



Colonial Virginia Aeromodelers

Chapter 1474
Newsletter Volume XXIII • Issue 03

April 2023
Editor: Alan Fry



Presidents Column: John Backes

Editor's note: John is currently in the hospital recovering from surgery. Get well soon John! Below is last month's President's column with updated information.

Upcoming Meeting Schedule

The guestbook will be used to provide updates.

April – Saturday April 15 @ 1:00 – Rain date Sunday April 16.

May – Saturday May 13 @ 1:00 – Rain date Sunday May 14.

Activities

The outlook for the coming year is much better that it was at this time last year. We will begin planning for a full schedule and then modify if needed. I would like to see us get back closer to our traditional schedule. Right now, we only have two events scheduled:

Spring Picnic – May 13th – with monthly meeting

July 4th Picnic – to be held on Saturday July 1st

August 5th - National Model Aviation Day

September 16th - CUB Fly

October 14th - Warbirds Over Williamsburg

October 28th – Fall picnic

Hampton Roads RC events:

June 10th - Summer Fly In (S)

August 12th - National Model Aviation Day

September 9th - Scale Meet (S)

October 14th - Toys 4 Tots

Remote ID

Beginning September 16, 2023, if your drone weighs over .5 Kg and doesn't have Remote ID, you are only able to operate within a FAA-Recognized Identification Areas (FRIAs). A FRIA is a defined geographic area where drones can be flown without Remote ID equipment. Both the drone and the pilot must be located within the FRIA's boundaries throughout the operation. In addition, the pilot of the drone must be able to see it at all times throughout the duration of the flight. The CVA flying field will be designated as a FRIA. The FRIA application to the FAA must be submitted through the AMA. I submitted the application about 1 month ago and have received confirmation that the AMA has received it but have no other communication.

Club Membership

It is time to renew your club membership. Club membership for 2022 expires at the end of the year. The fee for returning members is the same whether you renew now or wait until May or June. Remember to make sure that your AMA membership is current.

Show and Tell

We are going to have a short show and tell at the end of each meeting. Hopefully Santa was good to you. Bring out your new things to show.

Contact Me

Phone: 757-870-0854 (NOTE new phone number)

Email: jb753@cox.net

Address: 8630 Diascund Road, Lanexa, Va. 23089



Secretary's Report: Fred Hill

CVA Meeting – March 11, 2023

The meeting was called to order at 1:00 pm by Fred Hill. The meeting was held at the Field. A total of 13 members were present. The January 2023 meeting notes were approved.

Treasure's Report – Jon Persons

There were 24 renewals

The following bills were paid:

SB Cox \$106.00 paid for two months

Virginia Corporation Commission renewal \$6.00

The operating fund, Mower Fund totals were reported

Site Improvements – Randy Rogers

There was a general discussion about the poles used to hold up the tarps on the fields. There was a general discussion about the condition of the fence at the field. No conclusions or motions were made, so the discussion was tabled until the next meeting.

Activities

The next scheduled meeting is April 15th

The follow activities are scheduled:

CVA:

September 16th – Cub Fly

October 7th Warbirds over Williamsburg (moved from the 14th to not conflict with the HRRC toys for Tots)

Hampton Roads RC Events:

June 10th Summer Fly in

August 12th – National Model Aviation Day

September 9th Scale Meet

October 14th Toys \$ Tots

The following events were added to the CVA schedule

Spring Picnic – May 13th – with monthly meeting

July 4th Picnic – to be held on Saturday July 1st

October 28th – Fall panic

August 5th National Model Aviation Day – Co -Chairmen Bob Juncosa and Fred Hill

We would like to have a full schedule but need people to step forward and volunteer to coordinate events. Previous events have included Something Different, ICE, CAP but any other ideas are welcome. Contact a board member if interested.

There was a discussion about sanctioning events with AMA. There is no big advantage to having an event sanctioned, however if the coordinator wants to get his event group sanctioned to give if greater visibility, they are welcome to go through the process. Contact Bob Juncosa for help.

Safety

Steve Kolet discussed the danger of handling knives improperly. Be careful with sharp objects.

Training.

Bill Talbott and Bob Juncosa worked on a donated Tower 40 Trainer and have it working. The club now has 3 trainers that can be used for training member.

Old Business

No old Business

New Business

Steve Kolet read a letter that the club received from Sentara Hospital for donations of \$400 for Winston Shepherd's collection. Thanks to Steve for his hard work. And blue skies and warm thoughts to Winston and his family.

Bob Juncosa would like to see the club be energized and to raise the overall status of the club. Bob provided a list of items that he would like to see considered for action by the Board. These items include short term projects and long-term goals.

Short Term

1. Patio extension – 10' x 20'
2. Signage – permanent to the field
3. Signage - temporary for events
4. Update signage around the field
5. Cleanup of trees and brush at entrance

6. Cleanup at storage area
7. Fence repair
8. Shelter repair and spruce up
9. Repair flight stands
10. Repair/replace setup table
11. Repair bleachers
12. Repair picnic tables
13. Update website
14. Shelter mural
15. Second 20' storage container
16. Secure storage in shelter

Long Term Improvements

1. New shelter
2. Permanent roof over the pit area

Other Items

1. Plan for ensuring the long-term life of the club

Show and Tell

Bob Juncosa showed off some club merchandise that he has purchased on his own. These included hats, t-shirts, polo shirts and coffee mugs with the club logo on them. He will get a list of items that we can purchase in the future and make it available for ordering in the future.

Bob J. talked about his first impressions of the Radiomaster TX16s radio. He is very impressed with the radio. It is very comprehensive and will cover almost all receiver types. However, there is a learning curve to using the radio. Several club members have the radio and can be used as a resource for learning.

Bob J showed off his Sig 1/4 scale Cub project. He installed a VVRC 21 twin cylinder gas engine and is working on a detailed interior.





Training: Bob Juncosa

“Antennas: Part 1 – Size, Does it Matter?”

“The hobby really changed when we move into the “short antenna” club!”

-R.D. Juncosa

Part 1 on this subject dealt with why antennas are the size that they are. Part 2 will delve deeper into antenna physics and deal with the orientation of antennas and why that is important.

The first thing to get out of the way is that some of you might have spotted the over simplification in part 1 that described how waves propagate through and out of an antenna. Contrary to that illustration, the energy does not literally go out through the tips of the antenna. In actuality, the energy is transmitted from the sides of the antenna in a “toroidal” shape, sort of like the shape of a donut as shown in Figure 1. The darkened area is the cross section of that shape which is then rotated 360° around with you in the center. The shape of the sensitivity of a receiver looks exactly the same.

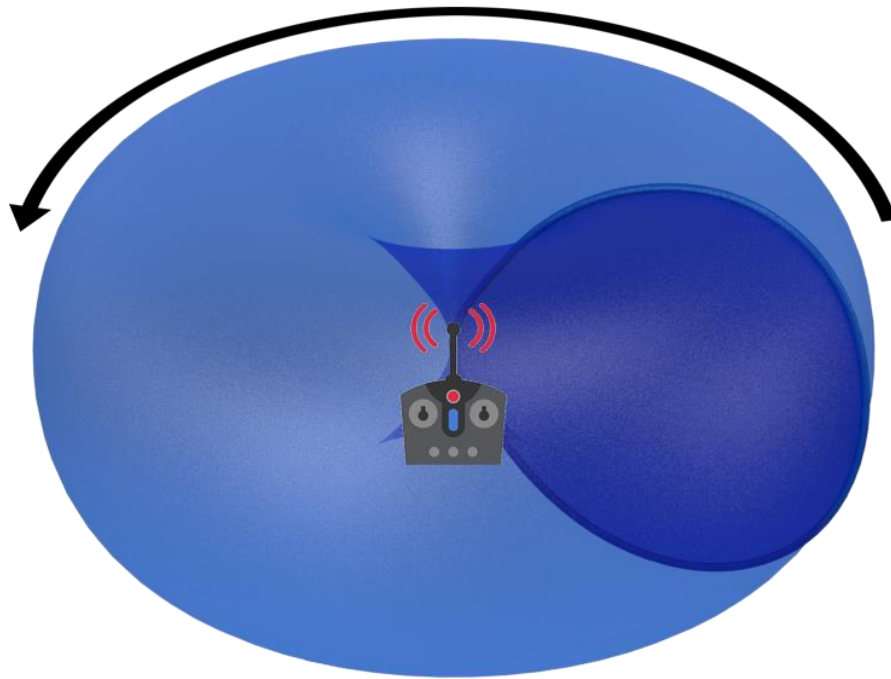


Figure 1. The Shape of Transmitter Energy

To get more graphic about it, take a look at Figure 2. This shows the propagation pattern of a very simple vertically oriented antenna such as what we have in our transmitters. Think of it as if your transmitter was in the middle of the graph and a slice was made from top to bottom. This is the cross section of that pattern. The optimum area for transmission and receiver sensitivity occurs when your plane is within the area bounded in red. Outside of that area, the efficiency drops off dramatically. As you can see, the worst place for your plane to be is right over your head. This means that the area of *least* transmitted power is right out of the tip of the antenna!

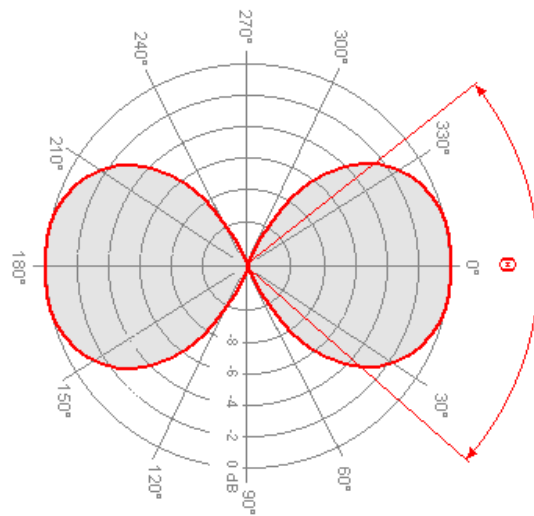


Figure 2. Antenna Propagation

Whenever I teach RC flying, I make it a point to get the student used to flying with their feet stationary and parallel to the runway. I encourage them to just turn their head towards the plane and not their whole body when flying. This reduces the opportunity for them to continually point their antenna at the plane.

Our 72Mhz radios had long telescoping antennas that came straight out of the transmitter case. If you tend to hold your transmitter rather “flat”, this increases the opportunity your plane to see the weaker signal from the end of the antenna.

Some transmitters back in the day had their antennas pitched slightly upwards and now you know why. This was done so that when held in a typical and comfortable manner, the antenna orientation was a bit closer to being vertical. This was a slight improvement over transmitters that did not have pitched antennas. Today, the antennas are so small that they can be mounted on swivels which gives you the opportunity to orient the antenna perfectly vertical no matter how you hold your transmitter.

Bringing this concept into our real world, we end up with the pattern shown in Figure 3. The ground effectively cuts off the bottom half of the transmitter pattern. This is not a problem since our airplanes tend to stop responding to radio commands once they are below ground level anyway.

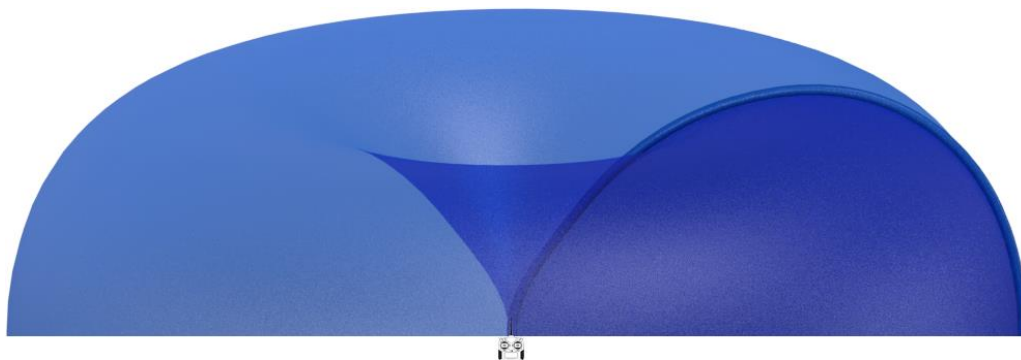


Figure 3. RC Transmitter Propagation Pattern

Now let's put it all together and see what happens when we put the transmitter propagation pattern together with a receiver propagation pattern. For this first example, assume that your plane has just one receiver antenna and it is mounted in the vertical orientation. Figure 4 shows how the transmitter pattern (blue) and receiver pattern (red) would interact. There is a very strong overlap between the two, meaning there is little risk of a loss of signal. This relationship would be present if the plane was flying level even if it were right side up, inverted, going away from you, or coming at you.

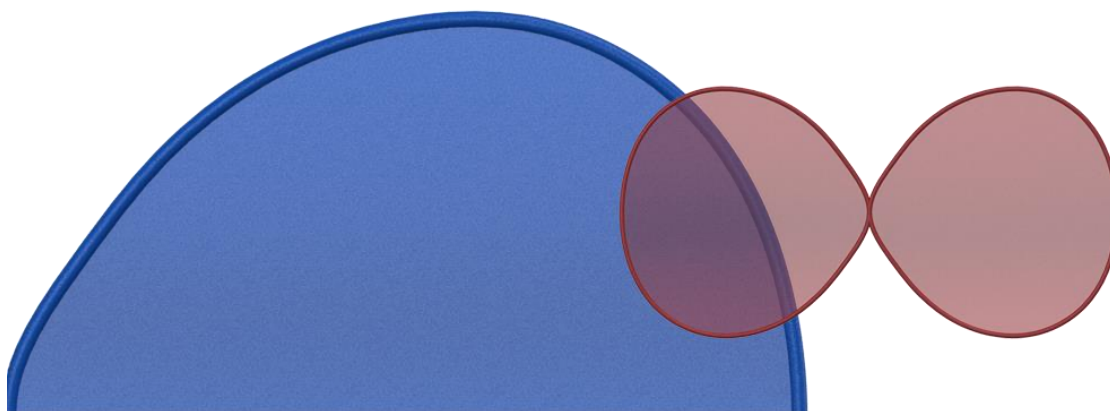


Figure 4. One vertical receiver antenna

The situation changes if the plane as described above is now flying a knife edge. The receiver antenna is now horizontally oriented. Figure 5 shows the new relationship between the two antennas. There is now far less overlap between the two patterns and in this example, that overlap would be present only when the plane is at a very low angle of elevation, close to the ground.

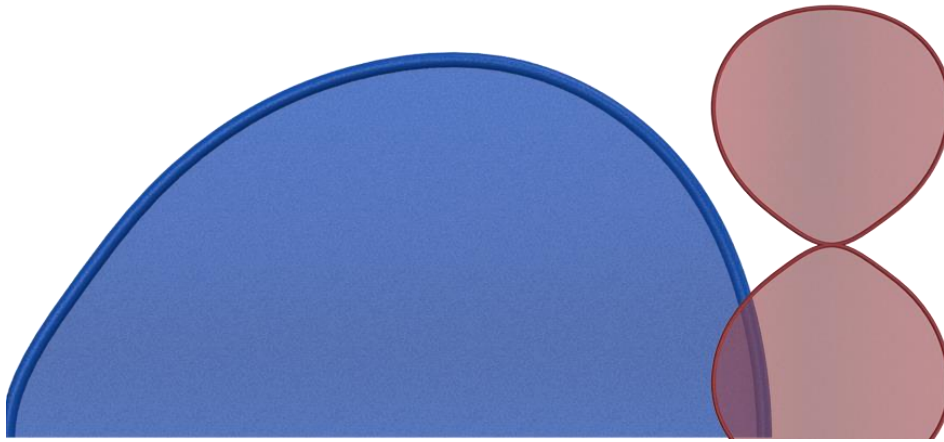


Figure 5. One horizontal receiver antenna

One way to address this potential limitation is to use a receiver with two antennas and mount one vertically and the other horizontally. This example is shown in Figure 6.

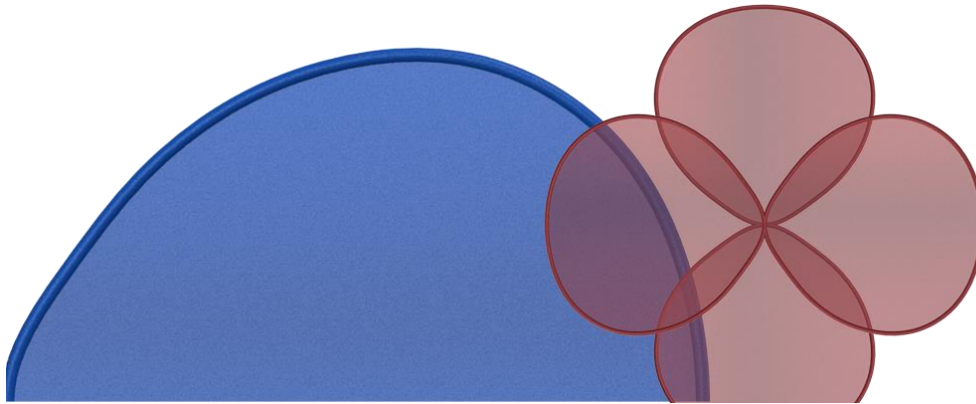


Figure 6. A receiver with a horizontal and a vertical antenna.

Having receiver antennas in both orientations ensures good antenna overlap no matter what orientation the plane is in.

One Antenna Receivers

Two examples of receivers with one antenna are shown in Figure 7. The one on the left has its antenna at the end of a length of flexible wire. This provides the option to mount the antenna in a preferred orientation no matter the orientation of the receiver. This is important because some receivers require that they be mounted horizontally, such as those with internal gyros.

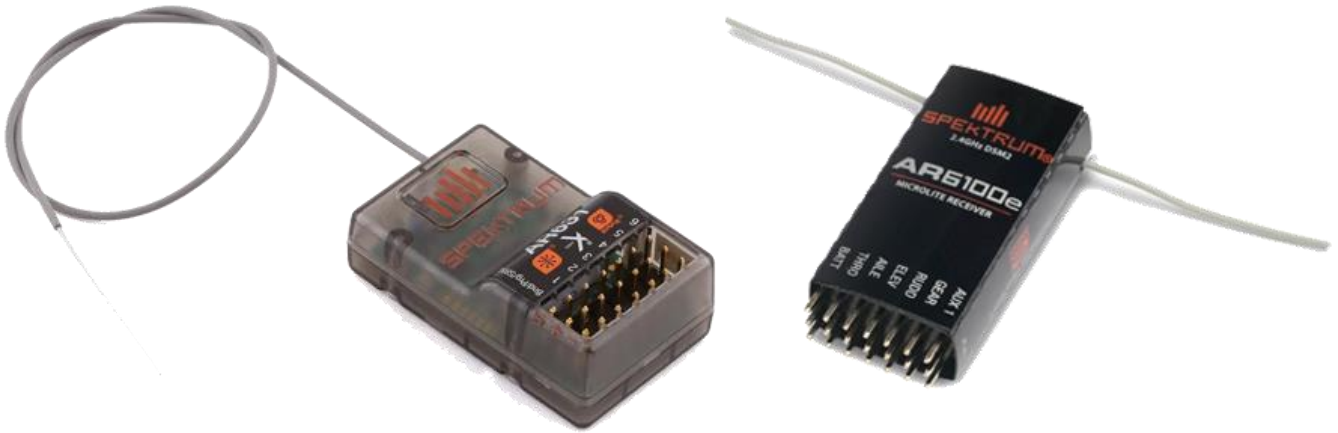


Figure 7. Receivers with one antenna

The receiver on the right, although it has two wires, is still a single antenna receiver. It is a “dipole” antenna as compared to the “monopole” antenna in the receiver on the left. A dipole antenna typically has better reception sensitivity but, in this example, its orientation is fixed to the receiver’s orientation.

Two Antenna Receivers

Figure 8 shows two examples of receivers with two antennas. The receiver on the left has two antennas that are 90° from each other. Their orientation will be determined by how the receiver is mounted. The receiver on the right has two flexible antennas and therefore decouples the orientation of the antennas from the orientation of the receiver.

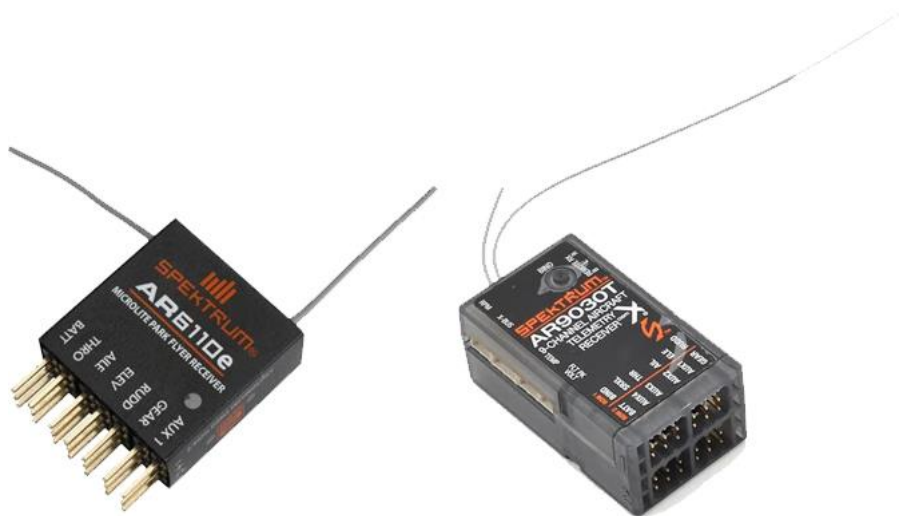


Figure 8. Receivers with two antennas

Receivers with Satellite Modules

Figure 9 shows an example of a receiver with satellite modules. A satellite module is in essence an additional antenna with additional circuitry that allows it to be connected to the receiver.

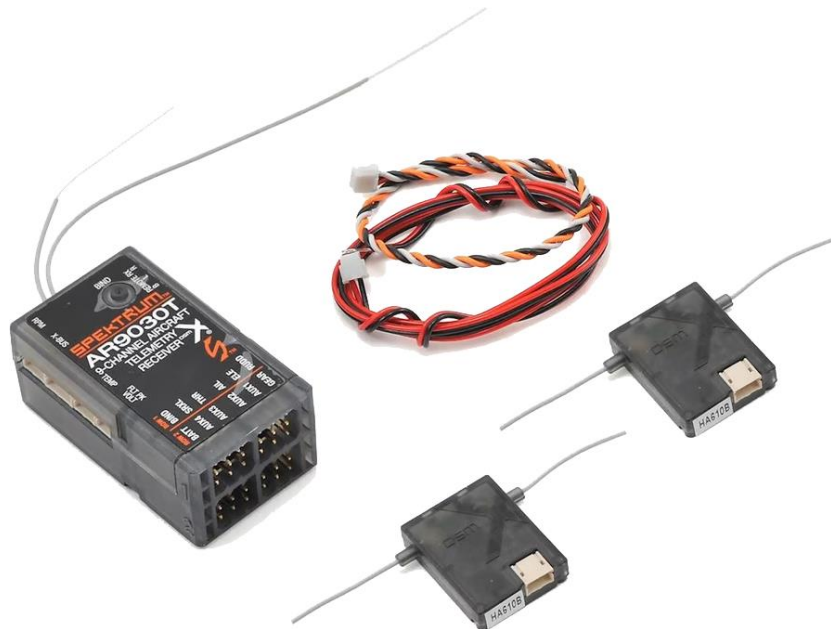


Figure 9. A receiver and satellite modules

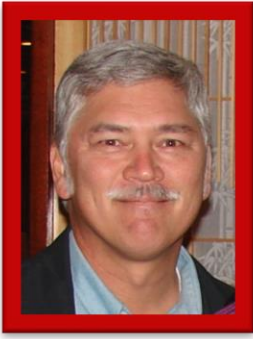
The receiver shown above has two flexible monopole antennas built into it and two external dipole antennas provided by satellite modules. The orientation options are practically endless!

With the background from the first two articles, we can finally wrap up the subject with the discussion of receiver mounting in your airplane in the final part of this series.

Happy Landings.

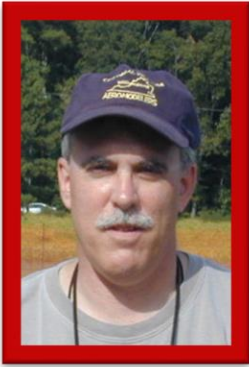
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Fly Safe, Be Safe



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