



# PROP TORQUE

Official Newsletter of Launceston Model Aero Club Inc. PO Box 1204 Launceston TAS 7250

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November/December 2010

## LMAC CHRISTMAS BBQ & FUNFLY



**Figure 1 8yo Jackson Oliver receiving his prize from elder statesman - Dave Jacobs (80 years young).**

Without any exaggeration, this was one of the best Christmas days we have had in a long time. The weather, whilst windy, was generally flyable for the Tomboys, the attendance was outstanding and friendship and fun was the order of the day. The theme was very much a family day and this was borne out by the large attendance – almost 50 people and it was very satisfying to see a large turnout of youngsters. We've said it many times – this hobby will die if we don't encourage the youth to take it up. So it was very encouraging to see so many kids there.

In addition to our own members, the boys from Hobart made the journey North. We are very appreciative of their support! Thanks to Tony, Will, Gavin and Peter for making the trip to join us.

The theme for the day was a Tomboy/Fun Fly day however the major attraction was the lolly drop! !! President Kevin Hay satisfied the masses of youngsters flying many "sorties" with his T240. Kerry C had organized a bag of mini "chuppa chups" and some prizes that were kindly donated by Tiger Models (many thanks again Dwayne and the boys!). A number of "chuppa chups" were labelled with "Winner" and the lucky finder brought their winning lolly to collect their prize from "Santa" Fred W. A special prize was awarded to our Junior member Jackson Oliver (Terry P's grandson). The prize was a new flight box built and kindly donated by Dave Jacobs who had the pleasure of handing the prize to Jackson. So from our oldest member Dave who is 80 to our youngest who is 8 is a remarkable event! The look on Jackson's face was priceless – I think all his Christmases had come

at once. A great gesture to give encouragement to our youngest member. It must have worked as he came second in the diesel Tomboy event – what an outstanding effort Jackson!



**Figure 2 Fred "Santa" Willis "gift giving" to some eager children**

Will Deal did his usual stellar job as CD in the Tomboy and was ably assisted by our newest member, John Moody. Will reported on the event as follows. –

*A rather windy day did not deter the Tomboy mob from having a great day out at the Christmas BBQ on the 18th December. For the first time we were able to have both electric & diesel in separate groups. Bad luck for both Geoff Hays & Gavin Hallam who unfortunately had gear problems and were unable to start. Three new models appeared on the day - Jacques Wakae with very smart electric Tomboy, Greg Robertson with a sparkling electric Sportster and Tony Gray also debuted a new white Cardinal model. Not too sure on your colour choice Tony!*

*With new member John Moody helping officiate we decided on an 8.00 min max for the day with a deduction of points for over 8.00 min flights. We also allocated points for landing on the cut strip. Two rounds were flown before lunch, however due to increasing winds we called it a day at this point. It was decided to have the best single score from the two rounds flown to count for the day's results.*

*Merv Cameron was unlikely to escape the reporting of his first round flight as he had an "out of paddock" experience after attempting to fly a model other than his own. A long Walk for Bill Hellinga at least worked up an appetite for the magnificent Christmas lunch. Jacques also had a problem with the strengthening northerly wind in the second round with his electric Tomboy not making it back to the landing strip. Three models landing within a single second of each*

*other in the second round and certainly kept the timekeepers on their toes. Dave Jacobs had his model sorted by the second round and was up there with the best. Terry Pearson decided not to compete but to give his grandson Jackson Oliver a helping hand on the day. Check those results, Jackson is on his way - watch out hot shots the new lads are arriving!*

*Electric Results: 1st George Carnie 2nd Greg Robertson 3rd Owen Cameron*

*Diesel Results: 1st Peter Allen 2nd Jackson Oliver 3rd Anthony Gray*

*Yet another top "Tomboy" day! Many thanks to John for helping with the timing.*

*Merry Christmas to all - look forward to more Tomboy fun in 2011  
Will*

Lunch was a lavish affair with food aplenty! Plenty of barbecued meat, salads, hot boiled potatoes etc followed by fruit salads and Christmas cakes washed down by a cool soft drink or tea/coffee. There was plenty of praise for the spread that was put on. You wouldn't get a better 3 course meal for \$5 anywhere.

Many thanks to Kerry for co-ordinating and all the girls for their assistance, without their help it would not have happened.

The day was not all joy as we saw the demise of Greg R's recent acquisition, a lovely electric powered Pilatus PC9. Unfortunately the model was on a turnaround manoeuvre and went into a spin from which it could not be recovered. Greg was philosophical about it and vowed to return with another new model soon. Tony Grey flew an ex Greg R pattern ship an "Adrenaline 90". It too was not without drama as shortly into the flight the canopy was seen floating down to earth. Anthony Grey kept a keen eye on its landing and was fortunate to find it in the long grass.



**Figure 3 - Fred Willis and his grandson, David**

The Christmas raffle was won by John Moody with 2<sup>nd</sup> going to "Dave the Builder". Thanks to all who bought tickets and supported our club. Let's all look forward to a safe, healthy and prosperous New Year. Our club continues to grow in membership with another 2 members (which should be ratified at our next meeting) so it augers well for 2011 to be another good one.

George.

## From the Secretary's Desk

Hi All,

December has arrived; the weather has not been too bad as of late although a bit on the windy side with quite a bit of showery weather.

The Thermal and Electric Glider day went off OK on the 20<sup>th</sup> of November but it too was quite windy but some braved the conditions and a contest was held. I would expect that a report on this is located further on in this Newsletter.

We have just held our annual club dinner on the 19<sup>th</sup> of November at which we had 23 members and partners attend.

The evening was a good time for members to get together and just talk. We were happy to have had 3 of the southern clubs members join us for this and share in the proceedings of the night. We also had various lucky door prizes that were donated to the club and these were very well received.

By now most if not all the members would know of President Gerry DeGroot's resignation from this position for personal commitment reasons. I would like to take this opportunity to thank Gerry for the service that he has given to our club now over the last 6 years and during that time he has guided us

though quite a few intensive times.  
**So on behalf of the club Thank you Gerry.**

Hence the committee has had to do some reshuffling and in accordance with the club's constitution Vice President Kevin Hay has now taken over as President and Merv Cameron has accepted the position of Vice President. This now leaves the committee one short till the Next AGM in June 2010 that will not cause us any problems as to how we can effectively operate.

One of our committee members Fred Willis has not been well at all just lately so we do wish him a speedy recovery to his health and strength.

There are some items from our recent committee meeting that needs to be passed on to the membership:

1. You may have noticed the MAAA poster on the wall in the clubhouse **Spinning Propellers are Dangerous** Now this is very real and the MAAA urges all Pilots and engine starters to be very conscious of this, This slogan is the latest in the way it is intended to highlight the dangers of mutilated hands and fingers which appears to be high on the list of serious insurance claims.
2. There is a poster in the clubhouse regarding World flight Team 737, which was a simulated round the world flying adventure to raise funds for the RFDS, this was held over 7 days starting 1<sup>st</sup> November, to which LMAC contributed a donation to the cause. Some may remember the Model Air Pageants that were run at Symmons plains some years ago for this very worthwhile cause.
3. From the MAAA/TMAA members are made aware of the strict criteria surrounding the flying of heavy Models that is models between 7kg to 25kg and Giant models 25kg to 50 Kg fixed or rotary wing. The onus is on them to produce a current permit to fly, if requested by an executive member of the club at which they intend to fly their model at. An uncertified large or giant model involved in an accident resulting in damage to property or injury to a person/s, could well find themselves up for substantial damages for which they are personally responsible. So don't just rock up and fly a heavy model without a permit. Our club Heavy model inspectors are

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- Kevin Hay and Merv Cameron.
4. Members will have noticed when at our flying site that the paddocks that surround us are heavy with crops, one paddock on the way down from the main road, containing poppies. Members should all know that these paddocks and crops are leased from the Youl family, and as such we cannot just barge into these to retrieve a downed model particularly from the poppies.

When the crops in these paddocks are high, as they are just now, we must first ask permission to go into them.

These paddocks belong to Mr Bill Chilvers and his phone number is on the notice board in the clubhouse, **RING him FIRST for permission to retrieve a lost model.**

#### Birthdays:

For November: - John DeGroot

For December: - Merv Cameron, George Carnie, Bill Evans, Chris Hallam, and Kevin Hay.

For January: - Ross Blackwell, Robert Laing, and Geoff Hays.

For each of their special days. We do wish them all a very happy birthday and a great year ahead.

You will find the latest MAAA newsletters numbers 4 and 5 with this edition of Prop Torque do take the time to read them as these letters do contain important information as they are issued each time.

*Just a reminder do not forget that this newsletter November-December - issue will be going bi-monthly from now on ---- the next will be for January-February.*

Well that's about it for me for now but I would leave you with this to ponder upon: -

***“There is only one corner of the universe that you can be certain of improving-and that is your own self”***

Have a great festive season and a safe new year ahead with plenty of good flying weather

So as always

Happy landings all.

Geoff.

**REMINDER –  
PLEASE LOCK THE CLUBHOUSE AS IT  
WAS LEFT OPEN AGAIN.**

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#### **From the Editor's Desk**

Unavoidable delays due to family visitors and taking advantage of the sun shining, when hay should be made has resulted in a late deadline for the news letter, for which I apologise.

There have been several new offers of material for Prop Torque which is very helpful. Because this issue has two MAAA news letters as well, some of the new offerings will be coming out in the next edition.

Owen Cameron has sent in some very interesting pieces and ideas. The first published in this issue is about a recent building project, the Sporty Ace biplane. This looks to be excellent and no doubt we shall be seeing a lot of it in the future.

As usual Jacques Wakae has been keeping his eyes out for useful information, one of these being the article on electric motors, and another that the fire proof bags in which one should charge Lipo cells are available now from Hobby King for US\$1.99 measuring 18 x 22 cms!

Recently, having the need to rewire a Lipo battery balance tap connector that is not an Hyperion, it took ages to find somewhere to buy them. RC-CONNECTORS.COM have them at very reasonable prices. They even supply an extra terminal for each plug or connector for practice with the crimping tool

...Richard.

**Torqued-up, by** Lucien Miller of Innov8tive Designs: from a post on an internet forum: submitted by Jacques Wakae.

There have been quite a few people lately that are trying to get way more power out of the S-4025 motors than they are designed to produce. I have replied to numerous threads regarding this, but in the interest of setting the record straight, I will reply to this one as well.

The 4025 series of motors are designed to operate at a maximum power rating of 2000 watts. In particular, the S-4025-12 motor has a maximum current rating of 85 amps. When run on a 6-cell Li-Po pack, which normally put out around 22.2 volts under load, this equates to  $22.2 \times 85$  or 1887 watts. I have said it before, and I will say it again for the 127<sup>th</sup> time. You should NEVER prop a motor to run at its maximum continuous current rating. This leaves you no head-room for the motor or speed controller.

The one thing that causes most of the problems is a situation called “core saturation” in the motor. When a very large prop is used, such as the 18x8, every time you go from idle to full throttle, or from partial throttle to full throttle, the motor takes 1 to 2 seconds to spool up to full speed due to the mass of the prop. During this time, the current draw on the motor is way more than the 84 amps it will pull once it gets up to speed. This is much like accelerating a car going down the freeway. To speed up from 50 to 70 MPH, you have to push the gas pedal way down to make a lot of power to speed up the car, but once you get to 70 MPH, you let up on the gas pedal to a much lower power level to maintain that speed.

This is exactly what happens in an electric motor. In your specific case, it takes 84 amps to spin the prop at full throttle. If you were to place a very quick reading data-logger in the system, that took samples at the rate of around 100 times per second, you would see that if you went from idle to full throttle, the current draw would initially go up to about 200 amps for about 1/10 of a second, until the prop actually started spinning, and then ramp down from there to 84 amps as the prop accelerated to full RPM, which might take 1-1/2 to 2 seconds on a prop that large. A similar thing happens when you goose the throttle from half speed to full speed suddenly, but not as severe. In a case like this the current might shoot up from 40 amps to 120 amps, and then fall back down to 84 amps over a period of about 1 second.

This large current can saturate the core of the motor and wreak havoc with the speed controller. So what exactly is “core saturation”? In any electromagnetic material, such as the stator in an electric motor, there is a random alignment of the atomic structure of the iron in such a way that the average magnetic strength of the material is zero when no current is flowing. When you apply a voltage to one of the field coils in the motor, the magnetic field that is generated that starts to twist the atomic structure of the iron in such a way that they all start to line up and point the same way. These are usually referred to as “magnetic domains” within the material. As more and more current is applied, more and more of the magnetic domains within the material twist to come into alignment with the applied magnetic field. As this happens, the material becomes magnetized, and can push or pull against the permanent magnets that are located inside the motor.

This process continues in a relatively linear fashion, and as more current is applied to the coil of wire, more of the magnetic domains get twisted to line up with the magnetic field. Eventually you get to a point where all of the magnetic domains have become twisted, and there are no more left to align with the magnetic field. At this point the core is said to be “saturated”, and no more magnetic field can be created within the material. If you continue to apply more current once the saturation point has been reached, the core cannot take any more, but the energy has to go somewhere. What happens is that the extra energy gets stored in the coil of wire itself, plus starts to generate a large amount of waste heat within the stator and wire coil.

Here is where the problem lies. When the speed controller goes on to switch to the next phase, the transistors shut off on the field that was just charged up. Because the core had reached its saturation point, all that energy is still stored up in the stator core and in the coil of wire wrapped around the stator. When a coil of wire has stored energy like this, once the applied voltage is removed, the coil tries to

maintain this field of energy. In a last desperate attempt to maintain this field of energy, as the energy starts to bleed out of the coil, the magnetic field in the stator collapses and applies a large voltage spike with the opposite polarity in a vain attempt to keep the energy in the coil of wire. When this happens, this large jolt of energy goes back into the ESC and causes it to lose timing sync with the motor. Once this happens, the ESC does not know when to fire the next phase pulse to keep the motor spinning and desperately tries to get back in sync with the motor.

Now, because the pulses of energy from the ESC that are going to the motor are not in alignment with the magnets, and so the motor starts acting like a speaker and you hear that horrible screeching sound like fingernails on a chalkboard through a PA amplifier. When this happens, all kind of bad things start happening in both the motor and speed controller. The ESC usually has to go through a start-up routine to sync back up with the motor, and that cannot start until the motor stops spinning. This whole process can take several seconds, again due to the mass of the large prop and the fact that it takes a while to slow down. The bottom line is that all of these problems can be eliminated by using a motor that is properly sized for the application, and have a correct size prop that does not push the motor into core saturation during hard acceleration. Hopefully this post can get the point across without being too technical for the average modeller to understand. If you have any other questions or comments, please let me know.

## LMAC Inc event Dates 2010-11

The 3<sup>rd</sup> Saturday in each month is designated as an event day as before.

**Canteen will operate on both club days and event days**

**PLEASE NOTE:** If the weather is unsuitable on the scheduled event day then that event may be moved to the -----[next Saturday](#)

2011

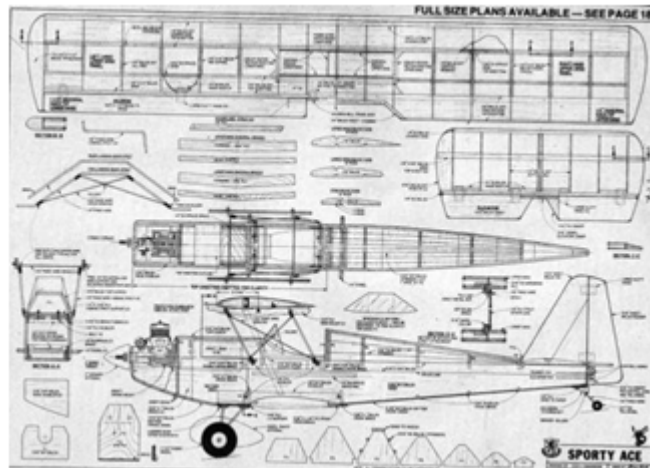
Jan 15 <sup>th</sup>	<a href="#">Tomboys / Old Timers</a>
Jan 22 <sup>nd</sup>	@ Tony Grey's Control Line >10:30am (time will be allocated for Tomboys etc) BBQ available (bring your own meat and salad) Contact Tony on 6268 1111 for more information
Feb 19 <sup>th</sup>	<a href="#">Glider—Thermal and LEG</a>
March 19 <sup>th</sup>	<a href="#">Scale Day</a>
April 16 <sup>th</sup>	free
May 21 <sup>st</sup>	free
Thurs June 9 <sup>th</sup>	<a href="#">Annual General Meeting</a>
June 18 <sup>th</sup>	<a href="#">Tomboys and Old Timer</a>

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## THE SPORTY ACE By Owen Cameron

Most modellers are intrigued by Bi-planes and I am but another person that thinks every modeller should have one. So I went searching through a very large stack of my fathers somewhat historic magazine collection for a good looking biplane that I felt wasn't outside my building skills. Along came the Sporty Ace in a 1981 RCM.



So a quick call to William Deal in Hobart, an A4 sized version of the plan in the post and he had it blown up to a size suitable for my OS 55AX engine in no time. Thanks again Will.

The building started firstly with the wings, they didn't present too much of a problem. Not many new tricks there.

Then came the fuselage: this was reasonably straight forward until I came to setting up the top wing and building the cabane. I opted for the folded aluminium cabane over the birdcage antique soldered look. Firstly I was instructed by the master (Merv) to fit the bottom wing and make up a jig to hold the top wing where it should live. "Make sure it is exactly where it should live and make sure it won't move whilst

you're mounting your cabane. If it's wrong I'll break it and you will have to start again." were the words stated. After an amount of time, and pressure, a jig was constructed and a cardboard cabane template was made.



The cabane sections were cut from a sheet of aluminium and folded. The pressure was huge at this stage and things were more than triple checked. The wing was then bolted into position and all was



glued and bolted and the jig removed. The most difficult part was over. I then made up an undercarriage and axles, fitted some wheels, planked up the top section of the fuselage and mounted the engine.



The rest came together fairly quickly and the covering was laid on, which made it really start to look like something.



I still need to fit the radio gear before the first flight. I'm in no rush as I figure a little more experience at flying doesn't hurt.

We will probably see it fly shortly after the New Year. I hope this inspires more of us younger people to scratch build as the older guys we need to tap into are getting fewer, and the skills and knowledge they have will fade with them.



**The satisfaction of flying something you have built yourself is great!!**

Also submitted by OwenCameron:

What is an Aeromodeller ?  
(Reproduced from "Model News" - November 1957 –

In the life of every male, there comes a time, at some age, the urge to submit to a creative desire. The most incredible of the creative creatures thus evolved is a complex and hard to predict character known as an aeromodeller.

What are these bods made up of? Baseball caps, the latest pre-fabbed kits, sun-glasses, Yankee motors, late nights, messy bedrooms, hot fuels, loud shirts and, when they invoke the wrath of the family, mentally retarded nit wits.

Nobody can arrive so late for meals or contests with so many alibis, and who else would sit in a public place and bite glue off his fingers? And all aeromodellers have one creed in common - to argue with every line in every rule in every rule book that every contest director may have the temerity to quote, even before a contest.

An aeromodeller is a managing director asking a kid for advice; an office clerk reading plans; a labourer judging a work of art; and a man's man with a toy place in his hand.

When you want one of these bods. they can usually be found engrossed in modelling magazines; up in trees; in hobby shops; on rooftops; looking for pins; in workshops; under cars; in public parks; in hot water; and always in debt.

No matter how ill or poorly you feel, a bod will always make you feel worse by running an OS in the next room or smelling the house out with dope fumes. Who else will confine someone else to their room because of a Wakefield motor stretched down the corridor, or a bathtub full of half set microfilm?

The really keen type is a composite of many factors: The curiosity of a model for a tree; the stubbornness of a diesel with a hydraulic lock; and the temper of a too-far provoked contest director. Nobody can spend as much time lubricating rubber, running in motors, sanding propellers, mixing fuels, untangling control wire, and still stay in bed contest day because it looks like rain.

And who else would drive hundreds of miles for a week of arguing plus the destruction of many months of work and return saying "I had a wonderful time!" And who else could fit into the hip pocket of a pair of jeans four propellers, a raffle ticket for a car, two glo plugs (one useless), key to the toolbox in the workshop, socket spanner, screwdriver, 18 inches of plastic tubing, and then find he's left his needle valve at home.

He is a magical creature. He can make Mother's best knife and supply of pins, plus Dad's best chisel and special paint brush, disappear just when they want them.

To avoid getting involved with one is the natural instinct of a female, and the prime purpose of the aeromodeller is to win an impossible prize - a female who is interested enough to build a model and follow the same path.

And when the visitors come, the tough, lousy, bad-tempered, noisy, uncouth, uncivilised nuisance can at last take pride when the parents or spouse say with that air of deserving some credit - **"He won all these items with his model aircraft, which I think is a really constructive and educational pastime for any boy."**

**Look how many less delinquents the community would have if . . . .**

# For Sale

As a reminder to members, here are some items listed for sale on the club web site.

	<p><b>World Models GROOVY 3D 50.</b></p> <ul style="list-style-type: none"><li>• Brand new in box ARF.</li><li>• Wing span 54.5"</li><li>• Flying weight 2.6kg.</li><li>• Requires 4 Channel (5 servos).</li><li>• Motor up to 55 2 stroke or 50-70 4 stroke.</li><li>• May be inspected at Merv Cameron's</li></ul> <p><b>PRICE: \$150.00</b></p> <p><b>Contact: Fred Willis 6257 8258 or Merv Cameron 6344 5614</b></p> <p><a href="mailto:fre2owil@bigpond.net.au">fre2owil@bigpond.net.au</a></p>
	<p><b>Tomboy (Ready to Fly)</b></p> <p>Complete with</p> <ul style="list-style-type: none"><li>• New Futaba 3 channel Tx</li><li>• Corona 4ch Rx</li><li>• Servos &amp; Batteries</li><li>• New in box MP-Jet 0.6 diesel</li></ul> <p><b>PRICE: \$360.00 ono</b></p> <p><b>Contact: Merv Cameron</b></p> <p><a href="mailto:mervcameron@internode.on.net">mervcameron@internode.on.net</a></p> <p><b>Phone: 03 6344 5614</b></p>
	<p><b>WILLY MONSTER</b></p> <ul style="list-style-type: none"><li>• Wing Span just over 10 feet.</li><li>• Powered by near new Super Tigre 90.</li><li>• Built by Greg Robertson. This gentle giant is a breeze to fly.</li><li>• Wings are in two for easy transport and the tailplane is removable. Servos are included so all that is needed is Rx and battery. Model is in top condition.</li><li>• Motor cost \$189 new so asking price is very reasonable.</li></ul> <ul style="list-style-type: none"><li>• <b>PRICE: \$200.00</b></li></ul> <p><b>Contact: Fred Willis 6257 8258</b></p> <p><a href="mailto:fre2owil@bigpond.net.au">fre2owil@bigpond.net.au</a></p>



Figure 4 - All eyes are on the lolly loading to see if they can spot the winner.



A couple more pictures from the Christmas barbecue lunch.

Figure 5 - Tony Grey's model minus its "hat"!