

# The Flying Times

The Official Newsletter of the Valley RC Flying Club

May 2005

Editor, Randy Ryman, [ryman@shentel.net](mailto:ryman@shentel.net)  
Publisher, Mike Reno, [jmreno@ntelos.net](mailto:jmreno@ntelos.net)

---

## May Meeting Discussion

One of the things being discussed at the May meeting will be an extensive review of our plans for the June Jumbo Fly in. As we all know, pulling off a successful fly in requires the help and cooperation of lots of club members, not just one or two. Dan Barrick is the CD in charge of this years Jumbo, and is is every club members responsibility to help him in any way we can. Come to the meeting, step up to the plate, and volunteer to help out for what is our biggest event of the year. There are lots of things that need doing, and the more that pitch in to help, the easier it will be on all of us. Helping out doesn't mean that you have to be there the entire weekend. If you can only come for an hour or two someone can probably use your assistance.

---

## Technical Notes

Reprinted with the permission of:

William Robison  
The Airplane Company

### What The Heck is "P" Factor

(Actually, I thought it was whether or not we think we can get another flight in before visiting the porta-john!!)

Actually, this is a very informative article below. Ever wonder why taildraggers seem to want to go the left on take off? The article below will explain it. I would like to thank Bill Robison for letting me share his vast knowledge of this stuff. He wrote the article. Bill is very knowledgeable on aerodynamics, and is a moderator on RC Universe. You may have seen his name there before. I read this some time ago. Bill writes in a way that makes it understandable without having to have a degree in aeronautical engineering. Anyway, I asked his permission to reprint it here. I think you'll find it very interesting. Thanks Bill.

There are many misconceptions about "P-factor," and the term is misused more often than not. First, what it is: When the airflow enters the propeller

disc at any angle other than 90 degrees, we have P-factor effects.

For purposes of this discussion we will say our taildragger airplane sits on the ground with the nose pointed up at 15 degrees. We will also say the propeller pitch is 15 degrees, just to simplify things. Now, with the nose up 15 degrees, the prop shaft is also pointing up 15 degrees. Now, when the propeller turns, and the airplane starts its takeoff roll, the rising blade has the 15 degree pitch cancelled by the 15 degree up angle of the prop shaft, and the descending blade has that same 15 degree shaft angle added to its pitch. So, in effect, the descending blade has a 30 degree pitch, and the rising blade has zero pitch. The majority of the pulling power is developed by the descending blade, giving off center thrust, and that off center thrust is "P-factor." The effect is zero at zero airspeed, and the effect builds until the tail wheel comes off the ground. This is why you have to gradually add right rudder as the airplane accelerates, and neutralize it when the tail wheel lifts, disregarding torque.

When the tail wheel comes off the ground and the airplane assumes a level position continuing the take off run, the air flow into the propeller disc is then on center, P-factor no longer has any effect, because it just isn't there anymore.

With tricycle gear, and the plane sitting level at rest, there is NO affect on the plane from P-factor. It does not exist. If the plane sits slightly nose down or nose up, there is a small amount, but it's so small it can be

ignored. This is one of the reasons why a trike is so popular for training. Both in full scale and R/C. They are just easier on take off.

In normal flight P-factor will never affect the airplane, as the airflow, in relation to the airplane, never gets more than one or two degrees off axis. Key word here is "Normal" flight. Most aerobatics are done in a normal controlled flight regime.

When doing aerobatics that depart from normal flight, 3d, gyroscopic maneuvers, harriers, and so forth, p-factor can rear its ugly head.

But 99% of what people call P-factor in normal flight is truly nothing but torque reaction, and that's another story for another time.

I welcome any and all comments pointing out my errors in this, amplifying my statements, or adding something I have forgotten.

### Tip of the Month:=====

**Submitted by : Randy Ryman**

While this information may not be new to some, I realize that not everyone reads the same magazines. I saw this in a magazine some time ago, and just put it into practice recently. This involves fueling and de-fueling your plane. Many members use one of the new <sup>3</sup>quick fuel<sup>2</sup> devices that goes directly into the feed line to the engine. This is a handy way to fuel and defuel. When fueling or defueling, when you insert the fill line, it shuts off the line to the engine and opens the line to the tank so it can be filled. Same thing happens when defueling. These items work good as long as they work as they are supposed to. I have seen two of these valves that did not reseat properly after filling, allowing air to enter the fuel line during full throttle. On one occasion I was flying the model and ended up

setting it down in the corn field due to engine failure. The problem didn't show during start up, but showed up promptly after take off. On one other occasion I saw the same problem result in very poor engine performance. The problem was finally isolated to this same type valve. Don't get me wrong, I think they are great little devices. Just be careful and be sure they are kept clean and operating properly.

Now, on to the models that have fueling systems that don't incorporate this device for one reason or another. On cowled in models, I usually put in a <sup>3</sup>fill line<sup>2</sup>, vent/muffler pressure line<sup>2</sup>, and a line that goes directly to the engine, or the <sup>3</sup>klunk<sup>2</sup> line. the problem with this is, you usually can't defuel from the fill line, or you have to turn the plane upside down to defuel from the vent/pressure line, which should go to the top of the tank. The simple solution to this is to install TWO klunks in the tank-one for the engine line and one on the fill line. That way, you can defuel through the same line you fill with. I was of course skeptical of this right away, thinking, <sup>3</sup>the lines will get tangled up in the tank. On the tank I tried this with, I installed the two klunk system, and turned the tank every way possible trying to tangle the lines, and couldn't. By golly, I believe that it does work. <sup>3</sup>Twin man<sup>2</sup> George Lumpkin of RC Warbirds fame also installed one tank on a B-17 to feed all four engines, and had FOUR klunks inside the same tank, along with the other required lines, and did not have a problem. I'm into gadgets as much as the next person, but years ago I was taught that

<sup>3</sup>Every place in a liquid or gas line that you make a splice is one more place for a potential leak.<sup>2</sup> It was good advice then, and it still applies today.

## The Voice of Experience =====

**Submitted by : Randy Ryman**

ARF's revisited. The ARF revolution is in full swing. If you don't believe it, try finding a kit amidst all the ARF types that are available. And they keep coming, getting bigger, and hopefully better. There are now some LARGE twin engine

warbirds becoming available. There's even an ARF B-17 now on the market.

I personally typically build kits, one, because I like building, and fortunately, still find the time to build. Lots of people don't have this time, and the ARF is just the ticket for them. I have two ARF's, a Hanger 9 Funtanta .40 which is certainly one of the best planes I've ever flown. I also have a China Models Transall, which I believe that now that it's been around 2 years, most of you have seen, and seen fly. It is a great flying twin. Flies like a trainer, except it has two engines.

While I think the quality of these ARF planes has improved dramatically, they should still be given careful inspections regularly. The guys who are building these models probably don't fly them, or intend to. They build to a set of specifications, and don't take into account that you might put on an engine that is above the manufacturers recommendation, or the fact that you may not balance your props and have vibration problems. They also, from what I've seen, build a lot lighter in some areas than I personally would if I were to have built it. I think the bottom line is, they don't intend or expect for them to be fixed if it crashes--you simply buy another one.

Several weeks ago, I was giving my Funtana (and the one Wes has) a good inspection. I noticed that inside the fuse in the area of the wing saddle, some of the ply parts were separating from each other. I couldn't determine if it was from a lack of adhesive, the wrong adhesive, or what. What I could see was that if it were allowed to continue, it probably would result in an unsafe condition at some point. I got this fixed, fortunately.

Just this evening I was flying my Transall ARF, and during the flight the airplane started a right "yaw" tendency. At first I trimmed it out with aileron. Shortly after that, the yaw was back, with a right roll tendency. I thought surely I must be losing an engine, so I started to get into the pattern to land. I made a pass down the runway at a safe altitude, and sure enough, both engines were running smoothly, but at this point I was using both left rudder and left aileron to keep the plane flying straight. I promptly set up to land, and did so uneventfully. After landing, I

discovered the problem--the right cover plate that holds the aileron servo had broken loose and was hanging out of the wing. Except for one screw still holding the plate to the wing, it would have fallen completely out! The plastic mounting plate that the servo was mounted on had failed on 3 of the corners where the screws attached it to the underside of the wing. That piece has now been replaced with a plywood plate. This is something that I never gave a thought to for failure, because I have been impressed with the plane in all respects. A couple weeks ago, I also found some ply in the fuselage starting to separate from other pieces. Not a big deal except that the parts that were separating were the ones holding the elevator servo! Either of these could have resulted in disaster, but fortunately, did not. Bottom line is, when you get your new ARF out of the box, do an inspection on it and look for things that you know matter. How well is the firewall glued in? Been lots of reports on RCU about entire firewalls separating from the aircraft-in flight! what about wing dowels, wing bolts, etc. Don't be afraid of adding some reinforcement in some places for the sake of a few ounces. Let's face it, most of our stuff is overpowered anyway, so what's the big deal? Also, use an adhesive that you know will do the job.

And whatever you do, **DO NOT MIX METRIC and STANDARD HARDWARE.** I did, and it cost me a plane on its first flight.(In fairness, it wasn't an ARF, but had metric hardware in the kit, which I mixed with standard stuff through my own doing.) Do a thorough check of the hardware sent with these ARFs. Some manufacturers are putting in decent stuff-they know what the result will be if they don't. But some of the stuff coming into this country has junk for hardware. Best to just deep six that and go get some brand name hardware.

Many years ago, Joe Lupton, Pete Shifflett and myself were talking about building vs. buying an ARF. Joe said something I have always remembered. He said, "The nice thing about building it yourself is, YOU are the one that is in charge of Quality Control."

You can still be in charge of quality control even if you buy ARF's. You just have to look a little closer at what someone else has done, and

sometimes you can't see some of what you would like to. Invest in an inspection mirror if necessary to look into those places you can't normally see. You might be surprised what you find.

## Buy, Sell or Trade: =====

For Sale: Sig Morresey Bravo-\$200.00  
Call Robert Cline 896-5168 for more details

## Food for Thought=====

Are you a good listener?? Do you REALLY listen to what others are trying to tell you, or does your mind occasionally wander? And, do you listen to your airplane when it is trying to tell you something? Or are you ready to "kick the tires and light the fires!" Here's some famous lines I've heard at the field over the years, and most of them occurred just before the final flight of their model: "It won't range check, but I charged it all night, so it will probably be all right." "I still haven't figured out what that funny noise was that I heard on the last flight." "Naw, that's all the rubber bands I ever put on it-don't want to break the dowels."

When you bring that new pride and joy to the field for the first flight, you are most certainly ready to fly, but is your plane ready? Did you REALLY do a complete check of everything? Did you put that screw back in the servo arm that you removed to readjust it? Or did the phone call you got in the middle of that job distract you enough to make you forget about it? There's an old saying about airplanes that goes, "keep looking around-there's bound to be something you missed!" We have an unwritten policy in our club that "recommends" that another proficient flyer look over your plane before the first flight. You'd be surprised how often another set of eyes can see things you (or I) missed. I personally do not like to fly a brand new model in front of a crowd-for several reasons. Reason



number one, is SAFETY. If something goes wrong during the flight, and there is only a couple people there with me, I have less to worry about when it comes to making a decision as to where to put the plane down if it becomes necessary, and sometimes unavoidable! And, on rare occasions, it may not be the pilots decision as to where the plane lands/impacts/crashes!

Another reason I like an uncluttered field is that should I find something amiss with the plane prior to take off, I won't be tempted to try to fly it anyway, because "they" want to see it fly.

When I fly a new model for the first time, the only model I want to hear is MINE! I don't want to start a take off roll only to hear another engine start up somewhere behind me. This is especially true for multi-engine planes. That is the reason I like to pick a day when there are few other flyers at the field. I know that one of our rules allow for the pilot of a new, previously unflown plane to call for a "clear sky" for the first flight, but I hate to do that on a Sunday afternoon when there are others there who want to fly their models and enjoy the day as well.

Anyway, don't be tempted to do something stupid or take a short cut just to get a flight in on the new plane. Be absolutely sure that you and your plane is ready to make that first flight. The last thing you want is for the first flight of the plane to be the last flight of it! Oh yea, the thing about leaving the screw out of the servo arm? That was me! For whatever reason, I left the screw out of the aileron servo on my first Stafford P-39. That was ONE servo for both ailerons. Fortunately, I only flew it two flights. When I took the wing off to go home, I was lucky and noticed that the screw was missing! And I remember Pete Shifflett saying something to the effect of "You are one lucky son-of-a-bitch!" Well. Someone once said, "I'd rather be lucky than good!"

**April 30**-Frederick Model Aircraft Club Flea Market. site: 4-H Center, 3702 Basford Rd. Frederick, Md.

**May 11-14** - Joe Nall, Woodruff, SC

## Mowing Reminder=====

May 07-Greg Liskey/Jimmy Lloyd  
 May 14-Randy Sampson/Rob Levine  
 May 21-Winston Rhodes/Dave Burgess  
 May 28-Robert Cline/Joe Moshier  
 June 04-Joe hash/James Stogdale

## Model for the Month=====



As for the flying, the Decathlon is fairly quick on snap rolls and spins. You do have to be careful not to over-speed in a spin, it can get a bit unforgiving on the recovery side. I think the aircraft looks best on long split S, and long slow loops. I've been able to hover it a bit, I think I'll let Wes give it a shot just to see what it can really do. The manual suggests a 60-65 2 stroke, I'm running an OS 91 FX, seems to be a good match, enough power to climb and do aerobatics...but not so much the aircraft is being stressed. If you flip to low rates she flies just like a trainer...slow and smooth. One thing I've noticed about the aircraft is she tends to (slip) through the turns, you have to stay on top of the rudder to maintain a square attitude during flight. I like the paint scheme on the Decathlon but I did add some large 7" diamonds to the top of the wing to help keep the aircraft visible at a distance. I had to find out the hard way (Funtana90), what happens when you lose track of the aircraft. S.A.D. Hahahah!!

As the manual states, the Decathlon is not for the beginner, the aircraft is well suited for the intermediate pilot. I'm finding out one of the best things you can do to learn cool looking moves in the air is to stand behind some of our experienced pilots and watch what they do with their thumbs. Go up high and try it yourself. Everything I'm doing with the Decathlon I did with the Thunder Tiger 60 trainer first. I can see myself flying larger aircraft further down the road, but for now I'm just enjoying the challenge of keeping the Decathlon in one piece. I want to say thank you to the club for all of your help and support while I learn the ropes. Blue Skies to all of us.!

Aaron R. Swindle

## Meeting Notice =====

The May meeting of the Valley RC Flying Club will be held Tuesday, May 3rd, 2005, 7:30pm at the Bridgewater Church of the Brethren (same place the March meeting was held). At the April meeting, it was decided by the membership in attendance to hold all further meetings at the above location until further notice. Some meetings may take place at the flying field during the summer months. Any change will be announced first in the newsletter.



Valley RC Flying Club  
2640 Autumn Lane  
Harrisonburg, Va. 22801