GENERAL CLUB INFORMATION

NEXT CLUB MEETING
Thursday, September 17, 2015,
7 -9 pm

Thursday, at Niceville Church of Christ

UPCOMING EVENTS
GLIDER SOCIAL - 1st SUNDAY OF EVERY MONTH

Sep 26, 2015   EAM Club Pre-Sportsman Class Pattern Clinic   POC: Rob Campbell

Oct 10, 2015   Motor Glider Contest EAM Field

2015 CLUB OFFICERS
President: Phil Conner (850) 217-5526
Vice President: Victor Diaz (404) 263-7674
Treasurer: Robert Pacheco
Secretary: Ron Van Putte 243-0207
Member at Large: **Paul Doman**

Message from the President
By Phil Conner

Hello everyone;

Fall is surely in the air, and with it cooler temperatures. A very big Thank You to everyone who purchased items from the Otto Martinez estate. We were able to send them a check for $605.00, and there are still a couple of planes to sell. If you missed the last meeting, Paul Doman brought in a new 10 channel radio by Flysky that is pretty amazing for the cost. It will really be a game changer for Futaba, Spectrum and JR as they will have to lower their prices to compete. We plan on having a much more detailed study of this radio and its features at the next meeting.

Coming up is our Pre-Sportsman class Pattern clinic on the afternoon of September 26th. Come on out and see what this aspect of our hobby is all about. You may find out it's not what you thought it was, and it can be very beneficial in your regular sport flying. Bring what you have got even if it's not a pattern plane. You can learn something no matter what. The cost is free so what have you go to lose?

Also coming up is the motor glider contest in October but the date may change, and don't forget about the possible airshow at the Niceville Mullet Festival site in October as well.

Reminder. If you have not paid your 2015 dues, they are past due. You may not fly at the field until your dues are current. Also, if you have not renewed your AMA for 2015, you are NOT covered by AMA's liability insurance and may not fly – NO EXCEPTIONS

See you at the field.

Phil Conner

Eglin Aero Modellers Regular Monthly Meeting 20 August 2015
By Ron Van Putte

The meeting was brought to order at 7:02 P.M. by the president, Phil Conner, with 22 present. Craig Deyerle was present, so it was not necessary for any club members to make obligatory "No" votes on his behalf. The minutes of the July meeting were approved as published on the August BEAM.

The treasury contains $3805.37. The treasurer's report was accepted as presented. Refurbishment of the aircraft starting stands was discussed.

Rob Campbell reported on plans for the Pre-Sportsman Pattern Clinic on September 26th.

Phil Conner reported on using naphtha to remove MonoKote markings on aircraft. It works!

Mark Pfeiffer brought several aircraft and other items from the estate of Ugo Ferrari that were free to the taker.

Model of the Month contributors were Paul Doman (BF-109) Stan Davis (FMS Explorer) and Victor Diaz (Spider 700). Paul won.

Ron Van Putte demonstrated the Durafly D.H. 100 Vampire EDF.

SAD patch nominees were Dick Campis (Dusty) and Phil Conner (Phoenix 7) Phil won.

Carlos Reyes demonstrated his Revell BAE Hawk.

Ron Van Putte reported on the benefits of sealing control surface gaps.

The meeting adjourned at 7:51 P.M.
Ron Van Putte, secretary

Meeting Attendees

Phil Conner	Rob Campbell
Paul Doman	Frank Perkins
Ron Van Putte	Mark Pfeiffer
Ron Unintelligible - Guest	
Joe Shearer	Exor Reyes
Mike Plummer	Craig Deyerle
Stan Stevens	Gene Barnes
Victor Diaz	Keith Stephens
Dick Campis	Stan Davis
Kevin Fears	Robert Pacheco

Recognition
Model-of-the-Year
By Robert Pacheco

Paul Doman won Model Of the Month with his BF-109

September 6, 2015, 2015 Don Hollfelder Memorial Sunday Glider Social

by Craig Deyerle

The forecast was for clear skies, temperatures in the mid 80s and winds 5 to 6 mph from the Northeast going to East. The sky was clear blue, with the occasional cumulous cloud drifting by. The winds started from the Northeast but went to Northeast to Southeast and back at 8 to 10 mph. We staked both the club and Mark Owens' winches out to the north and flew. It rained the previous afternoon and evening. That dumped cold water into the pond east of the field. Normally in the morning, with an easterly wind, you can rely on the warm moist air to drift up through the trees to the east. Not so on this morning. The normal lift wasn't there.

Jim Hartley led off with his Xplorer 3.5 X2. He worked air to the east and southeast, then south, and maxed. Not to be outdone, Jerry Baxter did the same with his Xplorer 4.0 X1. Buddy Bradley fell short with his Xplorer 3.5 X1, then the scores dropped when Craig Deyerle, flying his Velvia, and Mark Owens, with his Bubble Dancer, both made just over 4 minutes. Lance Ropke, back from the Nats, maxed with his Xplorer 3.8 X2. However, Bob Halverson had issues finding air with his Bubble Dancer. Cody Powell flew a glider scratch built by Bob using a Vista plan form. However, this one has a Kevlar fuselage and only weighs 16 ounces. Cody flew north over the trees and maxed. Brandon Balcer and Mike Plummer both flew the Cody's aircraft. It was great to see new folks trying out the glider event. Cody, Brandon, and Mike all flew in the No Carbon event. Cody's plane could circle in the lightest lift and was seen several times during the day making three and four turns around the landing spot at 10 ft of altitude.

Only Lance maxed in the second round as the air become very spotty and flukey. Cold air blew in from the East in this round destroying the lift.

In the third round Jim, Jerry, Buddy, and Lance all maxed. The rest of us were a bit short. Most of the folks were flying north, then east, then southeast, but Jerry bucked the trend by going West.

In the fourth round, Jim, Buddy, Craig, Mark and Cody managed to max out. Cody flew into lift off the line and boomed up to the Northwest. He specked out. He had an issue with his timer using a cell phone timing App and came down a minute early. Mike swears it was a honest mistake and that he was not sabotaging Cody in any way. Mike elected to retire after the third round as he didn't want to cause damage to Cody's aircraft.

In the fifth round Jerry and Lance maxed. Craig knew the lift had moved West so he flew north, then West to get lift off the pierced metal plank runway. He found zero lift and was just able to get back to the landing spot. The rest of the field scattered in all directions and found not much!

It was a very nice day. The winches worked well. We need new, or lubricated, swivels on the club winch. I will endeavor to go to Bass Pro Shops and pick some up. The club winch battery was down to 47% capacity when I plugged it into the charger this afternoon. Thanks to all who came out!.

Rounds 1 & 2.

Name	Aircraft	Round 1				Round 2			
		min	sec	land	score	min	sec	land	score
Jim Hartley	Xplorer 3.5 X2	7	7	5	418	3	14	0	194
Jerry Baxter	Xplorer 4.0 X1	7	1	85	504	2	56	85	261
Buddy Bradley	Xplorer 3.5 X1	5	28	0	328	5	9	0	309
Craig Deyerle	Velvia	4	2	80	322	2	15	0	135
Mark Owens	Bubble Dancer	4	33	0	273	6	7	0	367
Lance Ropke	Xplorer 3.8 X2	7	0	95	515	7	4	35	451
Bob Halverson	Bubble Dancer	2	50	0	170	3	59	20	259
Cody Powell	Vista	6	56	60	476	2	22	0	142
Brandon Balcer	Vista	4	3	0	243	1	58	0	118
Mike Plummer	Vista	3	19	0	199	4	14	30	284

Rounds 3 & 4.

Name	Round 3				Round 4			
	min	sec	land	score	min	sec	land	score
Jim Hartley	7	2	60	478	6	46	0	406
Jerry Baxter	7	2	45	463	4	52	45	344
Buddy Bradley	7	0	60	480	6	59	20	439
Craig Deyerle	2	30	85	235	6	55	0	415
Mark Owens	6	47	0	407	6	42	0	402
Lance Ropke	7	4	65	481	3	57	15	252
Bob Halverson	5	27	0	327	2	9	0	129
Cody Powell	6	30	90	480	6	21	0	381
Brandon Balcer	1	30	0	90	2	35	55	210
Mike Plummer	2	35	0	155	DNF			0

Round 5

Name	Round 5				Total	Place	Flight Time (sec)
	min	sec	land	score			
Jim Hartley	3	1	0	181	1677	4	1612
Jerry Baxter	7	0	65	485	2057	2	1797
Buddy Bradley	6	0	0	360	1916	3	1836
Craig Deyerle	2	36	75	231	1338	6	1173
Mark Owens	2	28	0	148	1597	5	1597
Lance Ropke	7	4	60	476	2175	1	1965
Bob Halverson	5	58	60	418	1303	7	1283
Cody Powell	2	37	40	197	1676	1	1526
Brandon Balcer	1	42	0	102	763	2	708
Mike Plummer	DNF			0	638	3	608

Member Submitted

Few will probably remember that the first starting stand at the club field was built by John Palm. When John brought the starting stand to the flying field, several club members made fun of it. Now we have six or seven of the starting stands at the field, vindicating John's belief that club members would use them.

Here's a picture of John strength testing his starting stand outside the garage at his home in Niceville.

Ron Van Putte

Membership for Year 2015

To renew membership for 2015, you will need your new 2015 AMA card. Dues are $40.00.

Late Renewals are now 50.00. ($10.00 late penalty) and you may not fly at the club site until dues are paid.

Mail either your new 2015 AMA Card or a copy to: Eglin Aero Modelers C/o
     Robert Pacheco
      43 Lake Point Dr
       Miramar Beach, FL 32550

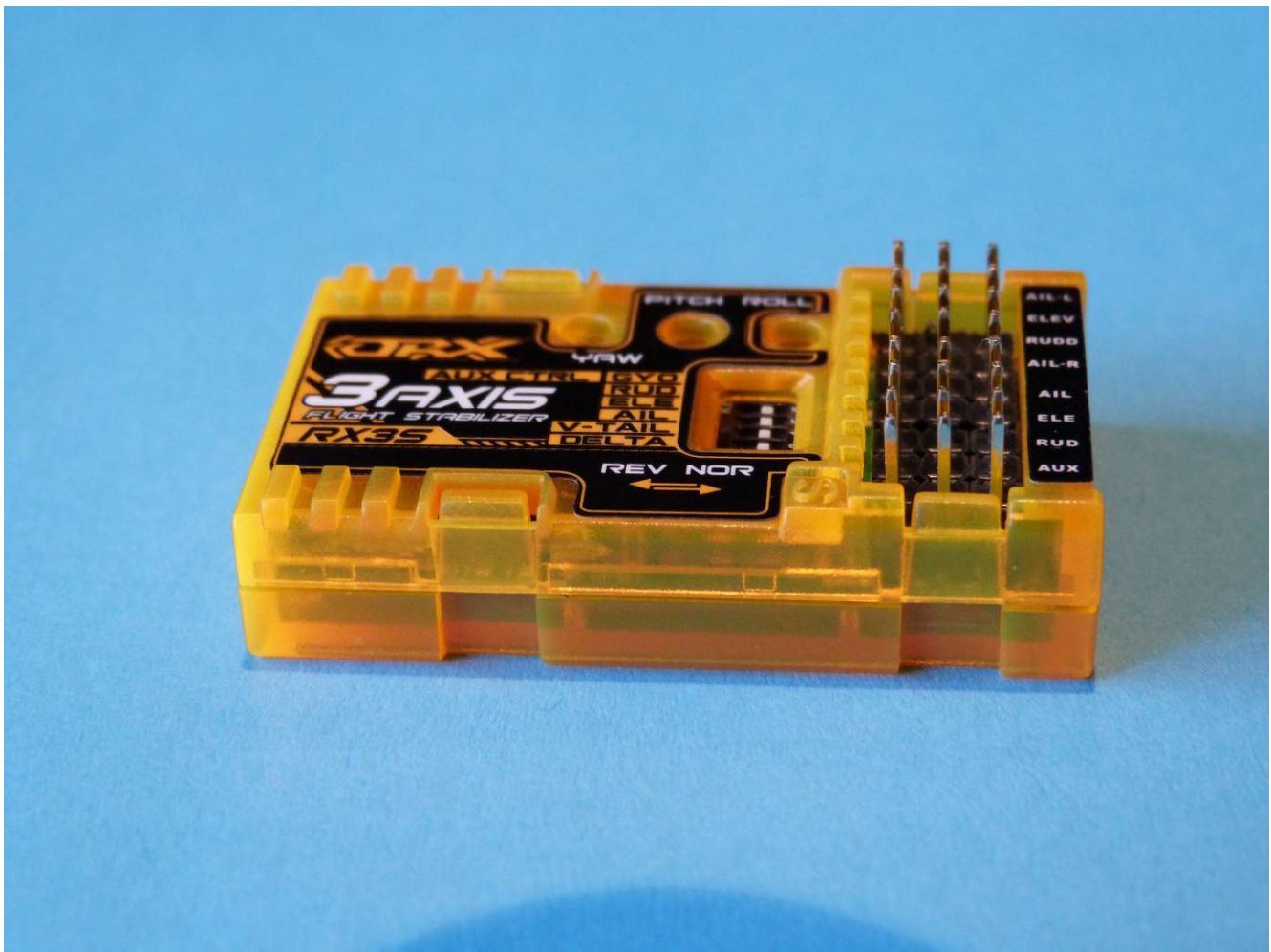OR make your renewals in person at Shalimar Hobbies (bring your 2015 AMA card).

Also, check or confirm your addresses, both postal and e-mail, and phone numbers when renewing. An EAM 2015 sticker will be attached to your AMA Card. If renewing by mail, be sure to indicate the address where

Reminder. If you have not paid your 2015 dues, they are past due. You may not fly at the field until your dues are current. Also, if you have not renewed your AMA for 2015, you are NOT covered by AMA's liability insurance and may not fly – NO EXCEPTIONS

the sticker will be mailed. A SASE will save
the club $$. Join or renew at a Meeting

EGLIN 2015 sticker will be attached to your
AMA Card. If renewing by mail, be sure to
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Flying With the Orange RX3S Ver.2 3-Axis Flight Stabilizer—A User Guide

Contents:

1. Overview

The Orange RX3S Version 2 is a 3-axis flight stabilizer intended for use in fixed wing model aircraft. It employs a micro- electro-mechanical system (MEMS) gyro to counteract destabilizing factors in pitch, roll and yaw that are often encountered in windy or gusty situations. While larger heavier model aircraft are relatively easier to manage in windy conditions, smaller model aircraft such as very light electric powered models can become un-flyable in even a little wind. The RX3S enables such model aircraft to brush off the effects of wind and gusts. It also results in a more stable platform in any size model, of special interest to FPV or photography flying. While the RX3S will not "rescue" a model from a crash resulting from pilot error, it may make many models easier to fly. Properly adjusted, it will not interfere with aerobatic flying.

The RX3S is installed between the receiver and the airplane's servos. The pilot's pitch, roll and yaw commands flow through the RX3S, operating the control surfaces the same as without the device. But any motion not resulting from control-stick inputs, like a wind gust, will be minimized by the 3-axis gyro. That is all it is intended to do. Remember that it is not an auto pilot, and it won't pull an airplane out of the vertical dive you put it in, nor will it bring the model back to you if you lose sight of it.

2. Specifications

- Size: 44x26x14mm
- Weight: 10g
- Gyro: 3 axis MEMS
- Input Voltage: 4.8 to 6.0 volts
- Signal from Receiver: 1520 μsec
- Signal to Power: 1520 μsec
- Use: Fixed wing aircraft including delta-wing and V-tail configuration
- Stabilizer ON-OFF control from transmitter.
- Compatible with virtually any receiver/transmitter

3. Pros and Cons of Stabilizer Use

- Pros:
    - Properly adjusted, RX3S v.2 will make the model more stable in windy or gusty conditions, thereby making the model easier to fly. Some say that the model will "feel bigger."
    - With the RX3S, the model will be a more stable platform for FPV and aerial photography.
    - RX3S is transparent to pilot input commands.
- Cons:
    - If the RX3S gain settings for aileron, rudder and/or elevator are set too high, loss of control can occur. Adjust gains carefully, starting at low gain settings, and increasing in small increments.

- Even in the absence of pilot control input, the device continually responds to disturbances of the three axis, and <u>may</u> result in shortening the life of the servos.
- Having only a single input for the ailerons, the RX3S does not support aileron differential or mixes.

4. Connection and DIP Switch Considerations

For the purpose of this User Guide we consider this to be the FRONT of the RX3S.
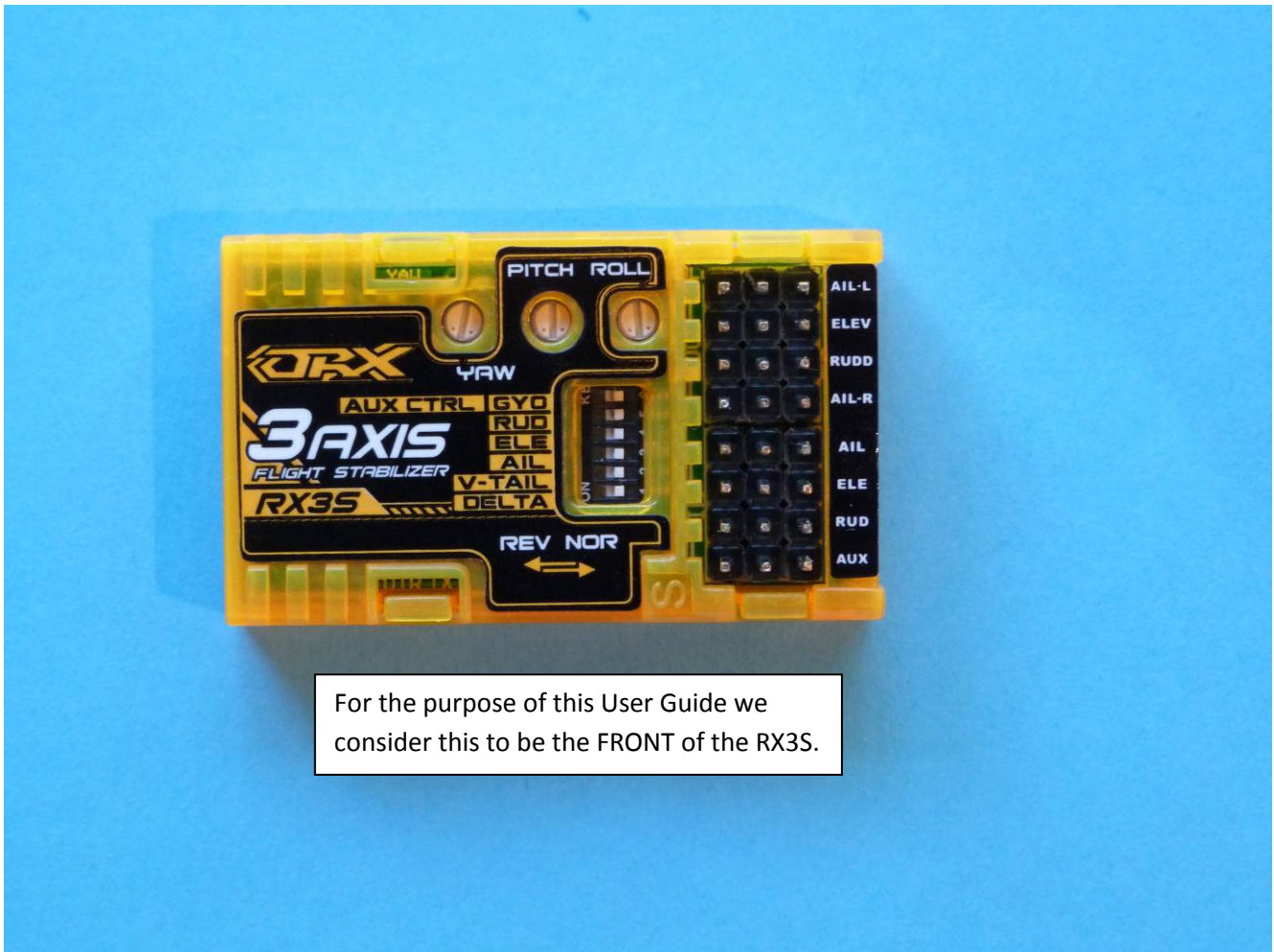
- RX3S Input Connections
  - RX3S connector inputs from the receiver are labeled AIL, ELE, RUD, and AUX. These connector pins are on the FRONT, located in the lower right end of the device. (See photo above.)
  - AUX is used for turning the device ON or OFF from the transmitter (using a switch channel such as Retracts, Flaps, etc.) if your transmitter has an available channel, and if you want the TURN-ON/TURN-OFF capability. It is not required, but nice to have.
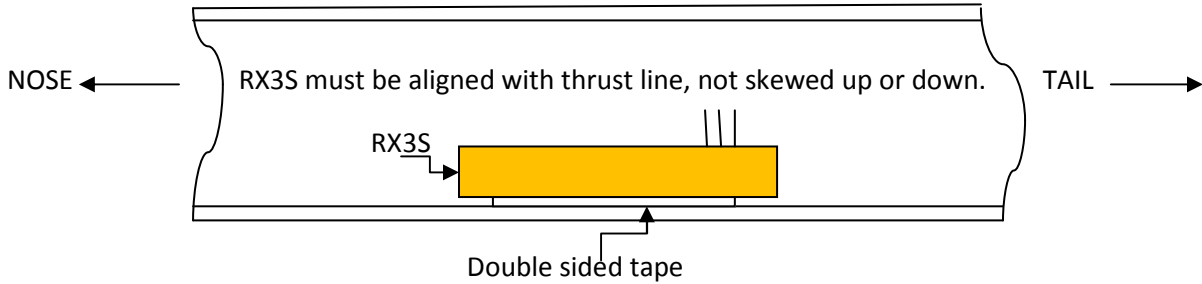
- o When the device is mounted FRONT-side-up in the model, receiver output channels are connected to their corresponding RX3S inputs, that is AIL to AIL, ELE to ELE, RUD to RUD. However, if the device is mounted on its side (i.e. with the Front facing left or right rather than up), then the receiver's ELE channel must be plugged into the RX3S' RUD input, and the receiver's RUD output to the device's ELE input. Ditto for the outputs to the servos, i.e. RUDD output to the elevator servo, and ELEV output to the rudder servo. (Check for the need for reversal of those controls at the transmitter and by the device's own reverse switches.)
  - o The receiver-to-RX3S connections must be made via (short as possible) male-to-male cables since both the RX3S and the receiver use male pin connectors. The RX3S connectors are not keyed, so be careful to orient the white or orange (SIGNAL) wires to the LEFT (inboard) column of pins. Note that there is an "S" molded into the device case indicating that the inboard column is for the signal lines. Power is supplied via the receiver connections, therefore, no power cable is required.

- **RX3S Output Connections**
  - o RS3S output connectors are labeled from the FRONT top: AIL-L, ELEV, RUDD, and AIL-R.
  - o The two aileron connectors, Ail-L and Ail-R, are used if the model has separate servos for the two ailerons with no "Y" cable. Although the RX3S will drive the two servos independently in this configuration, it cannot support aileron differential since it has only a single aileron input channel from the receiver. If the servos are set up to use a single receiver channel with a "Y" cable, then the "Y" extension must be plugged into the AIL-R connector.
  - o Normally the elevator and rudder servo leads are plugged into the RX3S ELEV and RUDD connectors. However, if the RX3S is mounted on its side with the FRONT facing either left or right, you must swap these outputs—that is rudder servo to ELEV, and elevator servo to RUDD.

- **DIP Switches**
  - o The RX3S has a six element DIP Switch just to the left of the connector pins. These switches are labeled (top to bottom): AUX CTRL GYRO, RUD, ELE, AIL, VTAIL, AND DELTA.
  - o AUX CTRL GYRO enables the remote ON-OFF feature. In the NORMAL position (right) the ON-OFF feature is disabled, leaving the gyro active all the time. With the DIP switch in the REVERSE position (left), the gyro may be turned ON or OFF from a switch on the transmitter.
  - o RUD, ELE, and AIL DIP switches control the _direction_ of control surface movement _commanded by the gyro_. For example, if nose is pitched UP by an external force, the gyro should momentarily command DOWN elevator. If the elevator goes UP instead, move the ELE DIP switch to the REVERSE (left) position. Please note that these switches do not reverse control surface movement directed by the transmitter. That is still controlled at the transmitter.
  - o VTAIL and DELTA DIP switches are left in the NORMAL (right) position unless the model has a V-tail or is a delta wing aircraft using elevons.
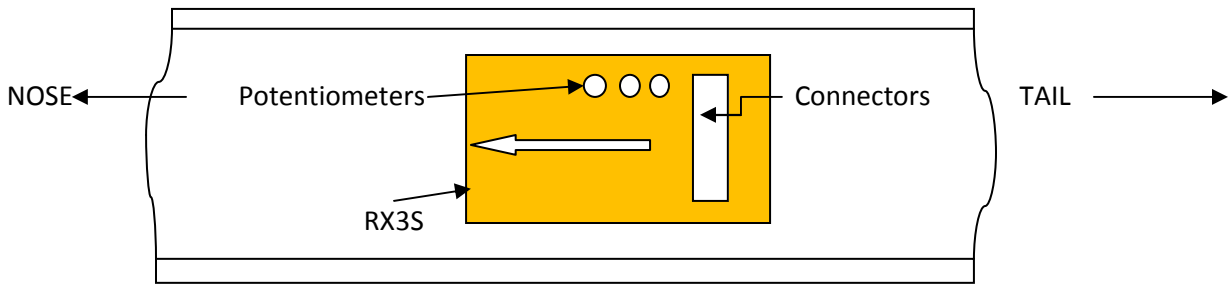
5. Installing the RX3S in the Airplane

The device is intended to be installed FRONT-side-up, with its connectors toward the aft end of the fuselage. As indicated in the RX3S Input Connections section, it may be side-mounted if rudder and elevator inputs are swapped. We will discuss the "normal" FRONT-side-up mounting here. Since this is a 3-axis device, it is important to make sure it is firmly attached to the airframe with double-sided tape so that any minute change in one or more of the axis is felt by the device. Velcro is NOT recommended since it may damp out such motion. In addition, make sure that the device is lined up with the airframe. It must be level with the wings, and aligned

with the direction of flight. Refer to Side, Top, and End View figures below. Place it as close to the Center of Gravity (CG) as possible. Also make sure to position the unit for easy access to the three potentiometers.
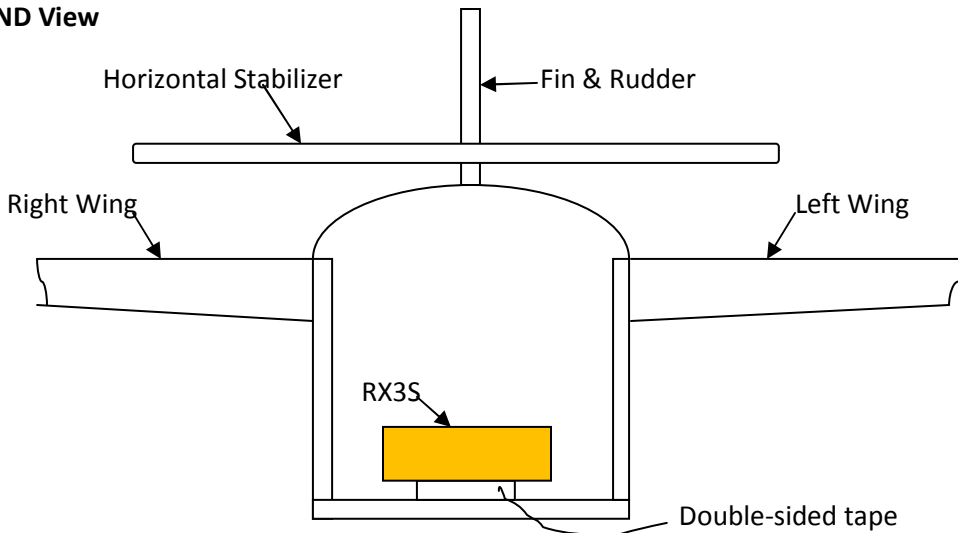
SIDE View of Fuselage Section

NOSE ← .... RX3S must be aligned with thrust line, not skewed up or down. .... TAIL →

RX3S

Double sided tape

TOP View of Fuselage Section

NOSE ← .... Potentiometers → ...... Connectors ...... TAIL →

RX3S

RX3S must be aligned with the thrust line, not skewed right or left.

Nose END View

Horizontal Stabilizer ...... Fin & Rudder

Right Wing ...... Left Wing

RX3S

Double-sided tape

RX3S must be level with the wing, not tilted right or left.

6. Adjustment and Operation

We assume here that the aircraft controls have been set up properly before we installed the RX3S. The Orange RX3S is said to be shipped with the three potentiometers at mid setting for "soft" stabilization. Check to see if the pots are at their mechanical mid-point before beginning.

- With all connections made, and the propeller removed, turn the transmitter ON, and plug in the battery. A red LED should light up indicating that the unit is ON.
- If you are using the AUX channel for the ON-OFF function, you may need to turn the unit ON from your transmitter.
- You may hear the servos, but the control surfaces should not be moving noticeably until you move the model. Any motion put into the model will induce servo reaction.
- With the model at rest (not being held), move the transmitter sticks to confirm proper control surface movement. Make sure surface movement is in the direction called for by transmitter stick position. Any reversal required must be made at the transmitter.
- Next, check to determine if the RX3S gyro inputs are in the correct direction. Remember that if any reversals are required, they will be done by the corresponding DIP switches. With controls operating properly from the transmitter, leave the transmitter controls in neutral, pick up the model and watch the rudder while YAWing the model to the RIGHT. The RX3S should momentarily command Left rudder. Yaw the model to the LEFT and the device should command Right rudder. NOTE: *You may have to temporarily increase the RX3S YAW, PITCH and ROLL gain settings to get a clear picture of control surface movement.*
- A quick PITCH-up of the nose should result in a momentary down-elevator, and the opposite for a PITCH-down of the nose. ROLLing the model quickly to the right should result in a momentary Left aileron movement, and the opposite for a quick ROLL to the left.
- If the gyro directed control surface movement is in the correct direction, all that remains is setting the initial YAW, PITCH, and ROLL gains. We certainly don't want large amounts of gyro correction—too much and the airplane will be uncontrollable. Turn the gain controls counter-clockwise for LESS, clockwise for MORE. These adjustments can be made with power ON—no need to shut down. The rule of thumb is, for the first flight with the RX3S, LESS surface motion commanded by the device is way better than too much! This is especially true for configuration not using the AUX channel for turning the device ON or OFF from the transmitter.
- It is recommended that the device be OFF (If you are using the Transmitter ON-OFF feature) for the first takeoff. Climb to a safe altitude, and then turn the device ON. Feel the airplane out to see whether the control (pot) settings are OK. If the airplane seems too twitchy, command the device off at the transmitter, land and adjust accordingly. If the settings are such that the airplane seems no different whether the device is ON or OFF, then land and adjust for a bit more gain. It will probably take several iterations before the optimum setting is found for the airplane and its pilot.
- If the AUX ON-OFF channel is not available to you, then it would be prudent to initiate your test/adjustment flights starting with the gain setting quite low, then working up to your optimum over several quick flights.
- REMEMBER—Too much gain from the pots can make the airplane uncontrollable.

RX3S v2 Manual v.1.0

8/20/2015

Stanley Davis

(Comments to stan.davis@cox.net)