



# SANDERSON FIELD R.C. NEWS



CHARTER NO. 3079

## CLUB MEETING

*This months meeting will be held  
on Thursday September 9th at 7:00  
pm*

*at the field*

*(weather permitting.)*

The August meeting was short and consisted mainly of discussing the steps taken by the board to insure the safety of turbine flights at the field. No new rules have been implemented. The 04 AMA safety regulations for turbine aircraft have been attached to our field safety procedures. You can get the new procedures document at <http://sfrcf.quintex.com> on the INFO page. You can also get the AMA document on the AMA web site.

The Scale fly-in was a success even though it was very warm and the bees were out in force, we had 4 or 5 people stung.

Gary House asked again about a certificate of Appreciation for Instructors and was put in charge of getting it done, if you have any ideas contact Gary at (360)427-3990.

Jerry Reynolds finally got his framed solo certificate. He soloed in May (sorry it took so long Jerry).

Someone has been leaving empty fuel cans and jugs by the porta-potty, please remove your trash, don't leave it at the field.

Join me in welcoming new member Robert Mann.

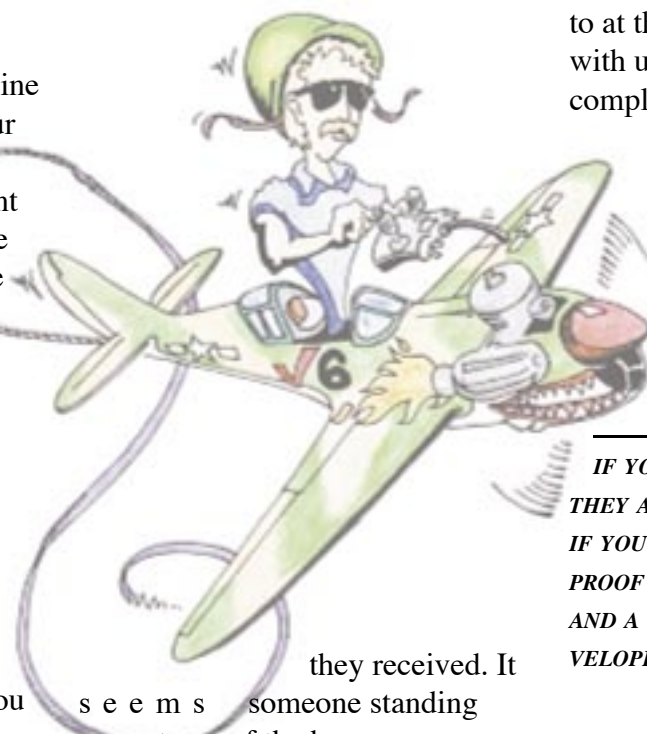
August 3rd I received a call from the Port about a complaint

person threatened to call the FAA and actually did so. The FAA called the Port and there will be an investigation conducted.

I'd like to remind everyone that we have a 400' ceiling. I've never seen that exceeded (our airplanes get pretty small out that far), Just be aware this is serious and could be a threat to our field. All that being said, the people I talked to at the Port didn't have a problem with us and have never gotten a complaint from an airplane pilot.

Still in these times you can't be too careful.

Altitude is your friend...  
(just not too much Altitude)



they received. It seems someone standing over at one of the hangers saw some model jets flying and was sure, in their opinion that they were flying too high and were endangering real aircraft. There was no specific incident mentioned. This

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VELOPE TO THE TREASURER:**

**CHUCK KENTFIELD  
6843 Gallagher Cove Rd NW  
Olympia WA 98502**

*If you really want to slow the process  
down send it to the secretary.*

# A SURE GUIDE TO DETERMINING A MODELER'S SKILL LEVEL

By JEF RASKIN

After a while in this hobby, you can walk up to someone, look at his or her model or workshop, and immediately put the person into one of four classes: Novice, Builder, Expert, or Master. Here are a few tips so you can tell one from another.

1. Take a good look at the control horns. If you weren't reading this guide, you might think to look at how they are positioned and attached, but here's the real secret.

Novice: They still have the little bumps where they used to be attached to the plastic runner.

Builder: The little bumps have been neatly cut off.

Expert: The horns are scratch-built from aircraft plywood, sanded, and varnished.

Master: The horns are handmade from polished T2024 aircraft aluminum and carbon fiber, coated for corrosion protection with the metal parts anodized to match the finish of the aircraft. Did I mention the stainless steel ball joints?

2. Covering quality is a dead giveaway.

Novice: It looks like the entire Belgian Army has slept on it for a week.

Builder: It looks like it has been slept on by a cat for one night.

Expert: It is as crisp as a freshly made bed.

Master: It looks as taut as a bed made up by a drill sergeant at boot camp.

3. Study the trailing edges of the wing.

Novice: Square and over 1/8-inch thick

Builder: Nicely rounded

Expert: Feather edge

Master: Uses the trailing edge to shave

4. How well are the uncovered wood parts finished?

Novice: Raw wood

Builder: Sanded and painted

Expert: Sanding sealer, five coats of urethane paint, and each coat was wet-sanded, followed by rubbing compound and a fine European hard wax

Master: Impossible to tell how its done because it looks like one piece of polished granite; wear sunglasses

5. On many models, it is possible to see the framework. Look carefully.

Novice: Hard to tell that its an airplane

Builder: Reasonably straight and true

Expert: Joints have no gaps, no warps, corners, gusseted, looks like it was carved from a solid piece of wood with the grain always going in the strongest direction

Master: It was carved from a solid piece of wood with the grain always going in the strongest direction.

6. What aircraft do they choose to model?

Novice: Piper Cubs

Builder: WW II fighters

Expert: Anything with elaborate detail or impossible surface finish and markings, scale operating engines, retracts, and working instruments; windshield wipers start automatically when it rains

Master: Piper Cubs

7. What glues did they use?

Novice: Mucilage

Builder: CyA, epoxy

Expert: CyA in three viscosities, aliphatic resins, four different epoxies, contact glues, special canopy cement, and has a friend in the adhesives industry

# SKILL LEVEL (CONT)

Master: Parts interlock so well that no glue is needed

8. Find out what shop equipment they use.

Novice: One old hobby knife

Builder: Hobby knife, supply of fresh blades, handheld electric tools, box full of small tools

Expert: 2,000 square-foot shop with drill press, lathe, milling machine, table saw, router, vacuum-forming machine, foam cutter (all computer-controlled), rolling tool chest with larger tools, and a magnificent walnut machinists tool chest with expensive precision tools

Master: One old hobby knife and a sharpening stone

9. Aerodynamic knowledge

Novice: Totally mystified since sixth grade

Builder: Has read one book on the topic and has forgotten it

Expert: Runs simulations on computers that make NASA jealous, solves differential equations mentally, and can give name, date of publication, and the author of every theoretical work since 1892

Master: If it looks right, it is right.

10. Radio system choice

Novice: Two-channel radio with elevator on left stick

Builder: Four-channel radio with two sticks

Expert: 17-channel radio made in Germany with an unpronounceable name and more levers and switches than the cockpit of a 747

Master: Free flight

11. How they fly their airplanes

Novice: Crashes on takeoff

Builder: Crashes on downwind turns

Expert: Only crashes when its someone else's fault

Master: Knows better than to fly them

from The Clanking Armor  
Lincoln Sky Knights R/C Club  
Dave Brazee, editor  
Lincoln NE

For Sale or Trade:



Lanier F-86 Sabre

- Wingspan - 52.5"
- Wing area - 531 square inches
- Fuselage length - 48"
- Engine - 40-47 two
- Estimated flying weight - 5.3 lbs
- Channels/Servos necessary -4

The model is pre-assembled and has been flown once. drop in your receiver, servos and motor and your ready to go.

will sell for \$150 or trade for NIB OS 46ax.

Contact Gary House at  
(360) 427-3990

## CLUB OFFICERS

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Vice President .....	Dick Robb .....	(360)427-4521
Treasurer .....	Charles Kentfield .....	(360)866-9473
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Board Member.....	Dick Robb .....	(360)427-4521
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# HOVERING

By James Goss

It seems that in the field of 3-D flying, hovering has become the benchmark that most pilots use to choose their fun fly planes. I have been trying to hover some of my models now for about two years and have had good luck with some and none at all with others. Now I am not talking about hovering your plane into a head wind, the type of hovering I am in reference to refers to hovering your plane with its nose pointed straight up and with no wind at all. Hover, bring the plane down close to the ground and then pull back up to repeat it again. Every now and again let it do a torque roll and then lock it back into a stationary hover. A series of torque rolls also looks neat, especially if the wind is blowing the plane down the center of the field. I think any plane will hover if it has enough engine power and control surface movement. How long it stays in a hover depends a lot on the plane as well as the pilot.

Let me say at the beginning of this article that hovering a large or small model plane can be dangerous for other pilots as well as for you and all the spectators around. 3-D flying deals with maneuvers while the plane is at or near a stall condition. A hover is about as stalled as you can get. You already know that a plane can do

some crazy things when it is stalled and sometimes you have no control at all over the plane; it has a mind of its own. This is where it can get dangerous if you are flying too close to other people. Pilots that are flying their own planes are not watching what is going on with the other planes in the air. I think it is a good idea to practice taking your eyes off your plane and looking around to see what the other planes are doing. I always do this during each flight and have no trouble finding my plane again; it just takes a little practice. When you take your eyes off your plane in flight it is still going to be in the general vicinity when you look back, it is not going to just fall out of the sky. (Unless you are flying a super fast plane, in this case it may be in the next county when you look back.) If possible always hover at a location across the field and then if you loose control your plane can hit the ground without doing any damage to anyone or anything other than your plane. Remember, when your plane falls out of a hover it takes a lot of engine power to recover without loosing any altitude, most planes do not have it. At our club field I try to do most of my hovering across the field and over a soybean field. In all cases you can't predict which way your plane will go when it falls out of a hover. It may do one thing this time and something completely different the next time. So always have

a large safety zone around your plane that will give you plenty of recovery time.

So what does it take to hover a model plane? First you need an engine that has about a 1:1.5 or greater weight to thrust ratio. An engine that has enough power will pull your plane straight up from a hover with good acceleration. A lot of fun-fly planes with small engines will hover the plane for a while, but when it falls out of the hover it will loose a lot of altitude fast. This is not what you want if you are hovering three feet above the ground. The engine has got to pull your plane straight up and not let it fall to the side. Next it takes a plane that is built for hovering with plenty of control surface and control surface movement. When the plane does fall out of its hover you may need a lot of rudder or elevator to gain control again. I am talking from 45 to 60 degrees of control surface movement. Most important of all you need a reliable engine, one that will not quit while your plane is at ground level. Even at a few feet above the ground when a model falls due to a dead engine, most planes will still receive a lot of damage. I have seen giant scale as well as small planes have their fuselage break into several pieces when they fell from a height of only three or four feet. I think it is safe to say that it is possible for all engines, gas and glow, to quit at any time during a flight. You may have fifty

flights without a dead stick and then it happens when you are least expecting it. So relinquish the thought that your engine is above quitting on you during a hover, it will happen sooner or later. If I am planning on a lot of hovering during a flight I like to adjust my engine on the rich side because when the nose stays pointed up for a minute or so the engine may go lean and quit. I also like to fly a few circuits to make sure my engine is at normal running temperature and is running reliable in the vertical mode. A while back I was just getting ready to enter my first hover during a flight and had about 40 or 50 feet of altitude. The engine spit and sputtered a few times and down she came. The plane was a 60-inch fun fly with a YS-120 engine and a total weight of 8.5 pounds. I had just enough altitude for the plane to recover and level up before it hit the ground. So it is important to know how much altitude your plane needs to recover and always use this amount or greater for your first hover of each flight. When your engine quits and gravity takes over, your plane will try to fall at a rate of 32.2 feet per second per second while it is in a vertical attitude. This means that if your plane is at a 50 ft. altitude and your engine quits, it will take only 2.05 seconds for your plane to hit earth. Remember that during the first second the object only falls half the distance, about 16 feet because it is going from a standstill. So the first second averages out to half of 32.2.

There is a lot of controversy about which prop to use while hovering. Do you need a large diameter with low pitch or a small diameter with large pitch? I think it depends on your plane and all planes seem to be different to some degree. I know on my smaller fun fly planes a large diameter and low pitch work best for me. On .46 size planes I like to use a 12.25x 3.25 prop. It gives my planes good speed regulation while going vertical. Remember that prop diameter is for thrust and pitch is for speed. All we need in a hover is enough thrust or pulling action to cancel the gravitational pull of the earth. The only speed we need is the air flowing over our control surfaces to correct for a fall out. While in a hover the low pitch prop seems to create less torquing of the airplane. It is easier to hover a plane when it is stationary and not trying to torque roll. I will talk about torque rolls later.

Now that you have a plane and engine needed for hovering all you need to do is practice. Entering the hover can be from any position that you like. Most pilots will bring their plane in as if they were going to land it and just before it touches down they will give it a little throttle and pull vertical. Of course they didn't learn to hover like this. You will need to start out at a safe altitude, maybe 100 feet or so to get the feel of it and as you get

better you can work lower to the ground. You may wonder why we hover so close to the ground. Not only does it look good it is much easier to hover when you can see your plane. You must be able to see when your plane is on the verge of falling out of its hovering position or what I like to call its sweet spot. If it is close enough you can see this and head it off at the pass so to speak. So for good hovering it is almost a necessity to be close to the ground (the danger zone) for that reason. If you are hovering at 300 feet in the air you may not be hovering at all, your plane may still be going up and you just don't realize it. While in a hover I choose to have the top of the fuselage face me and I watch the nose and not the tail. For me it is easier this way because the rudder is not reversed. If the plane's nose falls to the left I give it right rudder. If it falls to the right I give it left rudder and so on. The elevator also works better for me this way. You are still flying its just that your plane is not moving, so it is logical to use the same train of thought as you do when you are flying with the wings producing lift, up is up and down is down.