The Squire Flyer

Volume 9 Issue 3 http://www.countrysquires.com Mar 2000

While flying, always expect the unexpected when you least expect it!

Next Meeting:

Monday **March 13th 2000** at East Norwalk Public Library, Van Zant Street, starting at 7.30pm.

Letters to Members

From: Marcel Castanheira <marcelcastanheira@hotmail.com

To: <webmail@countrysquires.com>

Sent: Thursday, January 13, 2000 4:56 PM

Subject: aerodesign

Hi,

My name is Marcel Castanheira end I´m a mechanic engineer student in Brazil. I´m participating of a project to built a RC cargo airplane model, and I´m a little lost!! I´ll appreciate if you can indicate me sites, books, or e-mails from people that can help me and, if possible, answer me this two questions:

1) The model should have a limited planform area. I´d like to know if I build a double-wing airplane (one over another, like the old airplenes), I can get more sustation and suspend more weight?

2) What parts in the model are the secret to elevate more weight (~10kg), with a limited planform area (~7750 cm2)?

Thanks for your attention!!

Marcel Castanheira

marcelcastanheira@hotmail.com

marcelcastanheira@zipmail.com.br

[An interim reply has been sent to Marcel, indicating certain sites where he might find the information he is looking for. He was most pleased to get it. However, I'm certain Marcel would appreciate receiving a straight forward, easy to understand explanation from one of us - do please send Marcel your thoughts directly and copy your editor so we may all benefit. For those who do not have access to email, please pass your thoughts to Boyd or Bill and we will make certain the information is relayed and also published in a future edition of SF. Many thanks in anticipation - Ed]

From: Alex

To: webmail@countrysquires.com

Sent: Monday, October 25, 1999 3:35 PM

Subject: The proposition.

Dear Sir,

We make completely glass-fibre reinforced plastic (FRP) aerobatic scale aeromodels - SPAD XIII, CAP-231 Mudry, Sukhoi SU-26M, Embraer EMB-312 Tucano.

Please visit our site

http://www.planet777.com .

Here you can see a photo and also receive established prices.

If you will be interested then please write to us inbox@planet777.com .

With warm regards and hope for a fast reply, Alex Dalechin, attorney, e-mail attorney@planet777.com Vladimir Fedosov,director, e-mail fedosov@planet777.com

http://www.planet777.com

Planet 777 Corporation Inc.

inbox@planet777.com e-mail

[Apologies, this letter got stuck in your editor's inbox! Go check out this site!]

Ode To Glider

by Bob Sanders

Picked up my HLG for a test
glide and smiling I went
outside. Tossed it around,
adjusting this and that.
Flew it out then he headed it
back.
Lost my airspeed, as I sometimes
do, into terra firma it helplessly
flew.
After stepping back to survey the
damage, went back inside to
apply a CA bandage.
Opened new bottle, and boy, out
it flows, now my right hand's
fingers are stuck together, froze.

Inside This Issue

Now I'm typing with my left hand to complete this flyer, while my right foot stomps the balsa out of my glider.
Now I sit, one-handed and broken-hearted, looking at HLG plans, hopefully soon to get started.
Now if only I can unstick my fingers before I see the wife, I'm afraid she'll tease me for the rest of my life.
[With thanks to *The LASS Word* Louisville Area Soaring Society http://www.iglou.com/lass - Ed]

General Curtis LeMay

This is the first in a series of articles on people who have made a significant contribution to aviation in one form or other. Please send in your ideas of who we should cover in future articles - enjoy! - Ed

General LeMay was one of the most well known generals of the Air Force following World War II. He was probably the best known as the Commander in Chief and architect of Strategic Air Command. Born on November 15, 1906 in Columbus, Ohio. As a boy he saw the aerobatic show of Lincoln Beachy, a well-known aviator of the day. LeMay never forgot this aerial display.

Like all boys of his day he had a great fondness for mechanical devices. In 1919 he and a friend bought a Model T ford for twenty-five dollars. Eventually he bought out his partner and was sole owner of the automobile. He kept it running for many years. His desire to fly led to his college career. He knew that the best flight training he could get would be in the Army, but he was unable to secure a congressional appointment to West Point. As a second choice he joined the ROTC unit at Ohio State, seeking a commission. He knew this would give him the eventual opportunity to join the Army Air Service.

LeMay was an honor graduate of ROTC training, but due to his long hours at the job that supported his college career, he had failed some courses and found himself 15 credits short of graduation. As an honor graduate he was given a reserve commission, but found this would not allow him the chance at entering the Air Corps flying schools. He discovered, however, that by entering the National Guard would provide him a chance at flying. Explaining his desire to the Ohio Commander of the National Guard, he was given a commission as a second lieutenant.

His application for flying school was quickly processed and in November 1928 he was on his way to March Field in Riverside, California as a flying cadet. On October 27, 1929 LeMay was awarded his wings as an Air Corps pilot. During this period of The Great Depression, little thought was given to the expansion of the military. By 1938 the Air Corps began to lobby hard for funding for new aircraft. The Air Corps planned a mission to Buenos Aires, for the inauguration of the newly elected Argentine president. This was an opportunity to gain publicity for the newly acquired B-17. Lieutenant LeMay was selected as the Lead navigator for this goodwill flight of six fortresses. All aircraft made the round trip without mishap.

In that day this feat of crossing the Andes was quite a pioneering effort. As an indication of the state of the Air Corps at the time, LeMay used National Geographic maps to plan his mission. A few months later the Air Corps, in another publicity move, planned a mission of three B-17s to intercept the Italian luxury liner Rex, 700 miles at sea, to demonstrate the ability of the Air Corps to find and destroy enemy ships. Again, LeMay was selected as the lead navigator. Despite nearly impossible odds this mission was a success and infuriated the fascists on board the Rex.

By 1948 Gen. Curtis LeMay took command as SAC took deliveries of two new aircraft, the B-36 and the B-50. The headquarters was moved to Offutt AFB, near Omaha, Nebraska. This same year saw the introduction of in-flight refueling through the use of KC-97s. In-Flight refueling gave SAC's bombers a true intercontinental range.

General LeMay was SAC commander from October 1948 until June 1957, the longest of any U.S. military force commander.

Hints & Tips

Epoxy Tip

When applying fiberglass and epoxy to the center of a wing, tack the fiberglass cloth with CA, then put the epoxy on the cloth and work it in. Now for the easy part. Apply a strip of clear kitchen wrap to the freshly epoxied center section and smooth out the epoxy with your fingers. Try to remove all wrinkles. The wrap keeps your fingers clean. Let the wrap stay on until the epoxy has cured then pull the wrap off for a nice center joint.

from Plane Talk Charles Brooks, editor
105 Lewis St. #8 Berea KY 40403

Sheeting Foam Cores

by Thom Lamborn

A friend on mine, Hob Davis, suggested that instead of using epoxies, sorghum or other fluid type adhesives to attach the

sheeting to foam cores, try using rug and carpet tape.

This is a very thin tape that has adhesive on both sides. This made sheeting quick and easy as there is no drying time or need to weight down the surfaces.

You apply the tape to the foam core, peel off the backing then roll on the sheeting. As this tape is designed to hold down rugs, it does have a fairly strong tack, so be careful when aligning the sheeting with the foam core.

Hob used it to sheet the wing of his airplane with very good results. A year later there is no sign of delamination.

from RRCC News B. T. Lamborn, editor

THOML@prodigy.net

Flexible Palm Sander

by Jerry Wino

Cut an inexpensive, adhesive-backed, vinyl floor tile to a convenient size. You can make them custom sized to fit any application you may have. Now cover it's adhesive side with sandpaper of the grit of your choice. The vinyl is fairly flexible and will conform nicely to simple curves, such as wing camber. Consequently, it won't produce flat spots as regular sanding blocks do.

from The Signal Squeaker Jerry Wino, editor P.O. Box 614 Garden City MI 48135

[Many thanks to AMA Newsletter & all contributors - Ed]

Saito Power Tip

Spotted in the Horizon Hobby Advert, Model Airplane News March 2000, quote

Want even more power from your Saito engine? Try 30% helicopter fuel. Saito four-strokes thrive on increased nitro, and the extra lubrication provided in heli fuel gives plenty of protection. Our Team flyers have been reaping the benefit of nearly 400-500 rpm increase with heli fuel for over a year. Try it! Unquote.

'Flight Check' Quiz!

1. What was Louis Bleriot's real business?
2. What is the aviation irony surrounding Juan de la Cierva?
3. What is Australian born Bert Hinkler remembered for?
4. Know your State: Horace Wells of Hartford made an important discovery which would revolutionize dentistry - What was it?
5. Where does lacquer come from? [Thanks to Phil D'Ostilio for this one - Ed]

If you have suggestions for Quiz Items that might interest members, please submit them to Boyd.

Wing Loading and Different Sized Airplanes

By Ed Moorman

We are used to using wing loading as one indication of how an RC plane will fly. As a general rule, somewhere in the low 20's makes for a good performing airplane. Get up close to or over 30 ounces per square foot and the plane feels heavy and must be landed faster. Many scale planes, especially warbirds are in this range. Landing with flaps is common to offset the high wing loading. If a flier has been used to calculating wing loading and he builds a giant, he is in for a surprise. A plane he expects to be in the low 20's may have a wing loading up close to 30. He expects it to be a bear to fly, but finds out it is a real pussycat. Why is this?

The answer is that wing loading does not work well in comparing airplanes of different sizes. Other aerodynamic factors, such as Reynolds number, are dependent on wing size and aircraft speed. "Bigger is better," as the giant fliers say, is really true. Well, if wing loading is not a good way to compare planes, what parameter can we use for comparison? One answer is cubic loading, a number which attempts to include the overall size or volume of the plane in the equation. Francis Reynolds, in his July 1989, Model Builder magazine article, "Cubic/Displacement Loading" presented a formula for cubic loading, displacement loading and a performance rating, combining all of the loading factors.

Rather than go into the details of his math, let's look at some results for planes of three different sizes, a .40 sized plane with a 600 square inch wing area, a small giant for Super Tigre 3000 or Moki 1.8 with 1200 sq. in. & a large giant of 1800 sq. in. area, approximately like a Stinger.

For the baseline, I'll use an original sport giant design of mine, the Hawk, which has 1200 sq. in. area and weighs 15 lbs. The plane has been built by several different people, is an easy flier and may be landed by touching the tail wheel first, then the main gear. This indicates it is not a heavily wing loaded plane, rather one which might be compared to a lightly loaded, sport plane. However the wing loading is 28.8. If I had this wing loading on a .40 sized plane, I would feel I had a heavy plane, one which I would have to be careful with on landing. Here are the complete parameters, including cubic loading, on the Hawk.

Now let's compare all three planes with their weights adjusted to give a wing loading of 28.8.

Area	Weight	Wing Ld	Cubic Ld
600	7.5	28.8	14.11
1200	15	28.8	9.98
1800	22.5	28.8	8.15

Our .40 plane with 600 sq. in. weighs 7.5 pounds, pretty heavy. It would probably be a fairly fast landing plane. We would expect a good, light .40 sized plane to weigh in somewhere in the 5-6 pound range. The 1200 sq. in. Hawk, I have already told you feels lightly loaded and can be dragged in on landing. Our larger 1800 sq. in. Stinger sized plane would be really light at 22.5 pounds and probably be a floater.

Now take a look at the cubic loadings. They are 14.11, 9.98 and 8.15. These figures indicate the .40 sized plane to be the heaviest loaded of the three, which we know from experience to be true-the 7.5 lb. .40 sized plane will not be a slow lander. Cubic loading, then, seems to give a better method of comparison than wing loading.

To further check out cubic loading, here are a second set of calculations with weights adjusted to give the same cubic loading. I have used the cubic loading of the Hawk for the baseline since I know its performance.

Area	Weight	Wing Ld	Cubic Ld
600	5.305	20.37	9.98
1200	15	28.8	9.98
1800	27.57	35.29	9.98

With the same cubic loading, the weight of the .40 sized plane comes down to 5.3 pounds, more in line with a lightly loaded, good performing plane. The wing loading of just over 20 oz. per sq. in. also shows this is a lightly loaded plane. On the very large size, note the wing loading of the 1800 sq. in. plane. It is over 35, a figure which we would consider very heavy for a small plane. This figure would not be heavy for a plane this large.

Finally, let's look at the figures adjusted for the heavier cubic loading corresponding to the 28.8 wing loading on the .40 sized plane.

Area	Weight	Wing Ld	Cubic Ld
600	7.5	28.8	14.11
1200	21.22	40.74	14.11
1800	38.97	49.88	14.11

We already know a 7.5 pound, .40 sized plane would feel heavy. I know from many years of flying my Hawk design, 21 plus pounds would be heavy. Having flown Stingers, I can also say, 39 pounds would also be very heavy.

So having looked at wing loading for the three planes and their cubic loading both at the light range and the heavy range, cubic loading gives us a better and more accurate method of comparing airplanes of different sizes.

[Many thanks to Ed Moorman - Ed]

moorman@tsufl.edu

Feb Q Q Answers!

1 **What have the following people got in common?**

- **Ivan Kozhedub**
- **Hiroyoshi Nishizawa**
- **Richard Bong**
- **Erich Hartmann**
- **'Ginger' Lacey**
- **Bob Stanford Tuck**
- **Adolf Galland**

They all excelled at being fighter pilots during WWII

- **Ivan Kozhedub**

  Highest scoring Allied pilot of the war, shot down 62 German aircraft, mostly flying Lavochkins in the Ukraine, and ended the war as a Guards Colonel with three awards of Hero of the Soviet Union

- **Hiroyoshi Nishizawa**

  Sub-Officer Hiroyoshi Nishizawa was the highest scoring Japanese fighter pilot with a total of 103 victories

- **Richard Bong**

  Maj Richard Bong was the highest scoring American fighter pilot in the Pacific War with 40 victories flying P-38s. In the European theatre, his counterpart was Col Francis Gabreski who destroyed 31 enemy aircraft. The highest scoring naval pilot was Capt D McCampbell with a tally of 34

- **Erich Hartmann**

  Highest-scoring fighter pilot ever, Erich Hartmann destroyed 352 aircraft. He was awarded the Oakleaves, Swords and Diamonds of the Knight's Cross - the highest award for gallantry in the German Air Force

- **'Ginger' Lacey**

  Many individual pilots gained immortal fame during the Battle of

Britain in the summer of 1940 and 'Ginger' Lacey was the highest-scoring pilot of the Royal Auxiliary Air Force

- **Bob Stanford Tuck**

  RAF Regular commanded a Hurricane Squadron and destroyed 23 enemy aircraft by the end of 1940

- **Adolf Galland**

  Gained 104 air combat victories and went on to become the youngest general of the German Air Force at the age of 30

2 Who is credited with the following expressions: -

[a] "Slumps are like a soft bed. They're easy to get into and hard to get out of."

- ***Johnny Bench***

[b] "The youth of America is their oldest tradition. It has been going on now for three hundred years."

- ***Oscar Wilde 1893***

[c] "Creative minds always have been known to survive any kind of bad training."

- ***Anna Freud***

3 **Who was the first passenger to be killed in an aeroplane accident?**

It was Lieutenant Thomas E. Selfridge when on September 17th, 1909, during military trials at Fort Meyer in Virginia, Orville Wright crashed; Wright survived with a broken leg, but his passenger (of the US Balloon Corp) was killed.

Pitch Setup for Helicopters

by Tri Le

In helicopter operation, there are many ways to set up your machine depending on your ability and its performance.

The left stick on the helicopter transmitter controls the throttle and pitch. In normal mode, when the stick is at the bottom end, the pitch and rpm will be at the minimum. When stick moves up, the pitch and rpm will also be increased proportionally until it max's out at top end.

Two other modes, called idle up one and idle up two, are used for aerobatics when you ready to make your nerves jump up and down.

With my helicopter the pitch set up is -3 degrees for low end, and +7 degrees for top end in normal mode. Some of you might ask how could the helicopter fly with negative pitch—it can be used for inverted flight, or auto rotation.

Before I go further, I would like to give an example. Let's say you are holding high speed running fan, blades with +5 degrees pitch vertical. The fan would pull your hands up. And what happened if the pitch of the blades changed from +5 degrees to -5 degrees? Of course the fan would push your hands down.

The sudden force, and speed of directional change acted upon your hands depends on how fast or slow the pitch of blades changed from a negative to positive, or vice versa. When a helicopter flies, the speed of the rotor plays a major critical part of its maneuvers and particularly when the engine decides to quit. If you notice the engine quit suddenly, the only way to save your machine is by applying negative pitch (-3 degrees is good). While the helicopter is descending with fast rotor speed remaining, a negative pitch will help to push the helicopter down and helps keep the fast rotor speed which you will need for flare when the helicopter nears the ground. Hopefully, this will keep it in one piece.

This is called autorotation—using all energy left from the rotor blades to create a safe landing. I practice semi-autorotation a lot to get my mind and hands ready. Sooner or later the engine might quit or the helicopter might lose its tail blades.

Two weeks ago, while flying figure eight practice, the engine quit. I don't remember how I saved the bird from 20 feet above ground, but I did a nose in autorotation perfectly. The bird didn't bounce once. When I came to, I was amazed. However, too much negative pitch when doing auto rotation can be deadly.

Because the speed of the descent will be so fast, it will be very hard to handle at touch down. For the beginner, the negative pitch is not required while learning how to hover. It is recommended that the lowest pitch be +1 degree. This ensures that if you pull the stick back suddenly, and drop the model on the ground, the blades will still be lifting and not pushing themselves toward the tail boom.

Once you are ready for forward flight, you should add the negative pitch at the low end of the stick. Otherwise when your helicopter is flying at 200 feet, with wind blowing around, you will have a difficult time bringing it down to the ground. With a lot of practice, you will be as good as Roy Wright. Until next time keep the

big training gear on and have a good time.

[With thanks to the *The Millington Barnstormer* Victor Laurent, editor Vic14rc@aol.com - Ed]

Diary Dates 2000

The following selected dates you might like to make a note of in your diary. We have added the Moon cycles for you few night owl Flyers in CT!:

Mar 2nd - 5th Florida Jets, Bunnell, FL. Flagler Co Airport. CD: Ken Von Thaden (561) 795-6600

Mar 11th Central Penn Aeromodelers Assoc. 20th Annual Flea Market, Lebanon, PA Details: 717 243 0608

Mar 13th - Club Meeting

Mar 17th - St. Patrick's Day

Mar 18th - Chiefs Swap Meet and Auction, Granger Street, Canandaigua, NY Noon-4pm Info: John Morrill (716) 394-8185

Mar 19th - Full Moon [& Wyatt Earp Born in 1848!]

Mar 20th - 1st Day of Spring - Flying Weather is approaching!

Apr 1st - April Fool's Day

Apr 2nd - Daylight Savings Time Begins [and Ponce De Leon discovered Florida in 1513]

Apr 4th - New Moon

Apr 7th to 9th - 46th Annual Weak Signals, Toledo, OH

Apr 10th - Club Meeting and Winter Build Contest

April 17th - Tax Day!

Apr 18th - Full Moon [and Paul Revere's ride in 1775]

Apr 23rd - Easter Day [and William Shakespeare born 1564]

Apr 26th - 30th - Top Gun, Palm Beach Polo and Country Club, West Palm Beach, FL. Hotel Info: Cindy Bukey (954) 587-8491

May 4th - New Moon

May 8th - Club Meeting

May 14th - Mother's Day

May 18th - Full Moon

May tbd - Postponed Dixie Cup

May 29th - Memorial Day

Jun 2nd - New Moon

Jun 12th - Club Meeting

Jul 4th - Independence Day

Jul 9th - Dawn Patrol, see 'Useful Contacts' to obtain more Information

Jul 10th - Club Meeting

Aug 14th - Club Meeting

Sep 4th - Labor Day

Sep 11th - Club Meeting

Sep tba - Rhinebeck WW I Jamboree Hosted by the Mid-Hudson RC Society

Everyone with known dates for fly meets etc throughout the year, do please pass them to Boyd as soon as possible so we can compile and publish a concise list to help one and all make our plans.

March: Windy Weather Flying

by Bob Angel

A review of windy weather flying is a good idea for any contest. We tend to pick only the good days to do our practice and fun flying at home. But at contests, the show goes on regardless of wind. This can leave us unprepared.

Takeoffs in wind aren't too much of a problem. The airplane ground handler just needs to be very attuned to wind direction and make sure the release is directly into the wind. The ship will already have airspeed at release. Even those over-propped, small-wheeled 1/2As will get airborne easier than usual.

Landings are the big problem as far as preventing damage. It can help to push in some down trim during final approach to make sure the ship doesn't balloon up in a gust and stall. The most frequent cause of damage is when the wind tumbles the ship right after touchdown. Try to maneuver the ship back to yourself or to a helper who is prepared to catch, or run and pounce on the ship before the wind can upset it.

For the flight itself, the big problems are duration, and not getting blown downwind and off field. Launch from the most upwind portion of the field possible. During the flight, figure on walking down wind with the ship for recovery.

Right from launch and throughout the flight, concentrate on keeping the ship as straight into the wind as possible. Forget trying to circle in a thermal. You may also need to adjust your climb-out to a shallower angle to prevent being blown too far back.

Some people suggest adding a little nose weight in wind. I prefer to keep balance the same but sometimes add just a couple of clicks of down trim if the ship is occasionally stalling in gusts.

Finally, you might borrow the sailplane flier's trick of adding ballast weight at the ship's center of gravity. It all depends on how much power you have, but it's

often better to sacrifice some initial altitude to get that higher wing loading up in the air. Once in the air you will be better off flying a heavier ship that will penetrate enough to hold its own, without having to feed in down elevator to keep from being blown backwards. Whenever you have to hold down elevator, flight time suffers drastically. Ballast, as much as a pound of weight for a large ship, should always be added at the center of gravity, and be secure from shifting. This should be tested at home, not at a contest for the first time!

[Many thanks to *SAM 26 Newsletter* Bob Angel, editor]

Tailhooks!

Frequency Board

Warning!!! With the flying season rapidly approaching, if you get to the field and want to turn on your radio, please check Frequency Pins first! There may be another pilot in the air that's using that Frequency. Be careful and safe! [Next month, in the interest of safety, we will publish the details of a very unfortunate accident which had as one contributory factor, bad frequency pin observance - Ed]

***

With the warmer season just over the horizon, take comfort when those bugs come out, a housefly only lives for two weeks!

***

Lemon sharks grow a new set of teeth every two weeks. They grow more than 24,000 new teeth every year.

***

Centipedes, or members of the class Chilopoda, always have an uneven number of pairs of walking legs, varying from 15 to more than 171 pairs. Common house centipedes (Scutigera coleoptrato) have 15 pairs of legs.

Write Us!

Useful Contacts!

The following is a list of useful contacts and numbers. **All phone numbers are area code 203 unless otherwise stated.** We have also started to compile a useful list of Web Site addresses that members may wish to refer to from time to time. Suggestions for inclusion will be gratefully received and should be passed to either Boyd or any committee member via our contact information below.

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Paul Savastino

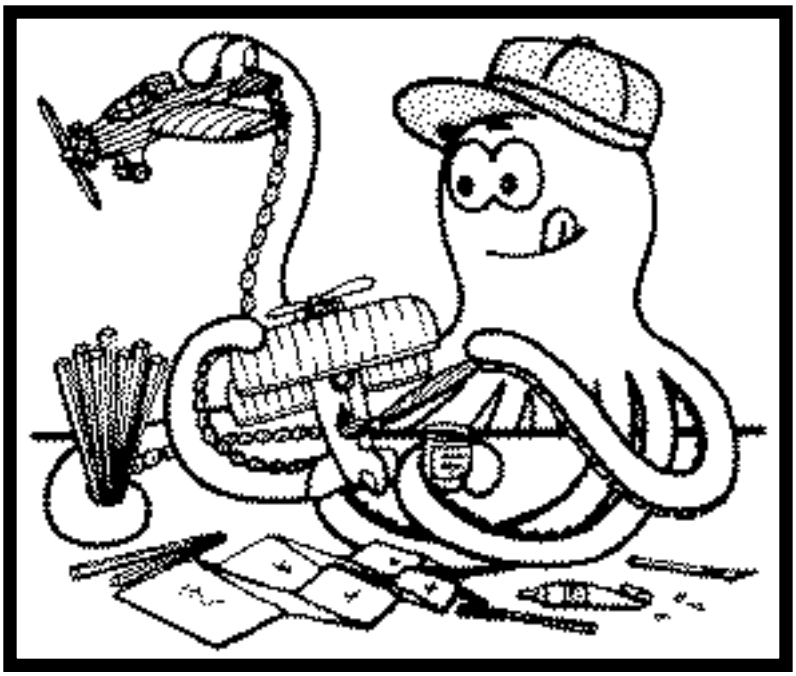
(860) 872-6303 or

Bob Boulais at

E-mail: DawnPatrol536@Juno.com

Club News - back next month! ☺

April 10th Winter Build!



Country Squire Modelers
Brad Lewis
c/o Heritage Hobbies
33 Danbury Road
Wilton, CT 06897

If you would like to receive your Squire Flyer in color, please contact Bill Waldman [see Useful Contacts List in this edition for #] and have your email address added to our distribution list. **Alternatively, sign-up at Jerry's or Brad's if you wish to collect your Newsletter in person each month**. This will help reduce our costs and you are likely to receive it faster than through the Mail.

The views expressed in this Newsletter do not necessarily represent the views of the Country Squire Modelers, Norwalk, CT or the Editors.

Input via e-mail or on disk would be appreciated, preferably saved as text.

Deadline Date for April Squire Flyer input: Mar 16th