



AMA Chapter 534,  
Medford, Oregon

THE ROGUE EAGLE



August 2001

## Color

While we're in our winter building cycles, we will soon be faced with the age-old question about "What color should our new creation be?" If this is a scale representation of a full-scale airplane, then the color scheme is predetermined. If we are young and eagle-eyed, then the color is chosen more on the basis of aesthetics rather than visibility. However, if our eyes aren't quite as good as they used to be, then the color needs to be such that we can see it better. The following paragraphs are reprints from previous **On The Flight Line** presentations which deal with the best color and scheme for best visibility. If you can't see it, then you can't control it.

From the May 1996, issue comes the following list which shows the visibility index for a variety of colors:  
Luminous Orange 100%, White 90%, Light Yellow 80%, Light Orange 75%, Dark Yellow 70%, Light Grey 66%, Light Blue 60%, Light Red 58%, Light Brown 55%, Light Green 51%, Dark Grey 51%, Dark Red 50%, Dark Blue 50%, Dark Brown 50%, Black 50%.

What does all this mean to modelers? It says that International (luminous) Orange is the most visible under most light conditions, and that most dark colors are only about half as visible as luminous orange.

This second article came from the September, 1996, issue (originally from the St. George, Utah club newsletter). While contemplating what colors to put on that new model, consider the following:

- Avoid single-color aircraft. particularly solid silver or solid dark colors.
- Beginners are advised to color the bottoms of aircraft wings a dark color and the tops a light color.
- Orientation recognition can be enhanced by placing large dark circles under the wings and a starburst pattern of straight lines on the top.
- Any series of adjacent colors on your aircraft that is intended to facilitate orientation should be gray-scale opposites—not color opposites.
- Don't rely on intricate patterns; they tend to blend together to form an edgeless fuzz at approximately 100 feet away.
- A bright red or orange leading edge on your wing and horizontal will help you keep your wings level during landings.
- Color lines parallel to and above the fuselage horizontal thrustline provide a good angular reference on the glide path prior to the final turn.
- For better loops, make the wingtips and horizontal stabilizer red or orange, and the body background a very light color such as white or yellow. This helps you tell if the wings are flat.

from *On the Flightline*  
Pikes Peak Radio Control Club  
Bill Sanderman, Editor

# Teaching R/C Flying

By Mike Lynch

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**What Makes The Best Trainer Airplane?** There is a lot of controversy related to what truly makes a good trainer. As you talk to people at the field and read ads & articles in model magazines, everyone seems to have a different idea as to what makes the best trainer. Of course, the companies trying to sell trainers will always slant their sales information in a way that sounds right for everyone. In this presentation, I intend to discuss the three most important attributes for trainer type airplanes.

**Wing configuration** - The most popular trainers are of high wing design. The high wing gives the most stability for flying. Since the major portion of the airplane's weight is below the wing, high wing airplanes have excellent self-correcting characteristics. There are three types of wings used for trainers, the flat bottom wing (as is used on Hobbico Flightstar 40, Great Planes PT-40, and Midwest Aerostar), the semi-symmetrical wing (as is used on the Hobbico Avistar), and the fully symmetrical wing (used on the Great Planes Trainer 40). The wing configuration has a great deal to do with ease of flying, wind penetration, and aerobatic capabilities. Generally speaking, planes with flat bottom wings are easiest to fly. With even a small amount of dihedral (the amount of angle in the middle of the wing), they tend to be very self-correcting. However, on windy days, difficulty of flying increases due to the fact that they do not penetrate the wind very well. You will also notice a great deal of ballooning (the tendency for a plane to gain altitude when speed is increased) with flat bottom wings. Also, planes with flat bottom wings tend to have limited aerobatic capabilities. Planes with semi-symmetrical wings, while they sacrifice some in the way of self-correcting characteristics, remain amazingly stable. With them you gain in wind penetration characteristics, reduce the tendency for ballooning, and increase your potential for aerobatics once you have learned the basics of flight. (This is my wing style of choice for trainers). High wing planes with fully symmetrical wings tend to be much more aerobatic. As long as you limit the movement of control surfaces, they can also make excellent trainers. The Great Planes Trainer 40, for example, makes a great trainer. And in the hands of an experienced pilot, can perform almost every maneuver in the book! The dihedral also has a great deal to do with the plane's stability and self-correcting characteristics. Generally speaking, the more the dihedral, the more tendency the plane will have to self-correct. However, the windier the day, excess dihedral will keep the plane from penetrating the wind nicely. It is difficult to fly planes with excess dihedral directly into the wind. The plane will have the constant tendency to turn in the direction the wind is blowing (with the wind).

**Weight versus rugged design** - Of course your first airplane will have to take quite a bit of abuse. Especially when you start landing on your own, you'll need a plane that can withstand the bumps and bruises associated with your first few attempts. Some of the balsa ARFs (almost ready to fly airplanes), while they are very light and have excellent flight characteristics, are a little on the weak side. For example, Hobbico planes (Avistar, Flightstar, etc.) are great fliers but tend to be a little weak in the nose area and may require some beefing up as you begin learning how to land. At the very least, you'll probably have to modify the nose wheel connectors which tend to bend or break after a few hard landings. Some model manufacturers take rugged design to extreme. The Aircores and Duraplans for example, while they are VERY rugged, tend to sacrifice desirable flight characteristics for the sake of keeping the plane from breaking. These planes tend to be quite heavy and do not respond well when it comes to slow flight characteristics. Difficulty of flying also increases as weight increases. In some cases, the excess weight may actually cause a mishap that would not have occurred with a lighter design. Two of the best planes in this regard (in my opinion) are the Great Planes PT-40 and the Midwest Aerostar. The nose area of these planes is well supported and will allow many hard landings, yet they remain amazingly light. Unfortunately, these are both kits you have to build yourself. I do not know of an ARF that has excellent flying characteristics and extremely rugged design (though they may exist). Note: The Hobbico Superstar 40 and 60 seems to meet both these characteristics and is available as both ARF and ARC (almost ready to cover) -TBR. My advice is this: Avoid the heavy weight airplanes that sacrifice desirable flight characteristics. If you purchase an ARF, look for balsa construction to keep the weight down. However, be ready to reinforce the nose area as you begin learning how to land. (Again, no balsa ARF I know of has an extremely rugged nose area).

**Plane and engine size** - 40 size trainers offer the best compromise in stable flight and economy. While you can go smaller to keep costs down, the 20 size airplanes tend to be a little unstable (especially in wind). If cost is not a concern, 60 size trainers tend to be substantially more stable than 40 size trainers (especially in higher winds). When it comes to engines, my first recommendation is to buy something with a proven track record of reliability. Talk to experienced flyers at your field to get recommendations. OS Max tends to have the best reputation in this regard. While you can get more power for the money with other engines, you don't want to be spending your precious flying time fine tuning your temperamental engine. Also, as you begin learning how to land, you will want a good reliable response from idle to midrange (for practice approaches). As far as power, I recommend if anything, that you keep the plane slightly on the overpowered side. As you begin taking off, a good strong engine makes the procedure much easier. If your plane barely has the power to get off the ground, taking off can be quite a challenge. This extra power is also very handy when practicing approaches and for gaining altitude fast. Additionally, once you have learned to fly, a good strong engine will be needed for your next (sport) airplane.

**Pre-flight inspections:** We urge beginners to have their planes checked for air-worthiness. Instructors will check for problems that need to be corrected. Common mistakes that must be corrected before the plane can be flown include having servos activate control surfaces in the incorrect directions (easily fixed by using servo reversing), not placing foam rubber around the receiver for padding,

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## Teaching R/C Flying

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not properly gluing wing halves (on ARFs), not correctly gluing hinges, and improper center of gravity point. Keep in mind that these are but a few of the many things that can cause an airplane to crash, and the instructor must be on the lookout for many more. Additionally, there may be things an instructor finds that may not cause the airplane to fail (yet) but should be repaired in the near future. For example, certain control surface hardware (clevises, control horns, and linkages) works better than others. An instructor may be willing to help a beginner today, but ask that some things be changed before further help will be given.

NEXT MONTH: Teaching How To Master Turns & Level Flight

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## Repairing Dings and Dents

Have you ever had a dent in a balsa leading edge? Try fixing it with water! Get a small diabetic syringe and put water in it. Inject a little water into the balsa into and around the dent in the leading edge. Heat the area with your covering iron. When the water starts boiling, it will build pressure and push the balsa out to its original shape. (Courtesy Victor A.)

### 2001 Club Officers And Coordinators

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## Ultracote Printing

Goldberg Ultracote film covering has a paper backing that you can print on. Cut a 8-1/2 x 11 inch sheet, put it in an ink jet printer, and print your design on the paper backing. Don't use a laser printer or anything that uses heat. It will destroy your covering.

This works well for large lettering. Make sure your image is reversed, so that when it's printed on the backing, you can cut it out and it'll be correct when ironed on your airplane.

If you want to use a piece of covering that's smaller, print the design onto paper first. Then carefully tape the Ultracote to the paper over the design. Run the whole thing through your printer and the design should print in the same place.

(These hints and tips come from The Orbiting Eagles Newsletter, N.F. Sheltraw, editor, Omaha NE.)

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## MEMBER NEWS

The following members soloed in June and July:

Pat Livingston (soon to be member), Mike Godfrey, Werner Bruckner, Jack VanEk. Their very able and busy instructor was Robert McLane. Three of these new flyers began their instruction in June. We wish them continued progress and good luck. *Editor*

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## 2001 Events

April 7 – Spring Fun Fly Potluck

May 5-6 – Agate Float Fly

OMPRA Racing - May 12

May 20 – Ashland, OR EAA

June 2 – Lee Renauld

June 23 – Military Fly In

July 7-8 – Big Bird Fly In

August 4 – Hawthorne Kids Day

August 11-12 – Airshow

September 8 – Fun Fly Potluck

October 13-14 – Agate Float Fly

Oct (not yet decided) **Builders contest**

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Rogue Eagles R/C Club,  
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Stamp

To:

NEXT MEETING is August 14. Please bring your projects for show and tell.

**NOTICE!**

**We now send out email reminders of member meetings telling what the program will be, also reminders of our contests and activities. If you are not getting these, please send your email address to [jsivin@aol.com](mailto:jsivin@aol.com)**

**By a decision of the Board at the board meeting on July 24th, NEW members who join the club after August 1st this or any year hereafter, will be charged dues of \$12.50. When they renew the following year, the full dues rate will apply. This reduced rate does not apply to current members who decide to renew their membership after August 1st.**

**Notice! Notice! Notice!**

In order to streamline and reduce club expenses distributing the monthly newsletter, the Board of Directors asks that you complete the following questionnaire and bring it to the next meeting at **07:30 PM, August 14, at the Lions Sight and Hearing Center, 228 N Holly, Medford, Oregon**. If you can not attend, please e-mail the Editor ([wkbruck@gateway.net](mailto:wkbruck@gateway.net)) to inform him of your choices. **IF YOU SUBMITTED THIS QUESTIONNAIRE BEFORE, DO NOT SUBMIT IT AGAIN!**

1) **Would you prefer to see the newsletter in living color on the club web site?** Circle **Yes**, or **No**.

2) **If 'Yes' please give your name and e-mail address:** \_\_\_\_\_