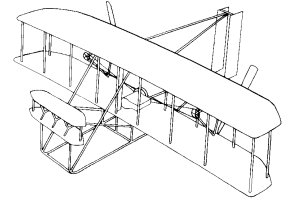


The Wright Flyer

WEBSITE: WWW.JOELD.NET/WFRC



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NEWSLETTER OF THE WRIGHT FLYERS R/C CLUB

Meeting Highlights

On Tuesday October 10th, the Wright Flyers held the monthly membership meeting at the Monticello Middle School. This was the first monthly indoor meeting of the winter season.

The business meeting was called to order at 7:12 PM by President Scott Leiferman. There were 8 members present including three club officers. The secretary presented the minutes of the September meeting and they were accepted as read. There was no treasurer's report given.

Garth Landefeld reported that he had been able to keep the field mowed this past season with a total of 5 cuttings, four early in the season and one recently. This compared with ten required the previous year.

The September club picnic was cancelled due to the weather and not rescheduled.

John Kossieck has made attempts to keep a log book at the field for the members to sign in each time they fly at the field. However, the book has been taken twice from a box on the back of the frequency board along with a pen. It appears that this system will not work so if we want to log our flying activity individuals need to be encouraged to use the message board that is on the club's web site. Wayne VanDenBoom suggested we use the box on the frequency board for membership application forms.

Wayne also suggested we designate on the club roster those who are available for giving training and consultation to new members. A total of six people attending the meeting volunteered to have their names highlighted on future rosters as contacts for help.

Club officers are up for election in December. The three officers at the meeting, president Scott Leiferman, VP Wayne VanDenBoom and secretary Leo Davids indicated they would each stand for re-election unless other members were interested in being officers.

The meeting was adjourned at 8:00 PM

Show and Tell

Al Amundson brought in two OS 25 engines, a set of skis and a Sig Rascal kit for sale.

Leo Davids and Hugh Lampert brought in the Multiplex Twin Star II for show and tell. As of the meeting the plane had

The next meeting is scheduled for **7:00 PM** on Tuesday, November 14th, 2006. It will be held in Room 30 of the Monticello Middle School.

about 20 flights and was featured in last month's newsletter (October). It has been flying very well on the stock brush motors and 8-cell Nimh batteries.

John Kossieck brought in a box of Depron flat foam sheets 6mm white and gray and 3mm white for sale. He is willing to sell them at his cost. John ordered a lot more than he needs for himself because the shipping costs are a more reasonable in larger quantities. On a similar note, the Dow Blu-Core foam that had been carried at Lowes home improvement chain was recently seen being advertised in a Mills Fleet Farm circular. This Blu-Core brand of fan fold foam has been hard to find at times with some Lowes stores seeming to be dropping it from their inventory in favor of other brands that are not as usable for model aircraft building.

Flying at The Metrodome

Again this year, the MARCEE group has secured a number of dates for flying small electric R/C aircraft in the HHH Metrodome. The general restrictions to flying are that the aircraft must be relatively light and slow (officially, 20 oz. weight and 20 mph speed). The pilot must have a current AMA membership. The cost is \$5 per date if you join MARCEE (annual membership fee is \$15) or \$10 per date if not a MARCEE member.

The parking is free at the dome lot on the southeast side. The dates so far are for November- 13, 14, 15, 20 & 22nd. The dates for December- 6, 7, 8, 11, 12, 13, 14, 20 & 21st. The months of January and February usually have a few dates available but nowhere as numerous as they offer in November and December.

Local Hobby Shop News for the Metro Area

The Hobby Warehouse in Richfield closed temporarily last month for transfer of ownership from father to son. For the next two months it will be remodeled to cater to model aircraft exclusively. It is scheduled to re-open on January 2nd.

A new shop has opened on the north side of the metro area. The business is called King Kong Hobbies and is located in Wyoming, Minnesota. The address is 5390-260th Street, Wyoming, MN 55092. Phone 651-408-8408. or www.kingkonghobbies.com. They are located off Highway 61 & 260th street in Wyoming (2 miles north of Forest Lake, 1 Block north of Fairview Hospital).

Color Theory for Models: Choosing the Right Color

All RC fliers have gotten that “I can’t tell which way it’s going” feeling when learning to fly RC. Several simple color trimming steps can help you fly your airplane better, whether you are a beginner or top dog in Pattern.

Most airplanes, especially ARFs, are covered or painted to look good in the store. But in the air it’s a different story. The situation is very simple—if you can’t see it, you can’t fly it.

To successfully fly an RC aircraft, the pilot must have good orientation and distance perception. The eyes estimate aircraft orientation based on the perceived position of the model’s outer edges, and the relationship of these outer edges to the edges of any discernible trim markings on the airplane’s wings or fuselage. Distance perception, in turn, depends on a combination of one’s perception of the aircraft’s outside edges and its estimated orientation.

After you have located your airplane and estimated how far away it is, you must immediately recognize several attitude orientations: Is it flying toward me or away from me?

Is it upright or inverted?

Are the wings flat, vertical, or tipped?

Is it flying horizontal, upward, or downward?

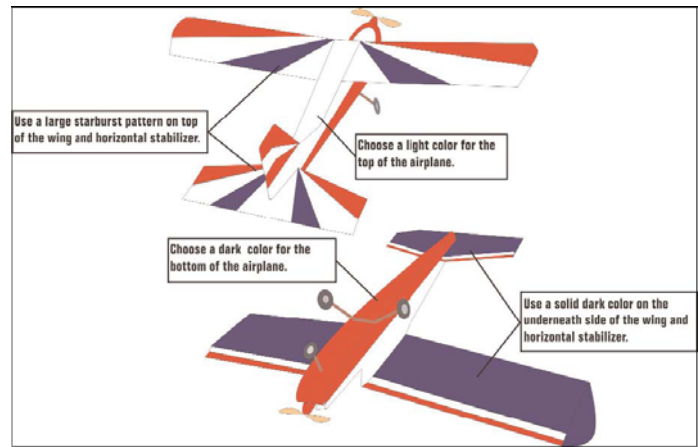
Is it flying parallel to the runway or vectored?

Is it flying perfectly vertical or skewed sideways or fore/aft?

The following suggestions will help you with distance and attitude perception. Visual acuity and contrast perception diminish with age, but by using correct color concepts, even senior fliers will find that visual orientation of their aircraft can be consistently and reliably achieved.

Solid-Colored Aircraft

RC airplanes are flown in all kinds of weather and background conditions. A solid-colored aircraft will sooner or later fly into a condition where it blends into the background. This will result in a complete loss of location and orientation since no edges can be perceived. The absolute worst, in my opinion, is a silver Mustang in a heavily overcast sky. Yellow Cubs are tough to see when back lit by the sun. I had a dark green airplane that would disappear when I landed with a background of green trees. Red Stiks and dark blue airplanes go invisible in late evening and storm conditions. A solid-colored airplane is easier to cover, but



it won’t do you any favors up in the sky.

Wing and Horizontal Stabilizer Shades

The top of the wing and horizontal stabilizer is normally lit by sunlight. The bottom of the wing and horizontal stabilizer is shadowed. Coloring the top lighter and the bottom darker keeps this same relationship even in changing lighting conditions.

ARFs are classic blunders in coloring. Either they have identical top and bottom wing colors, or they put some token color on the top of the wings and leave them white underneath. They look good in the store, but don’t help the beginner at all. I always recommend that beginners cover the bottom of the wing and the bottom of the horizontal stabilizer with dark-blue contact paper before flight.

When flying at a distance of 500 feet or more (depending on the size of the model and lighting conditions) you can’t see colors, because the cones of your eyes that perceive color are 2,000 times less sensitive than the rods, which perceive illumination.

In these circumstances, your gray-scale vision (your perception of lightness and darkness in a black-and-white image) provides your orientation and depth perception, not color. Any series of adjacent colors on your aircraft that are intended to facilitate orientation should therefore be gray-scale opposites. For example, a series of bands consisting of red, yellow, blue, and then white is desirable. Don’t assume a series of “color opposites” such as red, green, blue and black will be effective. These all have the same dark gray-scale shade and will show an equal tendency to disappear in a deep blue or heavily overcast sky.

If you use the wrong series of color bands, you won’t know how far away your aircraft is, and you won’t even know which way it’s heading to bring it pack. Also, don’t rely on intricate patterns. They blend together to form edgeless fuzz approximately 100 feet away. You can test potential color schemes for gray-scale perceptibility by video taping and playing back alternative color schemes on a black-and-white television or on a color television with the color control turned down.

Actual Patterns to Use

The best color scheme for beginners that I have found is a combination of large starburst patterns on top of the wing and horizontal stabilizer, and a solid dark color underneath the wing and horizontal stabilizer.

Beginners consistently become perceptually disoriented when flying at a distance, especially when the airplane flies at a 45° angle away or toward the pilot, since the aircraft silhouette is identical. With the starburst pattern, all the beginner has to do is

slightly roll the wings towards him, and the starburst pattern becomes an arrowhead, pointing in or out, the direction of flight.

Start by covering the bottom of the wing and horizontal stabilizer with any dark color. The exact color could be black, deep red, dark blue, or green, it doesn't matter; they will be the same gray-scale color at a distance. Then put a 2-inch strip of some light color along the leading edge of the bottom. Do the same for the bottom of the horizontal stabilizer, and make the light strip roughly 1 inch wide.

The base color of the top of the wing must be a very light color such as white, yellow, or some other very light color. The starburst pattern starts out at the center of the wing, from 3/8 inch under the wing's leading edge to roughly 1 inch back from the leading edge at the top. Then it is a large "pie slice" to the wing tip, where it extends from 3/8 inch under the wing leading edge to the trailing edge on the top. A second pie slice of a different dark color extends from the center of the wing to points one third and two thirds out on the wing. Both sides of the wing are colored like this as is the top of the horizontal stabilizer.

Landing Considerations

Landing requires keeping your wings flat and knowing where you are in the landing approach. You are generally close to the airplane during the later stages of the landing approach, so your color perception is improved, but the wings will be edge-on to your line of sight. The leading edges should be very prominent against any background such as blue sky, white clouds, dark overcast, distant mountains, or green trees. All of these items have spectral lines toward the higher frequency blue or green region, so a very simple solution would be to have a low frequency color such as red or orange on your wing and horizontal stabilizer leading edge.

At the field where I fly in Colorado, ARFs with blue wing edges are almost invisible when a low approach from the West dips the airplane visually below the mountains, resulting in very klutzy landings by beginners.

The leading edge red or orange pie slice is wrapped around the leading edge so that it has the maximum area of visibility when edge on. The 2-inch strip of white on the bottom of the wing near the leading edge will become visible during the landing flare, aiding in precision landings.

I prefer a white background on the top of the wing and horizontal stabilizer, with a bright red leading edge pie slice and a metallic blue inner pie slice on trainer airplanes. The same metallic blue under the wing looks nice, but any dark color works fine.

Fuselage and Rudder Coloring

The same coloring rules apply to the fuselage. Keep the top of the fuselage light, and the bottom dark.

The sides of the fuselage should aid you in flying horizontal passes. A solid color fuselage is very difficult to keep straight and level because all of the aircraft reference lines are curved. Light blue-and-white fuselages (a favorite ARF color scheme) blend in with the sky and clouds too well, and will become invisible under some lighting conditions.

Draw a line along the thrust line of your aircraft, roughly splitting the top and bottom of the sides in half. Make the top half of your fuselage sides a light color. Make the bottom half a dark color, usually one of the wing pie slice colors.

Analyze how you fly. Beginners and experts, who fly inverted much of the time, should make the fuselage line color demarcation exactly follow the thrust line. Beginners fly airplanes with lifting, flat-bottom wings, so the aircraft fuselage side flies a straight line.

The expert flies an airplane with symmetrical wings, so he flies at a slightly raised altitude to maintain level flight, whether upright or inverted. Therefore he should also have the fuselage line color demarcation exactly following the thrust line. When doing a horizontal pass, he should maintain an equal rising thrust line sight picture whether upright or inverted.

The interesting situation is the beginning aerobic pilot. His routines do not include horizontal, inverted passes, but his maneuvers do include many horizontal flight components. He will usually be flying an aircraft with symmetrical airfoil wings, so the aircraft will be moving through the air with a slight upward orientation. He should offset the fuselage side color demarcation upward at the tail of the aircraft by roughly an inch. Now he can practice his horizontal passes by keeping the fuselage side lines parallel with flat ground.

The vertical stabilizer and rudder should have very wide horizontal bands of color. Make the top of the horizontal stabilizer the same color as the wing tips. Then put a lightcolored band, and below this a dark-colored band, usually the same color as the inner pie slice on the top of the wing. The base color of the vertical stabilizer and rudder should be the same light color of the wing.

Another variant for the vertical stabilizer and rudder that works well on trainers with very big tails—such as the Kadet series—is a starburst pattern on the top of the wing. This aids the beginner in determining the direction of travel when flying at a distance. The tail's starburst pattern becomes an arrowhead pointing out the direction of flight.

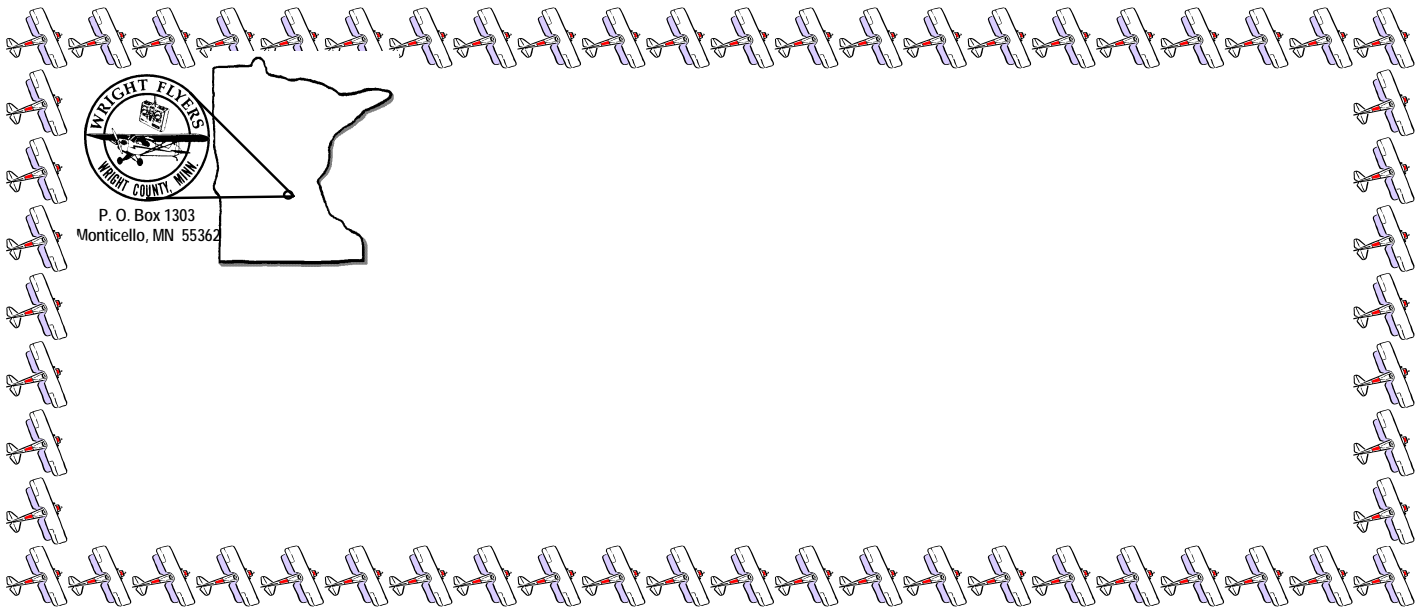
Looping

Consider what the usual looping problem always is for the beginning aerobic pilot. The pilot does not begin the loop with his wings flat. He usually corkscrews in or out. Proper coloring of his low-wing or mid-wing airplane can be a major help.

Make the wing tips stand out. I usually make the outer 2 inches of each wing and 1 inch of each horizontal stabilizer the same bright red that I color the leading edge. If you follow my advice above on the wing bottom and the fuselage sides, the wing tip can be visually correctly placed for a perfect loop. If the wing tip is too high, resulting in a corkscrew out, the pilot will see the dark wing bottom. If the wing tip is too low, resulting in a corkscrew in, the pilot will find that the wing tip blends too well with the bottom of fuselage side. The correct sight picture will be the wingtip cleanly placed against the upper lightly colored fuselage side. Look at the International Miniature Acrobatic Club or Pattern airplane pictures in RC magazines. They always have a dark color on the top half of the fuselage side into which the wing tip blends, causing looping problems.

Geometric Shapes

Humans can recognize different geometric shapes 1/10 of a second faster than colors. I use this phenomenon to help me with the vertical rolls performed in advanced aerobatics. Instead of a solid dark color on the bottom of my wing and horizontal stabilizer, I put four large circles on the bottom of the wings and two large circles on the bottom of the horizontal stabilizer. The noticeably faster recognition of the round shape verses the line



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shape aids me in nailing the vertical rolls.

A number of people at my field have copied my bottom circles without knowing the reason why I use them. The solid colored bottom is preferred unless you are doing vertical rolls.

Sunglasses

Several years ago I flew with some expensive Serengetti Driver sunglasses. These had a red tint to them, I guess to cut down on the ultraviolet region I lost visual perception on a solid dark blue airplane during a landing approach and crashed.

Fortunately they were stolen at a hobby store a week later, and I got some RayBan aviator sunglasses with a blue-gray tint. What a difference!

Red is at the low frequency part of the visual spectrum, and blue is at the high frequency part of the spectrum. Red or yellowtinted sunglasses reduce all colors to highcontrast shades of gray, making your aircraft in the air appear completely different from the appearance of your aircraft at home or in the pits. Gray, light blue, or light green tinted sunglasses make the airplane in the air look just like the airplane in the pits, and because your vision is extended into the high frequency part of the visible spectrum, you will have twice the visual perception range!

Final Thoughts

Evaluate color schemes for visibility first, beauty second.

Dark-colored airplanes are more difficult to see in overcast skies and in the evening.

Scale airplanes are a special problem. Warbirds were colored to avoid detection, just the opposite of RC airplanes. Avoid flying scale-colored airplanes until you a very experienced flier.

Avoid dark colors on the fuselage where your battery and receiver are located. The heat buildup can result in loss of battery capacity and premature radio failure.

Don't fly when someone with a airplane identical to yours is already flying. ARFs and yellow Cubs are particularly susceptible to this problem. Several years ago two fliers were flying with identical ARFs. When one of the models landed, both modelers went out to get the airplane. Much to the entertainment of the folks in the pits, one modeler discovered that his airplane had crashed out in the field five minutes previously because he had lost track of which airplane was his, and he was "flying" the wrong one.

*by Dr. Robert Suding
from www.ultimatecharger.com*