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AIRTRONICS INC

Stylus

Radio System Operating Manual

AIRPLANE • HELICOPTER • SAILPLANE

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Stylus

Congratulations on your selection of one of the world's best values in high performance radio control systems!

THE WORLD'S FASTEST 1024 PCM SYSTEM

Stylus utilizes advanced R.F. circuitry and clever programming to deliver the fastest response time of any PCM system available today. When you combine this rapid response with the precision of 1024 resolution, the result is an outstanding radio system. With the Stylus it's almost as if your thoughts are directly controlling your model! Long lists of features are nice, but for flying, the bottom line is how positively the aircraft responds to your inputs. Stylus delivers both features and rock solid control. With breakthrough performance like this the Stylus will be the radio of choice for serious R/C pilots in the years to come.

INTELLIGENT PERFORMANCE

With its unique optional Memory Card System, Stylus lets you upgrade features whenever you decide you're ready for the next level of performance. There are three Feature Upgrade Cards, one each for Aircraft, Helicopters and Sailplanes. There is also a Model Storage Memory Card which allows you to save up to 50 different model setups on a card smaller than a credit card! With the Stylus you are no longer forced to buy a new radio when your skills improve; you simply add capability to a proven performer. A very intelligent solution to a previously frustrating problem.

Please contact Airtronics for a complete list of features available on the RAM (Feature Upgrade) cards.

INTRODUCTION

NOTE:
Any changes or modifications to this equipment not expressly approved by Airtronics could void the user's authority to operate this equipment.

Thank you for selecting the Airtronics® Stylus Radio System. In designing the Stylus we have made every effort to provide you with a radio that will allow you to extract the maximum performance from your helicopter, airplane or sailplane, while at the same time simplifying the task of setting up and adjusting your model. These instructions are written in great detail to help you understand what all of your radio's capabilities are. Because of the many features of the Stylus, this manual is quite long. Don't be intimidated! To actually use the system, you may only need to read this section, the INTRODUCTION, and study the menu summaries. The balance of this book is designed to help you get the most from your Stylus, even if you have never used a computer-controlled radio system before. You probably won't have to read the entire manual just to fly your model, but you may wish to read it anyway to become aware of the many features available for use. Each different aircraft type (Helicopter, Airplane, and Sailplane) has its own, self-contained section describing each feature and its implementation.

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

SAFETY FIRST!

"SAFETY FIRST!" is not just a slogan when it comes to radio controlled models. The key to R/C pleasure is proper use of your radio system and all other modeling components. If you fail to follow instructions, fail to heed warnings given, or fail to install and operate your system according to the instructions provided with the unit, the result may be the partial or total destruction of your system and injury to yourself or to the person or property of others. For your own safety and the safety of others you must recognize that radio controlled models are not harmless toys and can become dangerous missiles if carelessly or improperly flown. **REMEMBER THAT YOU ARE RESPONSIBLE FOR THE SAFETY OF ALL SPECTATORS AND MAY BE HELD LIABLE FOR ANY DAMAGE OR INJURY CAUSED BY YOUR MODEL.** Radio control equipment and models are generally attractive, inviting, and exciting in looks and performance. Realize that young people and inexperienced adults may try to operate the equipment without understanding the dangers to themselves or others. It is your responsibility to guard against unknowing hands for their protection as well as for the safety of your equipment and model.

ALWAYS INSTALL YOUR RADIO CONTROL SYSTEM CORRECTLY, MAINTAIN IT PROPERLY AND BE CERTAIN THAT YOU CAN FLY WELL ENOUGH TO CONTROL YOUR AIRCRAFT AT ALL TIMES.

DO NOT FLY where your model could injure any person or property.

DO NOT FLY OVER THE HEADS OF SPECTATORS OR PERSONS IN THE AREA OF YOUR FLYING FIELD. This includes taking off, actual flight and landing. Keep everyone, except experienced and knowledgeable persons who are assisting you in flying, away from your model even when it is on the ground and you are preparing to fly.

DO NOT FLY unless an experienced instructor has completely checked over your model and radio installation and test flown the model for you.

DO NOT FLY if you are a newcomer to R/C unless you have an experienced instructor who will fly with you until you have learned to fly competently by yourself.

DO NOT FLY in adverse weather conditions. Strong winds, for example, may cause loss of control of your aircraft leading to injury or damage to yourself or others.

DO NOT FLY unless your frequency is clear. Only one person can use each frequency at a time.

(Continued on next Page)

Safety First ...

WARNING: IF YOU DELIBERATELY OR ACCIDENTALLY TURN ON YOUR TRANSMITTER WHILE ANOTHER MODEL IS FLYING, THAT MODEL WILL GO OUT OF CONTROL.

ACADEMY OF MODEL AERONAUTICS

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

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

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

72 MHZ BAND

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

6 METER BAND

Ch. #	Freq.	Freq.
0	50.800	53.100
1	50.820	53.200
2	50.840	53.300
3	50.860	53.400
4	50.880	53.500
5	50.900	53.600
6	50.920	53.700
7	50.940	53.800
8	50.960	
9	50.980	

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FEDERAL AVIATION ADMINISTRATION

FEDERAL AVIATION ADMINISTRATION

The Federal Aviation Administration has announced guidelines for operation of model aircraft. We are reprinting these guidelines here and encourage you to study and follow them.

1. Purpose: This advisory circular outlines safety standards for the operators of model aircraft and encourages voluntary compliance with these standards.
2. Background: Attention has been drawn to the increase in model operations, and the need for added caution in the case of free flight and radio controlled types to avoid creating a noise nuisance or a potential hazard to full-scale aircraft and persons and property on the surface.
3. Operating Standards: Modelers, generally, are concerned about safety and do exercise good judgment when flying model aircraft. However, in the interest of avoiding undue criticism from affected communities and airspace users, COMPLIANCE WITH THE FOLLOWING STANDARDS IS ENCOURAGED BY OPERATORS OF RADIO CONTROLLED AND FREE FLIGHT MODELS.

A. Exercise vigilance for full scale aircraft (get other people to help if possible) so as not to create a collision hazard.

B. Select an operating site at a sufficient distance from populated areas to avoid creating a noise problem or potential hazard.

C. Do not fly higher than 400 feet above the surface.

D. Do not operate closer than three miles from the boundary of an airport unless permitted to do so by the appropriate air traffic control facility in the case of an airport for which a control zone has been designated, or by the airport manager in the case of other airports.

E. Do not hesitate to ask for assistance in complying with these guidelines at the airport traffic control tower, or air route center nearest the site of the proposed operations.

A FINAL NOTE ON SAFETY

The basic safety precautions outlined above are for your safety, the safety of others, and the safety of your equipment. Consider carefully all of what has been stated and obey all precautions in this manual, as well as any others appropriate to your particular activity. And remember that good common sense must also be used at all times during the operation of your equipment.

INITIAL PREPARATION

NOTE: When you first unpack your radio you should charge the transmitter and receiver batteries ***for 24 hours.*** *Subsequent re-charges should require only 16 hours.*

PACKAGING

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

BATTERY CHARGING

The first thing you should do after unpacking your Stylus is to charge the transmitter and receiver batteries. The charging procedure is completely explained in Section IV, page 9 of the INSTALLATION FUNDAMENTALS AND GUIDELINES MANUAL included with your radio.

COMPATIBILITY

- RECEIVERS
- SWITCH HARNESS

The Stylus transmitter is compatible with, and can be used with, all of Airtronics' previous 72 MHz FM/PPM 1991 type receivers.

These include:

p/n 92745 4-channel
p/n 72765 6-channel
p/n 92775 7-channel
p/n 92785 8-channel

Stylus is NOT compatible with the older FM/PCM receivers such as p/n 92965, 92065 or 92985, since the Stylus uses an ultra-fast 1024 PCM system.

The switch harness used with these older PCM receivers contains a blue wire that applies the full battery voltage to pin #1 of the battery port in the receiver to keep the memory alive for fail-safe operation. This switch harness SHOULD NOT be used with the Stylus receivers or with the older FM/PPM receivers since it can cause intermittent operation!

The pin #1 of the battery port of the Stylus receivers is reserved for Direct Servo Control (DSC) operation, using its own p/n 97006 or 97002 switch harness.

The Stylus switch harness has a blue wire leading from the charge receptacle all the way to the switch harness plug that goes into the battery port of the Stylus receiver.

The p/n 97006 switch harness can be used with any Airtronics FM/PPM or FM/PCM receiver; however, the older receivers do not have DSC capability.

Lithium Internal Battery
IMPORTANT!

THIS BATTERY IS NOT USER-SERVICEABLE!

Stylus utilizes an internal battery to maintain internal programming data when the transmitter power is off or the battery pack is removed. This battery is a high quality lithium cell that is rated for a five-year expected useful life in this application.

THIS BATTERY IS NOT USER-SERVICEABLE! When your Stylus transmitter is three years old (and each three years after that), you should send the transmitter to Airtronics service department to have this battery replaced This interval should allow a safety margin to ensure that your programming is not lost.

Note that you will NOT lose your programs if the battery fails while the Stylus transmitter is in use; if the internal lithium battery fails while you are flying or have the transmitter turned ON your program will be lost ONLY when you turn the transmitter off.

AIRBORNE COMPONENTS

AIRBORNE COMPONENTS

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

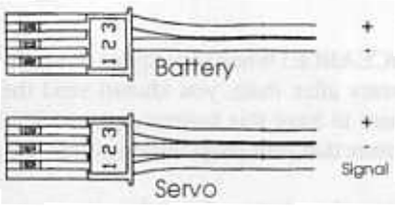
The receiver with your Stylus system will be either the FM (Airtronics P/N 92085) or the PCM (Airtronics P/N 92185) eight channel receiver. Both of these receivers comply with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

PCM RECEIVER LOW VOLTAGE ALARM

PCM RECEIVER LOW VOLTAGE ALARM

The PCM receiver (P/N 92185) for the Stylus has the ability to warn you when the airborne battery pack voltage drops below 4.7 volts. When the airborne battery hits this voltage, the throttle servo will move to a reduced throttle position for one second, and then return to normal. This cycling of the throttle will occur about once each minute until you land and recharge the battery. IT IS RECOMMENDED THAT YOU LAND IMMEDIATELY if the receiver failsafe warns of low voltage conditions! See page 21 for instructions on activating this function.

CONNECTORS



CONNECTORS

The connectors on your Airtronics System are rugged but should be handled with care. There are three socket contacts in the servo connector, numbered 1 through 3. The #1 is the signal pin, #2 is negative and #3 (Red) is positive. The Plug configuration is shown below. If you are using an FM or PCM receiver where the connectors are plugged into the end of the receiver, be certain that the #3 pin is toward the bottom of the receiver. When you are using the FM 6 channel receiver where the connectors plug into the top of the receiver, the #3 pin should be toward the outside edge of the receiver. Do not attempt to force the plug into the receiver; properly align each servo plug and it will move into place.

TRANSMITTER R.F. METER

The meter on the front of the Stylus reads Radiated Frequency (R.F.) Current and is an indication of the strength of the signal the unit is sending and the state of charge of the transmitter battery. With the transmitter antenna fully extended the meter will read in the upper portion of the silver section on the meter face. If the meter reads in the orange portion it indicates that the signal has weakened and the battery is marginally discharged. A reading in the red indicates that the signal is very weak and the battery is discharged below an acceptable level. When the transmitter has just been fully charged and the antenna is extended you should get a reading in the high silver. Make a note of where the needle moves to after a full charge. If in the future there is a substantial change in the position the

(Continued on next Page)

Transmitter RF Meter ...

needle assumes right after a full charge, it may be an indication of a drop in battery performance and the unit should be returned to Airtronics for inspection. If you get a reading in the red or orange after a full charge it is an indication of defective cells and the battery must be replaced. If there is no movement of the meter when the transmitter is first turned on the battery is most likely completely discharged. Charge the battery pack as described in Section IV of the INSTALLATION FUNDAMENTALS AND GUIDELINES MANUAL. After approximately 15 minutes of operation the reading will drop to the lower portion of the silver. This is normal, since the battery in the transmitter will actually be higher than 9.6 volts when first taken off charge. The meter is calibrated so that a 9.6 volt reading is in the lower portion of the silver area. DO NOT ATTEMPT TO OPERATE A TRANSMITTER UNLESS THE METER READS IN THE SILVER WITH THE ANTENNA FULLY EXTENDED. IF YOU NOTICE THE METER READING HAS DROPPED INTO THE ORANGE WHILE FLYING, LAND IMMEDIATELY. A TRANSMITTER WHOSE PERFORMANCE HAS DROPPED MAY NOT SEND THE SIGNALS REQUIRED TO ADEQUATELY AND SAFELY CONTROL THE MODEL, RESULTING IN A POSSIBLE CRASH.

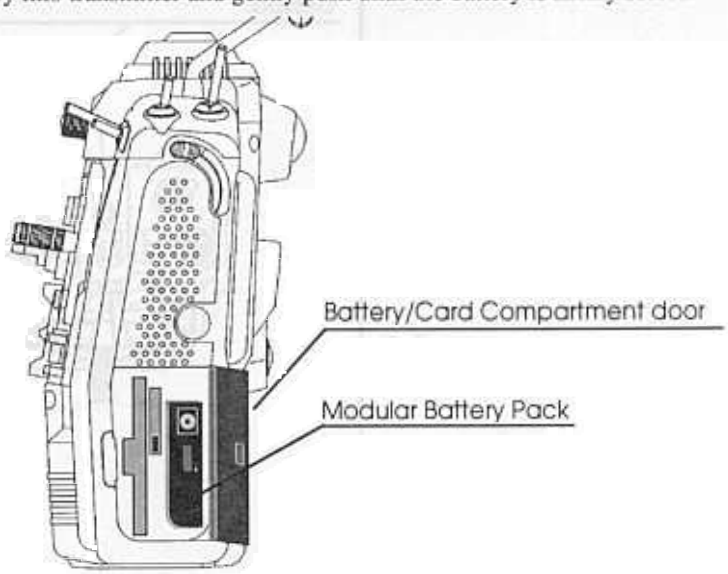
AUDIO LOW VOLTAGE ALARM

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

PLUG-IN TRANSMITTER BATTERY

The battery pack in your Stylus is a self contained unit and can easily be removed and replaced with a fully charged pack to extend operating time. The Stylus has a special internal lithium back-up battery, so unplugging the battery pack and switching to a fresh pack will not cause you to lose any information. Additional packs are sold separately as an accessory item under the Airtronics P/N 95050.

To remove the pack, open the hinged door on the right side of the transmitter. Grasp the small plastic "handle" or pull tab on the modular battery pack and gently pull it until the battery pulls free of the transmitter case. To replace the pack, slide battery into transmitter and gently push until the battery is firmly seated.

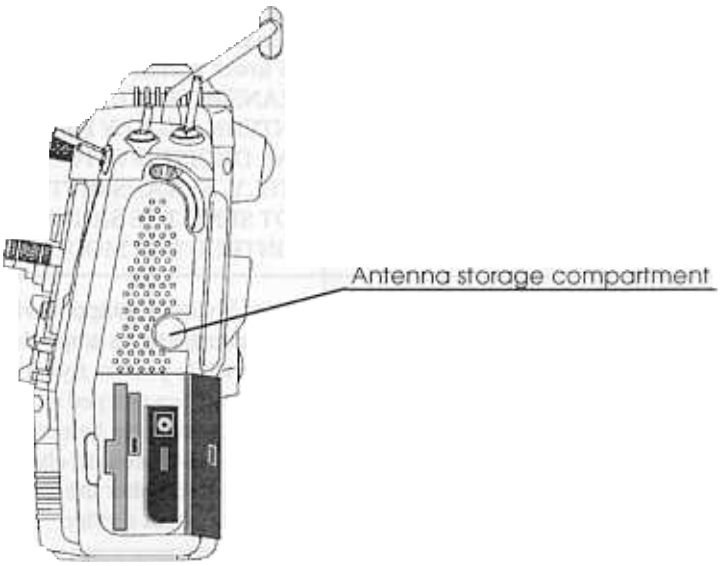


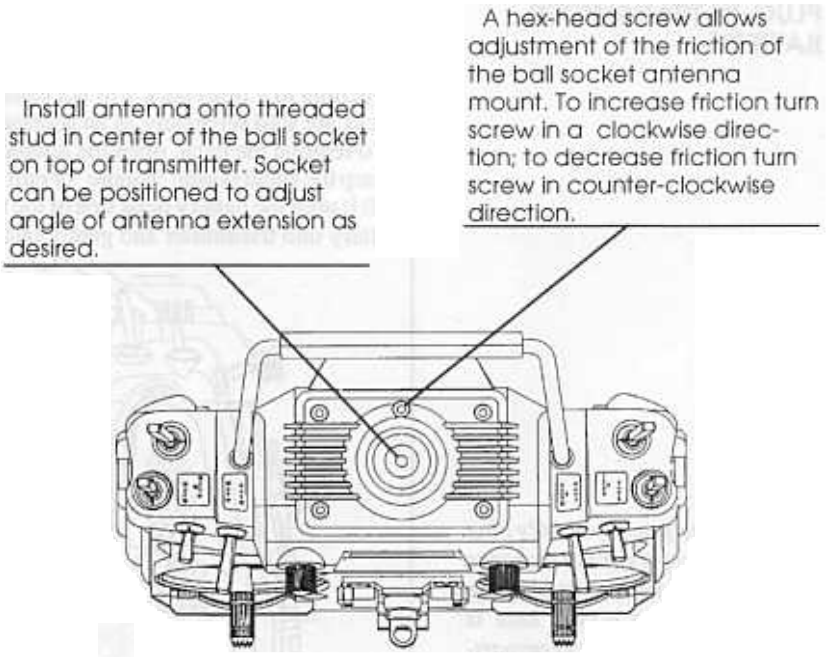
Of course you can simply plug in your charger cord to recharge the pack while it is still in the transmitter. An access hole is provided in the battery compartment door to allow for this.

TRANSMITTER ANTENNA

The antenna for your Stylus transmitter is stored in a compartment located on the right side of the transmitter case. Prior to operating the system, remove the antenna from its storage area and install it on the ball socket located on the top of the transmitter by rotating the antenna clockwise.

Grasp the antenna by the lower section to position the ball socket in the position you desire. Extend the antenna fully before flying your model.



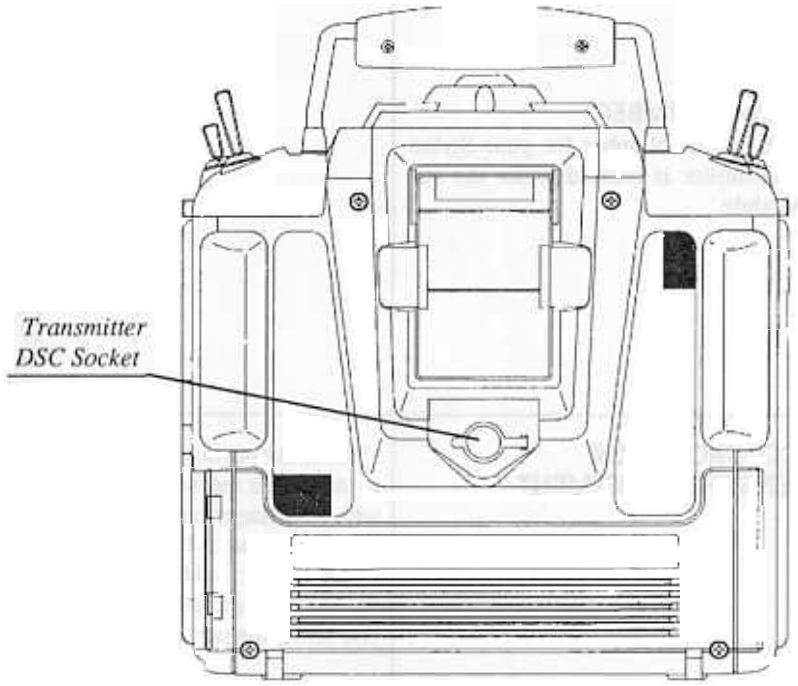


DIRECT SERVO CONTROL (DSC)

The Direct Servo Control function provides the capability for you to adjust your servos from the transmitter without emitting any RF.

The Stylus transmitter has a DSC socket located on the rear of the transmitter case below the RF Module. One end of the DSC cable (supplied with the Stylus system) plugs into the DSC socket on the transmitter, and the other end plugs into the receiver switch harness charge receptacle. When you plug the cable into the transmitter DSC socket the display will be turned on automatically and the RF will be turned off even if the transmitter switch is in the ON position. A short beep will sound when you plug the cable into the transmitter. For safety we recommend that the transmitter switch be in the OFF position to prevent transmission of RF when the DSC cable is removed.

When you plug the cable into the transmitter DSC socket the display will be turned on automatically and the RF will be turned off even if the transmitter switch is in the ON position.



For safety we recommend that the transmitter switch be in the OFF position to prevent transmission of RF when the DSC cable is removed.

To use the DSC capability following the cable connection, turn the receiver power switch on, then use the transmitter's Edit key to select the screens you wish to adjust, i.e. Dual Rates, End Point Adjustments, Servo Reversing, etc., and make your adjustments while observing your aircraft's servo operation.

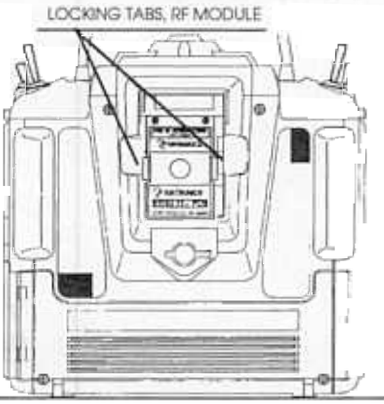
When adjustments are complete, disconnect the DSC cable from the transmitter and charge receptacle.

CHANGING FREQUENCIES

ALWAYS BE CERTAIN that you have installed the proper frequency flag for your present frequency!

Operating frequency of the Stylus transmitter is determined by the R.F. Module plugged into the back of the unit. If you wish to change the frequency of your unit, you will have to change this entire Module. Individual transmitter crystals can not be changed. If you change the R.F. Module you will obviously have to change the frequency of your receiver to match the new transmitter frequency. The crystal in the receiver can be replaced. Make a very careful ground range check to be sure you have the same ground range on the new frequency as you did on the radio's original frequency. If there is any loss of range the components should be sent to Airtronics for alignment.

Removing the R.F. Module is rapidly and easily done. Press in the two locking tabs on either side of the Module and lift out. Be sure to lift the Module straight out from the unit, always parallel to the transmitter case to keep from bending the multi-pin connector on the upper edge of the Module. To replace the Module, hold it in place, again being sure to keep it parallel to the case, and press it into position until the two tabs snap into place.

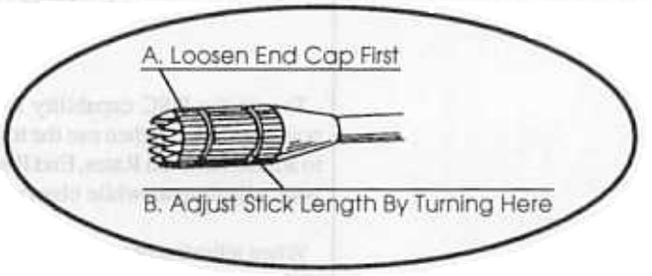


SERIAL NUMBER

The Serial Number for your Stylus Transmitter is located under the RF Module.

CONTROL STICK LENGTH ADJUSTMENT

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



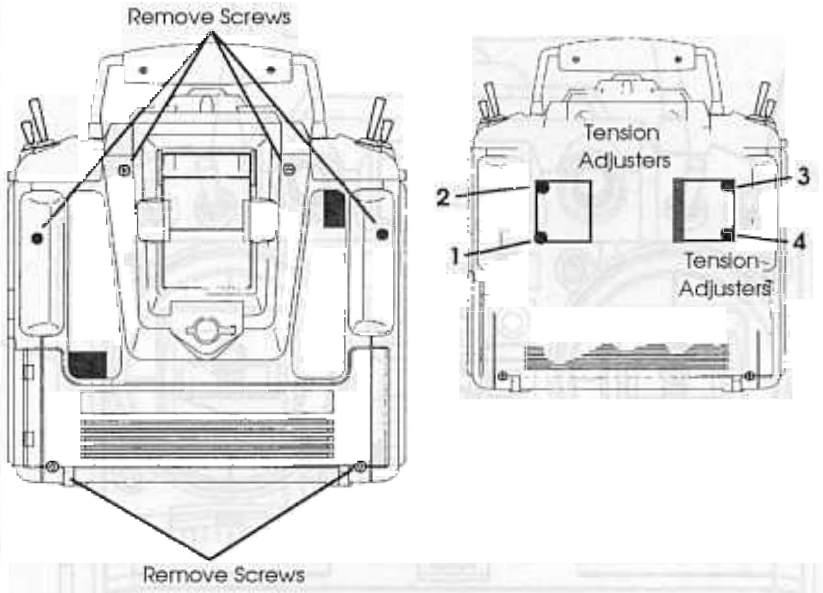
SPRING TENSION

To adjust the spring tension of the sticks you need to take off the back of the transmitter. First remove the antenna from the storage compartment, then unplug the R.F. Module and battery pack. Remove the six screws that hold the case back in place, two on the back near the top of the module, two at the lower back and two that are underneath the rubber grips on the upper back of the transmitter. (The pads

(Continued on next Page)

Spring Tension ...

can be simply pulled off and replaced when done.) Once the screws are removed, swing the back of the case away from the transmitter, being careful of the DSC plug wiring.



There are four locations for the stick adjustment screws. Your Stylus will only have three screws installed because the stick controlling the throttle is ratcheted and has no tension adjustment. Depending on whether you fly Mode I or Mode II, either screw #2 or #4 will be installed. The #2 and #4 screws adjust the tension for the vertical motion of each stick. The #1 and #3 screws adjust the tension for the horizontal motion of each stick. To make the tension adjustment, use a small Phillips type screwdriver to turn the adjustment screws. Turning the screw clockwise will increase the stick tension, turning it counterclockwise will decrease the tension. Avoid excessive tension adjustment of the #2 screw, since it can hit the antenna storage compartment.

Once you have completed your stick adjustments, replace the case back and install the R.F. Module, battery pack, antenna and grip pads.

PRIMARY/DISPLAY POWER SWITCHES

The Airtronics Stylus offers a unique new method of dealing with systems activation. Now you can either power-up all of the transmitter's systems at once, or just activate the programming screens, depending on which you need to do at the moment.

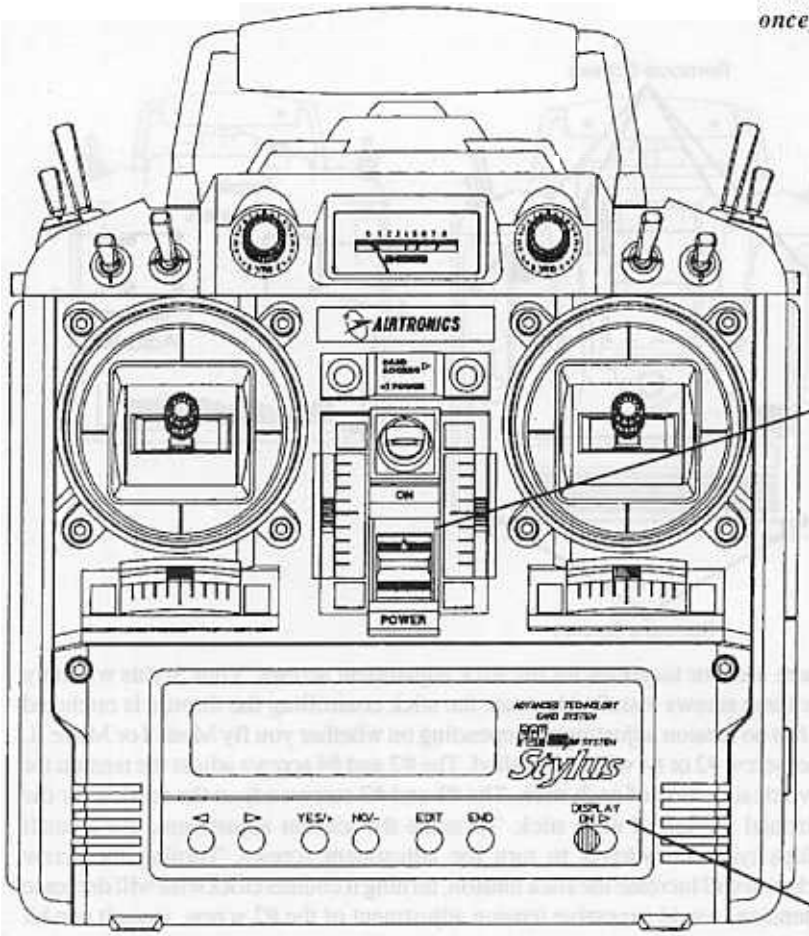
The Primary Power Switch, located in the center of the transmitter face, turns on or off all of the transmitter functions. Use this switch for normal flying activities. When this switch is set to ON, the menus are active and transmitter RF output is broadcasting.

The Display Power Switch, located on the right side of the programming panel, activates ONLY the menus and display. NO TRANSMITTER RF OUTPUT occurs when the Display switch is ON and the Primary Power Switch is OFF. The RF Meter will show NO output in this condition.

Because no RF output is generated when ONLY the Display switch is on, you can use this switch for all programming needs and decrease battery usage. You can also make menu adjustments when your channel is busy and you can't turn on the RF output.

PRIMARY/DISPLAY POWER SWITCHES

The Airtronics Stylus offers a unique new method of dealing with systems activation. Now you can either power-up all of the transmitter's systems at once, OR just activate the programming screens.



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The Display Power Switch activates ONLY the menus and display. NO TRANSMITTER RF OUTPUT occurs when the Display switch is ON and the Primary Power Switch is OFF. The RF Meter will show NO output in this condition.

Mode 1, Mode 2 Conversion

NOTE:
If you are not comfortable with making these mechanical changes to your transmitter, you may send the transmitter to Airtronics for conversion in our service department.

Later in this Introduction section you will find instruction for changing the Stylus software settings from Mode 2 (normal configuration) to Mode 1. In addition to the software changes, you will also need to make the following mechanical changes to your transmitter:

Remove the transmitter RF Module, antenna, battery pack and back plate as shown on the preceding page.

Remove the spring assemblies for vertical centering from the right-hand transmitter stick. Be careful not to lose the springs or any screws.

Now remove the metal ratchet devices and throttle stop assembly from the left-hand transmitter stick. Reinstall the ratchet clip, its mating bracket and throttle-stop assemblies onto the right stick in the same manner as they were installed originally on the left stick.

Next install the centering springs on the left-hand transmitter stick, again installing in the same manner as the springs were originally installed on the right stick.

Adjust spring and ratchet tensions as desired, replace back plate, RF Module and battery. Now proceed with software instructions for Mode 1 conversion.

Using The Stylus Micro-Processor

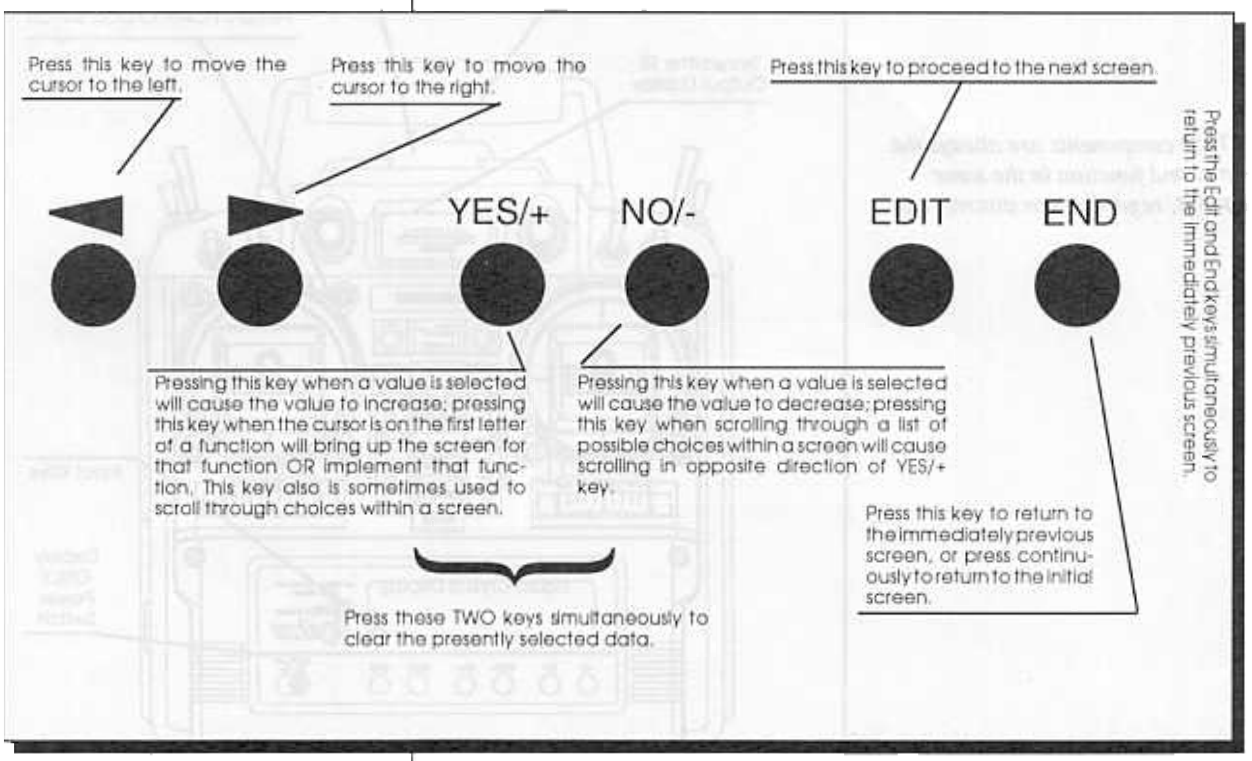
Airtronics has invested a large amount of design effort to ensure that the powerful capabilities of the Stylus are as simple as possible to use. The manual has also been written to offer the user complete instructions for each of the aircraft model types that can be controlled with the Stylus. With patient study of the manual you will find it exceptionally easy to access each of Stylus's features, and to customize the software as desired for your specific model and flying style.

Throughout the manual you will see that all switches except for the primary control sticks are referred to by numbers. This is because Stylus allows you to assign any function to any switch or switches. You can also assign more than one function to a switch. This allows you to set up the functions in whatever manner you find suits your needs, rather than having to conform to pre-selected switch assignments. NOTE: When you assign a function to a switch number, **the number you assign is the 'Active' or 'On' position** for that function.

In order to produce a meaningful manual, we have explained the various model setups using the normal 'default' switch assignment settings. Remember that you do NOT have to use these switch assignments!

THE INPUT KEYS

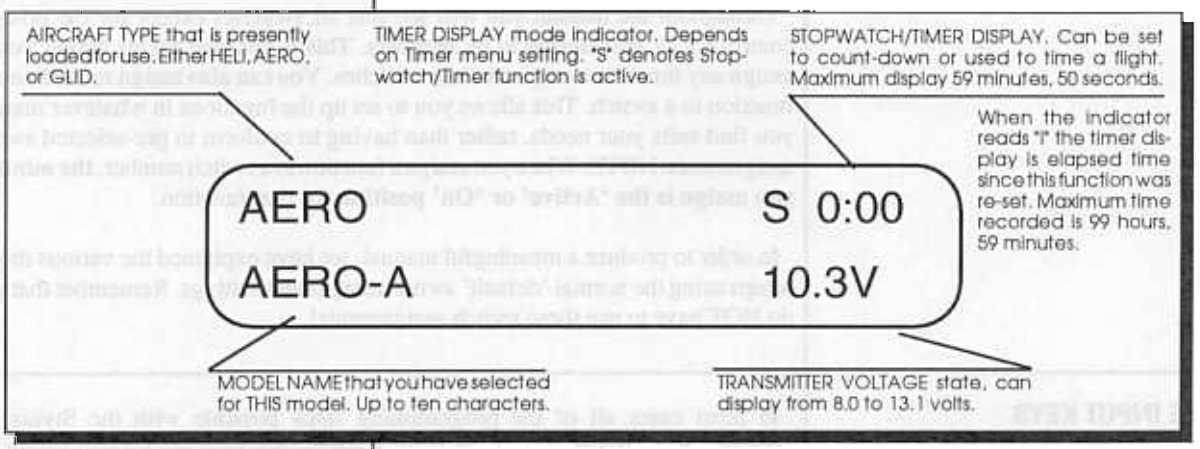
In most cases all of the programming steps possible with the Stylus are accomplished through use of the Input Keys. These keys are located below the LCD display panel, on the bottom face of the Stylus transmitter. The function(s) of these keys are shown below.



INITIAL SCREEN DISPLAY

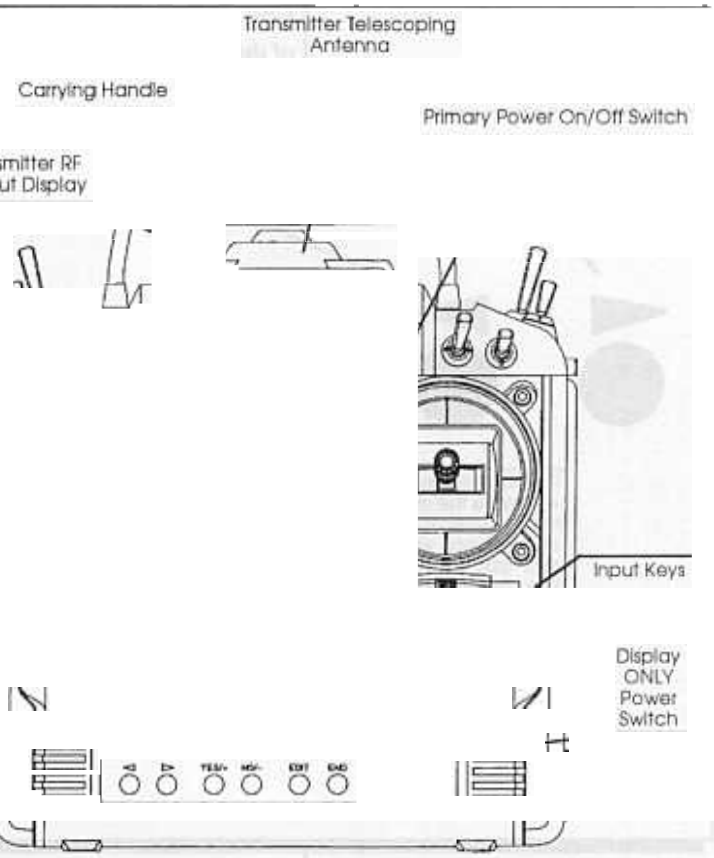
Regardless of the aircraft type being programmed, the first screen displayed is for informational purposes only; no programming is possible on this screen only. If the Stylus transmitter was turned off with another screen selected, that screen will appear instead of this Initial Screen. Pressing the END button one or two times will cause the initial screen to be displayed. You should ALWAYS return to the Initial Screen before flying your aircraft, to ensure that you have locked-in (set within the software) any program changes and to present a display of the important information presented within this screen.

Data presented in the Initial Screen is explained below:



'FIXED' TRANSMITTER COMPONENTS

These components are always the same, and function in the same manner, regardless or aircraft type.



SHARED FUNCTIONS

The screens and specific functions described on the following pages are common to all aircraft types.

ALL screens and settings for specific aircraft types are covered in detail in the respective model type sections of this manual.

'CLICK' Transmitter Audio

The Stylus normally is set to emit an audio tone whenever the programming cursor is moved, when screens are changed, when values are changed and when the stopwatch function is started or stopped or reaches the final ten seconds of count-down.

It is possible to disable the 'click,' or audio tone, using software settings. When the tone is disabled, ONLY the stopwatch countdown will still cause an audio tone to be emitted.

To set the 'Click' function, press the EDIT key until the following screen is displayed:

Note that the first letter of the F-SAFE function is highlighted with a blinking square rectangle; this rectangle is the CURSOR position indicator. To move the cursor to the function you wish to investigate, press the > key to until the blinking indicator is over the CLICK function:

Now, press the YES/+ key to bring up the menu for the CLICK function:

The CLICK screen has only one programming position, so the cursor is over the ON position. Now you can press the YES/+ key or the NO/- key to change the present setting. Press either of these keys now.

Now the CLICK display has changed from ON to OFF. In the OFF position, the audio tone will only sound when the stopwatch countdown mode is active in its final ten seconds.

You now have performed almost every operation required to make a programming choice within the Stylus software!

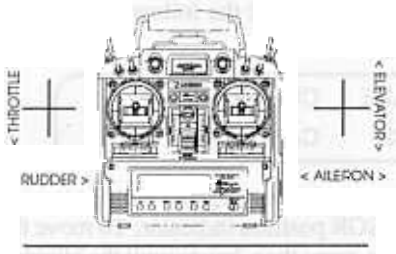
Press the YES/+ key or the NO/- key again to turn the audio 'click' back on. Now press the END key once to return to the main menu screen, or press the END key twice to return to the initial screen.

You now have performed almost every operation required to make a programming choice within the Stylus software!

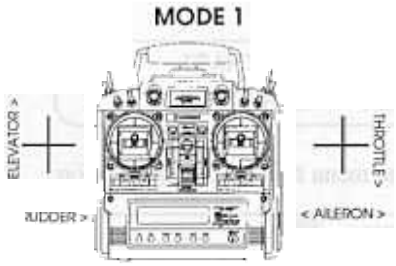
MODE 1 or MODE 2 Software Setup

Along with the mechanical conversion, you also must 'inform' the software which function is assigned to which control stick - BUT ONLY IF YOU WISH TO CHANGE TO MODE 1 CONFIGURATION!

MODE 2



MODE 1



The majority of pilots fly with what is known as 'Mode 2' transmitter stick configuration. This configuration places the Aileron and Elevator functions on the RIGHT transmitter control stick, and Rudder and Throttle on the LEFT transmitter control stick. Within this manual most examples refer to a Mode 2 setup.

Some pilots prefer to switch the Throttle and Elevator functions to the opposite sticks. This configuration is called 'Mode 1.' On Page 13 the mechanical conversion process is outlined. Along with this mechanical conversion, you also must 'inform' the software which function is assigned to which control stick - BUT ONLY IF YOU WISH TO CHANGE TO MODE 1 CONFIGURATION! The software is already programmed for proper operation with Mode 2 configuration.

To reset the Stylus software for Mode 1 operation, press the EDIT key to bring up the following screen:


```
(MODE1,2)      SW-ALM
               BA-F-SAFE
```

The cursor indicator is over the (MODE 1,2) position when this screen is presented.

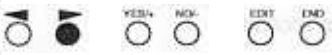
Now with the cursor located over the MODE 1,2 position, press the YES/+ key to bring up the MODE 1,2 program screen.


```
MODE1,2    >MODE 2
NEUTRAL    TRAVEL
```

The cursor is on the MODE position, and indicates MODE 2 is presently selected. To change to Mode 1, press the YES/+ key. The display will change to read MODE 1 as shown below:


```
MODE1,2    >MODE 1
NEUTRAL    TRAVEL
```

Next you must update the Neutral and Travel information for the changed transmitter stick assignments. To do this, set the transmitter throttle stick to the neutral (center) position. Now press the > key to move the cursor to the NEUTRAL position as shown below.




```
MODE1,2    >MODE 1
NEUTRAL    TRAVEL
```

(If you are just studying the manual and do not actually wish to change transmitter Modes, skip these parts on the Neutral and Travel settings.)

(Continued on next Page)

Mode 1,2 Selection ...

Now with NEUTRAL selected in the screen and with the throttle stick in the neutral position, press the YES/+ key. This will update the neutral position of the transmitter sticks.

Next press the > key to move the cursor to the TRAVEL position.

Now you can update the stick travel settings as follows: Move the throttle stick to the full high (upper) position, then press the YES/+ key. Next move the throttle stick to the full low position and press the YES/+ key. These steps will update the travel information for the throttle stick. (Trim position is not relevant for these steps.)

Repeat the same steps (Upper stick position, press the YES/+ key; Lower stick position, press the YES/+ key) for the Elevator stick.

You have now updated all settings required for Mode 1 operation.

CONTRAST

The CONTRAST of the Stylus Liquid Crystal Display can be adjusted for user preference. To adjust the contrast, press the EDIT key until you see the following screen:

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

Press the YES/+ key to see the CONTRAST program screen.

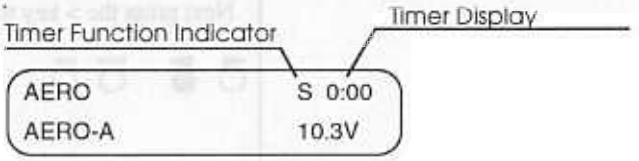
The present, default setting for contrast is 50%, as displayed. You can increase the contrast setting up to 100% by pressing the YES/+ key; the contrast setting can be decreased to 0% by pressing the NO/- key. At the 0% setting you will barely see the menus - not a recommended setting!

Pressing both the YES/+ and NO/- keys simultaneously will 'clear' the setting back to the default setting of 50%.

STOPWATCH FUNCTION

Stylus offers a built-in timer and allows the pilot to use a stopwatch function in either elapsed-time mode or in countdown mode.

The Stopwatch and Timer displays are shown in the initial screen of all aircraft types, as below:



The Timer Function Indicator will read either "S," indicating the Stopwatch/ Timer function, or "I," indicating Integral Timer function. The Timer Display reads the time for whichever function is presently selected as shown by the Timer Function Indicator.

To use the timer or stopwatch functions, press EDIT to arrive at the following screen:

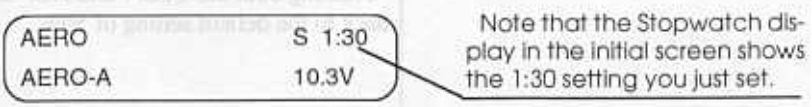
Press the > key to move the cursor to TIMER.

Press the YES/+ key to access the TIMER STW program screen.

The cursor is positioned over the STW, or STOPWATCH position. If you want to use the STW as a timer (for example, to measure flight duration) you will set the STW function to 00:00 as shown. Then, when you activate the stopwatch function by pressing the assigned switch, the timer display will count up to a maximum of 59 minutes, 59 seconds. Pressing the STW switch a second time will cause the timing to stop.

You can also set the STW function to work as a countdown stopwatch. To do this, set the cursor to the STW position as shown above. Then use the YES/+ key to increase the STW setting, in 10-second increments, up to a maximum of 59 minutes and 50 seconds. For now, set the STW timer to 1 minute, 30 seconds as shown:

Now press the END key to return to the Initial Screen display that will normally be displayed when you are in flight.



Stopwatch Function ...

Now activate the stopwatch function by pressing the assigned switch. (If no switch is presently assigned, see the SWITCH ASSIGNMENTS sections of any Model Type setup in the following sections.) The stopwatch can also be started or stopped by pressing the YES/+ key.

The Initial Screen display will start to count down in one-second increments. When the remaining time reaches 10 seconds, a short audio tone will sound, and will repeat in one-second intervals. When the timer reaches zero, the audio tone will sound one final long tone.

Tone sounds at one-sec. intervals starting at 10 seconds remaining.

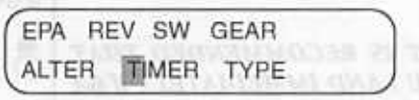
You can stop, then re-start the countdown timer whenever desired by pressing the assigned switch each time you wish to either start or stop the countdown.

After the Stopwatch reaches zero, if the function is not deactivated, it will continue to act as a timer counting upwards with beeps in one-second intervals.

INTEGRAL TIMER

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

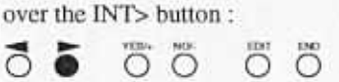
To change the Initial Screen timer display to show the Integral Timer, access the Timer Function:

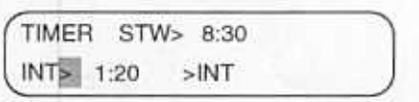


Now move the cursor to the last position and press the YES/+ key. The display will change from STW to INT.

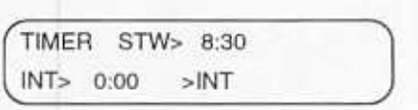
Integral Timer display in the Initial Screen indicates 1 hour and 20 minutes of elapsed time.

To reset the Integral Timer, return to the TIMER menu and position the cursor over the INT> button :





Now press both the YES/+ and NO/- keys simultaneously to reset the timer to zero.

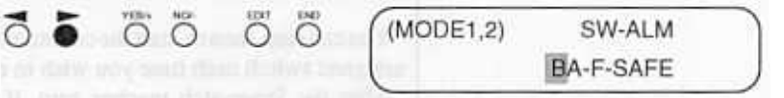


BATTERY FAIL SAFE (Receiver Pack)

Stylus offers a Fail Safe function to warn you of a low voltage condition in your receiver's battery pack. This function is only operable when using the PCM receiver (P/N 92185).

To activate the Battery Fail Safe function press the EDIT key until the following menu is displayed:

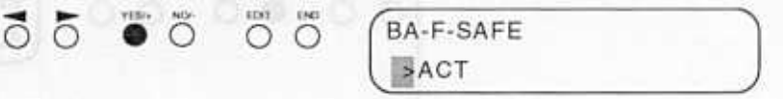
Press the > Key to move the cursor to the BA-F-SAFE position.



Press the YES/+ key to display the BA-F-SAFE menu.

There is only one cursor position in this menu. The default setting is INH, meaning that the Battery Fail Safe function is inhibited and will not function. To activate the Battery Fail Safe function press the YES/+ key.

IT IS RECOMMENDED THAT YOU LAND IMMEDIATELY if the receiver failsafe warns of low voltage conditions!



The display will change to "ACT," indicating that the BA-F-SAFE function is now Active. (Pressing either the YES/+ or NO/- key will toggle the function between the "INH" and "ACT" settings.)

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

How to Select and Load Model Set-ups

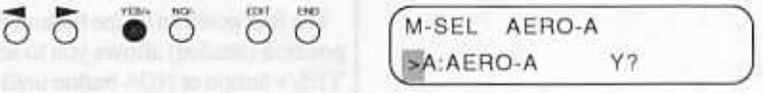
M-SELECT

Stylus has built in memory to store four Model set-ups in any combination of the Model Types AERO, HELI or GLID. To use or modify one of the Model Set-ups you must first SELECT that set-up and load it as the presently active Model. This is done through the M-SELECT function.

To select a specific Model, press the EDIT key until one of the screens below - depending on the presently selected model type - is displayed:

Assume that you want to select a second Model to use as an AERO set-up. Press the > key to move the cursor to the M-SELECT position: (M-SLCT in GLID Model Type menu).

Press the YES/+ key to bring up the M-SELECT screen. (AERO type screen is shown, similar screens will appear for the other model types).



"AERO-A" on the top line shows the name of the presently loaded model. The cursor will be at the first position on the second line of the menu. Pressing the YES/+ key will select the second model:

In this example the number two (B) model is shown as a HELI (helicopter) type; disregard this since you can change the Model Type later.

(Pressing the YES/+ or NO/- keys will move you up or down through the list of available Model Set-ups.)

M-Select ...

At this point AERO-A is still loaded, as shown by the top menu line. To change to Model number two (B) - or any other model you have selected - press the > key to move the cursor to the "Y?" position:


```
M-SEL   AERO-A
>B:HELI-B      Y?
```

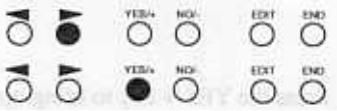
Now press the YES/+ key to Select and Load the "HELI-B" model. The top line of the menu will change to reflect that "HELI-B" is the presently active Model set-up.


```
M-SEL   HELI-B
>B:HELI-B      Y?
```

You can now move to the Model Type menu by pressing the END key once and the EDIT key once to display the following screen:


```
EPA  REV  SW  GYRO
ALTER  TIMER   TYPE
```

Press the > key to move the cursor to the TYPE position, then press the YES/+ key to display the TYPE menu.




```
TYPE
HELI→ >AERO     >YES?
```

The first position on the bottom line shows HELI as the present Type; the cursor position (shaded) allows you to select the Type you want to change to. Press the YES/+ button or NO/- button until AERO 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.


```
TYPE
HELI→ >AERO     >YES?
```

The first position in the bottom line will now change to display AERO type, showing that AERO is the type now selected for the presently active Model set-up.

```
TYPE
AERO→ >AERO     >YES?
```