THE FLYER

Middlesex County R-C Fliers, Inc.

Sept 2007

Bob Palermo with his Funtana X. ***Photo by Jim Orsborn***

Inside this issue:

President's Message - *Eventful Season*

As with most summers, this one looks like it's going to be about 9 months too short. Still, with the significant lack of rain recently, the flying conditions have been mighty good. So good that we've had a bumper crop of new pilots this year, with more on the way.

The lack of rain hasn't done the grass any favors, but on the bright side, we're saving some money on mowing!

Our warm-season events this year have been tremendous successes, due in no small part to the favorable conditions. Remember last year, when almost everything we planned got rained out? Not this year!

Starting with our Field Cleanup Day in April, and followed by the return of the Construction Derby in June, the July Meeting and cookout, and the August Fun Fly competition, it's been a banner event season.

Many thanks go out to the core group that always seems to be there to run or help with these events, but thanks also go out to the new faces I've seen pitching in - it's appreciated!

The traditional wrap-up to our summer events is our participation in Billerica's Yankee Doodle days. We'll have the usual information booth and public buddy-box flying on Saturday, September 15th at Billerica High School. We very much need some extra hands to help with various things throughout the day - like setting up or staffing the booth, and crowd management and coaching on the flight line. Even an hour or two would be helpful. Please contact me if you can help.

On a more *serious note*, we recently had a very nasty crash in the pit area that occurred as a result of frequency conflict. Like most accidents, this one came at the tail end of a series of smaller mistakes and misunderstandings. Another few feet this way or that, and the result could have been catastrophic for more than just an airplane model.

Please take a few minutes to read Jim's articles on field safety and courtesy and use of the frequency control system. We all make mistakes from time to time, but let's not let them build into the "big one". Safety First, Always!

***** Heads Up *****

- Training Night is TUESDAY until further notice
- Horse Event on Sunday 9/9
- Monthly meetings start again on 9/12
- Wednesday afternoons will have many track events - I'll post the schedule to the web soon

Be safe, and have fun!

Jeff

How Accidents Happen *by Jim Orsborn*

An incident at the field earlier this summer demonstrated how things can go wrong very quickly. We've all heard similar stories and may have even been present to see one. In this author's opinion, accidents are seldom the result of a single action. Instead they can be attributed to a whole series of otherwise minor actions that come together.

The MCRCF flight control procedures say that only three aircraft can be flown at the same time, so no more than three pins should be on the active bar on our frequency control panel. When pilots leave their pin on the active bar it becomes difficult to know who has earned their turn. When no one is at the field, one might ask, "who cares?" But things can change quickly from *who cares* to *really important*.

We all know the problems that can occur when two pilots share the same channel. So basic protocol has been to speak directly to the other pilot and make sure that both pilots know there are two transmitters on the field with the same channel assignment. When we are constantly introducing new members and everyone does not know each other, this can become difficult. But it still requires that we all make an effort to introduce each other and know the other's radio situation. When there is a frequency conflict, there are obviously TWO people involved, and it is incumbent on BOTH parties to speak with the other — no one-sided responsibility here.

As an aside, many of today's radios feature some flexibility in being able to change the channel. Know and display your actual channel assignment.

When we fly at the field no one has either special or privileged access to the field. We ALL share that access regardless of who we are or what we are flying. Helicopter and aerobatic stunt pilots who fly over the runway will tend to drive other flyers off the field. So each one of us should look around and be aware if we find ourselves in the air alone with several other pilots on the sidelines. Basic courtesy and a respect for others will go a long way towards making a flying session a good experience for everyone.

We have all talked about interference issues. I've always assumed that problems would originate from somewhere off the field. It is always a good idea to perform a radio check with the antenna down before each flight. If there are any interference issues, they will be most obvious at low power.

When there is an obvious channel conflict, it looks like the prudent plan is make sure that both parties take some time to focus on the conflict and insure that they both understand the situation. It is not adequate for one person to call the conflict and then assume that the other party understands.

So here are some additional guidelines that we all might want to consider following as we go forward:

1) **Active Pins**: Put your pin on the tree right away, to let others know what channels are at the field. Never remove a pin from an active bar (green or yellow) that is not yours! No more than three (3) pins at a time should be posted to the green (flying) bar. When you turn off your radio, move the pin down to the inactive (red) bar.

2) **Channel Conflicts**: Both parties have a responsibility to notify the other and then come to full agreement that they will check with each other before flying. A fair plan might include showing your pin to the other person and asking them to confirm that they have a conflict.

3) **Introductions**: While many of us have been around the field for a number of years, newcomers need to be introduced to each other and no one should ever be embarrassed about walking up to a stranger and asking them for their name.

4) **Ground Checks**: A good ground check before each flight is certainly better than skipping it. Any interference seen on the ground will certainly be greater once airborne.

5) **Spread Spectrum**: Okay, so if either pilot had been using a SS radio we would not have had a problem — WRONG, items 1, 3 and 4 still apply. And so doesn't common

News From the Field *by Jim Orsborn*

Wow has this been a busy summer for our Flight Instruction program! There has been a flock of at least six new Kadets plus an Avistar or two and a Tower Trainer at the field. Since the last newsletter five new pilots have soloed, and several more should be ready to solo in the next couple of weeks.

New Pilots:
Greg Sullivan
Mike Whitmore
Savuth (Woody) Ly
Harry Alcorn
Tyler Shepard

Active Students:
Eric, Jackie, Tomas and Don.

As most members know, Wednesday has been our traditional training night. Well, we're having to change that to Tuesday night for the next month or two. The High School track team has four intramural track meets at the field over the next two months. Actually the coach says that it was the district athletic department that chose the dates; but either way the field will be covered with runners.

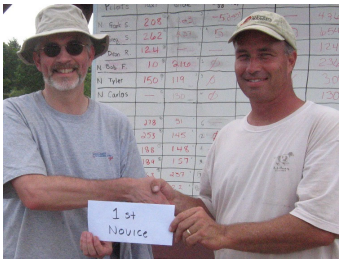
On August 12th we held our **MCRCF Fun Day Competition** at the club field. It was a fantastic day for flying so we had a nice turnout of both Novice and Expert flyers. The competition included five separate events that were combined to find the overall winner for each class.

Starting with a Taxi, Takeoff, Loop and Roll event; pilots were timed to see who could complete the maneuvers in the shortest time. Everyone completed this event and several pilots turned in an impressive performance.

The second event was a Climb and Glide competition. Again, all of the pilots completed this event and several turned in 2+ minutes of glide time, and we even had a couple of spot landing awards.

The third event called for pilots to try and takeoff with a golf ball in a cup and then drop it on the field. We didn't get too many balls on the field, but we did lose several planes. Rich Kruszynski had the most spectacular crash, but we also lost Scot Stewart, and then Dean Reed started having engine troubles.

The fourth event was



Greg Sullivan, 1st Place, Novice Pilot

where Greg took charge of the Novice class with repeated passes below the Limbo line.

Bill Copp, 1st Place, Expert Pilot Class

The final event was a "bust" when no one was able to break a single balloon on the runway. With no additional points coming from the Balloon Bust, it was the Limbo event that set the final placements for both pilot classes.

Final placements were as follows:

Novice Class:
Greg Sullivan, 1st
Frank Sullivan, 2nd
Tyler Shepard, 3rd

Expert Class:
Bill Copp, 1st
John Parisi, 2nd
Jeff Ward, 3rd

Other News

As reported earlier, new pilot Greg Sullivan took top honors in the Novice Class at our Fun Day Competition. Since he soloed, Greg has been pressing really hard to sharpen his skills and move on to new challenges. He has had a couple of mishaps with his Kadet, but the bones keep on flying.

Woody is another new pilot that has not been shy about trying new equipment and experimenting with new ideas. In recent weeks we've seen Woody put a Saito .62 and then a Saito .82 on his plane. He has also built a new wing, first with no dihedral and then he modified it again to add some flaps. Believe me, a Kadet with a big Saito, flaps, and no dihedral is no longer a novice student plane.

Several new students (and veteran pilots as well) have shown up at the field with Spektrum radios. Pins are still needed, but the glitch free radio operation with no worry about frequency conflict is really nice.

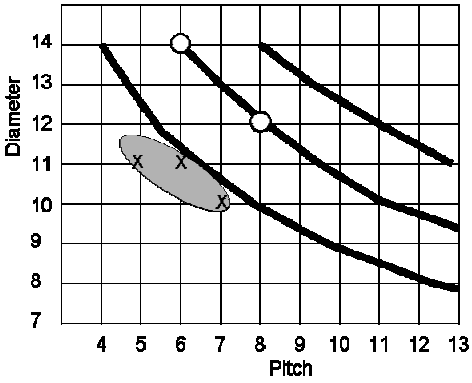
How to Select a Suitable Prop *by Jim Orsborn*

Did you happen to read Andy Lennon's article titled "***Select the perfect propeller for your airplane***"? If not, check the June issue of Model Aviation? This article should help make Andy's article easier to understand.

Let's start with a couple of points that Andy skips. Propellers (aka props) are typically labeled with two numbers, e.g. 11 x 5. These numbers indicate that this prop is 11 inches in diameter and has an effective pitch of 5 inches. Effective pitch is a measure of how far forward the prop will move during each complete revolution.

Let's not get too precise about how pitch is measured — suffice it to say that an 11 x 7 prop would move farther than an 11 x 5 prop. So the net result would be that if we used an engine that turned both props at the same RPM, the 11 x 7 prop would go faster than the 11 x 5 prop.

The trouble is, an engine that can turn the 11 x 5 prop at 12,000 RPM would not be able to turn the 11 x 7 prop at this same RPM.



Turning a higher pitch prop requires more work, so getting it up to the same RPM as the small pitch prop will probably require a bigger engine.

Andy mentions the concept of Propeller Load Factor (PLF), and he even references Dave Gierke's formula for PLF as Diameter^2 times Pitch or PLF = D^2 x P. What Andy did not include was a figure, such as the one at the top of the page, that shows constant PLF curves. Using these curves, we can see that a 14 x 6 and 12 x 8 prop (the two circles) have approximately the same PLF value.

Andy uses PLF to explain that two props with the same PLF will place an equal load on an engine. So when selecting a prop, one should make the choice from a group of props that share about the same PLF value. Notice for example that all three prop choices in the grey oval have about the same PLF value.

The ***Sport Aviator*** site on the AMA Website has an interesting review of the popular OS .46 AX engine. The engine review is excellent, but the article also sheds some light on making a choice between different props with similar PLF values. The article was written by Frank Granelli, and it compares the performance of this engine while using the three props in our grey oval. Flight results were measured with a 10 x 7, 11 x 5 and 11 x 6 prop. The following extracts from the article summarize the performance differences:

10 x 7 — This prop resulted in a "hot" plane with the highest speed. This choice also had the highest landing speed because the idle RPM could not be set lower.
Top RPM: 13,200
Idle RPM: 2,900
Speed: 23 to 103 MPH

11 x 5 — This choice resulted in the best climb rate, but the lowest top speed. Idle RPM and landing speed was much lower.
Top RPM: 13,000
Idle RPM: 2,800
Speed: 15 to 72 MPH

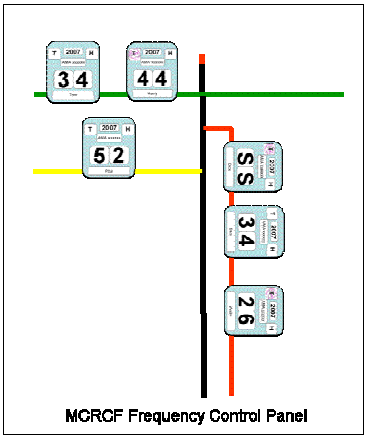
11 x 6 — This prop is a compromise between the other two choices, but it provides excellent climbing ability while the slower, more reliable idle makes landing much easier.
Top RPM: 11,800
Idle RPM: 2,300
Speed: 15 to 80 MPH

In conclusion, it looks like choosing a prop is a trade-off that depends on your flight objective. Higher pitch will give increased speed, but the lower diameter may make it difficult to achieve a reliable idle setting. Increased diameter gives more "bite" into the air making climbing and 3D maneuvers easier to perform. Increasing both pitch and diameter may require a bigger engine and might overload the engine.

Engine manufacturers usually offer a range of recommended props. With an understanding of PLF values you will be able to make the best choice of prop for your specific flight situation.

MCRCF Frequency Control Panel *by Jim Orsborn*

The diagram to the right represents the MCRCF Frequency Control Panel that is found in the center of the pit area at our field. This article should be a refresher course for all current members, but everyone should understand and follow the simple rules for using this panel.



MCRCF Frequency Control Panel

First, every current member should have a valid frequency pin that should be posted on the panel as soon as they arrive at the field. Pins are updated each year, so every pin on the pole should have the current year on it.

Most radios are set to transmit on a single radio frequency. We refer to this frequency by assigning it to a channel number. Pilots who have multiple transmitters (or interchangeable Tx modules for their unit) should request separate pins for each channel.

New Spread Spectrum do not have an assigned channel, so they have been designated as channel **SS**. Pilots who use Spektrum or other spread-spectrum units must post a frequency pin on the board even though they will not interfere with other transmitters.

The top, green, bar represents pilots who are actively engaged in flying their model. Pilots should move their pin to this bar before activating their transmitter, and they should remove the pin once they have finished their turn flying. Only three (3) pilots are allowed to fly airplanes in the air at the same time, so no more than 3 pins should be on this bar.

The lower, yellow, bar is to be used by pilots who are NOT flying, but they need to turn on their transmitter while performing maintenance in the pit area. The number of pins on this bar should be kept to a minimum.

When moving their pin to either the green or yellow bar, pilots must insure that they have the only transmitter on the same channel. Whenever a pilot shows up at the field and finds another pilot operating on their channel, an effort should be made to identify the other pilot and both pilots should coordinate all of their radio operations with each other.

The vertical, red, bar should be used as a holding spot for all pilots waiting their turn to fly. Courtesy would say that pilots should remove their pin from the active, green, bar and place it below all of the pins on the red bar. As pilots at thr top of the bar take their turn flying, the other pins can be moved up the bar towards the top.

Considering the pins on the pole, Dick has a Spread Spectrum radio, and he is the next pilot to fly. Based on the pins on the other bars, Dick is cleared, and ready to fly as soon as he is ready.

If Dick does not wish to fly, Sam is the next pilot. He could skip over Dick, but Tom also has a transmitter on channel 34 and he is flying. So Sam can not use his radio until Tom lands and declares that the channel is free.

In summary, here are some guidelines for using the MCRCF Frequency Pole:

- All pins should be current.
- Pilots should post their pin on the pole whenever they are on the field.
- A maximum of three (3) airplanes (and one helicopter) may post their pin on the active bar.
- Pilots on the same channel should speak with each other and coordinate all of their radio operations.
- Before turning on their transmitter, pilots should move their pin from the red bar to either the green or yellow bar and insure that they will be the only active transmitter of that channel.
- When finished flying, pilots should move their pin to the bottom of the red, holding bar.
- Time on the active bar should be limited to a maximum of 15 minutes when other pilots are waiting to fly.

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The FLYER is the official publication of the Middlesex County R-C Fliers, Inc., a non-profit organization chartered for the promotion of radio controlled model aircraft building and flying. The club operates a flying field located on Treble Cove Road, Billerica, MA. The club offers free flight instruction to any member provided they have a current membership with the Academy of Model Aeronautics. Contact any club member for details. Meetings are held on the second Wednesday of every month between September and June in the Billerica Recreation Dept building at 248 Boston Road in Billerica, starting at 7:30 PM.

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