

Springfield Radio Control Flying Club



AIRMAIL



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AMA CHARTER CLUB 394

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NEXT MEETING

MARCH 1ST

LIBRARY CENTER

4653 S CAMPBELL

Synthesized Transmitters the Good and Bad

There is a growing trend among our radio manufacturers to offer transmitters with a synthesized RF module. This feature allows the user to select any one of the 50 aircraft channels upon which

to transmit. This is a very handy feature for competitors where there may be a conflict of channels at a particular contest. It's also a handy feature I've used when someone at the field (with similar brand gear) either forgets their transmitter or has a transmitter problem – dial the correct channel, setup the model, and go fly. I've also used it to troubleshoot suspected receiver trouble at the field.

But first some basics before we get into more specifics. There are several different versions of synthesized TXs out there. Some have a removable RF module in or on which are rotary channel selector dials. To

change channels, just change the dial settings. Some high end TXs have the RF module built in and channel selection is accomplished through the front user panel interface. Typically, these type TXs also assign a channel to each model stored in memory. Changing models also changes the output channel to which the model has been assigned, allowing the user not having to remember what channel a specific model is on. Also, these type TXs usually have a transmit button which must be pressed to initiate RF transmission after the TX power has been turned on – kind of a reminder: are you sure you want to transmit on this channel?

There are two types of synthesized receivers: manual and automatic. Manual synthesized receivers have selector dials just like the selector dials on some of the synthesized TXs. Automatic synthesized receivers have a remote channel change button which, when pressed with the TX broadcasting in very close proximity, will automatically match the TXs channel.

A synthesized transmitter is capable of providing output signals to any current receiver,

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2007 Events

March 31	Night Fly
April 21	Field Day
(April 28	Alt Field Day)
May 12	Fun Fly & Swap Meet & Lady Fly
June 9	Fun Scale Contest
July 28	Float Fly Practice
*Aug 11-12	Float Fly
*Sept 8-9	Pattern Contest
Oct 20	Swap Meet
Dec 7	Christmas Party

*AMA Sanctioned Event

The Presidents Corner

There have been complaints in the past that people don't know what the rules are, especially those rulings passed during club meetings. Beginning with the March meeting, we will review all the club's rules and policies so that everyone will know what they are. It is crucial we have a good representation of the club's membership

at these meetings. Here's your chance to speak up against any rule or policy with which you don't agree.

Spring is almost here. The field is still a bit soggy in places, but it's time to get your favorite birds ready for the flying season. And, if you haven't renewed your club membership for 2007, now is the time!

the user makes a channel selection error, disaster can result. It is always the responsibility of such a transmitter user to double check a channel change ensuring it is the one for which a frequency pin has been secured.

Regardless of the type of transmitter used, at our field it is required the appropriate frequency pin be secured before turning on a transmitter. If a channel is to be switched in a synthesized transmitter, the frequency pin of that new channel must be secured before the new channel is used. The frequency pin is always to be attached to the transmitter antenna. That way, there is no doubt in anyone's mind what channel a transmitter is supposed to be on.

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even single conversion receivers (with like shift – Futaba is negative shift, JR is positive shift, some Hitech equipment can be either). Fixed channel receivers can be used with synthesized transmitters, but of course involves changing crystals to change channels).

The danger of using a synthesized transmitter is not making sure the channel being changed to is the one intended, especially if the channel change is a manual process. Getting a particular channel frequency pin does not ensure the channel intended is the one selected by the user on the transmitter. If

SKI FLY

There was a lot more snow at the field than in town, about 3 inches with some new snow that had fallen the night before. The sky was clear and the sun bright. It was a beautiful ski flying day until the wind came up

too strong from the west. The snow was almost too deep for the skis. When the west wind got strong, wind would get under the windward wing causing the opposite ski to dig in and causing the prop to strike the snow, sometimes killing the

engine. Too bad, it was a beautiful day. I'm sure there will be others. If you've never flown off skis, it is an unusual experience!

Barry



Springfield RC Club Minutes for February 2007. Ray Niles, Secretary

Springfield RC Club Minutes from the February 1, 2007 Meeting

President Barry Harper opened the meeting at 7:00 PM. There were 13 members and 2 guests present.

The treasurer's report was given and approved. Treasurer Rhodes presented a preliminary budget. It was formed from expenses from the last 3 years of club activities. He will refine the budget as a result of discussions during this meeting.

The minutes from the Jan meeting were approved.

Old Business:
The investment CD's which came due were discussed. The treasurer suggested a short term CD at Commerce Bank for 3 months @ 3+%. Another suggestion was a longer term at ING Credit Union for around 5% in a somewhat longer term but with the ability to withdraw the funds with no early w/drawl penalty. Both of these will be looked at by Treasurer Rhodes and he will move on his findings to secure the funds in an appropriate institution.

New Business:
A bylaws committee was

formed to attempt to clarify the existing bylaws. The members of this committee are Gary Kellogg, Jeff Schmidt and Justin Heath.

We now have a field mowing contract with Bob Ford of Green Acres Lawn Care.

A detailed draft of a flight training program was presented by President Harper. More discussion and refinement will be done at the March meeting on this program.

The meeting was adjourned at 7:47 PM.

Proper Engine Size

In a group discussion after our last meeting, I brought up the question of wing loading versus engine size. Those with more experience in that area stated that an engine choice is more directly related to model weight than anything else. So I am sharing a chart I modified some time ago which I use in helping me determine what engine to choose for a new model:

Weight	Wingspan	2 Stroke	4 stroke
1-2 lbs	35-40"	0.049	
2-3 lbs	40-45"	0.25	0.30
3-4 lbs	45-50"	0.32	0.40
4-5 lbs	50-55"	0.40	0.52
5-6 lbs	55-60"	0.50	0.61
6-8 lbs	60-65"	0.61	0.70
8-9 lbs	65-70"	0.76	0.91
9-10 lbs	70-75"	0.91	1.20
10-12 lbs	80-85"	1.20	1.50

By no means is this the final word on this topic. The above is only a guide because different manufacturer's engines of the same size have different power. Most will agree, however, one should go with the largest engine specified by the model manufacturer for a particular model.

Barry

A Windsock View

Saturday, Jan 6

It was a cool morning. The wind was light, kind of from the north-west. No one showed up until after 11am, very unusual for a morning such as this. Finally one person arrived, set up and was making his first flight when another few showed up, the ones with the planes strapped in the back of the truck. Shortly thereafter a few more showed up. One that usually flies sitting down (we haven't seen him much in the past few months), the one that usually flies what he calls 3-D, the other one with the plastic covering his foot. The field was still soft and mushy in spots.

Around noon the real flying began. The one who flies sitting down flew a very unstable small plane, built by someone called

Pete. There were several times we thought it was over, the model spiraling toward the ground as though it was out of control. The pilot finally got it on the ground. In a subsequent flight, however, another spiral dive was not recovered, the model broke into parts out in the field. After that he flew a glider really really high, almost out of sight.

The pilot with the plastic bag on his foot only made one flight then left. The 3-D flier had some engine trouble at first, flew several times then left. The tall pilot started to fly one of his models, but the young pilot pointed out something to him and the intended flight was aborted – something about a cracked stabilizer. The tall man brought out another model, got it in the air but the engine quit

after a few minutes. He was never able to get the engine running properly again and gave up.

The young pilot flew several times but quit early. The older of the pair was flying one of his models when he exclaimed he had lost a landing gear. He handed the control box to the tall man for the landing. The landing gear was not lost; one of the gear legs was still attached, but only by one screw and dangling back towards the rear of the plane. The tall man landed the plane in the grass smoothly. The tall man flew another one of his models for a while as the others were packing up for the day.

The Windsock

Setting the Mixture

Controls on a Glow Engine

Many people have problems setting the mixture controls on their engines. My belief is that this is because they do not fundamentally understand how a carburetor works.

Model aircraft engine carburetors are actually very simply in their operation. This article will not discuss the inner workings of the carburetor. However, if you do not understand how a carburetor works, then please read How to disassemble a Carburetor and How to assemble a carburetor. These two articles should help you understand what's inside and what the various parts do.

Once an engine is broken in and the carburetor is set properly you should not have to make

radical changes unless something else that affects engine performance has changed. These things include changing fuel, propeller or exhaust system or drastically different climatic conditions.

After you start your engine run it at 1/4 to 1/2 throttle for about 30 seconds to warm it up. If the engine is new then you may have to make some coarse adjustments just to keep it running, but let the engine run for a bit before attempting to dial it in. Setting the High-Speed Needle Tip: When tuning a conventional engine with the needle in the carb, you can turn the needle until the engine is at the setting you want. Some engines with remote needle valves take a second or two to react to changes in needle setting.

Make small changes and then give the engine a chance to react before making additional adjustments.

Most carburetors are designed to have the high-speed needle set first and then the low-speed needle. After the engine is warm set the high speed needle to near peak RPM. Do not lean the engine to the point that it is screaming. Set the high speed needle while holding the airplane straight up.

In this position it is most difficult for the engine to draw fuel and this is the condition under which you want to check the high-speed needle. Lean the needle to peak RPM and then back it off a few clicks to richen the mixture slightly. If the engine is new and is not an ABC engine then back

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off the high-speed a few more clicks so it is almost breaking into a "4-cycle" setting. This setting will give you good overall performance without leaning out too much in climbs. If you are having problems with your idle setting that did not exist before, it is probably because you changed the high-speed setting since you last adjusted the idle or the engine wasn't fully broken in. Make sure the high-speed is right and the engine is broken in before attempting to set a good idle mixture.

Testing the Idle Setting

There are a couple ways to check the idle mixture. The most popular and most accurate way is to use the pinch test. Pull the throttle back to idle. Pinch the fuel line and hold it. If the engine begins to speed up then the idle mixture is too rich. If the engine immediately slows

down or tries to quit then it is too lean.

If the engine slowly speeds up or slows down then the mixture is close to right.

When the idle is adjusted properly then when the fuel line is pinched the engine will run at the same rpm for several seconds and then begin to slow down. The engine should transition smoothly from idle to full throttle without burbling, loading up or dying.

The Wrong Way to Check the Idle Setting

The way a lot of people check their idle setting is to reduce the throttle to idle and then immediately gun the engine. If it transitions ok then they think everything is set properly. The problem with this techniques is that it does not allow the engine to idle long enough to reveal a problem.

If the idle is close to being prop-

erly set then you have to let the engine idle for several seconds to see if there is a problem. For example, if the idle is ever so slightly too rich, then it may take several seconds for the engine to load up with enough fuel at idle for it to be noticeable when the throttle is advanced.

If you really want to get the idle setting dialed in, then let the engine idle for 15 to 30 seconds and then advance the throttle. If it still transitions well, then the engine is set properly.

If the engine sputters and spits then the idle mixture is too rich. If it slows down then it is too lean.

Setting an engine is not difficult. It is just a matter of going through a set of procedures and being a little patient.

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