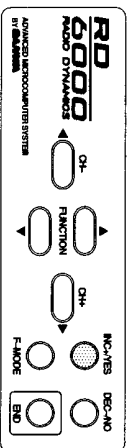
To select the V-Tail operation, first press either the ◀ CH - or the CH + ▶ key to access the "etc" channel indicator.



Next, press the FUNCTION ◀ key to scroll down to the V-TAIL display.



Press the INC +YES key to see the following screen which will activate the V-TAIL function. If you press the DEC -NO or the INC +YES key you can toggle from INH (Inhibit) to ACT (Active). You can use the Rudder and Elevator Servo Rev (Reverse) and EPA (End Point Adjustment) functions to fine tune your set-up.

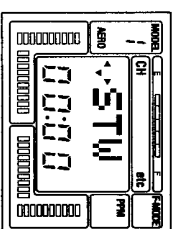
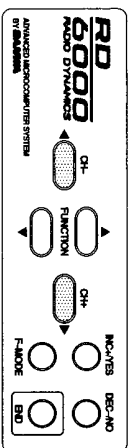


If you desire, you may use the Aileron →Rudder mixing function to allow operation of the V-Tail rudders with the right aileron control stick. See AL→RU mixing, page 56.

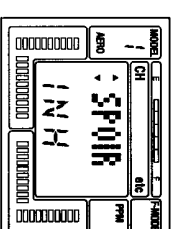
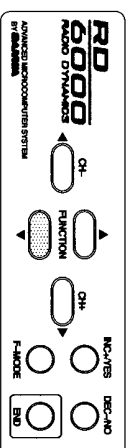
SPOIR (SPOIRON)

The RD6000 has the ability to control different fixed wing aircraft wing types, including conventional single aileron servo or dual aileron servos on individual channels with differential adjustment and wings with flap/spoilers. The Spoiron function is normally used with sailplanes.

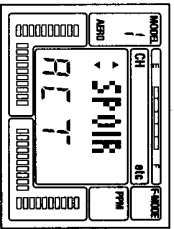
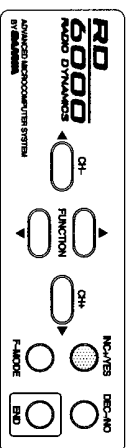
To access the SPOIR function, press either the ◀ CH - or the CH + ▶ key to select the STW screen.



Press the FUNCTION ◀ key to access the SPOIR (Spoiron) screen. The INH indication allows only one channel for aileron function.



In order to use two separate aileron servo channels and/or have electronic aileron differential, press the INC +YES key to make the SPOIR read ACT (Active). Note that it is only possible to electronically adjust aileron differential throw, when you choose to use TWO CHANNELS for aileron, with a servo on each side of the wing driving that wing's servo. Pressing the INC +YES or the DEC -NO key will toggle the function between "INH" and "ACT" settings.



When SPOIR is ACTIVE, you will have two channels assigned to the aileron/spoiron function. Plug these servos into channels #2 and #6 of your receiver. Note that both servos will respond equally when you move the aileron stick on the transmitter.

If AL-DIF (Aileron Differential) see page 52, is set to 0%, the servos will move equally in response to left and right transmitter aileron stick movement. If a value is inserted for AL-DIF when using the SPOIR function, the FLAP STICK (throttle) will determine when AL-DIF becomes effective for a sailplane.

When the SPOIR (Spoiron) function is inhibited, only the servo plugged into channel #2 will respond to aileron stick movement. The channel #6 servo will then respond to the flap switch and value programmed in the Flap (p-r) channel EPA.

FAIL (FAIL SAFE) Contd.

To test the action of your preprogrammed Fail Safe, place your throttle stick in the high throttle position. Then turn off your transmitter power switch. Your throttle servo will drive to the low throttle position that you previously programmed. To return to the INHIBIT condition, press the INC +YES and the DEC -NO keys simultaneously.

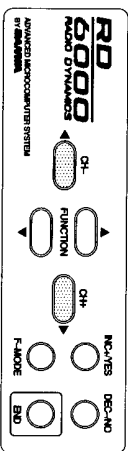
The same procedure as indicated above applies to setting the Fail Safe positions for the other channels. For example, if you want to have a small amount of UP Elevator applied during Fail Safe, first select the Elevator channel on the Channel Indicator. Then scroll down to the EL Fail Safe screen. Hold a small amount of UP Elevator and press the INC +YES key to program the amount of elevator you want for Fail Safe. Text as indicated above.

NOTE: If interference is present when Fail Safe is not active, in PCM Modulation, the receiver will "hold" the last command received until the signal is again established.

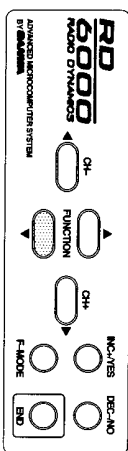
A-R (AILERON-RUDDER MIX)

The RD6000 provides you with the capability to program your aircraft so that Aileron stick deflection will also cause the rudder servo to respond in the same direction, (right aileron=right rudder). This automatic coordination of rudder with aileron is useful in many high wingscale models that suffer from adverse yaw with aileron application. (Note that the rudder servo will still respond to rudder stick movement as well as with aileron stick movement).

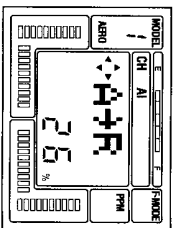
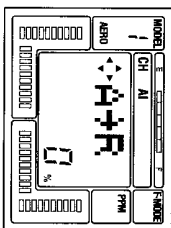
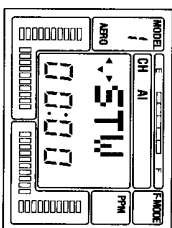
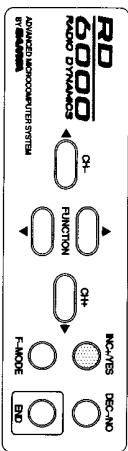
To use A-R (aileron-rudder) mixing, first access the AL (aileron) channel on the Channel Indicator.



Next, press the FUNCTION V key to select the A-R display.



Press the INC +YES key to adjust the amount of mixing that will occur.

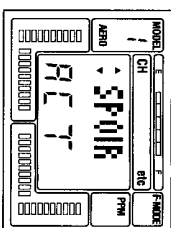


You can now activate the AL-RU mix switch, located above the throttle/rudder stick assembly, to turn on or off the AL-RU mix function. Press the INC +YES and DEC -NO keys simultaneously if you desire to reset A-RU to 0%.

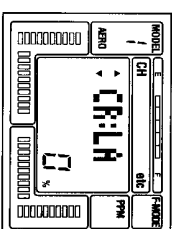
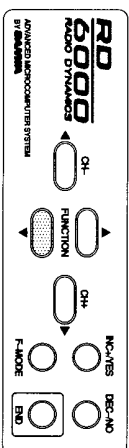
CR:LA (CROW LEFT AILERON) CR:RA (CROW RIGHT AILERON)

In a sailplane landing mode, the flaps provide a large amount of both lift and drag. This causes the plane to fly very slowly and descend gently. On very light sailplanes the rate of descent may be so slow that the plane tends to "float right past" the landing spot. CROW (both ailerons up) adds quite a bit of drag while decreasing lift. This increases the rate of descent (steepens the glide slope) and improves controllability. The amount of CROW that is used should be adjusted to suit personal preference. In general, higher wing loading sailplanes require less CROW because the rate of descent will probably already be high enough.

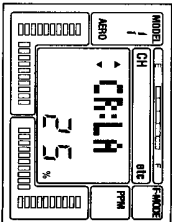
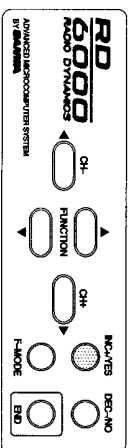
In order to program the CROW function you must have previously selected the SPOIL(Spoiler) function and set it to ACTIVE. See page 47.



Press the FUNCTION V key to select the CR:LA (Crow left aileron) screen.



Next, press the INC +YES key to program a value of 25%. Here we have set CROW for the Left Aileron at 25%. The Left Aileron now will raise 25% of its travel upwards while the flaps deploy downwards while in the Landing Mode. The Landing Mode, Flap deployment and CROW are all controlled by the position of the FLAP (throttle) stick. The range of adjustment for CROW is from +100% to -100%. The default value is 0%.

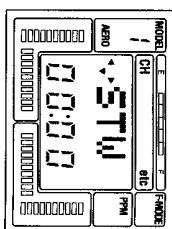
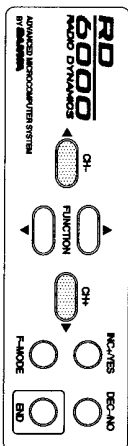


Now, press the FUNCTION V key to move down to the CR:RA (CROW right aileron) screen. Press the INC +YES key to set it at 25%. Now both ailerons respond identically to the CROW command.

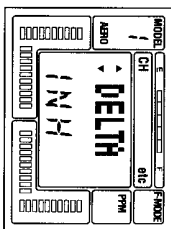
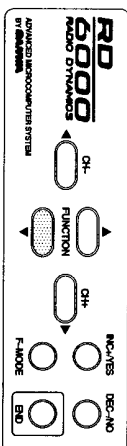
DELTA (ELEVONS)

DELTA mix can be used in a flying wing type model to provide ELEVON control, where the elevator and aileron functions are combined.

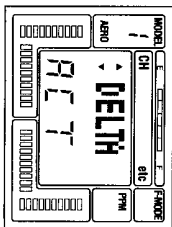
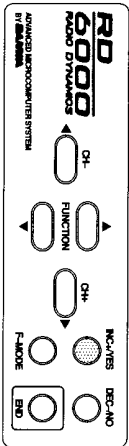
To access the DELTA function, use either the < CH - or the CH + > key to select the STW screen.



Press the FUNCTION > key to scroll down to the DELTA screen.



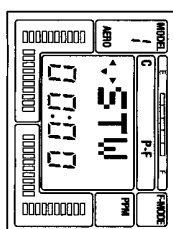
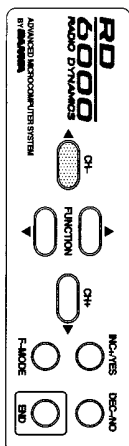
Now press the INC + YES key to change the display to ACT(Active). Note that you cannot have SPOIL (Spoiler) Active when DELTA is Active and vice versa. When DELTA is Active, you will have two channels assigned for ELEVON control. Plug these two servos into channels #1 and #2 of your receiver. The two servos will now respond to movement of the elevator/aileron control stick. End Point Adjustments for elevator and aileron can then be made for the amount of throw required.



Press the END key to return to the STW screen.

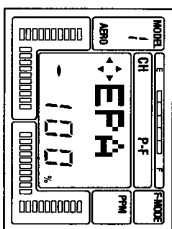
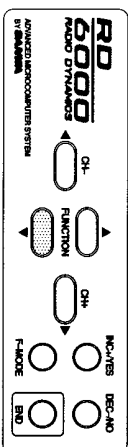
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Press the < CH - key to select p-f on the Channel Indicator.



Use the FUNCTION > key to scroll down to FLAP Endpoint adjust. Note that the default setting is -100%. Range of adjustment is from -150% to +150%. Press either the INC +YES or the DEC./NO key to change the value and/or polarity of the function. The FLAPFL-EL switch located on the top-right of the transmitter activates the Flaperons and also the Flap-Elevator mixing. To disable the Flap switch, set the Flap EPA at 0%.

Note that if the flaperons go up when the Flap switch is activated, change the polarity of the programmed value. Use the FLAP TRM (trim) function to fine tune flap operation.



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