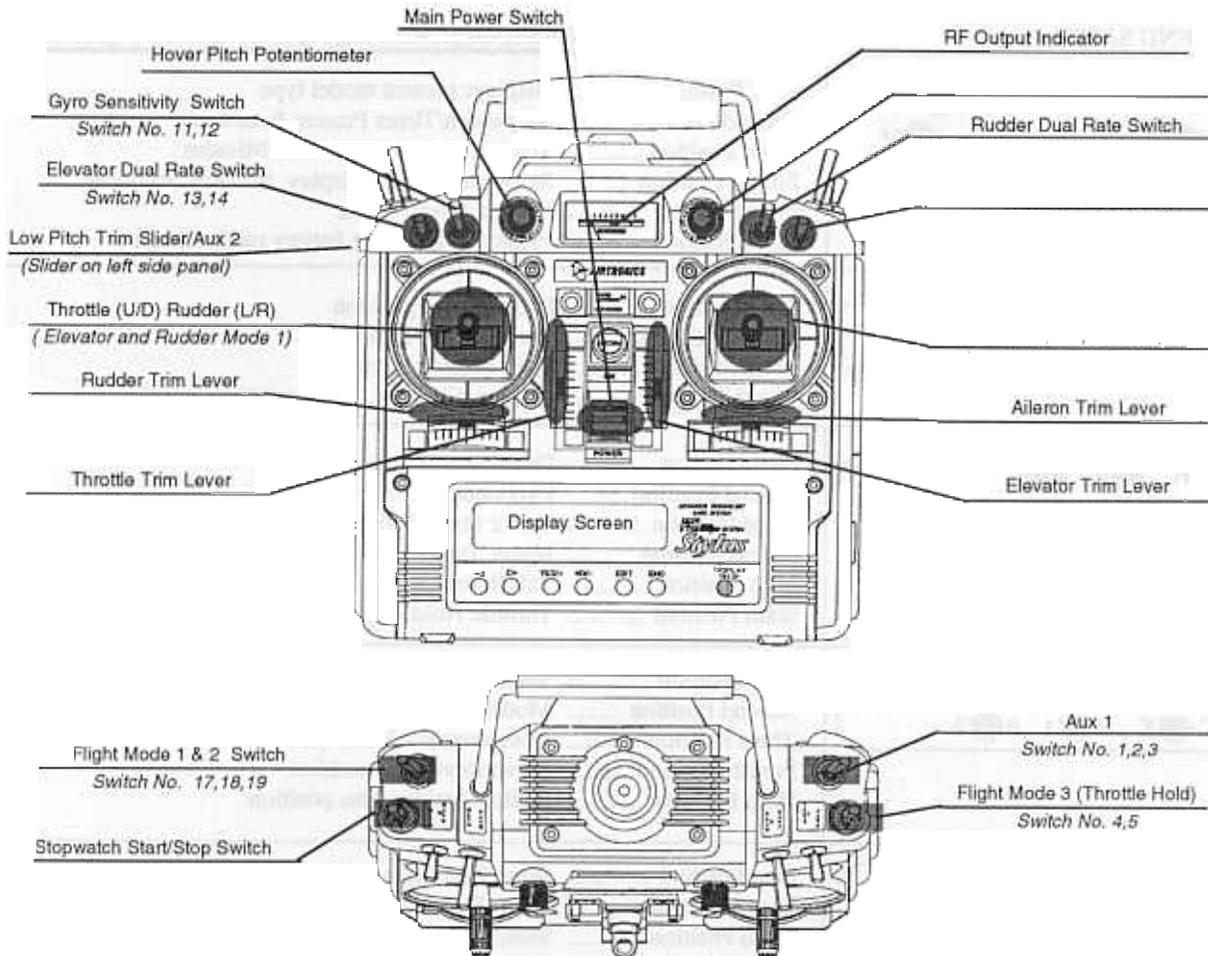


# Stylus User's Manual — HELICOPTER



## Read This!!

Before doing ANY programming for your model, make certain that you have selected the desired model TYPE (AERO, HELI or GLID).

IF YOU CHANGE TYPES, (to Aircraft or Glider) or if you use the Data Reset at any time, the switch assignments will need to be checked. The chart at the right shows the intended "default" switch assignments. It is recommended that you at least start out with these assignments, as this will make your system consistent with this manual. Later, you may change switch assignments to personalize your setup for your own flying preferences.

NOTE: A "0" default setting means that function is not presently assigned to a switch. To make the function operative you must assign it to a switch or assign it to be always on.

SCREEN ONE .... Default	
Fli-Mode (1) .....	18
Fli-Mode (2) .....	19
Fli-Mode (3) .....	4
SCREEN TWO	
D/R A1 .....	7
A2 .....	6
E1 .....	14
E2 .....	13
SCREEN THREE	
R1 .....	9
R2 .....	8
ALTERNATE .....	0
SCREEN FOUR	
Gyro .....	12
Aux 1 .....	1
Aux 2 .....	0
C-MIX .....	0
SCREEN FIVE	
STW S/S .....	15

If the Switch Alarms function is activated you will hear an audio alarm if you turn the transmitter on while an Idle-up is active.

## RECEIVER CHANNEL ASSIGNMENTS

Receiver Plug No. ....	Plug In Servo For:
1 .....	Throttle
2 .....	Aileron
3 .....	Elevator
4 .....	Rudder
5 .....	Gyro
6 .....	Collective Pitch
7 .....	Auxiliary 1
8 .....	Auxiliary 2
B .....	Battery - input end of switch harness. NOT FOR SERVO!

This same order applies to the servo reversing screen positions.

Channel assignments apply to both the PCM and FM receivers provided with Stylus systems.

## HELICOPTER

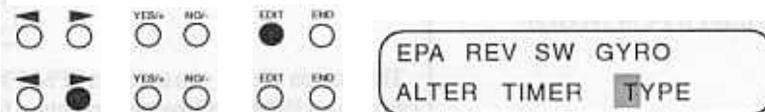
### Stylus Menu Summary — Helicopter Menus

MENU SAMPLE	EXPLANATION/ACCESS <i>(Note; positions are left to right, top row, then left to right, bottom row)</i>
	<p>First Position ..... Displays present model type            Second Position ..... Stopwatch/Timer Present Function            Third Position ..... Total Time Display, Hours:Minutes            Fourth Position ..... Stopwatch/Timer Display, Minutes:Seconds            Fifth Position ..... Present Model Name            Sixth Position ..... Present Transmitter battery pack voltage</p>
	<p>First Position ..... Pitch Curves position            Second Position ..... Throttle Curves position            Third Position ..... Trim Memory position            Fourth Position ..... Aileron, Elevator, Rudder Offsets position</p>
	<p>First Position ..... Dual Rates position            Second Position ..... Exponential position            Third Position ..... Hover Pitch Trim position            Fourth Position ..... Hover Throttle Trim position            Fifth Position ..... Tail Rotor Compensation Mixer position            Sixth Position ..... Throttle Hold Adjustment position</p>
	<p>First Position ..... Servo Centering position            Second Position ..... Model Selection position            Third Position ..... Compensation Mixer position            Fourth Position ..... Servo Reversing position            Fifth Position ..... Switch Assignments position</p>
	<p>First Position ..... Servo End Point Adjustment position            Second Position ..... Servo Reversing position            Third Position ..... Switch Assignments position            Fourth Position ..... Gyro Sensitivity Adjustment position            Fifth Position ..... Alternate Function position            Sixth Position ..... Timer Set            Seventh Position ..... Aircraft Type position</p>
	<p>First Position ..... Data Copy position            Second Position ..... Data Reset position            Third Position ..... Modulation Type position            Fourth Position ..... Name Assignment position</p>
	<p>First Position ..... Fail-Safe Assignment position            Second Position ..... Transmitter Screen Contrast position            Third Position ..... Click or "beep" activation position            Fourth Position ..... RAM and/or ROM card position</p>
	<p>First Position ..... Transmitter Mode Selection            Second Position ..... Switch Alarm activation position            Third Position ..... Receiver battery pack Fail-Safe position</p>

## HELICOPTER

### TO SELECT HELICOPTER SET-UP:

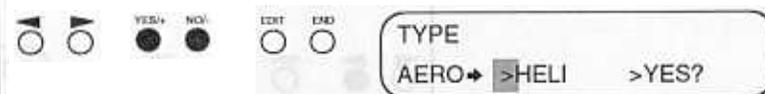
Press EDIT key to arrive at the screen shown below. Press > button to place cursor over TYPE.



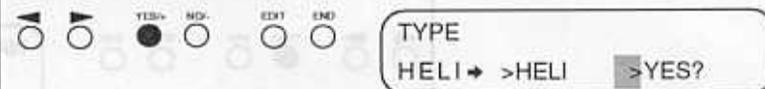
Now press the YES/+ button. You will see a screen such as that shown below.



If HELI is not currently displayed to the right of the cursor position, press the YES/+ button or NO/- button until HELI is displayed. (The possible choices are: AERO, for powered aircraft; HELI, for helicopter, or; GLID for sailplanes.)



To confirm your selection press the > key to move the cursor to the >YES position, then press the YES/+ key. Note that HELI now appears in both lower screen positions.



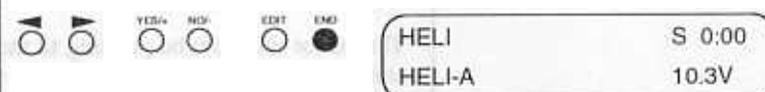
Possible choices are:

AERO, for powered aircraft

HELI, for helicopter

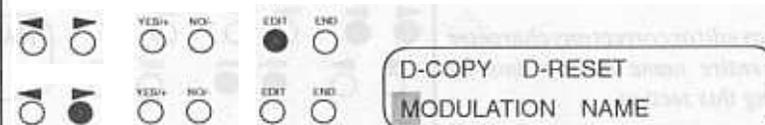
GLID, for sailplanes.

Pressing the END key twice on the front control panel will bring you to the following screen, the INITIAL SCREEN:



This screen tells you several valuable things as stated in the Introduction section of this manual. If you are not familiar with this screen, please refer to that section!

To set up your model, press the EDIT key until you reach this screen:

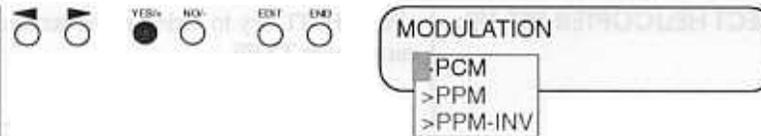


Press the > key to move the cursor to MODULATION. Press the YES/+ key, and this screen will appear: (See next page)

## HELICOPTER

### BASIC HELICOPTER SETUP ...

*PCM modulation is only available if you are using a PCM receiver!*



This screen allows you to select PPM/FM operation or PCM/FM operation. You can also set PPM/FM Inverted operation for use with other brands of receivers that require this mode.

Press the YES/+ or NO/- key to change the currently displayed choice. *PCM modulation can only be used in conjunction with a PCM receiver!*

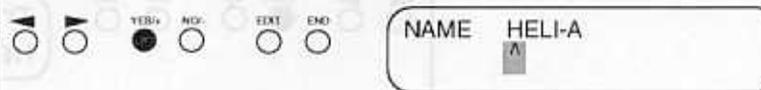
### NAMING THE PRESENT HELICOPTER

*You may use any combination of LETTERS, NUMBERS, Colon (:), Dash (-) or Spaces up to a total of 10 characters.*

When you have set the proper modulation, press the END key to return to the prior screen. Press the > key to place the cursor over the NAME position.



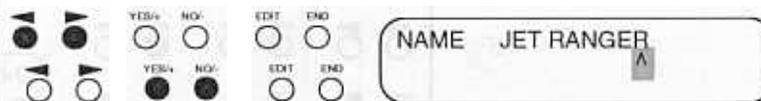
With cursor positioned over NAME, press the YES/+ key to reach this screen:



NAME HELI-A

Press both the YES/+ and NO/- keys at the same time to CLEAR the present name, if any.

The cursor will now be pointing to the first NAME space. You may use any combination of LETTERS, NUMBERS, Colon (:), Dash (-) or Spaces up to a total of 10 characters. To select the character for the first position, press the YES/+ or NO/- key to move through the available characters. When you reach the desired letter or character, press the > key to move to the next position. Continue until you have completed your present model's name or description.



*You may edit or correct any character or the entire name at any time by repeating this section.*

You are done naming your present helicopter. You may edit or correct any character or the entire name at any time by repeating this section.

Press END to return to the prior screen.

**FAIL SAFE**

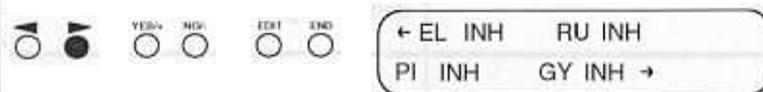
Now press the EDIT key to bring up the menu below. The cursor is over F-SAFE. This menu position allows you to enable or disable the Failsafe function of your Stylus.



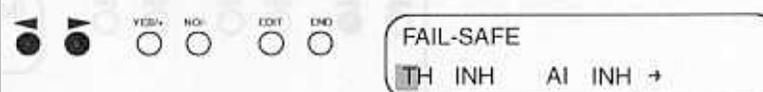
Press the YES/+ key to see this screen:



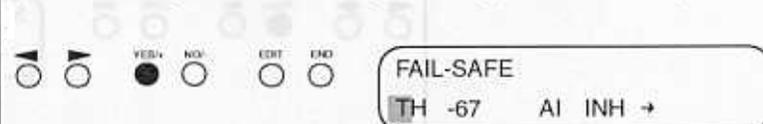
The arrow at the end of the second menu line indicates there are more screens for this function. Pressing the > Key will take you through all of the screens for the failsafe function, as follows:



The settings for the Fail-Safe menu positions can not be set by the +/- Keys. Instead, you program the desired Failsafe servo position for each by placing the control stick or switch in the desired position; for example, low throttle, slight up elevator, etc. Each control function is set individually. Start with the first Fail-Safe setting, TH (Throttle). The default setting is INH (inhibit). To assign a Fail-Safe position for the throttle servo, position the cursor as shown.



Now position the Throttle stick on the transmitter to the desired Fail-Safe position. Now press the YES/+ key to set the position in memory.



To check your settings (after programming all of your failsafe positions) simply turn the transmitter power switch OFF and check that the controls go to the preset positions. These are the positions the radio will assume if control is temporarily lost due to interference or transmitter problems.

To turn off or inhibit one of the Fail-Safe setting, move the cursor to that menu position and press BOTH the YES/+ and NO/- keys at the same time.

Because of the inherent instability of helicopters, many helicopter pilots prefer to leave the failsafe feature in "hold" rather than setting failsafe positions. You will need to decide what is best for your specific installation.

*FAILSAFE is ONLY available when you are using a PCM receiver and transmitting in the PCM Modulation mode. If you are transmitting PPM/FM or PPM/INV you will not be able to enable the F-SAFE function.*

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

*To turn off or inhibit one of the Fail-Safe setting, move the cursor to that menu position and press BOTH the YES/+ and NO/- keys at the same time.*

## HELICOPTER

### SPECIAL NOTES

During the radio installation and set-up process for your helicopter you will find it helpful to mark each servo with its control function and the direction for specific control application, i.e. 'right tail rotor,' 'high throttle,' etc. This way you can look at the servo to ascertain the effect of slight control adjustments, rather than looking at the control itself.

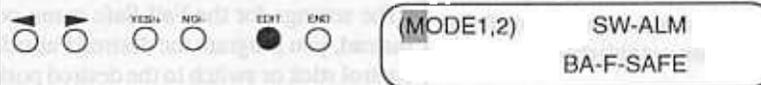
Stylus is not designed to accommodate CCPM style swashplate mixing.

During field set-up and fine tuning you will find it necessary to make adjustments that either change throttle settings, or require changing the throttle stick position in order to make the program changes. **BE CERTAIN** to kill the engine before making these changes!

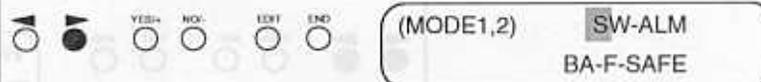
Finally, always be certain which flight mode your transmitter is set for before starting the machine or taking off. Regardless of the flight mode selected, be certain the throttle is in the 'low' position with the trim properly set each time you start the engine.

### SWITCH ALARMS

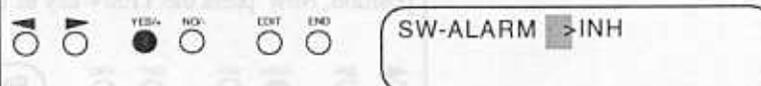
Stylus offers the option of having an audio alarm sound when certain stick or switch conditions are present when you turn on the transmitter. For helicopters especially, it is recommended that you enable this function. To do so, press the Edit key to display the following screen:



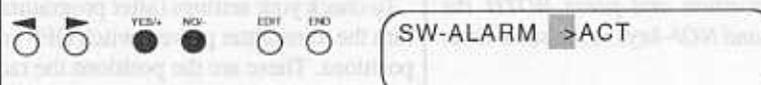
Press the > Key to move the cursor to the SW-ALM position.



Press the YES/+ Key to display the SW-ALM menu.



Press the YES/+ or NO/- keys to toggle the Switch Alarm ON or OFF.



*Any time that the transmitter is turned ON while one of the idle-up flight mode switches is in the ON position, an audio alarm will sound and the display screen will warn you "IDLE UP ON!"*

Now, with the Switch Alarm function activated, any time that the transmitter is turned ON while one of the idle-up flight mode switches is in the ON position, an audio alarm will sound and the display screen will warn you "IDLE UP ON!"

**SERVO REVERSING**

*Stylus allows you to electronically REVERSE the direction of rotation for each of the servos in use.*

Stylus 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 transmitter controls. If so, proceed as follows.

Press the EDIT key until you arrive at the following screen:



Press the > key to position the cursor over the REV position.



Now press the YES/+ key to see the following screen:



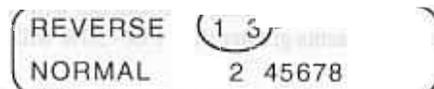
The default positions shown have all channels operating in the NORMAL direction, so all channel numbers are in the lower row as shown above.

If, for instance, you wish to change the direction of rotation of the servos operating on channels number 1 and number 3, press < or > keys to position the cursor over the desired channel number(s), then press the YES/+ or NO/- key to change that channel to the REVERSE direction.



Those channels you have changed to reverse rotation will now appear in the upper row in the REVERSE position.

*In this example, Channels 1 and 3 have been set for REVERSE rotation.*



Reversing Position	Reverses This
1	Throttle
2	Aileron
3	Elevator
4	Rudder
5	Gyro
6	Collective Pitch
7	Aux. 1
8	Aux. 2

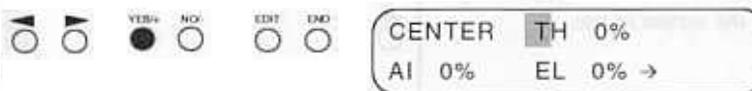
## HELICOPTER

### SETTING CONTROL CENTERING

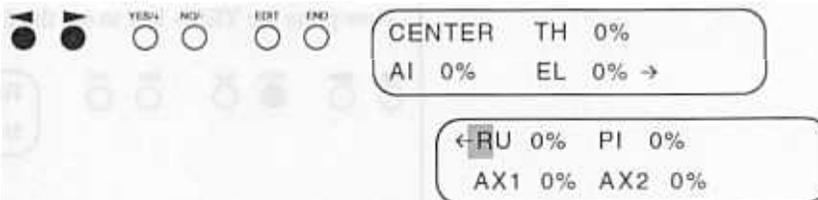
The Stylus allows you to fine-tune the CENTER or neutral position of all flight control servos. After hooking up your controls and mechanically centering all linkages to the approximate positions, press the EDIT key to arrive at the following screen:



Now press the YES/+ key. You will see this screen:



By pressing the > key (or < key) you can position the cursor over the desired control function. Note the arrow at the far right of the bottom row of this screen; this indicates that there are more cursor positions than presently displayed. If you continue to press the > key past the EL position, you will see the remainder of the CENTER screen positions as shown below.



*It is desirable to adjust the control linkages as close as possible to the correct center positions, then use the CENTER commands to "fine tune" the exact position of the control surface when the transmitter control is in neutral.*

The channels for which electronic centering is available are abbreviated in the CENTER menus as follows:

TH = Throttle  
AI = Aileron  
EL = Elevator  
RU = Rudder  
PI = Pitch (Collective)  
AX1 = Auxiliary Channel 1  
AX2 = Auxiliary Channel 2

The value displayed as percentage (%) to the right of each channel abbreviation shows the present centering adjustments. Default position is zero. Press the YES/+ and NO/- keys simultaneously to restore a setting to zero.

#### **IMPORTANT NOTE:**

It is desirable to adjust the control linkages as close as possible to the correct center positions, then use the CENTER commands to "fine tune" the exact position of the control surface when the transmitter control is in neutral.

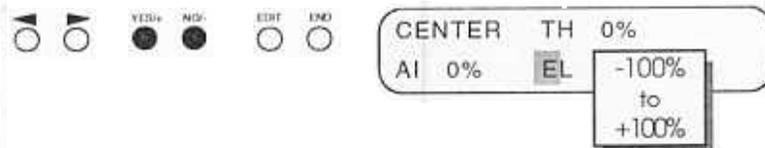
Using a very large amount of electronic centering adjustments will decrease the total throw available for that channel. In particular, centering adjustments greater than + or - 50% will tend to make the extreme stick position on one end less responsive.

**Setting Control Centering ...**

To adjust the centering of any channel, press the > or < key to place the cursor over that channel's position. (For this example we'll adjust the centering of the Elevator servo; so position the cursor over the EL position as shown).



Now, by pressing the YES/+ or NO/- keys you can adjust the centering for the selected channel. The value range possible is from -100% to +100%.



By positioning the cursor over each channel position for which centering adjustments are desired, then setting the CENTER position with the YES/+ or NO/- keys, set the centering for each channel.

**END POINT ADJUSTMENTS (EPA)**

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

There is no EPA screen for channels 5, the GYRO sensitivity channel. This function has a separate dedicated menu that allows for adjustments.

Note that for the Collective and Throttle channels you can not exceed the total output defined in the EPA screens while setting the Hi and Low points in the pitch curve and throttle curve screens.

In general, it is best to use as close to 100 percent 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.

To electronically adjust End Points for servo travel, press the EDIT key to arrive at the following screen:



Now press the YES/+ key to see the first EPA screen.

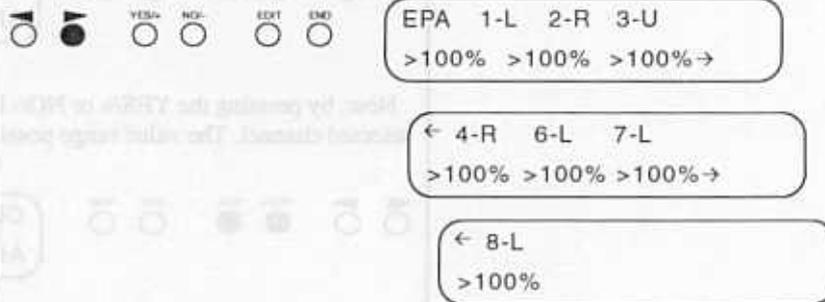


*In general, it is best to use as close to 100 percent servo throw as possible. This allows for the best possible resolution and centering of all control surfaces.*

## HELICOPTER

### End Point Adjustments (EPA) ...

Note that there is an arrow pointing to the right at the bottom right corner of the screen. This means that there are more cursor positions than are presently displayed. Pressing the > key repeatedly will 'push' the cursor off this screen and bring up the second screen of the EPA menu, as shown below.

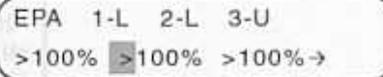


### How To Use The EPA Screens

In the EPA screens, the top row shows the seven channels for which EPA adjustments are available AND the current End Point (High, Low, Right or Left) for which the adjustments can be made. The bottom row of data is the present setting for the currently displayed End Point.

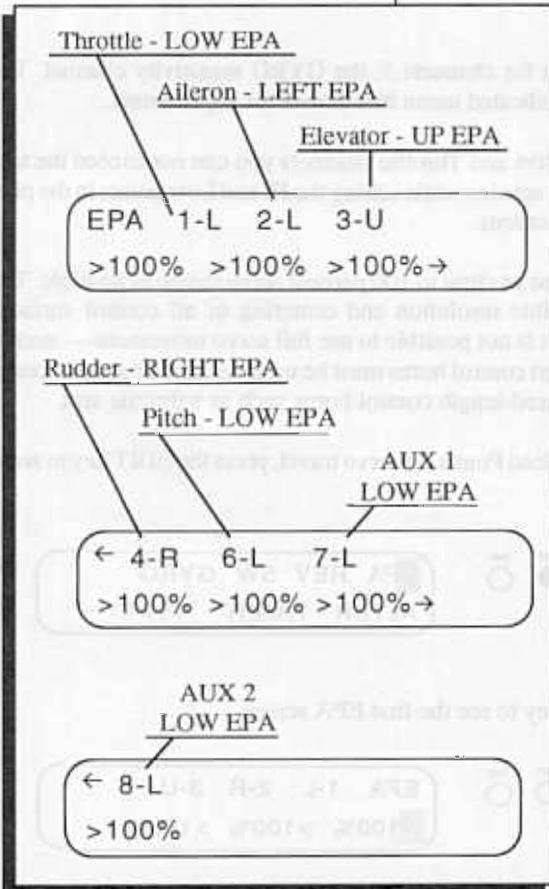
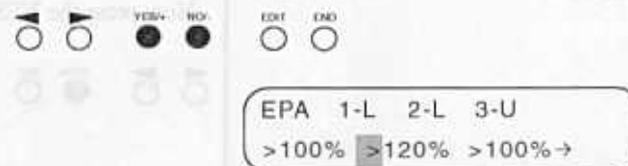
The order of functions displayed in the EPA menus is: Throttle, Aileron, Elevator, Rudder, Collective, Aux 1 and Aux 2 (from left to right in the EPA screens).

To set your individual End Points, use the < or > keys to position the cursor over the desired control function's present setting.



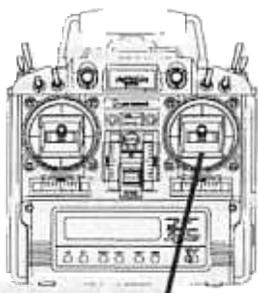
In this example, we have selected the EPA setting for the second function, Aileron. On the top row, the present display shows "2-L," which means you can now make changes in the LEFT travel limit for the Aileron servo.

Pressing the YES/+ or NO/- keys will increase or decrease the amount of servo rotation caused by full LEFT deflection of the aileron stick. The range of EPA adjustment is from 0-150%.

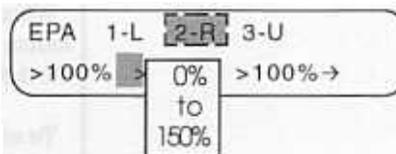


**EPA Screens ...**

To set the EPA for RIGHT MOVEMENT of the Aileron function, move the aileron stick to the right. Now the EPA screen will show as follows:



Move Aileron Stick to the right. →



The 2-R now in the second position means that your End Point Adjustment will now apply to the RIGHT extreme of servo travel.

In a similar manner, you can determine which End Point your adjustments will affect by moving the appropriate stick or switch in the direction of the desired End Point adjustment for any of the other channels.

**GYRO ADJUSTMENT**

It is possible to program two levels of gyro sensitivity\*, and switch between the two in flight with the Stylus.

In this manner the pilot can adjust the gyro for a suitable level of sensitivity for one flight mode (for instance, hover) and by changing a switch setting alter the sensitivity for either more or less stabilization.

\*Actually four levels of sensitivity can be selected in-flight by using the gyro screens in combination with the alternate model option.

\*The gyro sensitivity program will require the use of a gyro that offers remote sensitivity adjustment, such as the Airtronics SG-1 and SG-10 gyros.

*The gyro sensitivity program will require the use of a gyro that offers remote sensitivity adjustment, such as the Airtronics SG-1 and SG-10 gyros.*

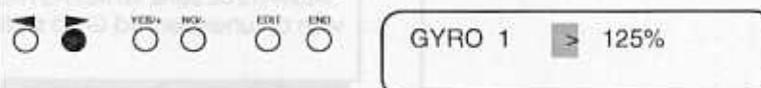
Press the Edit key to reach the following screen:



Press > key to position cursor over the GYRO position.



Press the YES/+ key to display the GYRO screen:



(Continued on next Page)

## HELICOPTER

### Gyro Adjustment ...



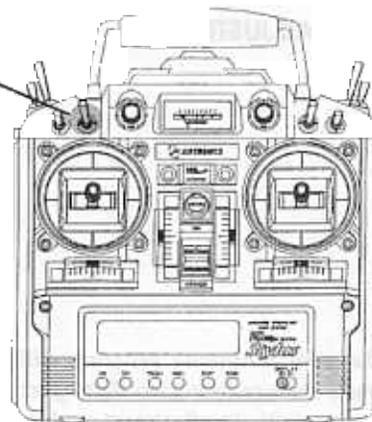
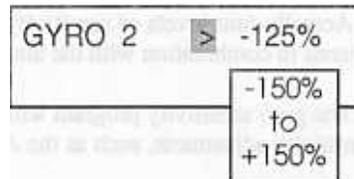
When the GYRO screen is presented, it will display the present Gyro switch setting and the present sensitivity adjustment. In this case, GYRO 1 setting is at the default value of 125%.

To adjust the sensitivity for GYRO 1, press the YES/+ or NO/- key. The range available is from -150% to 150%.

The default program selects switch #11,12 for the Gyro sensitivity switch. This switch is on the upper left face of the transmitter. Switch position #12 selects GYRO 1, and switch position #11 selects GYRO 2.

To adjust the sensitivity of GYRO 2, move the transmitter switch to the #11 position. The GYRO screen will change from GYRO 1 to GYRO 2 depending on the Gyro Switch position.

Switch #11,12 is the pre-set  
GYRO selection switch.



Note that the default for GYRO 2 is -125%, as opposed to the GYRO 1 default of (+)125%. Both can be adjusted from -150% to 150%.

If desired, the Gyro Switch can also be assigned to control a Dual Rate and/or Exponential function for the tail rotor control. See the sections on SWITCH ASSIGNMENTS and DUAL RATES and EXPONENTIAL for more information.

ALWAYS BE SURE WHICH GYRO SETTING IS SELECTED! Taking off with an unexpected Gyro setting may cause loss of control.

**DUAL RATES**

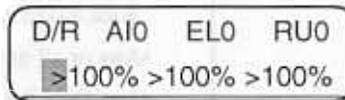
Dual Rate adjustments allow you to switch from your 'standard' control deflection to a reduced or increased amount of throw by simply flipping a switch. The actual speed of signal processing and servo movement are not affected by the Dual Rate settings, only the amount of total servo throw available.

Stylus allows Dual Rate settings for Aileron, Elevator and Rudder. To access the Dual Rate settings, press the Edit key to reach this screen:



With the cursor positioned over the D/R position, press the YES/+ key.

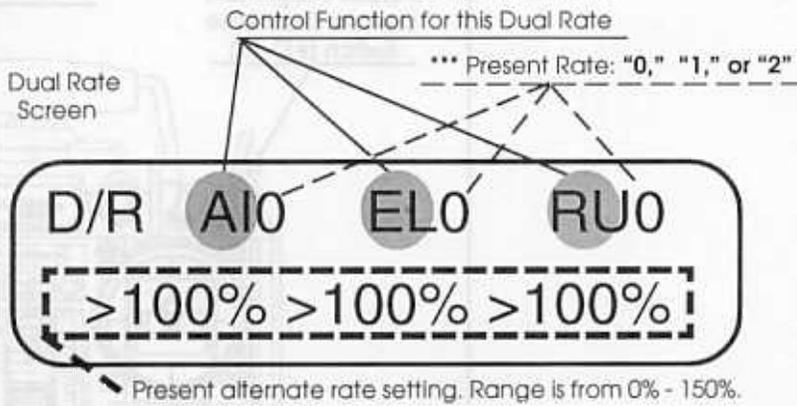
The Dual Rate screen will appear as shown below:



This screen tells you the present rate status and, when a Dual Rate switch is set to an ON position, the alternate rate for that control function that is presently set in the program. See diagram below.

*Dual Rate adjustments allow you to switch from your 'standard' control deflection to a reduced or increased amount of throw by simply flipping a switch.*

**The DUAL RATE Screen**



**\*\*\* Present Rate Display Explanation:**  
 0 is Normal  
 1 is Dual Rate #1  
 2 is Dual Rate #2

Abbrev.	Function	DR #1	DR #2
AI	Aileron	7	6
EL	Elevator	14	13
RU	Rudder	9	8

\*Default switch assignments and positions.

You may wish to change the Dual Rate #2 positions above to be OFF (in the Switches menus) or assign the Dual Rate for a function or functions to a 3-position switch so that you can activate any of the 3 rates available from a single switch.

(Continued on next Page)

## HELICOPTER

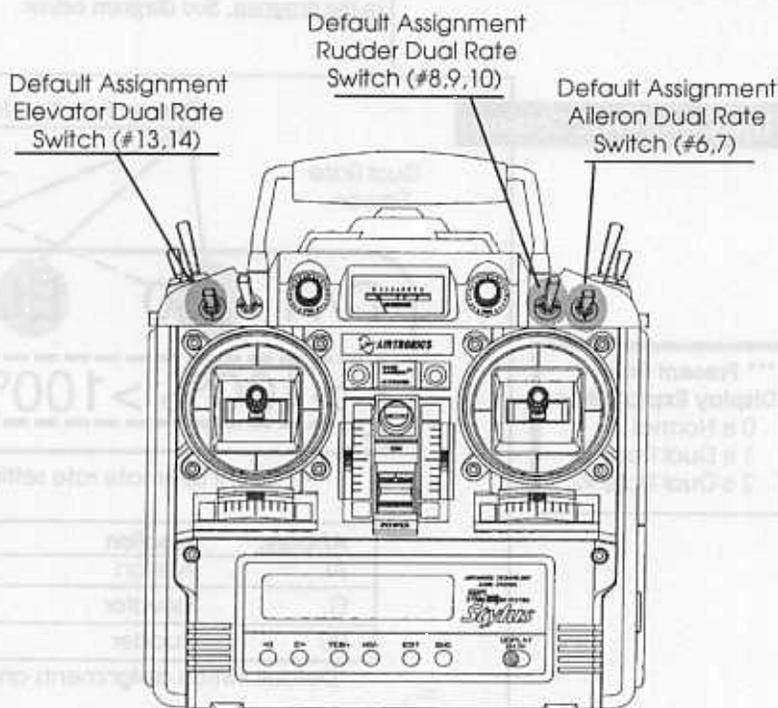
### Dual Rates ...

*The Dual Rate screens, used with the Switch assignment options, offer far more flexibility than traditional 'dual rate' switches.*

It is important to understand that the term "Dual Rate" is used because it is an old and familiar description. It does NOT, however, provide a very complete description of the many options possible when using the Dual Rate functions of the Stylus.

The Dual Rate screens, used with the Switch assignment options, offer far more flexibility than traditional 'dual rate' switches. It is almost impossible to list all of the options possible with the Stylus's Dual Rate functions; you should study this portion of the manual along with the sections covering Exponential and Switch Assignments to arrive at the optimum use of these functions on your specific aircraft. Here are some important pointers about the Dual Rate functions of the Stylus:

- There are THREE possible rates available for each of the three controls: Aileron, Elevator and Rudder. These rates are (0) Normal, (1) Dual Rate #1, and (2) Dual Rate #2.
- You may assign any of the possible rates (Normal, Dual Rate #1 and Dual Rate #2) to cause **reduced** or **increased** throw of that control.
- Any or all of the Dual Rate positions may be assigned to any switch.
- Any Dual Rate switch may also activate or deactivate Exponential settings.
- If you activate the switches for BOTH Dual Rate #1 and Dual Rate #2 at the same time, regardless of which is activated first, Dual Rate #1 will be active.

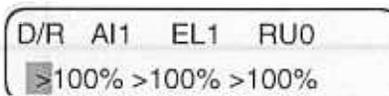


In the standard default settings, the Aileron, Elevator and Rudder Dual Rate switches are assigned to the 'standard' locations as shown above. You can change any of these settings if you wish, as described in the SWITCH menu section.

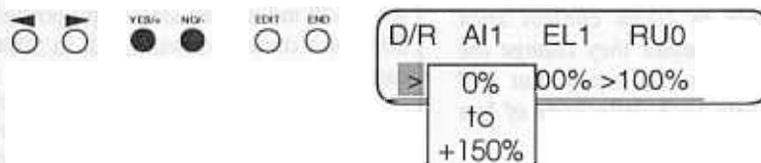
Dual Rates ...

To set an alternate rate for any of the three possible control function, turn the switch for that function to the Dual rate 'On' position. Below we'll assume that the Aileron and Elevator dual rate switches are both in the on position — note that the number following the abbreviations for these functions has changed to "1."

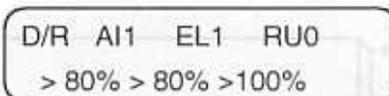
AI and EL display Dual Rate #1 is activated. →



By positioning the cursor over the Aileron and/or Elevator positions you may now set the amount of control response available in Dual Rate #1 position by pressing the YES/+ or NO/- keys.

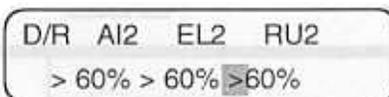


Here we have set the Dual Rate #1 to be 80% of the "Normal" throw for both the Aileron and Elevator channels. The possible range is from 0% of normal to 150%. (Note that you can not increase servo deflection if you already have set the servo throw to its maximum possible settings in the End Point Adjustment menus.)



If you wish to have Dual Rates available for all channels, and/or want to have three rates available for the flight control functions, you will need to change some switch assignments as shown in the "Switch Assignments" section of this manual. For now, assume that you have assigned switch #6 to activate the Dual Rate #1 function for Aileron and Elevator. (You may also assign Dual Rate #1 for Rudder to this switch). When you set the switch to the "On" position, both controls assigned to it will display the number "1" in the Dual Rate Screen.

You can now assign Dual Rate #2 positions to the #7 switch. In this example we'll assume that Dual Rate #2 for Aileron, Elevator and Rudder have all been assigned to the #7 switch position. When this switch is set to #7, you will see the present settings for Dual Rate #2, as shown below.



In the example above we have set the Dual Rate #2 functions to provide 60% of the "Normal" servo throw for all three control surface functions. The range available is from 0% to 150% of the present "Normal" setting.

**CAUTION:**  
Proceed with care when setting dual rate functions to ensure that you will have adequate control deflection available in any possible dual rate position. Setting a dual rate to a very low or 0% setting may cause the loss of control of that function!  
Always make sure that you are aware of the present status of any rate assignments that you have selected.

## HELICOPTER

### Dual Rates ...

For maximum flexibility in the set-up of your aircraft, you will want to study the instructions for setting EXPONENTIAL and ALTERNATE MODE before completing switch assignments and rates for the Dual Rate function. You must assign Exponential Throw options to the same switch(es) as your Dual Rates, or you may decide to alter any or all of your control settings with one switch by using the Alternate Mode option.

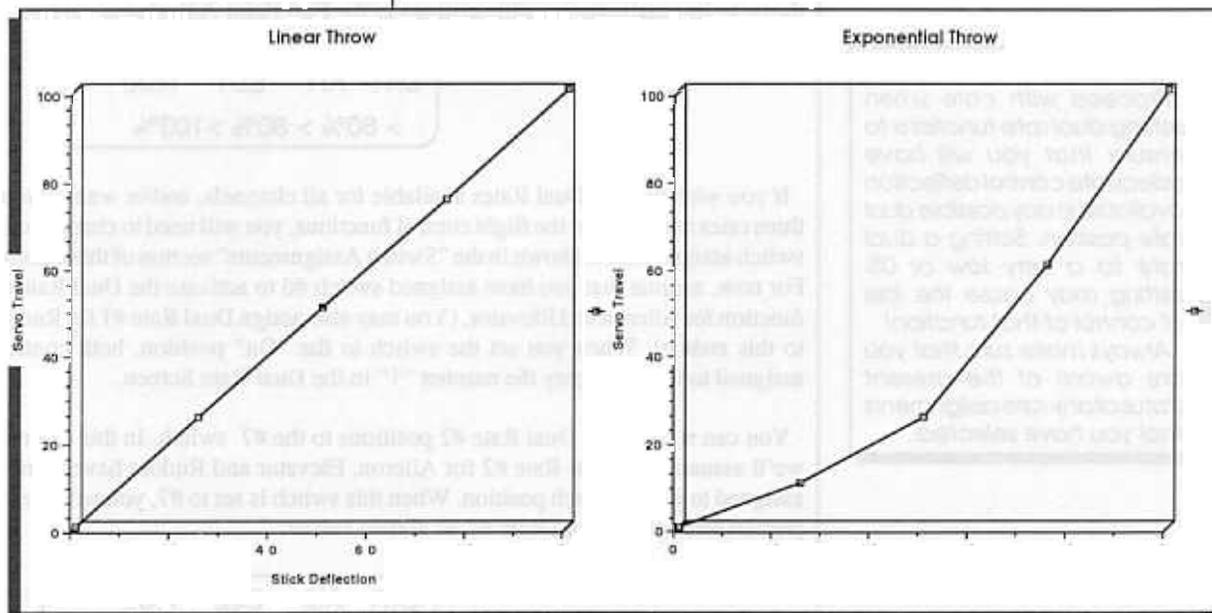
### EXPONENTIAL

*Exponential settings DO NOT change the amount of servo travel available at 100% control stick deflection; rather they change the amount of servo travel that will occur with stick deflections of less than 100%.*

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

Exponential Throw is primarily used to 'soften' or decrease the 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 stick deflection; i.e. 50% stick deflection will result in 50% servo travel; 75% stick deflection will cause the servo to travel to 75% of its presently set maximum throw.

Exponential settings DO NOT change the amount of servo travel available at 100% control stick deflection; rather they change the amount of servo travel that will occur with stick deflections of 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 illustration below.*



If you have not used Exponential functions before, you will want to start with a very small amount of Exponential (10% - 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.

(Continued on next Page.)

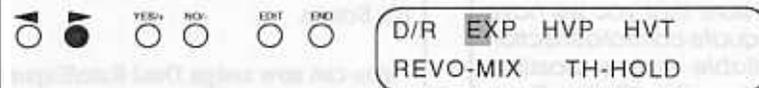
Exponential ...

To activate Exponential Throw you must have Dual Rates assigned to a switch. The positions for Exponential #1 and Exponential #2 for each flight control function correspond to the Dual Rates switch position(s) for those functions. In other words, if you have assigned the #7 switch position to turn on Dual Rate #1, then this same switch position will activate Exponential #1 settings for the same control functions. (Note, however, that you can leave the Dual Rates set at 100% so that switching a Dual Rate switch on will activate Exponential only.)

Press the Edit key to bring up the following screen:



Press the > key to place the cursor over the EXP position.



With the cursor positioned over the EXP position, press the YES/+ key. The Exponential screens will appear as shown below:



These screens tell you the present Exponential status and, when a Dual Rate/Exponential switch is set to an ON position, the Exponential setting for that control function or functions. Refer to Dual Rates section for an explanation of the screen positions, which are identical for Dual Rate and for Expo.

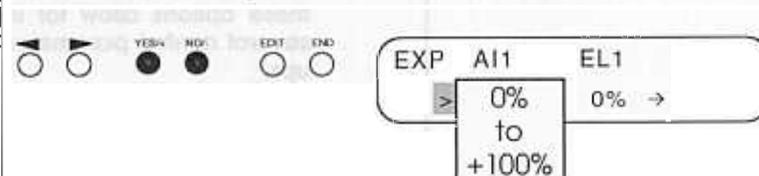
The possible range for Exponential settings for each function is from 0% (Linear Throw) to 100% (Maximum Exponential).

To set an Exponential rate for any of the three possible control function, turn the switch for that function(s) to the Dual Rate 'On' position. Below we'll assume that the Aileron and Elevator dual rate switches are both in the on position — note that the number following the abbreviations for these functions displays "1."

AI and EL display Dual Rate and Exponential position #1 is activated. →



By positioning the cursor over the Aileron and/or Elevator positions you may now set the amount of Exponential available in Dual Rate #1 position by pressing the YES/+ or NO/- keys.



## HELICOPTER

### Exponential ...

#### 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.*

Here we have set the Exponential Rate #1 to be 20% of the maximum for both the Aileron and Elevator channels. This is a good starting point for determining the suitability of Exponential throw for your aircraft and flying style.

```
EXP  A11    EL1
    > 20%  > 20%  →
```

If you wish to have Exponential available for all channels, and/or want to have two Exponential rates available for the flight control functions, you will need to change some switch assignments as shown in the "Switch Assignments" section of this manual. For now, assume that you have assigned switch #6,7 to activate the Dual Rate/Exponential #1 function for Aileron and Elevator. (You may also assign Rate #1 for Rudder to this switch). When you set the switch to the "On" position, both controls assigned to it will display the number "1" in the Exponential Screen.

You can now assign Dual Rate/Exponential #2 positions to the #4,5 switch. In this example we'll assume that Exponential Rate #2 for Aileron, Elevator and Rudder have all been assigned to the #4 switch position. When this switch is set to #4, you will see the present settings for Rate #2, as shown below.

```
EXP  A12    EL2
    > 40%  > 40%  →
```

In the example above we have set the Rate #2 functions to provide 40% of the maximum amount of Exponential throw for all three control surface functions. Changing these settings is done in the same manner as the Dual Rate setting; i.e. press the > or < keys to position the cursor over the desired control function, then press the YES/+ or NO/- keys to adjust the Exponential setting.

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.

(You may wish to assign 'low' Gyro sensitivity to the same switch setting as low rate for tail rotor.)

For most sport and aerobatic models, an Exponential setting from 10% to 25% will give the desired "softness" around neutral.

**For the most flexibility in setting up an aircraft model to your liking, study the available options for Dual Rates, Exponential, Switch Assignments and Alternate Modes. The combinations possible when using all of these options allow for in-air alteration of one or several control parameters to several possible set-ups.**

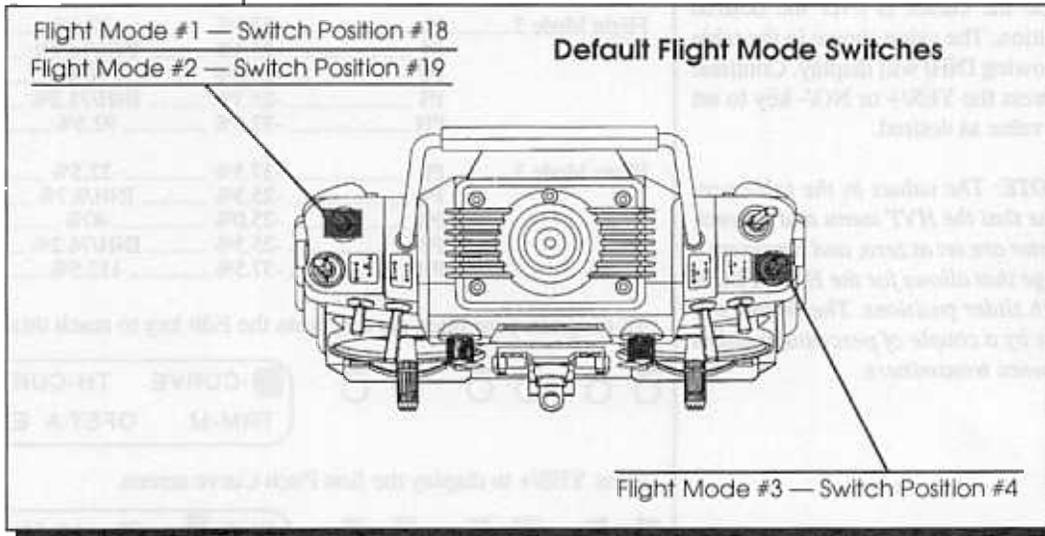
**PITCH CURVES  
(Flight Modes)**

Stylus allows you to customize four distinct flight modes for each helicopter. By using the 'Alternate' function you can access a total of eight distinct pitch curves while in flight.

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

- N ..... Normal
- 1 ..... Select Curve One - Idle Up
- 2 ..... Select Curve Two - Idle Up
- 3 ..... Select Curve Three - THROTTLE HOLD

Selecting a pitch curve other than Normal is done by activating a switch on top of the transmitter as shown below.



*Always be aware of which flight mode you have selected before starting your engine or attempting flight!*

The above switch positions are the factory defaults, and can be changed if desired. **IF DATA RESET IS USED, CHECK FOR THESE SWITCH ASSIGNMENTS.** Because of the international nature of the Stylus, the software may not restore these defaults as shown.

The switches are assigned priority as follows: 3, 2, 1. If Flight Mode 2 is selected when Flight Mode 1 is on, Flight Mode 2 has priority. If Flight Mode 3 is selected when Flight Mode 1 and/or 2 is on, Flight Mode 3 has priority.

Because Flight Modes 1 and 2 are idle-up modes, activating Flight Mode 3, which is Throttle Hold, when Flight Mode 1 and/or 2 is active, will cause an audible alarm to sound if the Alarm function in the TH-HOLD menu is active. This is to warn you of possible erratic or unexpected behavior

You must always be aware of which flight mode you have selected before starting your engine or attempting flight!

When none of the Flight Modes #1, #2 or #3 are selected, you are in 'Normal' flight mode.

(Continued on next Page)

## HELICOPTER

### Pitch Curves ...

The pitch curve for each flight mode has FIVE points that can be adjusted to suit your specific needs.

The P1 and P3 points within each pitch curve is inhibited in the default settings. In this position the servo response will be linear from PL to P2 and from P2 to PH.

To activate the P1 and P3 positions, simply press the YES/+ or NO/- key while the cursor is over the desired position. The value shown in the table following INH/ will display. Continue to press the YES/+ or NO/- key to set the value as desired.

*NOTE: The values in the table presume that the HVT menu and potentiometer are set at zero, and represent a range that allows for the HI and LOW pitch slider positions. The values will vary by a couple of percentage points between transmitters.*

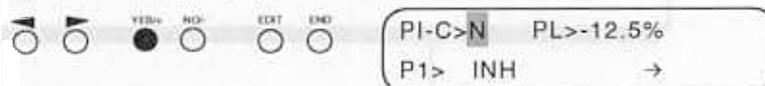
The pitch curve for each flight mode has FIVE points that can be adjusted to suit your specific needs. Within each pitch curve these points are referred to as PL (low pitch) P1, P2, P3 and PH (high pitch). The range of values and the default settings for each point of each pitch curve are shown below:

Flight Mode	Curve Point	Minimum	Default	Maximum
Normal	PL	-37.5%	-12.5%	112.5%
	P1	-25.3%	INH/21.2%	125.2%
	P2	-39.0%	55%	125.2%
	P3	-25.3%	INH/83.7%	125.2%
	PH	-37.5%	112.5%	137.5%
Flight Mode 1	PL	-37.5%	-12.5%	112.5%
	P1	-25.3%	INH/21.5%	125.2%
	P2	-25.0%	55%	125.0%
	P3	-25.3%	INH/78.6%	125.2%
	PH	-37.5%	102.5%	137.5%
Flight Mode 2	PL	-37.5%	-17.5%	112.5%
	P1	-25.3%	INH/16.2%	125.2%
	P2	-25.0%	50%	125.0%
	P3	-25.3%	INH/71.2%	125.2%
	PH	-37.5%	92.5%	137.5%
Flight Mode 3	PL	-37.5%	-22.5%	112.5%
	P1	-25.3%	INH/8.7%	125.2%
	P2	-25.0%	40%	125.0%
	P3	-25.3%	INH/76.2%	125.2%
	PH	-37.5%	112.5%	137.5%

To program your pitch curves, press the Edit key to reach this screen:



Press YES/+ to display the first Pitch Curve screen.



The first cursor position (shaded above) indicates the Flight Mode for which the present pitch curve points are set. This position will read either N, 1, 2 or 3. Select the Flight Mode you wish to program, using the YES/+ or NO/- keys.

The other cursor positions allow adjustment of the PL and P1 pitch settings. Use the < and > keys to place the cursor over the desired pitch curve point, then adjust with the YES/+ and NO/- keys.

The arrow at the lower right indicates that more positions are available than are presently displayed. Pressing the > key repeatedly will cause the added screens to become visible as shown below.



As for the first two positions, use the < and > keys to place the cursor over the desired pitch curve point, then adjust with the YES/+ and NO/- keys.

*Fine tuning of the Hover pitch setting is also available on a separate screen and via a potentiometer control on the transmitter face.*

**HOVERING PITCH**

Stylus offers two methods for setting the Hovering Pitch; an 'HVP' screen within the software, and a potentiometer on the face of the transmitter. In normal operation you will usually set the approximate Hovering Pitch with the software, then adjust as needed for various weather and flying conditions with the Hover Pitch potentiometer.

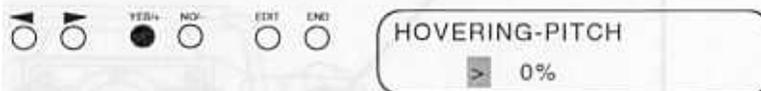
To set the Hovering Pitch with the software, press the Edit key until the following screen appears:



Place the cursor over the HVP position with the > key.



Press YES/+ key to access the HVP screen.



The value displayed will be 0% IF the Hovering Pitch Potentiometer is set at the zero, or neutral, position. The screen will indicate "INH" if Flight Mode 1,2 or 3 is activated. You may now adjust the Hovering Pitch point by using the YES/+ or NO/- keys. The range possible is from -25% to +25%. When you adjust the HVP setting, points 1, 2 and 3 of the Pitch Curves are also shifted accordingly. PL and PH are not affected by HVP settings.

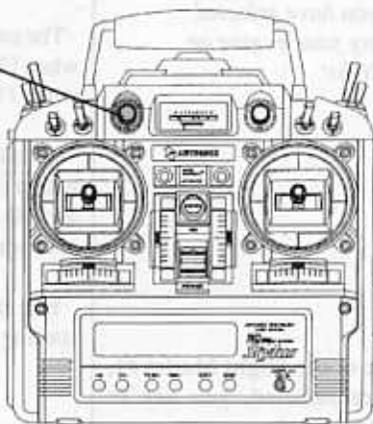
The Hovering Pitch Potentiometer on the left face of the transmitter also adjusts the Hovering Pitch setting within a range of -25% to +25%, and is incremental to the HVP screen. This means that by using both Hovering Pitch adjustments you have a total range possible of -50% to 0%, OR 0% to +50%.

The above adjustments affect ONLY the Normal Flight Mode, indicated as Flight Mode "N." To adjust this point in another Flight Mode use the Pitch Curves P2 adjustment.

Hovering Pitch Potentiometer

Fine tuning of the Hovering Pitch can be accomplished with the Hovering Pitch Potentiometer. Turning this clockwise will increase the pitch at the hover position; turning the control counter-clockwise will decrease pitch at the hover position.

*(Hover position is assumed, for the purpose of the HVP and HVT functions, to be half-stick, or the center position on the Throttle/Collective control.)*



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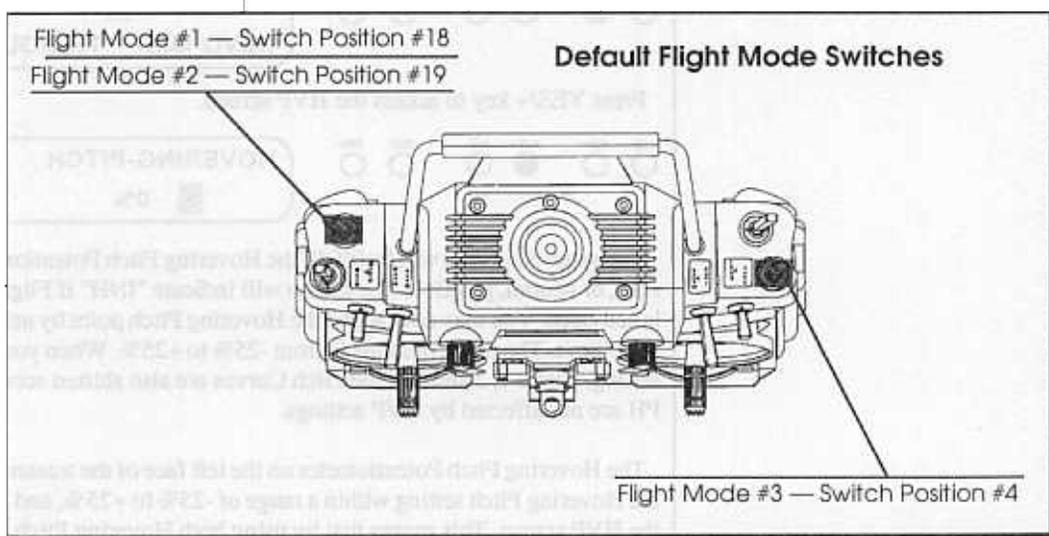
### THROTTLE CURVES (Flight Modes)

Stylus allows you to customize four distinct flight modes for each helicopter. By using the 'Alternate' function you can access a total of six distinct throttle curves while in flight plus two Throttle Hold modes.

The four throttle curves (flight modes) available for each helicopter are:

- N ..... Normal
- 1 ..... Select Curve One - Idle Up
- 2 ..... Select Curve Two - Idle Up
- 3 ..... Select Curve Three - THROTTLE HOLD

Selecting a throttle curve other than Normal is done by activating a switch on top of the transmitter as shown below.



The above switch positions are the factory defaults, and can be changed if desired. **IF DATA RESET IS USED, CHECK FOR THESE SWITCH ASSIGNMENTS.** Because of the international nature of the Stylus, the software may not restore these defaults as shown.

The switches are assigned priority as follows: 3, 2, 1. If Flight Mode 2 is selected when Flight Mode 1 is on, Flight Mode 2 has priority. If Flight Mode 3 is selected when Flight Mode 1 and/or 2 is on, Flight Mode 3 has priority.

Because Flight Modes 1 and 2 are idle-up modes, activating Flight Mode 3, which is Throttle Hold, when Flight Mode 1 and/or 2 is active, will cause an audible alarm to sound if the Alarm function in the TH-HOLD menu is active. This is to warn you of possible erratic or unexpected behavior.

You must always be aware of which flight mode you have selected before starting your engine or attempting flight!

*Always be aware of which flight mode you have selected before starting your engine or attempting flight!*

When none of the Flight Modes #1, #2 or #3 are selected, you are in 'Normal' flight mode.

(Continued on next Page)

**Throttle Curves ...**

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 PL (idle) P1, P2, P3 and PH (high throttle). The range of values and the default settings for each point of each throttle curve are shown below:

Flight Mode	Curve Point	Minimum	Default	Maximum
Normal	PL	-25.0%	0%	125.0%
	P1	-25.0%	INH/22.5%	125.0%
	P2	-25.0%	47%	125.0%
	P3	-25.0%	INH/73.5%	125.0%
	PH	-25.0%	100%	125.0%
Flight Mode 1	PL	-25.0%	40%	125.0%
	P1	-25.0%	INH/45%	125.0%
	P2	-25.0%	50%	125.0%
	P3	-25.0%	INH/75%	125.0%
	PH	-25.0%	100%	125.0%
Flight Mode 2	PL	-25.0%	50%	125.0%
	P1	-25.0%	INH/52.5%	125.0%
	P2	-25.0%	55%	125.0%
	P3	-25.0%	INH/77.5%	125.0%
	PH	-25.0%	100%	125.0%

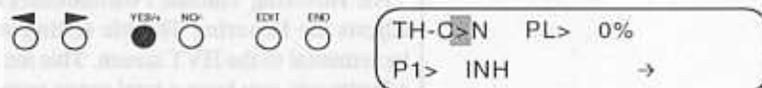
*NOTE: The values in the table at right will vary by a couple of percentage points between transmitters due to factory control stick calibration tolerances.*

**Flight Mode 3 is Throttle Hold.** (This throttle setting is adjusted with its own screen, covered later in this manual.)

To program your throttle curves, press the Edit key to reach this screen:



Move the cursor to TH-CURV using the > key, then press YES/+ to display the first Throttle Curve screen.



The first cursor position (shaded above) indicates the Flight Mode for which the present pitch curve points are set. This position will read either N, 1 or 2. Use the YES/+ or NO/- keys to choose the flight mode you wish to alter.

The other cursor positions allow adjustment of the PL and P1 throttle settings. Use the < and > keys to place the cursor over the desired throttle curve point, then adjust with the YES/+ and NO/- keys.

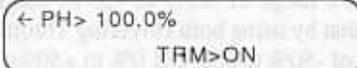
The arrow at the lower right indicates that more positions are available than are presently displayed. Pressing the > key repeatedly will cause the added screens to become visible as shown below.



As for the first two positions, use the < and > keys to place the cursor over the desired throttle curve point, then adjust with the YES/+ and NO/- keys.

Fine tuning of the Hover throttle setting is also available on a separate screen and via a potentiometer control on the transmitter face.

**THROTTLE TRIM**



When you select Flight Mode 1 or 2 for throttle curve you are presented with a final screen similar to the above. The TRIM>(ON) position allows you to select whether the throttle trim is active or not when that flight mode is selected. Move the cursor to the TRIM> position and press the YES/+ key to toggle between ON or OFF for throttle trim.

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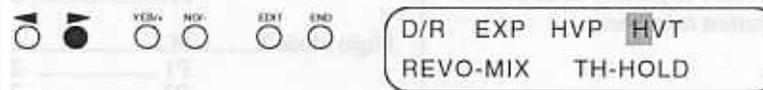
### HOVERING THROTTLE

Stylus offers two methods for setting the Hovering Throttle; a 'HVT' screen within the software, and a potentiometer on the face of the transmitter. In normal operation you will usually set the approximate Hovering Throttle with the software, then adjust as needed for various weather and flying conditions with the Hover Throttle potentiometer.

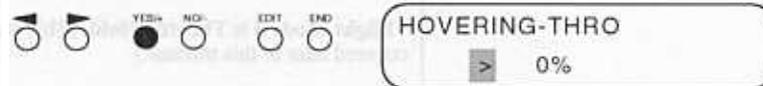
To set the Hovering Throttle with the software, press the Edit key until the following screen appears:



Place the cursor over the HVT position with the > key.



Press YES/+ key to access the HVT screen.



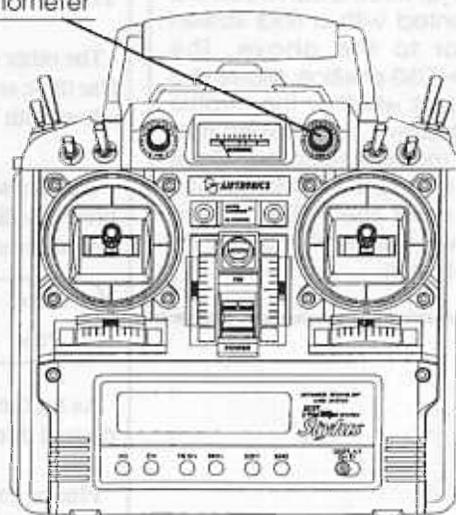
You may now adjust the Hovering Throttle point by using the YES/+ or NO/- keys. The range possible is from -25% to +25%. When you adjust the HVT setting, points 1, 2 and 3 of the Throttle Curves are also shifted accordingly. (This adjustment is only available in the Normal Flight Mode. To move the mid-stick setting in another Flight Mode, use the P2 point in that mode's pitch curve screen)

The Hovering Throttle Potentiometer on the right face of the transmitter also adjusts the Hovering Throttle setting within a range of -25% to +25%, and is incremental to the HVT screen. This means that by using both Hovering Throttle adjustments you have a total range possible of -50% to 0%, OR 0% to +50%.

#### Hovering Throttle Potentiometer

Fine tuning of the Hovering Throttle can be accomplished with the Hovering Throttle Potentiometer. Turning this clockwise will increase throttle at the hover position; turning the control counter-clockwise will decrease throttle at the hover position.

*(Hover position is assumed, for the purpose of the HVP and HVT functions, to be half-stick, or the center position on the Throttle/Collective control.)*



**THROTTLE HOLD**

*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.*

Flight Mode 3 is the Throttle Hold mode, allowing the pilot to practice and perform autorotation approaches and landings without actually killing the engine.

The HOLD screen allows for adjustment of the throttle setting while in Throttle Hold, as well as allowing the throttle trim and alarm functions to be either active or inactive.

To set the Throttle Hold position, press the Edit to display the following screen:



Place the cursor over the HOLD position with the > key.

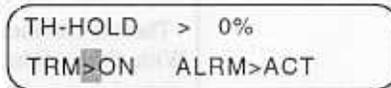


Now press the YES/+ key to display the HOLD screen.



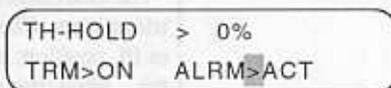
The first cursor position allows setting the throttle position for Flight Mode 3, Throttle Hold. Use the YES/+ or NO/- keys to change the setting. The range of adjustment available is from -50% to +50%. Actual operation of your engine will be required to determine the optimum setting for autorotations. Generally the engine will be adjusted to a reliable idle speed that is low enough to disengage the clutch.

The second cursor position in the HOLD screen allows you to enable or disable the throttle trim function while in Throttle Hold. Move to the TRM position using the > key.



You may now toggle the trim from ON to OFF using the YES/+ or NO/- keys. In either case the throttle stick will control only the collective pitch while in Throttle Hold (Flight Mode 3.)

The third cursor position in the HOLD screen allows you to enable or disable the alarm function while in Throttle Hold. Move to the TRIM position using the > key.



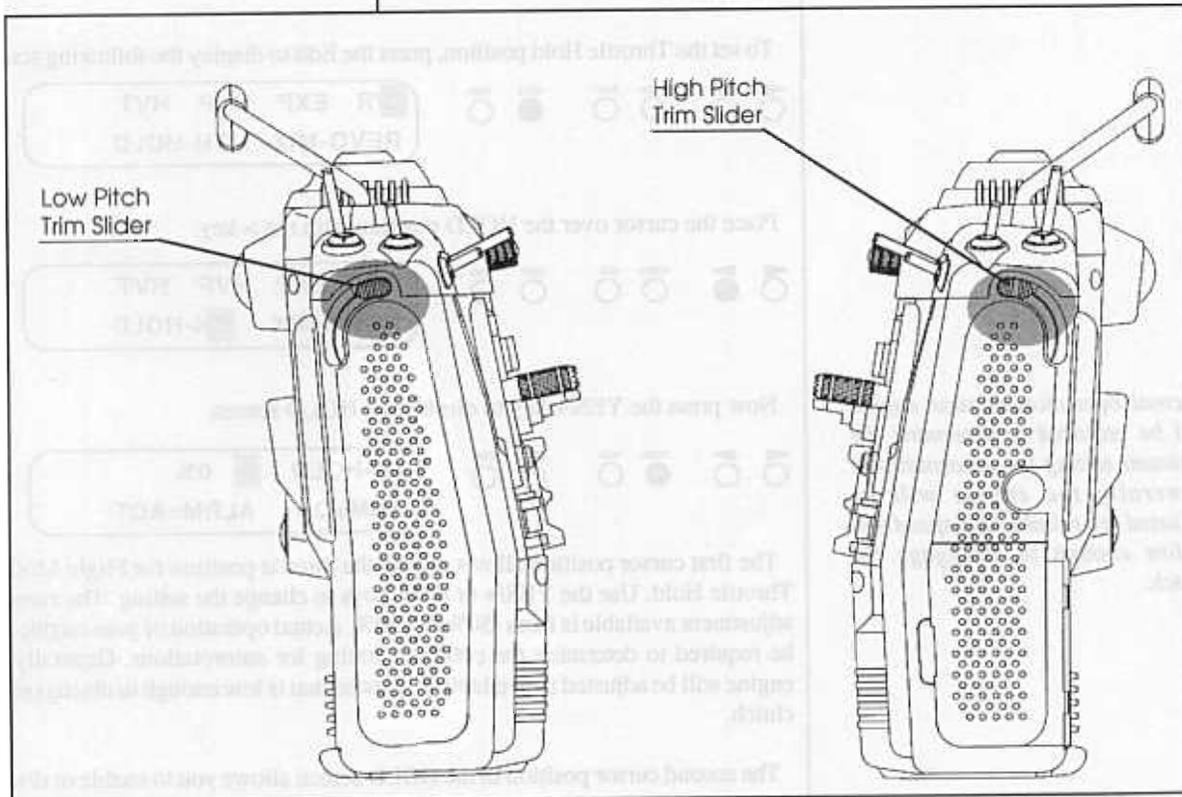
You may now toggle the alarm from ACT to INH using the YES/+ or NO/- keys. If set to ACT (active) an alarm will sound if Throttle Hold (Flight Mode 3.) is turned ON while Flight Mode 1 or 2 are active.

**ALWAYS be aware of the position of your flight mode switches when starting or operating your helicopter!**

## HELICOPTER

### HIGH PITCH, LOW PITCH SLIDERS

Stylus offers external pitch sliders to adjust High Pitch and Low Pitch setting. These sliders are pre-assigned and their position can not be changed in software. The High and Low Pitch trim sliders are located on the sides of the Stylus transmitter as shown below:



There are no menus used for adjustment of the High and Low pitch trim sliders. With either slider, moving the control upwards will increase pitch; moving the control downwards will decrease pitch. You can de-activate the High and Low pitch trim sliders in the AUX1 and AUX2 menus if you do not want to use these functions.

When you are setting up your pitch curves, move the High and Low pitch trim sliders to the center position. This will allow you to "field trim" the collective either upward or downward as needed for temperature and altitude conditions.

The total range of adjustment available is 25% for each of the High and Low pitch trim sliders. Changing the High or Low pitch trim slider will affect ONLY the PH or PL position; all other pitch curve positions will remain the same regardless of the pitch trim slider position.

When High and Low pitch trim sliders are active, you should check the position of these controls before each flight.

**REVOLUTION MIXING**

REV-MIX Default Settings:		
Mode	Low Stick	Hi-Stick
N	50%	50%
1	50%	40%
2	50%	20%
3	0%	0%

**NOTE:**

If you are using a driven tail rotor system (Tail rotor continues to turn while Throttle Hold is engaged) you will want to program REVO-MIX settings for Flight Mode 3 (Throttle Hold) as well. If no driven tail rotor is used, REVO-MIX is not needed for Throttle Hold.

Stylus allows setting Revolution Mixing for each of the four flight modes, and allows for mixing of tail rotor control with both above-hover stick settings and below-hover stick settings.

REVO-MIX is used to automatically change the tail rotor trim position to accommodate torque changes with increased/decreased main rotor loads.

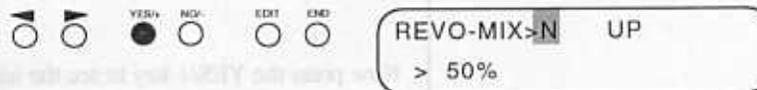
To set REVO-MIX, press the Edit key to display the following screen:



Press the > key to position the cursor over the REVO-MIX position.



Now press the YES/+ key to see the initial REVO-MIX screen.

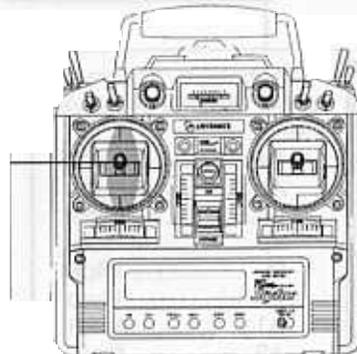


The first cursor position displays the present Flight Mode; either N, 1, 2 or 3. Use the YES/+ or NO/- keys to select the Flight Mode you wish to program for.

The next cursor position shows the throttle stick direction for which the present mixing will apply. In this case it shows DN, for below-hover stick positions. To set the REV-MX for above-hover stick settings, simply move the throttle stick to a position above center.



Move the Throttle/Collective stick up or down to change the present REVO-MIX direction.



Having selected the Flight Mode and the stick direction for which you are setting the REV-MX, move the cursor to the bottom row position, and set the REV-MX using the YES/+ or NO/- keys. For each setting the range of values possible is from -100% to +100%. Flight testing will be needed to determine optimum settings.



**NOTE:**

Since you must move the Throttle/Collective stick to change from Low-Stick mix to Hi-Stick mix, you should ONLY adjust the REV-MX program with the engine OFF!

## HELICOPTER

### COMPENSATION MIXER

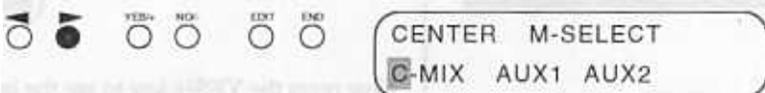
Stylus has one Compensation Mixer available in Helicopter mode to handle advanced mixing needs. This mixer can be assigned to a switch or can be set to remain active or inactive at all times.

The purpose of the Compensation Mixer is to allow one transmitter control input to affect two flight functions. A common use would be to mix rudder with aileron to achieve coordinated turns without moving the rudder stick.

To set up such a mix, press the EDIT key until the following screen appears:



Press the > key to position the cursor over the C-MIX position.



Now press the YES/+ key to see the initial C-MIX screen.



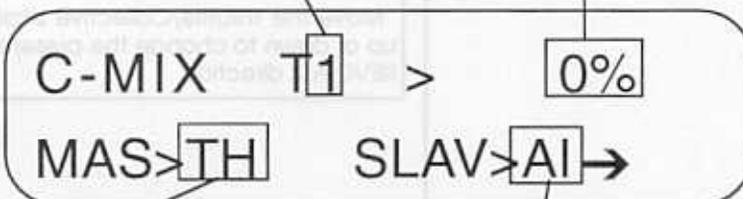
### C-MIX SCREEN

Channels available as either MASTER or SLAVE are:

TH ..... Throttle  
 AI ..... Aileron  
 EL ..... Elevator  
 RU ..... Rudder  
 PI ..... Pitch  
 GY ..... Gyro  
 A1 ..... Aux 1  
 A2 ..... Aux 2

Throw Direction Indicator - either 1 or 2 depending on which way you move the MASTER function's stick.

Amount SLAVE will respond to MASTER control inputs (Mixing Amount)



**MASTER Channel:** Channel that will 'drive' the presently selected SLAVE channel's servo, in addition to its own, when mixing is active.

**SLAVE Channel:** Channel that will respond to the transmitter control function set as MASTER in addition to its own, when mixing is active.

Continued on next Page

**Compensation Mixers ...**

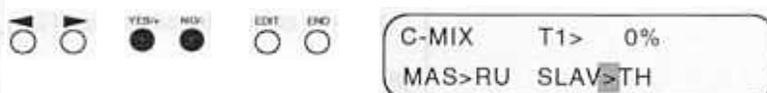
*MASTER channel is the channel that will drive both its own servo(s) AND the slave channel's servo when the Master channel's transmitter control is moved. The SLAVE channel's servo(s) will respond to the Master channel's transmitter control AS WELL AS responding normally to its own transmitter control.*

Usually the first thing you'll want to set is the MASTER and SLAVE channels. Press the > or < key to position the cursor over the MAS> position.



Now press the YES/+ or NO/- keys to cycle through the channels available until you reach the desired MASTER channel. In this example we want the throttle to automatically respond when we move the rudder stick, so Rudder must be the MASTER channel. (This mix adjusts for the slight increase in power needed with tail rotor commands in the anti-torque direction and decreased power with opposite tail rotor commands.) Press the YES/+ to until RU displays.

Now move the cursor to the SLAV> position, then use the YES/+ or NO/- keys to select Throttle as the SLAVE channel.

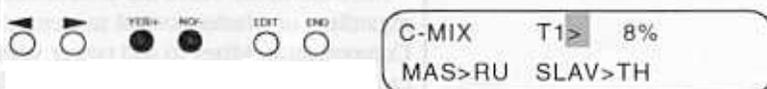


Remember, the MASTER channel is the channel that will drive both its own servo(s) AND the slave channel's servo when the Master channel's transmitter control is moved. The SLAVE channel's servo(s) will respond to the Master channel's transmitter control AS WELL AS responding normally to its own transmitter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

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

Position the cursor over the T1> cursor position using the < or > keys. By pressing the YES/+ or NO/- keys you can set the amount of Slave servo movement (throttle) that will occur with movement of the Master control. (In this case rudder.) The range of adjustment available is from -150% to +150% — in other words, the full range of servo travel is available for mixing. NOTE that you can have more control movement set than the servo is able to accommodate if the total of mixing and EPA for that servo exceed 150%.

For now, set the T1 at 8%. If the throttle moves opposite the direction desired, simply change the value for T1 to -8%. This will give the same amount of mixing, but in the opposite direction.



With T1 set at 8% you now have 8% mixing of throttle with rudder in ONE direction; i.e. left rudder stick will now give added throttle response PLUS left rudder response, but right rudder stick will not cause throttle movement.

(Continued on next page)

## HELICOPTER

### Compensation Mixer ...

To program mixing for both directions of Master stick movement you must set both T1 and T2. To change from T1 to T2 for programming, simply move the transmitter control for the MASTER channel. (In this example the Rudder stick). Note that when you move the control in one direction T1 is displayed in the mixing screen, and when you move the control in the opposite direction T2 is displayed.



Move the Rudder stick to the right and T2 will be displayed in the mixing screen.

Now you can set the mixing for T2 by pressing the YES/+ or NO/- keys.



C-MIX T2> -7%  
MAS>RU SLAV>TH

At this point you will have automatic throttle response along with rudder response whenever you move the Rudder stick on the transmitter. The throttle servo will still respond normally to movement of the transmitter's throttle stick.

Optimum amounts of mixing must be determined by in-flight testing.

### MIXING NOTES

Because each direction of mixing can be set individually, you can change both the AMOUNT and DIRECTION of the slave channel's response to movement of the master channel's control.

By changing the value from + to - for both T1 and T2 you will reverse the slave channels response to the master channel BUT NOT to it's own transmitter control. An example of this type of mixing would be to mix out undesired rolling with application of rudder. For this type mix, the Rudder channel is set as Master and Aileron is set as slave. T1 and T2 are then set to give aileron movement OPPOSITE the direction of rudder movement whenever rudder is applied. (i.e. right rudder causes left aileron and vice-versa). Aileron response to movement of the Aileron stick is unaffected.

There are times where the desired deflection of the Slave channel is the same regardless of Master control movement. An example of this would be using a Compensation Mixer to add power whenever right/left cyclic is applied. In this case Aileron would be the Master channel and Throttle would be Slave. By setting one of the T1 or T2 settings to +10 and the other to -10 (as determined by observing servo movement) you can set the mixing to cause increased power with the application of either Right OR Left cyclic.

You may wish to assign the mixer to a switch (See Switch Assignments section.) so so that mixing will only occur during certain flight modes.

(Continued on next Page)

**Compensation Mixer ...**

The arrow to the right of the SLAV> channel position indicates that there are more settings than can be displayed in the present screen. Press the > key to move the cursor past the arrow and the next screen will appear.



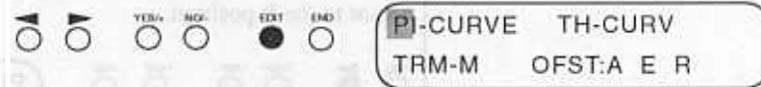
The MIXING-POINT setting is an advanced mixer function. It is set by moving the Master transmitter control to a desired point and then pressing the YES/+ key. The display will read whatever amount of transmitter control deflection you had when the key was pushed.

The Mixing Point function SHIFTS the point at which the mixing RATE "neutral" is located. For instance, assume you have set Aileron as Master and Rudder as Slave, and have set twice as much mixing (tail rotor response) for right aileron stick movement as for left aileron stick movement. Now, hold the aileron stick about 1/2 way towards the right stick limit and press the YES/+ button in the mixing point menu. The menu will now show a value around 50%. Now, the rudder response to aileron stick movement will be the same for the first 1/2 of rudder stick movement to the right as to the left; only aileron stick movements to the right of MORE THAN 50% will cause the higher mixing rate for right rudder to activate.

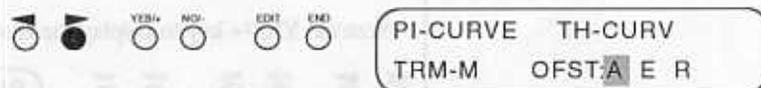
**OFFSETS  
(Flight Modes)**

You can adjust Aileron, Elevator and Rudder Offset for each of the flight modes #1, #2 and #3. In this manner you can set the appropriate trims for each flight mode without having to reset the transmitter trim lever when you select a new flight mode.

Press Edit key to reach this screen:



Move the cursor to the OFST:A position using the > key.

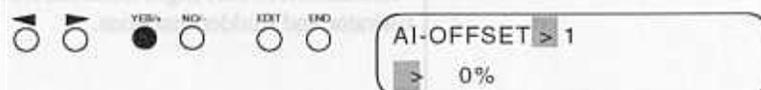


There are three designators in the OFST menu;

- A ..... Aileron Offset
- E ..... Elevator Offset
- R ..... Rudder Offset

Each of these controls can have an offset programmed in either direction, for any of the three flight modes. We'll start with Aileron, the present cursor position.

Now press the YES/+ key to display the AI-OFFSET screen.



## HELICOPTER

### Offsets ...

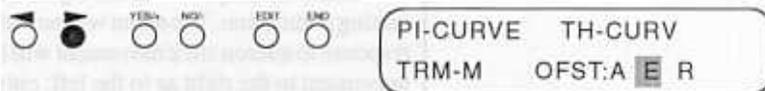


The first cursor position indicates the flight mode for which the current AILERON offset is set. Change the flight mode setting by using the YES/+ or NO/- key.

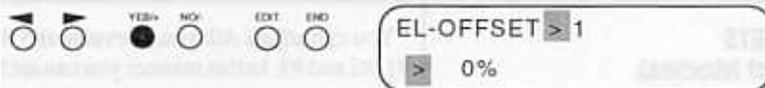
The second cursor position allows you to program offset for the presently displayed flight mode for this control function. The range available is from -100% to +100%. This allows any amount of trim offset from none to full deflection in either direction.

In-flight testing will be needed to determine the proper offset setting.

After setting Aileron Offsets as desired, return to the main menu and press the > key to move the cursor to the E position.



Press the YES/+ key to display the Elevator offset screen:



The screen and functions are identical to those for the Aileron Offset function.

Press the END key to return to the prior screen. Now use the > key to move the cursor to the R position.



Press the YES/+ key to display the Rudder offset screen:



The screen and functions are identical to those for the Aileron and Elevator Offset functions.

Start with small settings in the Offset menus and proceed with flight testing to reach optimum settings.

Remember, EACH flight mode has it's own offset settings available for Aileron, Elevator and Rudder functions.

TRIM MEMORY

*By always having the trim levers centered for ALL aircraft stored in transmitter memory the pilot can change from one model's program to another without having to worry about trim positions for each model.*

Stylus offers a Trim Memory function for all flight control channels. This function allows the trim levers to be re-set to the center positions while maintaining the trimming information in memory. This is useful because the pilot can then ensure that the trims are in the proper position just by checking that the trim levers are all centered. Also, by always having the trim levers centered for ALL aircraft stored in transmitter memory the pilot can change from one model's program to another without having to worry about trim positions for each model.

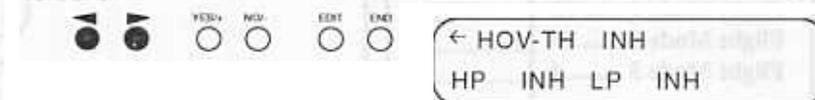
Trim Memory is used after flight testing and trimming the aircraft. When trimming is complete, program Trim Memory as follows: press the Edit key to reach this screen...



Press the > key to position cursor over TRIM-M, then press YES/+ key to display the TRIM-M screen.



Additional screens: press > or < keys to move between screens.



The cursor will be over the ALL position. This position will store trim information for ALL channels if desired, by pressing the YES/+ key when the cursor is over ALL.

To store memory information for selected channels ONLY, press the > or < keys to position the cursor over the desired channel indicator, then press the YES/+ key. Move to the next channel indicator and repeat until desired channels' trim information is stored. Note that as you press the YES/+ key, the trim value for each selected channel will change from zero to a value from -200% to +200%. This value indicates the present trim location.

After storing the trim information for all desired channels, **TURN OFF the transmitter.** Move the trim levers to the neutral positions (within 1-2 notches from center) for all channels for which you have stored trim information. When you turn the power back on, the servos should stay in the previously trimmed positions.

To clear a value stored in any function's trim memory, position the cursor over that function in TRIM-M and press both the YES/+ and NO/- keys simultaneously.

**NOTE:** Hovering Pitch, Hovering Throttle, High Pitch and Low Pitch trim settings will be displayed and saved IF the respective potentiometers are set to within + or - 1 notch of their center positions.

# HELICOPTER

## SWITCH ASSIGNMENTS

At each cursor location (designated by ">") you can change the switch assignment number that follows to any switch number from 1 to 19, or '0' for inhibit, or 'On' to turn the function on at all times.

A very useful feature of Stylus is the ability to assign functions to switches however you prefer, rather than forcing you to adapt to one particular switch layout.

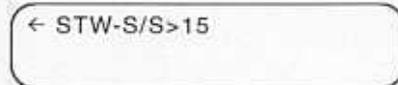
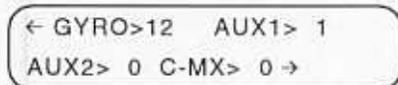
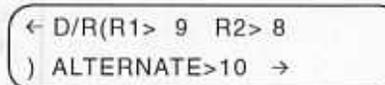
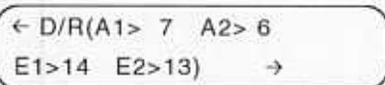
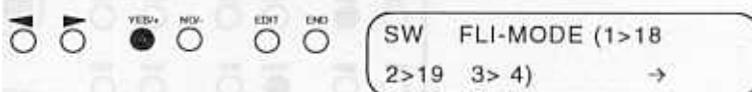
To observe or change switch assignments, press the Edit key to reach this screen:



Press the > key to place the cursor over the SW position.



Now press the YES/+ key to see the first SW screen. There are a total of five Switch Assignment screens as seen below. To move from one screen to another press the > or < keys to move the cursor past the arrow positions.



## Switch Assignment Chart

Write Your SW Choice In Below Lines:	
<b>SCREEN ONE</b> .Default	Set
Flight Mode 1 .....	18
Flight Mode 2 .....	19
Flight Mode 3 .....	4
<b>SCREEN TWO</b>	
Dual Rates	
D/R A1 .....	7
A2 .....	6
E1 .....	14
E2 .....	13
<b>SCREEN THREE</b>	
R1 .....	9
R2 .....	8
ALTERNATE .....	0
<b>SCREEN FOUR</b>	
Gyro .....	12
Aux 1 .....	1
Aux 2 .....	0
C-Mix .....	0
<b>SCREEN FIVE</b>	
STW S/S (Stopwatch) ...	15

At each cursor location (designated by ">") you can change the switch assignment number that follows to any switch number from 1 through 19, or '0' for inhibit, or 'On' to turn the function on at all times.

Note that more than one function may be assigned to a single switch. This can be useful in the case of similar functions, such as dual rates for Aileron, Elevator and Rudder all being assigned to a single switch. However, to avoid accidentally enacting a function, extreme care must be used when assigning switches. It is suggested that you keep a list of all switch assignments for each model in the transmitter's memory.

Also, it is a good idea to assign similar functions to the same switch from one aircraft to the next. Always be aware of which functions are active at any time before starting or flying your aircraft.

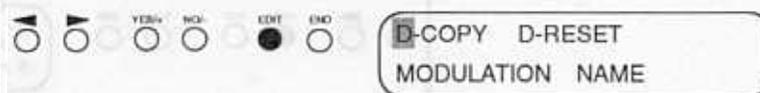
**DATA COPY**

A valuable feature of the Stylus 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 helicopter program in Model 1 and nothing in Model 2, you can copy the Model 1 program into Model 2 with the Data Copy function).

Having copied your control set-up, you can now use M-SELECT to load the Model 2 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, still stored as Model 1).

*Having copied your control set-up, you can now use M-SELECT to load the Model 2 program, and then make control changes to that set-up. This allows you to experiment with different control options without changing your original parameters.*

To use the Data Copy function, press the Edit key to reach this screen:



The cursor is already positioned over the D-COPY position, so now press the YES/+ key to see the D-COPY screen.



The top line of the screen shows the PRESENTLY LOADED model; in this case "HELI-A". This is the model that can presently be copied INTO another model set-up.

The second line shows the data destination, or which Model (1 through 4) the presently loaded data will be copied INTO. It is presently set as HELI-A, which is the same as the source model. Pressing the YES/+ or NO/- keys allow you to set the DESTINATION for the data being copied.

You can select ANY of the other three available setups for a destination, regardless of the model type presently set for that setup.

*MAKE CERTAIN that this Model set-up is not one you wish to save, because when you copy the HELI-A set-up into HELI-B, all data that was in HELI-B is REPLACED with the HELI-A data!*



Above, the destination has been set to HELI-B. MAKE CERTAIN that this Model set-up is not one you wish to save, because when you copy the HELI-A set-up into HELI-B, all data that was in HELI-B is REPLACED with the HELI-A data!

At this point HELI-B is still intact, so if you wish to change the destination for the copied data, do so before proceeding.

(Continued on next Page)

## HELICOPTER

### Data Copy ...

Having selected both the desired data source (HELI-A) AND the desired data destination (in this example, HELI-B) you can now proceed to confirm the D-COPY function.

Press the > key to place the cursor over the >Y position as shown.



Press the YES/+ key to confirm your D-COPY selection.



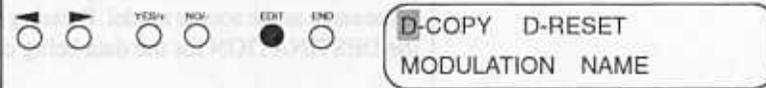
The screen will change to the following screen to inform you that the process has been completed, and that Model 1 and Model 2 now have the same data (in this case, HELI-A).

D-COPY COMPLETED  
A:B HELI-A

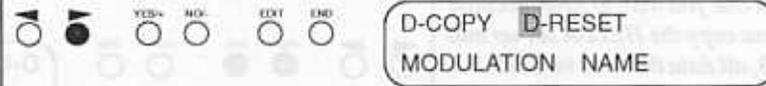
### DATA RESET

If you want to 'undo' all of your programmed parameters at one time, you can use the Data Reset function. This function will 'Reset' all settings to the factory default settings.

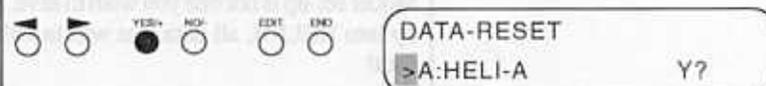
Press the Edit key to display the following screen:



Press the > key to place the cursor over the D-RESET position.



Now press the YES/+ key to display the D-RESET screen:



The first cursor position shows the current MODEL (HELI-A here) that will be RESET if you continue. Press the YES/+ or NO/- to change this Model if desired.  
(Continued on next Page)

#### NOTE!

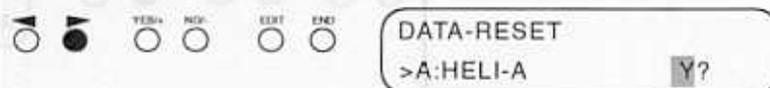
Using the Data Reset function will cause the Stylus to reset the switch assignments.

Always check switch assignments whenever loading a new model, changing model type or after using the Date Reset function.

**Data Reset ...**

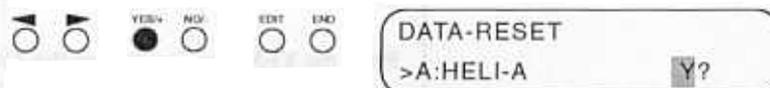
Along with the Model No., the bottom line shows the name of the setup denoted by the selected Model No. (In this case HELI-A).

When you are certain that the selected Model setup is the one you wish to reset, press the > key to position the cursor over the >YES position.



*ALL OTHER Models in memory are unaffected by the DATA-RESET function, only the selected Model setup is affected.*

Now press the YES/+ key to confirm that you wish to Reset the data for this Model.



Note that the bottom line now displays HELI-A — the default name for this Model setup. (This will replace any name you had assigned to this setup.) The data has now been reset to factory default settings.

ALL OTHER Models in memory are unaffected by the DATA-RESET function, only the selected Model setup is affected.

**ALTERNATE**

*The ALTERNATE function is one of the most powerful functions of the Stylus. This function allows the pilot to switch from one Model Setup to another Model Setup DURING FLIGHT!*

The ALTERNATE function is one of the most powerful functions of the Stylus. This function allows the pilot to switch from one Model Setup to another (compatible) Model Setup DURING FLIGHT! There are two particularly helpful uses for this function:

1. A pilot may Copy the current setup and make adjustments to the copied data, then can switch IN FLIGHT between the two Model Setups. In this manner a comparison can be made easily, during a single flight, allowing the pilot to choose which control set-up is most comfortable. Also, trying a new control setup in this manner allows the pilot to instantly change back to a known setup by simply flipping one switch.
2. A pilot may change ANY or ALL flight control parameters with a single switch for greatly differing flight conditions. For instance, the Alternate settings might include forward cyclic, low gyro gain, high rate for flight controls and removal or addition of exponential characteristics on flight controls — all by flipping a single switch.

In order to use the ALTERNATE function, you must first assign it to a switch. (See Switch Assignments section on prior pages).

Next you need to have an ALTERNATE setup that is compatible to your standard setup. The recommended manner to achieve this is to start with a completely tested Model setup, then use the DATA COPY function to copy this setup to a new Model Setup that will be assigned as the Alternate setup.

(Continued on next Page)

## HELICOPTER

### Alternate ...

*Make certain that you know which mode (normal or Alternate) you have selected at all times!*

Note - if the SW Alarm (Switch Alarm) function is set to be "On," and an Alternate set-up has been designated, then an audio alarm will sound if you power-up the transmitter while the Alternate Set-up switch is in the "On" position. Move the Alternate Set-up switch to the "off" position to deactivate the alarm.

Having assigned a switch and determined a suitable Alternate Model setup, you may program your Alternate.

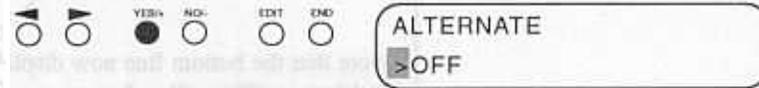
Press EDIT key until the following screen appears:



Press the > key to move the cursor to the ALTER position.



Press the YES/+ key to display the Alternate screen.



The cursor location's display will read OFF, meaning that no Alternate Model is presently selected. By pressing the YES/+ or NO/- keys you can scroll through the four Models in memory to choose the desired Alternate Model.



In the above example the bottom line shows that Model B, named HELI-B, has been selected as the present Alternate Model.

NOTE that it is possible to select an incompatible set-up as the Alternate; i.e. you can select an AERO Model setup as an alternate for your helicopter. However, in this case the Alternate function will be ignored even if you do turn the Alternate switch on.

**Make certain that you know which mode (normal or Alternate) you have selected at all times!**

To make changes to the setup that you have selected as your Alternate, use the switch you have assigned to activate the Alternate Set-up to load that (Alternate) Model into memory, (in other words, turn the Alternate Set-up Switch ON) then make any adjustments desired, then turn the switch to OFF position to re-load the primary Model.

**AUXILIARY CHANNELS**

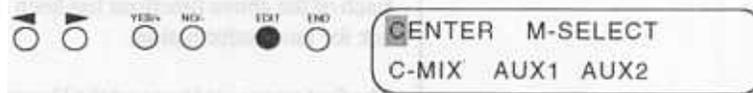
Stylus offers two Auxiliary channels in Heli mode. These channels are pre-assigned to control High Pitch Trim and Low Pitch Trim functions.

AUX1 is controlled by the slider on the right side of the transmitter face and is the trimmer for High Pitch Trim (Collective.)

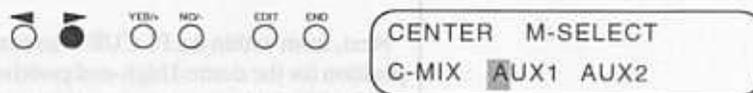
AUX2 is controlled by the slider on the left side of the transmitter face and is the trimmer for Low Pitch Trim (Collective.)

If you do not wish to have external trimmers available for high and low collective pitch settings, you can de-activate either or both of the AUX1 and AUX2 functions. This allows use of AUX 1 and AUX 2 for other functions.

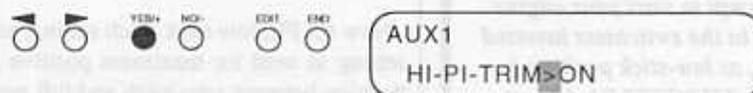
Press the Edit key to display this menu:



Press the > key to move the cursor to the AUX1 position.



Press the YES/+ key to display the AUX1 screen.



There is only one cursor position in this menu, the High Pitch Trim function can be set to either ON or OFF, using the YES/+ or NO/- keys.



The AUX2 menu is identical and is operated in the same fashion, turning off or on the LO-PI-TRIM function.

**NOTE:** If the AUX1 and AUX2 settings in these menus are set to OFF, then the following choices are available:

- A. If you set the AUX1 and AUX2 SWITCH assignments (in the SW menus) to "0," then the left side slider will control the AUX2 ( servo output #8) function and the right side slider will control the AUX1 function, servo output #7. Control throw will be proportional and EPA and Centering menus will adjust the control parameters.
- B. If you set the AUX1 and/or AUX2 SWITCH assignments to a numbered switch, then the control throw will be activated by that switch and the amount of throw will be determined by the EPA settings for AUX1 and AUX2.

# HELICOPTER

## SWITCHLESS INVERTED

Stylus can be easily set up to allow switchless inverted flight. Though other methods are possible, this example will use Flight Mode 2 as the "switchless inverted" flight mode.

To set up Flight Mode 2 for "switchless inverted" flight, you will need to use the following functions of the Stylus:

<b>FUNCTION</b> .....	<b>MENU ABBREVIATION</b>
Pitch Curve for Flight Mode 2 .....	(PI-CURV)
Throttle Curve for Flight Mode 2.....	(TH-CURVE)
Hover Pitch for Flight Mode 2 .....	(HVP)
Hover Throttle for Flight Mode 2.....	(HVT)
Tail Rotor Mix for Flight Mode 2.....	(REVO-MX)

Each of the above functions has been explained in detail in prior sections, refer back for more information.

The first step would be to set the Hover Pitch (using P2 in pitch curve F-2) to zero degrees, or 'flat' pitch at mid-stick. Next, adjust the settings for P2 in the Throttle Curve to establish the desired rotor speed at mid stick.

Next, from within the PI-CURV screen, Flight Mode 2 setting, set the high stick position for the desired high-end positive pitch using the PH point of Pitch Curve #2. Set P3 of this curve at some intermediate setting between zero pitch and high pitch.

Now set PL, low stick pitch setting, at approximately the same negative blade setting as used for maximum positive pitch setting. Set P1 to an intermediate position between zero pitch and full negative.

Now go to the TH-CURVE screen for Flight Mode 2 settings. Set PH for desired full stick rotor speed, and set P3 for the desired rotor speed at the mid-positive position. Next set PL and P1 to the same throttle settings as PH and P3, respectively. You should now have pitch and throttle settings that are 'mirror images' of each other with opposite pitch direction and same throttle response from mid-stick upwards and mid-stick downwards.

Finally, use the REV-MX screen to set the tail rotor compensation for both positive (upright) acceleration and negative (inverted) acceleration. FLIGHT TESTING will be required to determine optimum settings!!

**CAUTION:** Be very careful not to attempt to start your engine while in the switchless inverted mode, as low-stick position is FULL THROTTLE! Always know what flight mode you have selected at all times.

Stick Position	Pitch Setting	Throttle	Heli Response
100%	+9 deg.	100%	Full Upright Power
75%	+4.5 deg.	70%	Upright Hover
50%	0 deg.	40%	Neutral
25%	-4.5 deg.	70%	Inverted Hover
0%	-9 deg.	100%	Full Inverted Power

*NOTE!! All settings are approximate, and will need to be set for each machine through in-flight testing.*

Inverted flight of your helicopter is very challenging, and should only be attempted with the aid of an experienced helicopter pilot. Also, check the manual  
Continued on next Page

**Switchless Inverted ...**

for your helicopter for the manufacturer's allowed range of pitch settings and desired rotor speed range.

Note that the perceived reaction of the helicopter to transmitter control inputs will be REVERSED for rudder and elevator commands when the helicopter is inverted.

*CAUTION: Be very careful not to attempt to start your engine while in the switchless inverted mode, as low-stick position is FULL THROTTLE! Always know what flight mode you have selected at all times.*

**SWITCHED INVERTED**

Another option for inverted flight is 'Switched Inverted.' In this case, you would normally use Flight Mode 2 as the idle-up mode for switched inverted. IN ADDITION, you would use the Switch Assignments screen to cause the same switch that selects Flight Mode 2 to activate the ALTERNATE function.

*IN ADDITION, you would use the Switch Assignments screen to cause the same switch that selects Flight Mode 2 to activate the ALTERNATE function.*

For the set-up that will be used in Alternate mode, copy a proven setup for your helicopter into any available model setup, and assign it as the Alternate. Now, activate the Alternate Set-up switch to load the alternate model so you can make the adjustments for switched inverted flight.

On the ALTERNATE model setup, use the REVERSE screen to reverse the direction of the servos for Rudder, Elevator and Collective Pitch. Due to some differences inherent in most helicopters when flying inverted, you may need to adjust control rates and collective settings when in the switched inverted mode.

Turn the Alternate set-up switch OFF to re-load the original helicopter setup. At this time, check to ensure that activating Flight Mode 2/Alternate Function causes the Rudder, Elevator and Collective settings to reverse.

Using the Switched Inverted setup, you will normally activate the inverted mode (Flight Mode 2) while performing a half-roll or half-loop to inverted. When the inverted mode switch is activated, the appropriate controls will reverse so that your stick movements will cause the same reaction in your inverted helicopter as they normally do when the helicopter is upright; i.e. the model increases its angle of attack when you pull back on the elevator stick, will yaw the nose to the right when right rudder is applied, and will climb when throttle-collective is advanced. In other words the radio will take care of the 'control reversal' effect for you.

There are some special precautions that must be taken when using a switched inverted setup. First, you must always be aware of which mode (upright or inverted) you are in at all times. Second, you need to change the switch from normal to inverted and vice-versa when reversing the helicopter's attitude. And third, you must be careful to make the change from normal to inverted mode when the collective pitch is at or very near ZERO PITCH! Changing modes with a high pitch setting can cause loss of control and/or damage to your helicopter.

Inverted flight of your helicopter is very challenging, and should only be attempted with the aid of an experienced helicopter pilot. Also, check the manual for your helicopter for the manufacturer's allowed range of pitch settings and desired rotor speed range.