
Skywords

The Newsletter of the Burlington Radio Control Modelers Club

www.brcm.org

March 1999

MAAC MEMBERSHIP IS MANDATORY

It is no accident that this is the first item in **Skywords** this month.

MAAC membership provides insurance for individual members but, more importantly from the Club's perspective, MAAC provides liability insurance for the Club *provided* that

100% of Club members are also MAAC members. Our contract with the City of Burlington and The Queen in the case of Bronte requires the Club be insured against third party claims. Thus, MAAC membership of all members is critical to the Club and the Club will take all measures deemed necessary to ensure that all members comply.

As a Chartered Club, BRCM is authorized to collect MAAC fees and MAAC coverage is effective immediately upon payment.

EDITORIAL: TRICYCLE V. TAIL DRAGGER

This month, I thought I would share some of my great store of knowledge accumulated over one whole season of RC flying! Whatever wisdom I have accumulated is the result of help from club members, constantly reviewing "Stick & Rudder" and, of course, my great correspondent Harry Curzon in the UK.

Many kits offer the option of building it as a tail dragger or with tricycle landing gear and you may ask "so what?" or, perhaps, make a decision based upon mere appearance. But the difference between the two configurations is most significant during landing; an aircraft with tricycle landing gear is much easier to handle at that all important phase called touch down.

The main wheels of a tail dragger must be ahead of the CG wherein lies the problem. If you touch down in a classic "three pointer" all is well; but, if you touch down in a tail down attitude

– but not enough to achieve a three point touch down – then you will get an instant tail down force which instantly increases the angle of attack (AoA) and up you go again. Of course, even if you achieve a classic three pointer, you'll bounce if you land too fast but that bounce will be largely attributable to, and limited by, the spring in the

landing gear. So how do you "fly it down", touching down above stalling speed, without bouncing? I'll let you know when I've done it!

The main wheels of a tricycle landing gear are behind the CG and if you touch down in a tail down attitude then you will get an instant nose down force which reduces the AoA and might even drive it negative thus tending to plaster the aircraft onto the ground. In other words, tricycle landing gear tends to make landing easier provided you don't wallop the nose wheel first!

Getting a tail dragger off the ground can be a bit of a challenge too – once the tail wheel leaves the ground rudder input is needed to deal with propeller "torque" pulling the aircraft to the left. With tricycle gear, the nose wheel can be kept firmly down and in control until the moment of lift off by which time there will be adequate flying speed to provide stable directional control.

So, given the choice of either type of landing gear, why choose a tail dragger configuration? Because it's more difficult to handle. That's why!

OK. That's my contribution. Now, where's yours? Deadline for Newsletter submissions is third Monday. Email attachments or machine readable (any format) preferred but hand written will do just fine.

THE PRESIDENT WRITES

Well, here we are, into month two of being President of this fine organization, the Burlington Radio Control Modelers and I am supposed to provide some enlightening words of wisdom for the newsletter. There are many important decisions to be made for the future of the club, and it is difficult to determine what is best for the membership in general. As you are well aware, whenever two or more people get together to discuss a topic, there will be more than two opinions, and so it is with the executive. Where are we going, how do we get there, and when we do make a directional decision, is it the right one for the benefit of the club? These are some of the challenges we will face in 1999 in our attempts to perpetuate the hobby, and to get back to the basics of just plain having fun.

It is sometimes hard work just doing the preparatory work so that everyone has an enjoyable time, and so it will be when we host the Tri-Club Invitational Fun Rally this summer on August 7th at Bronte Creek Park. This is a club event, and we must be prepared to commit ourselves so that the hundred or so guests will remember BRCM as a gracious host. The Mall Show in May, is another event that pleases the public, and most of us enjoy displaying our craft which have consumed so many of our precious hours in the building and finishing. We are all proud of our efforts, regardless of our skill level and the intricacies of the aircraft being presented. These events require planning, preparation, and in some cases, hard physical work to illustrate the co-operative effort of the club membership and the camaraderie of each other. To use an often quoted cliché, "you only get out of it what you put into it". The above are only two of the several events that are planned for this year. A calendar of events is printed in the newsletter each month so you do not miss out.

I am sure that the co-operative spirit of the members will again be exhibited this year as we strive to achieve the "boyish dreams" of flight, when we emerge from our basements and workshops into the bright sunlight and blue skies. As many of you are aware, some members have been flying throughout the winter season, and this offers new and different challenges compared to the warm season flyers. Fuel, engine temperatures, battery capacity, and cold finger conditions all offer significant demands to the pilots who persevere and continue to hone their flight skills in every season. Many times, the reflexes slow down, and the weather or wind conditions offer unforeseen challenges to the flight, but there is always one constant that remains steadfast, and that is the companionship that exists of the fliers on the flight line. It is not uncommon to see one pilot braving the atmosphere, while another stands beside as an observer. This buddy flying as it is often referred to, is becoming more common within the hobby and is quite often used to calm a nervous pilot and offer another set of eyes and ears to the pilot. Conversation between the two is not uncommon during the

fight, and this feeling of companionship prevails to steady the nerves. (*I can attest to that! Ed.*)

As has been briefly illustrated, the co-operative effort of all members is what makes the difference between an "OK" club and a "GREAT" club. I like to feel that whenever I have a question, problem, or a concern, that someone from the club will be there to assist me, and so far, my belief has not been proven wrong.

A TRIP TO FOREST LAKESIDE FLYERS

On Saturday Feb. 20th, the Forest Lakeside Flyers held a Fun Fly. Three members of the BRCM club traveled over 200 Km each way to attend the event, and were warmly received. The Zone Director for the South West Zone, Gerry Shaw was also in attendance. Flying commenced about 10AM with only four of their club members having brought aircraft to fly. **Wayne Bransfield**, our Zone Director for the Middle Zone, brought his little scale J3 Cub, which took up most of the room in the van, **Art Titmarsh** brought his little Green "Thang", and the 40 size Auto-gyro, and I took my Piper Cherokee. About noon, even though the day was bright, the wind started to become a little on the brisk side, and quite cold, but this was offset by the offer of gourmet tube steaks done over a BBQ in their makeshift shelter. (They always taste better outdoors.) The farthest attending pilot was awarded a bottle of Malt Whiskey and we were on our way home by about 1:30pm. We gave this to Art because we figured the oldest and ugliest should enjoy it. This bottle was subsequently raffled off at the February club meeting by Art Titmarsh, to raise the sum of \$52.00 for the club coffers. **Dave Parry** was the fortunate winner of the hard-earned bottle!

This trip was in keeping with the aims of some of the club members to further extend the club's relationships to other surrounding clubs, and to make additional acquaintances within the hobby. We expect to receive a return visit from several of the members of the Forest Lakeside Flyers in the near future, and I am sure all will make them feel as welcome as we were made to feel.

Bill Swindells, President

WINGS PROGRAM

Members wishing to join the 1999 program must sign up at the March meeting. Coordinator is **Bud Childerhose**. Remember, the ground school is mandatory. New pilots are strongly recommended to start with an Ugly Stick: it's the easiest and cheapest thing to repair after you have crashed. Yes, you will!

REALLY IMPORTANT PEOPLE

*In response to the "title" which I conferred upon the Editor and our Web Master, I received a tongue-in-cheek reminder about one other RIP – **Wayne Gilbank** (the other Wayne).*

Perhaps one of the most important of all (at least to 3 or 4 people) is the very high profile of the good looking, intelligent, and very talented older gentleman who never fails to produce gourmet coffee at every Club meeting.

Oh yes, his Tim Hortons donuts are individually selected and presented oven fresh each night as well. What a fine effort! Where would we be without this luxury and convenience?

With which I can but humbly concur.

COMING EVENTS:

Toledo, April 10 – See out Web site for details about this.

Monday, April 12 at 7pm Oakville Club swap meet held in the White Oaks school, McCraney St. (runs west off Trafalgar Rd. N of QEW) BRCM members invited. No fees, just bring whatever you want to sell.

April 30 – May 2, 10:00 – 18:00 Toronto Aviation & Aircraft Show in the Hangar at Downsview. Organizer is Fred Massacar of the Bramalea club. Contact **Richard Fahey** for further details.

May 21-23 – Maple View Mall show. **Dave Parry** coordinating this. Set up on Thursday, May 20 after 9pm, breakdown on Sunday, May 23 after 5pm

Float Fly June 6 & 7 at Christie Park. Also in September sometime.

Canada day festivities - Fun Fly, July 1st at the Bronte field.

June 26-27 Otterville Air Show and Fun Fly at Rene Goossens Trout Farm, RR2 Otterville: 24KM South of Woodstock on hwy 59. There will be a free meal for each *flying* pilot. Presumably, Trout figures prominently on the menu! On Sunday, 27th there will be a Barn Storming contest with a \$300 prize for the *first* pilot to fly through a "Barn" with two windows 21" high by 47" wide. Info: David Neale at 519-688-6824 or cbam@kwic.com

Balloon Fest in July (?)

Tri Club meeting hosted by BRCM August 7th at Bronte. The organizer for this event is our new President: **Bill Swindells** who will doubtless be looking for volunteers.

Corn roast 4th weekend in August

EVENING MEETING PLANS

*Plans are afoot to entertain, amuse and inform you about some of the good stuff. Thanks to **Norm Harris** for this.*

March: **Tony Pittari** will show his SM 260 and his 101" Nosen P51 models. & more: **David Elsey** will discuss all you need to know about propellers ~ a practical, "down to earth" approach to a high tech problem.

April: Swap meeting and video presentation(s).

May: Show and tell in which you bring your model(s) in pristine condition before you've had a chance to crash it (them.)

OTHER PLANS

There seems to be some interest in general technical meetings at the Bayview Club House (shed!) We'll try to organize something at the next meeting.

- Building with foam.
- Electric flying
- Indoor flying
- Servo mounting and chattering.
- Any other technical subject.

If you have a subject of particular interest, call **Norm Harris** or email the Editor.

OTHER BUSINESS

Financials will be published in the April edition.

Orders for **Club Shirts** will be taken at the next meeting, cash or cheque up front. \$33 for any size with pocket, \$30 without.

The Bronte Grass is sleeping and the field still remains closed until further notice.

ABOUT SOME OF OUR MEMBERS

I would very much like to learn of member's building and other plans – whatever they may be. Please give me a call or email; otherwise you'll just get stuff about me!

Art Titmarsh is building another, bigger Auto Gyro in accord with the Auto Gyro pilot's credo: Wings are for Wimps!

Bud Childerhose is building a Staudacher (Ace kit) which he won at the February meeting.

Lawrence Cragg is finishing an Ultra Sport 60 with a Saito 91 engine. Volunteer needed: someone to fly it before I do!

ABOUT SYMMETRICAL AIRFOILS

Here's some more writings from my favourite oracle: Harry Curzon. Harry occasionally writes in the rec.models.rc.air news group. I am pleased to report that I have Harry's permission to publish.

Telus NEWS wrote: One question I've always wondered. If a wing has an entirely symmetrical airfoil, how does it create lift, out the door go my high school physics lessons.

To which Harry replied:

Lift is a reaction to downwash. Lift force is proportional to the momentum of the vertical component of the downwash. As long as a symmetrical section or a flat plate is given an angle of attack, there will be a downward flow of air around it which produces an upward reaction. An airfoil shape merely takes the flat plate and improves the stall characteristics by rounding the path that the air takes, and the downward slope of most of the top surface increases the downflow around the wing thus improving the efficiency.

Therefore a wing is nothing more than a mechanical pump, pumping air from above to below. Like all pumps it tries to move in the opposite direction to the flow. The mechanism by which it does this is that the pumping of air from above to below alters the amount of air around the wing. Since air has mass and therefore inertia, surrounding air takes a time to fill in or leave these areas and thus a low pressure is created above the wing and a higher pressure below. That pressure pushes the wing up.

Poor old Daniel Bernoulli is oft quoted in the belief that the top surface acts like a venturi to accelerate the air which drops the pressure. The first problem with this is that strictly this is Bernoulli's Law for incompressible fluids whereas air is compressible and people really ought to use the incompressible (and nearly incomprehensible) form of Bernoulli's equation though the difference below 300kts is negligible. The biggest problem is that Bernoulli never stated that increasing the speed reduces the pressure! What Bernoulli found is that in a venturi there are 2 co-incident events - an increase in speed and a drop in pressure. He, and no-one since, has proved that one caused the other. They both exist as effects of a venturi and it is equally true to say that it is the drop in pressure which causes the air to accelerate in towards it. Since both may be true, the cause/effect is circular and therefore useless.

Chew on that for a while folks! And if you think its just my theory, try the RAF's manual (some UK flying clubs do have an old copy), or try Anatomy of an Aeroplane by Darrol Stinton, C.Eng, FRAeS and so on, a book which arose out of his lectures on aerodynamics at the Empire Test Pilots' School.

Darrol repeats many times very explicitly that the prime cause of all the mechanisms that generate lift is downwash.

There is an on-going argument about Down Wash versus Bernoulli. Here's some more:

Please don't get wound up in a debate between Newton and Bernoulli. Bernoulli's law in its first incompressible, inviscid form is simply another way of expressing Newton's existing law of the conservation of mechanical energy. Thus the Bernoulli equation you are thinking of is a subset of Newtonian mechanics. There is no argument between Newton and Bernoulli.

The argument is over what produces the pressure difference between the top and bottom of a wing, and whether the pressure difference is the cause of lift, or whether it is an incidental effect of some other cause.

And more.....

..... Jim is correct, a symmetrical foil presented to the airflow at an angle of attack is no longer symmetrical as far as the airflow is concerned. The leading edge stagnation point will be below the geometric centre of the l/e, meaning that the airflow above and below the wing will have paths of different shapes. That path gives the symmetrical wing an aerodynamic camber, even though it has no geometric camber. That camber then assists the downwash in the same way that a curved upper surface of a flat bottomed wing assists the downwash.

Harry

HOBO STORY

From my varied collection:

A hobo comes up to the front door of a neat looking farmhouse and raps gently on the door. When the farm owner answers, the hobo asks him, "Please, sir, could you give me something to eat? I haven't had a good meal in several days."

The owner says, "I have made a fortune in my lifetime by supplying goods for people. I've never given anything away for nothing. However, if you go around the back, you will see a gallon of paint and a clean paint brush. If you will paint my porch, I will give you a good meal." So the hobo goes around back and a while later he again knocks on the door. The owner says, "Finished already? Good. Come on in. Sit down. The cook will bring your meal right in." "The hobo says, "Thank you very much, sir. But there's something that I think you should know. It's not a Porsche you got there. It's a BMW."

OOOPS!

Here's another selection from the news group:

I had just finished construction on a 1/2A Cap 21 and was waving the fuse around in the air, making appropriate airplane sounds as I sat back into my chair, right onto the wing.....

A nameless friend, well, he HAS a name, but I ain't that stupid.... ("Huh, Carroll?") was doing likewise with his fully completed "Super Chipmunk" and loncevaked it into the ceiling fan..... Yuk!

Bill Fulmer

████████████████████
THE Y2K PROBLEM:

Not all Y2K problems are bad. How about this memo from a mythical automated payroll department:

Date: January 1, 2000

Subject: RE: Vacation Pay

Dear Valued Employee:

Our records indicate that you have not used any vacation time over the past 100 year(s). As I'm sure you are aware, employees are granted 3 weeks of paid leave per year or pay in lieu of time off. One additional week is granted for every 5 years of service.

Please either take 9,400 days off work or notify our office and your next pay check will reflect payment of \$8,277,432.22 which will include all pay and interest for the past 1,200 months.

Sincerely,

Automated Payroll Processing

████████████████████
FACTS ABOUT FUEL

This is the third of five articles submitted by Ernie Fryer. I have edited this in the interest of brevity

No. 3 - Nitromethane, the Mystery Ingredient?

Nitromethane is just one of a family of chemicals called "nitro-paraffins." Others are nitro ethane and 1-interoperable and 2-interoperable. Nitroethane can be used successfully in small quantities. (Top fuel drag racers, which generally run on straight nitromethane, sometimes add a little in hot, humid weather to prevent detonation.)

Yes, NITRO = POWER! But it *doesn't* add power because it's such a "hot" chemical. Not at all, the methanol (methyl alcohol) in the fuel is by far the most flammable ingredient. If nitro were only 4 degrees less flammable, it wouldn't even have to carry the red diamond "flammable" label! Nitromethane must be heated to 96 degrees F. before it will vaporize and can be ignited by some sort of spark.

An internal combustion engine can burn more than 2 times as much nitromethane to a given volume of air than it can methanol. Voila! More Power!

Virtually all our everyday sport flying can be done on model fuel containing from 5% to 15% nitromethane. Need a little more power? Move up to 10% or 15%. In most of our sport engines today, I really wouldn't recommend going any higher than that. It probably won't hurt anything, but it won't do you much good, either.

Nitro does more than just add power. It also helps achieve a lower, more reliable idle. One good rule of thumb for checking to see if a particular engine needs a higher nitro blend is to start the engine, let it warm up for a few seconds, set throttle to full idle and remove the glow driver. If it drops rpm, move up to a 5% higher nitro blend. If there is no discernible drop, you should be fine right where you are.

One of the most popular misconceptions is that by adding substantial nitro, the user will immediately achieve a huge power jump. Just ain't so. In the 5% - 25% nitro range, you will probably only see an rpm increase of about 100 rpm static (sitting on the ground or on a test stand) for each 5% nitro increase. In the air, it will unload and achieve a greater increase, and it will probably idle better, too.

Another statement we read or hear frequently is that nitromethane is acidic and causes corrosion in engines. It isn't acidic, and the manufacturers say it doesn't happen....can't happen. However, at least one noted engine expert and magazine writer insists that it does. Flip a coin. (I once asked Dave Shadel, 3-time World Pylon Champion, and a fellow who works on more high performance engines than anyone I know, how frequently he encounters rust in engines that have been using high nitro blends. His answer? "Never.")

Finally, remember in the beginning of this, we said that nitro adds power because we can burn more of it than we can methanol, for a given volume of air? This also means that the higher the nitro content of the fuel, the less "mileage" (or flying time) we will get. In a typical .40 size engine using 15% nitro, we can usually get a minute to a minute and a half flying time for every ounce of fuel. The Formula 1 guys are lucky to get 2 minutes out of an 8 oz. tank!

What's the practical side of this? If you go to a higher nitro blend, be sure to open your needle valve a few clicks and reset before you go flying. Otherwise, you'll be too lean, and could hurt your engine. Conversely, if you drop to a lower nitro blend, you'll have to crank 'er in a little.

Next Installment: 2-Stroke vs. 4-Stroke Fuels - Is there really a difference?

████████████████████
LASTLY

I've recently discovered Spackling compound but I've yet to meet a Spackle. (Sorry!)

Directors			
President	Bill Swindells	905-387-7706	swindes@ican.net
Vice President	Richard Fahey	905-637-5469	
Treasurer	Ivan Wismayer	905-825-8048	lakeshor@ican.net
Secretary	Wayne Bransfield	905-632-4049	wbransfield@sympatico.ca
Past President	Bob Trumbley	905-627-0549	trumbley@worldchat.com
Events Coordinator	Bernie Sudol	905-634-3245	bsudol@sprint.ca
Bayview Park Co-Manager	George Payne	905-689-6710	
Memberships	Barry Ward	905-634-6081	
Events Coordinator	George Bartkus	905-632-4058	GBart53316@aol.com
Bronte Creek Manager.	Art Titmarsh	905-319-2354	
Bayview Park Co-Manager	Kevin O'Shaughnessy	905-637-5346	kwo@idirect.com
Wings Program Manager	Bud Childerhose	905-634-6559	budc@cgo.wave.ca
Meetings & Entertainment	Norm Harris	905-637-2868	

RIP's (Really Important People!)			
Newsletter Editor	Lawrence Cragg	416-622-3705	cragg@inforamp.net
Web Master	Dave Parry	905-855-5430	coins@home.com
<i>Mail Address:</i>	<i>820 Burnhamthorpe Road, #2010, Toronto, Ontario, M9C 4W2</i>		