



January

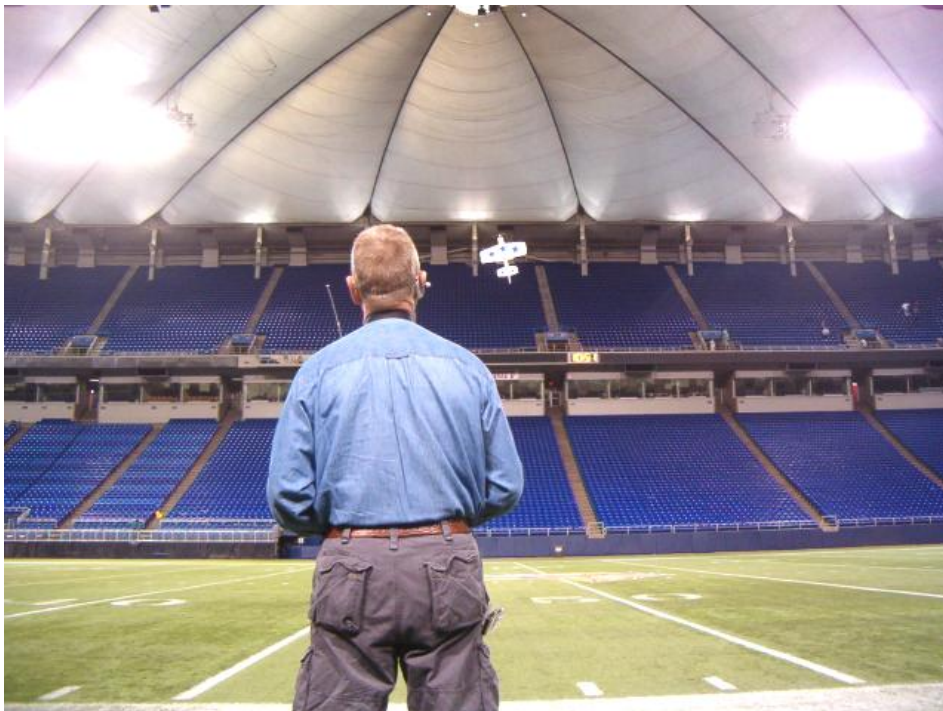
Minneapolis, Minnesota U.S.A.

2007

Flying In The MetroDome Is A Great Experience

by Jim Cook

It is always a thrill to take the sticks of an R/C airplane and soar off into the wild blue yonder with a great looking airplane. Well, when you do that inside the Minnesota MetroDome, that thrill is more than doubled!



Mike Burk of TCRC hovers his 3-D airplane over the 50-yard line in the MetroDome. (Photo by Jim Cook)

MARCEE, the Minnesota Area RC Electric Enthusiasts club, has been able to procure permission to fly electric RC airplanes in the MetroDome and has done so in the month of December for the last couple of years. Several members of TCRC are also members of

MARCEE, and they have utilized that permission and the hospitality of the Dome.

On Thursday, December 7th, Jay Bickford, Mike Burk and Jim & Mary Cook arrived at the MetroDome to put in a few flights. When they got there, they were joined by about 4 or 5 other MARCEE pilots. From 10:00 AM to 11:00 AM the field was closed to flying while the kicking team of the Minnesota Vikings went through punting practice.

The requirements to fly at the MetroDome included MARCEE membership, an electric plane that weighed 20 ounces or less and flew at 20 mph or slower. The planes that were present ranged from Slow Sticks to small 3D airplanes, and also a few helicopters. Helicopters were only allowed to hover, they were not allowed to do linear flight.

Bob Savre, long-time member of the Anoka County RC club, and a previous member of TCRC, and an electric guru, was in charge of the impound area on this day, and he brought a huge number of RC electric planes to be put into the air.

Mary Cook had come along with husband Jim to watch the flights and do a little reading to pass the time,

Continued On Page 3, Col. 1

The President's Hangar

by Bill Jennings

Happy New Year to everyone!

TCRC is heading into what should be a very special year. This year marks the observance of our 50th year of operation. It's really quite an accomplishment to keep an organization going for fifty years. Obviously, credit belongs to the efforts of individuals throughout the history of TCRC who have worked hard to keep the club alive and successful. Each of us must also do our part today to keep the club active and healthy, so that it can continue to thrive for the next fifty years.

Other than longevity, one of the measures of a successful organization is how well it meets the needs of its members. In other words, the number of services or activities provided. The list of services currently provided by TCRC is quite impressive: a great website, a monthly newsletter, monthly meetings with great educational programs, a membership roster, a well-maintained flying field, and scheduled monthly flying events. Whether you're an active flyer or prefer to build and socialize there is at least one activity each month to keep everyone actively involved. Another measure of a successful club is its ability to maintain a healthy treasury and to retain a viable membership base from year to year. I think all our current members would agree that TCRC measures up well in these areas. But don't forget to regularly thank those individuals who are donating their time each month to keep the club running smoothly. And please don't hesitate to share your ideas for new activities or improvements to the club.

One of the things that will make this year seem different is that we'll take more time than usual to celebrate our past, enjoy the present, and look ahead to the future... We have formed a committee to form some plans for celebrating our 50th Anniversary. Several great ideas have been presented at recent meetings, and I can't wait to see how the year unfolds. Stay tuned for announcements of the special activities to be scheduled throughout the year. In addition to volunteers to help support the activities, we'll also be encouraging large member participation in the events. I'm always amazed to see some of our members at the auction that I don't see at any other time of the year...

The continuing weeks of mild weather have permitted some unexpected work to be completed at the field. This is due in part to the surprise donation of

some Bobcat services by one of our Jordan neighbors, Jim Cooper. Jim not only supplied a large Bobcat with a bucket loader to move brush, but borrowed a brush hog to clear the brush. Through the additional efforts of a large group of club members who cut and moved the larger trees into piles, we have managed to clear an additional large area of the field to the east of the runways. Not only that, but all of the cleared trees and brush have been burned. The hard working group consists of John Dietz, Gerry Dunne, Pat Dziuk, Bill Jennings, Don Knauff, Butch Neutgens, John Perry, and Mike Timmerman. Many thanks to all!



**The hard working field crew pauses for a quick picture before putting a match to the brush piles.
(Photo by Bill Jennings)**

The start of the 2nd Kit Building Workshop is right around the corner, and it's shaping up to be even more impressive than last year's event. A ninth session has been added to cover the information needed to design and build realistic scale models, and the considerations that go into designing a 'super' giant scale aircraft (10 ft. and larger wingspans). Several new presenters have been added this year, while we've managed to retain all of the skilled presenters from last year. Invitations have gone out to several area clubs, which should boost attendance this year. We're also hoping to get some donated supplies from Balsa USA and several of the large kit manufacturers. The schedule of workshop sessions and topics will be posted on the website, in this newsletter, and also will be available at the next meeting. Mark the dates on your calendars, so as not to miss out on this valuable opportunity to learn more about your hobby.

I'm hoping for some additional snowfall in time for the All Season Flyer kickoff on Saturday, January 6th. I hope to see you at the field!

MetroDome Flying Is Great

but as soon as Bob realized she had never flown, he pulled out one of his Rookie foam electric airplanes. These planes weigh only 3 or 4 ounces and have only one control surface – aileron. A pilot holds the switch down that operates the engine and tosses the plane into the air. The back of the wing allows climb, and by a push and release of one of two buttons, you can ‘flick’ the rudder to the left or the right. This is somewhat similar to the olds Reed’s system of RC flight. It didn’t take long and Mary had the Rookie puttering around over the football field. A few flights of this and she was hooked enough on RC that she actually asked for an RC plane for Christmas!

Jay had his trusty Slow Stick with him, but without its camera. He wanted to find out how long he could keep the Stick up in the air, and proceeded to put many flights on the plane. I believe his longest in-air flight time was 37 minutes!

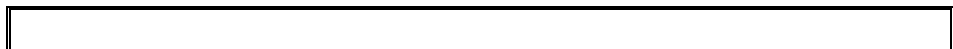
Jim had his e-Flite Gypsy with him that he built solely for Dome flying. His Scorpio Stick that he flew in the Dome the previous year was a little too fast for the restricted area, but the Gypsy proved to be just great for the occasion. The plane had many flights over the MetroDome turf.

After 3 or 4 hours, the group grabbed some lunch and headed home. Thanks to MARCEE and to Bob Savre for allowing the pilots another means to enjoy this great hobby!



2007 TCRC Calendar January thru May

Jan. 6	All-Season Flyer Kick-off	11 AM Jordan, Jim Cook
Jan. 9	Membership Meeting	7 PM, CrossPoint
Jan. 13	Kit Building Workshop #1	9 AM CrossPoint Choosing a kit, selecting tools and supplies
Jan. 13	Shop Tour	2 PM
Jan. 23	1 st Qtr Board Meeting	7 PM Shepherd of Hills
Jan. 27	Kit Building Workshop #2	9 AM CrossPoint Wing layout, proper use of tools
Feb. 3	All Season Flyer	11 AM Jordan Gerry Dunne
Feb. 10	TCRC Annual Auction	7 AM St. Peter’s, Richfield
Feb. 13	Membership Meeting	7 PM CrossPoint
Feb. 17	Kit Building Workshop #3	9 AM CrossPoint Building straight, using adhesives, fuselage layout
Feb. 17	Shop Tour	2 PM
Feb. 20	Auction Review Bd Meet.	7 PM Shepherd of Hills
Feb. 24	Kit Building Workshop #4	9 AM CrossPoint Building the stabilizers, installing push rods
Feb. 24	Shop Tour	2 PM
March 3	Winter Fun Fly	Bill Jennings
March 10	Kit Building Workshop #5	9 AM CrossPoint Using heat shrink coverings
March 10	Shop Tour	2 PM
March 13	Membership Meeting	7 PM CrossPoint
March 24	Kit Building Workshop #6	9 AM CrossPoint Working with fiberglass, paint
April 7	April Fool’s Fun Fly	John Dietz
April 10	Membership Meeting	7 PM CrossPoint
April 14	Kit Building Workshop #7	9 AM CrossPoint Installing engine, fuel tank, servos, battery
April 24	2 nd Qtr Board Meeting	7 PM
April 28	Kit Building Workshop #8	9 AM CrossPoint Adjusting the CG, control throws, radio program
May 5	Jordan Field Clean Up, Fly In	
May 8	Membership Meeting	7 PM CrossPoint
May 12	Spring Float Fly	11 AM Bush Lake, J Cook
May 20	Building Contest & Fly In	Jay Bickford



Pictures From Flying In The MetroDome



Jim Cook, Jay Bickford and Mike Burk and their electrics at the MetroDome on December 7th.



Mary Cook with Bob Savre, Jay Bickford and two other MARCEE pilots in the MetroDome.



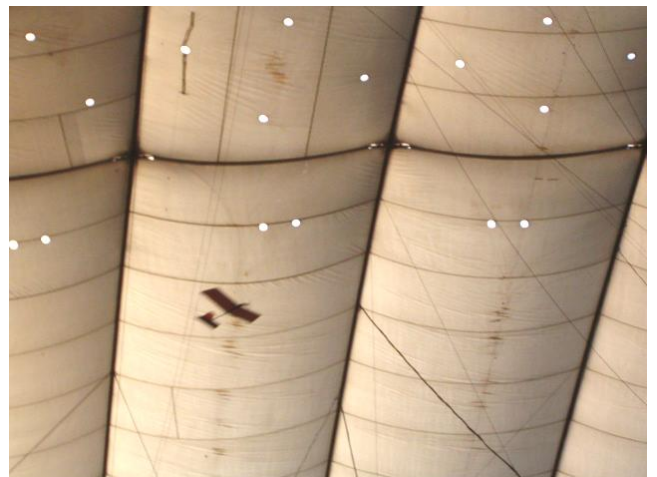
This MARCEE pilot shows just how easy it is to fly in the MetroDome, while eating an apple!



Jay Bickford brings his Slow Stick over the field at a slow pass during his endurance flights.

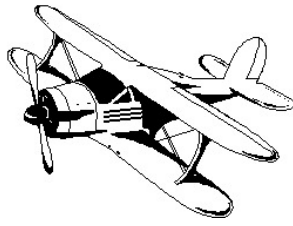


Mary Cook launches a Rookie for another flight.



Jay Bickford's Slow Stick under the Dome.

Show & Tell



Lots of nice planes at the December 12th membership meeting.



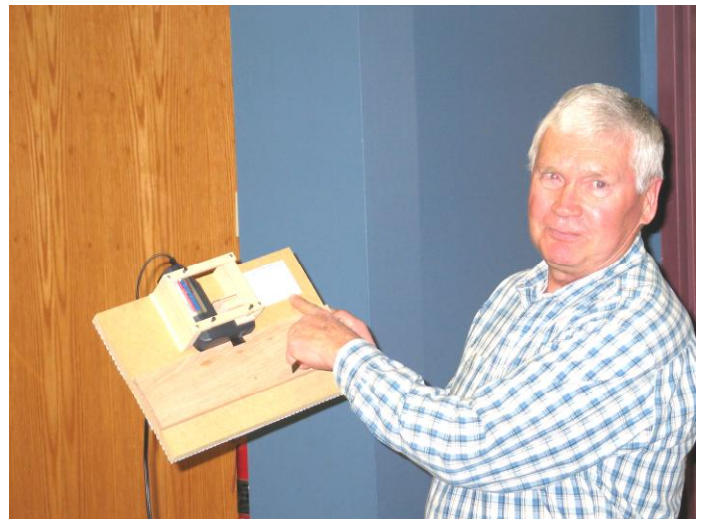
Jon Perry had his newest plane – a Hanger 9 ARF Super Stick. This plane was done in its traditional white with blue/green trim. It was powered with an Evolution .46 2-stroke engine.



Larry Couture ('Mr. Build-A-Plane-A-Week') had his newest ARF – a twin version of the Big Stick. This plane was from Cedar Hobbies of China. Larry powered it with two OS .30 Wankel rotary engines. As of the meeting, the twin had yet to fly.



John Dietz had his new 3DX Electric which he scratch-built from plans. The profile plane weighed in at 15.5 ounces and was powered with a HiMaxx HC2812-850 outrunner motor and used a Phoenix 25 ESC. The battery was a 3S1P 11.1 1500 mAh Li-po. The electric was done in yellow Solar Lite covering and had its maiden flight on December 9th in Jordan. John liked its performance in the air very much.



Bernie Gaub showed the holder he built for the Great Planes Slot Machine. This allows the Slot Machine to be held steady while you just slide your work piece up to it to cut the hinge slot. The machine used a series of shims to allow you to cut hinge holes in the center of different thicknesses of wood stock. Bernie was very happy with how the holder worked.

Keep bringing in those new planes. It's great to get ideas about your next project that way. (All photos by Jay Bickford). ☺

From The Co-Pilot's Seat

by Chris O'Connor

Happy New Year to everyone!

Now that the holidays are over, we can get into some serious building. I know the winter workshops are coming up as well as the shop tours. Speaking of shop tours, the first one will be in January at Larry Couture's. Plan on being there, you may get an idea that you would like to do in your own shop. I'm still looking for a few more volunteers to open their shops for a two-hour tour this winter on a Saturday.



Butch Nuetgens shows off his nifty P-47 at the December membership meeting. (Photo by Jay Bickford)

Our last meeting featured scale planes. To be more specific, war birds. We had Dave Andersen, Larry Couture, Rick Smith, Jim Miller, Butch Nuetgens, and an invited guest, Jeff Quesenberry. Everyone had beautiful war planes to show and talk about, and we saw a wide variety of different types and sizes. We also found out that for the most part, the war birds were very good flying planes. Thanks guys for your contribution. The meeting was well attended and we seem to increase a few guys each month. Almost 40 in attendance!

Our meeting in January is on scale again, but this time it will feature civilian planes. Plan on attending and see what all the excitement is about. Our February meeting will focus on jet planes -- turbines to be exact. Dave Schwantz, the area expert on turbines will do the program. Many of you may know Dave, he works at Hobby Warehouse. If you see him, say hi and thank you. Going way out in time, our March meeting will be on electric planes.

Bob Savre, a past member and an electric guru. If you remember, Bob gave an outstanding program a few months back on electrics.

So, as you see we have lots of great programs lined up for your enjoyment and education. **PLAN ON ATTENDING THE MEETINGS AND ENJOY SOME OF THESE VERY INFORMATIVE PROGRAMS.**

See you in January! Remember bigger is better! ☺

Time To Renew Your TCRC Membership

by Pat Dziuk

The board of directors decided to keep the same dues structure as last year. Regular membership dues are:

- Regular \$75.00
- Junior \$37.50
- Social \$30.00

A special early bird renewal rate is in effect until January 15, 2007 again this year to encourage prompt renewal. If you have your payment post marked by January 15th you will only pay \$60 for regular membership and \$30 for junior memberships. If you renew after January 15th you will pay the full rates.

A dues renewal form has been mailed to each member during the first week in December. Please remember to enclose your check and a copy of your 2007 AMA card with the renewal form in order to receive your TCRC 2007 membership card.

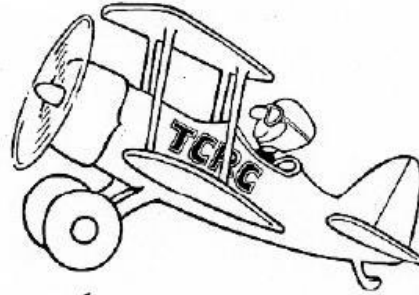
Pay your TCRC dues today! ☺

Renew Your AMA Membership

If you haven't renewed your AMA membership yet, now is the time! You can renew by mailing back the renewal form you received in the mail, or for an easy quick way, renew online at <http://www.modelaircraft.org/preapp.aspx>

Remember that TCRC requires all pilots who fly at our Jordan field or the Scott County Fairgrounds to display a current year AMA membership card or current year TCRC membership card. If you don't have your card with you, you will not be allowed to fly. So don't get stuck out in the cold in January - renew your AMA now before you forget. . . Also, you will be required to show proof of 2007 AMA membership when you renew your TCRC membership. Any the deadline for TCRC early bird discount membership renewal is January 15th.

Renew your AMA and TCRC memberships today! ☺



TCRC 31st ANNUAL AUCTION

TWIN CITY RADIO CONTROLLERS - MINNEAPOLIS AMA CLUB #383

SATURDAY - February 10, 2007



What's for Sale?

- R/C Airplanes
- R/C Airplane Kits
- R/C Airplane Engines
- R/C Airplane Radio Systems
- R/C Aircraft Related Accessories and R/C Aircraft Support Equipment
- No Cars, No Boats, No unrelated Stuff

Where:

St. Peter's Catholic Church
6720 Nicollet Avenue
Richfield, Minnesota

When:

REGISTRATION Begins at 8 AM
AUCTION Begins at 10 AM

Details:

- \$3.00 Admission: *Includes Bidders Card*
- \$ 20.00 MINIMUM OPENING BID (to speed the auction! Nothing will be sold for less than \$20)
- commission of 5% or 10% whichever is greater
- Seller MUST attach a brief description to Each Item being sold
- Pre-Registration Available for Sellers
- BUYBACKS AT 10% UP TO A MAXIMUM FEE OF \$20

Raffle & Concessions!

- Hot Coffee & Donuts
- Soda/Pop
- Hot Dogs & Chips

Questions?

Call Jim 952-445-5257 or Scott 952-934-1471
Email auktion@tcrconline.com
More info at www.tcrconline.com

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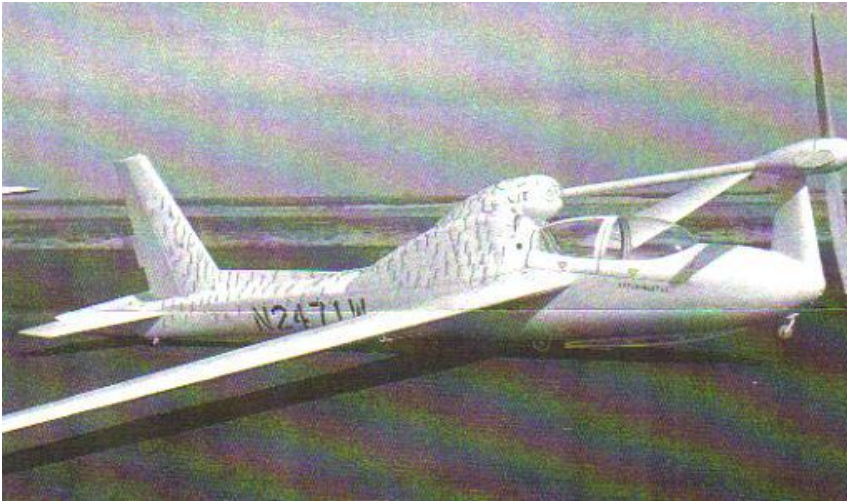
Jeremy Steinmueller, Owner

612-861-5587

QT-2 Night Stalker

by Conrad Naegele

The December Mystery Plane was the Lockheed QT-2 night Stalker.



In 1966, a young Navy Lt., Leslie Horn, while on river patrol cruises, saw a need for better ways to detect the Viet Cong activities. He envisioned a stealth-type airplane to do this. He sent the Office of Naval Research a detailed proposal for such a plane. Lockheed Missile and Space was given the chance to develop the aircraft. R & D suggested a powered sailplane, well muffled and using a slow turning prop. A grant of \$100,000 was secured and since this was so small, the government didn't bother getting involved. The absence of bureaucratic government meddling almost insured the projects success.

For the airframe, the well-known Schweizer 2-32 glider was chosen, and a tried-and-true Continental 0-200, 100 horsepower engine was used. The engine was mounted at the center of gravity, resulting in a large hump on the fuse and an external driveshaft. An 8-foot 4-bladed wood propeller running at 800 rpm was selected. The engine compartment was filled with fiberglass batting. Exhaust was through a stock 1958 Buick muffler. Instead of mechanical gearing, a system of six rubber drive belts added to the sound reduction. As was normal with glider practice, a single fuselage wheel, a tiny nose wheel and two outrigger wheels performed the ground handling.

The plane was completely successful, and produced a sound value of about 70 decibels at 500 feet. The plane needed to be flown straight and level, since a yaw or turn on the vertical axis could easily develop into a larger yaw than expected, and a banked turn could lead to a phenomenon called yaw roll coupling, which could be devastating. The Schweizer glider had an 8G rating, but the QT-2 could barely handle 2 to 4 G's.

Cruise could be maintained on only 17 horsepower! The Viet Cong didn't know they were being observed until the gunships showed up.

The Night Stalker carried a crew of 2 (pilot and observer), had a wingspan of 62 feet and a gross weight of 2,500 pounds. It had a flight duration of 6 to 8 hours and could cruise at 70 knots. ☺

Seller Pre-Registration At TCRC Auction

by Pat Dziuk

It is time again to open up the advanced seller's registration process for the 31st Annual TCRC Auction which will be held February 10th. Last year we had 74 sellers and 42 obtained a sellers ID number via the online email process.

You can now register via email for a seller's ID number. The process is outlined at the following web page:

http://www.tcrconline.com/pages/auction_seller_registration.htm

Please note that the Seller Inventory Card has changed a little in format this year so please make sure you download the latest copy from:

http://www.tcrconline.com/pages/auction_seller_registration.htm

If you have any questions, please send an email to auction@tcrconline.com.

See you at the auction. ☺

The Basics Of Electric Flight

I really enjoy getting together with clubs and speaking to the group about the basics of electric power. However, because there is so much information that needs to be passed along, it would be difficult, if not impossible, for those attending to remember much of the pertinent information. For that reason, it's better to write up the basic guidelines so that those who are interested in getting into electrics would have the information available for reference at a later date.

Here goes. I'll keep the numbers as simple as possible to avoid unnecessary confusion.

The numbers in Table 1 are based on models with wing loadings from 8-16 oz/square foot. As with gas models, higher wing loadings require more power since they must fly faster to support the added weight. By the same token, a lightly loaded model with a wing loading in the 3-5 oz/square foot range will fly very well at 25-30 watts/pound.

Table 1

Basic power needed to fly an electric model:

Direct Drive System: 60 watts/lb.
 Gear Drive System: 50 watts/lb.
 Mild Aerobatic Perf: 70-80 w/lb.
 All-Out Aerobatic: 100-110 w/lb.
 3-D Performance: 150 watts/lb.

What's a 'watt'; and where can I get some?

Wattage is the term used in electric flight to relate the level of power that an electric drive system will produce. To relate it to terms we're familiar with, 746 watts = 1 horsepower. To calculate the wattage delivered by a given system looks like this: amps x volts = watts. So where do these numbers come from and how do I know how many volts and amps are needed to fly a given model?

Okay, let's say you want a mildly acrobatic sport model with a 14 oz/square foot wing loading that will weigh in at 2 pounds. We already know that the power requirement for a model like this is about 70 watts/pound, so we're going to need to generate about 140 watts. Let's assume that you are going to use an eight-cell Ni-Cad battery. At 1.2 volts per cell, eight cells will deliver 9.6 volts. To arrive at the necessary current draw to achieve 140 watts, simply divide 140 (watts) by 9.6 (volts) and you arrive at 14.58 amps.

Now, let's assume that you have a three-cell Li-Poly battery for the model, which is rated at 11.1 volts. The formula is the same; 140 (watts) divided by 11.1 (volts) = 12.6 amps. As you can see, as the available voltage increases, the lower the current draw needs to be to deliver the necessary wattage.

Now here's something to consider when selecting your system: the higher the current draw, the shorter the flight duration on any given battery. Therefore, the ideal setup would be to use a higher-voltage battery with lower

current draw for maximum duration. On the downside, when using Ni-Cad and NiMH batteries, as the cell count goes up, the weight will increase significantly as well. It works that way with Lithium too, but Lithium batteries are dramatically lighter than the old 'round' cells.

Okay, let's say we're going to use an 11.1 volt Li-Poly battery. All we need to do now is select a motor that will swing enough propeller at 12.6 amps to fly the model at a top speed of around 40-45 mph and we're in business. Now that you know the parameters, visit your local hobby shop and select a motor that fits that description.

Gear Drive vs. Direct Drive: Why is one better?

Well, it all depends on the kind of performance you're looking for. If you're looking to go fast, go with direct drive. Going fast requires a high-pitch propeller turning high rpm. The formula to calculate propeller pitch speed is an easy one; it looks like this: rpm x pitch (in inches)/1056 = mph. Let's say that you are turning a 7x6 propeller at 14,000 rpm. $14,000 \times 6 = 84,000 / 1056 = 79.55$ mph.

Now, let's assume you are setting up a slow, relaxing park flyer with a 5 oz/square foot wing loading. If we swing a 9x7 propeller at about 3,500 rpm, we'd be looking at a top speed of roughly 23 mph. To swing that much propeller with a small, light drive system, we would use a gear drive unit at a very low current draw and a small, light battery.

Continued On Page 10, Col. 1

The Basics Of Electric Flight

Continued From Page 9

Again, to make a known comparison, we can relate all this to riding a 10-speed bicycle. A gear drive swinging a big propeller is like riding your bike in low gear. You pedal like mad with little effort, you don't go very fast, but you can climb steep hills with ease. The direct drive system could be compared to riding the bike in high gear. It'll really go fast, and even though you're pedaling slower, it requires considerably more effort.

What all this boils down to is 'propeller disc loading'. We all know what wing loading is: it's the amount of the model's weight that each square foot of wing must carry. Prop disc-loading works the same way. A large propeller will be more lightly loaded, thus delivering more torque than a smaller propeller turning high rpm. The tradeoff, of course, will be speed.

One more thing to cover and we'll give you a rest. Batteries are rated in 'voltage' and 'amperage'. Voltage dictates the amount of power the battery will deliver. The amperage rating dictates for how long the battery will deliver that power. To relate that to glow fuel, consider the voltage as nitro content. High voltage (nitro) means more power. The amperage is related to the quantity of fuel, or simply the 'size of the tank'.

To figure the size of battery needed, let's go back to our 140-

watt sport airplane. If we're pulling 14 amps from a 1400 mAh (1.4 amp hour) battery, we will have full power duration of five to six minutes. In the real world, with proper throttle management, you'll see flight times of approximately eight minutes. These are common flight times, even with liquid-fueled models.

To arrive at that number, divide the battery amp rating by the current draw: $1.4 \text{ (amp hours)}/14 \text{ (amps)} = 0.1$. Then take 60 (minutes per amp hour) $\times 0.1 = 6$ minutes. Now, to double the duration, you must either cut the current draw in half (to 7 amps), or double the battery size (to 2800 mAh or 2.8 amp hours) - again we see tradeoffs. To reduce the current draw, we can use a larger, higher-pitch propeller turning slower with very little weight penalty. If we double the size of the battery capacity, the weight penalty is quite high unless we go over to the new Lithium batteries in which we will discover we have benefited from a tremendous weight reduction, but at a higher price than conventional batteries.

Okay, I promise I'll quit before we all end up in 'system overload'. Once again there's a tremendous amount of information here for a newcomer to electrics to digest, so let's do this: if you have specific questions about setting up an electric model, please feel free to drop me a line (patscustommodels@aol.com) and I'll do what I can to steer you in the right direction. For now, I'll offer up one last piece of advice. To get started, work with a known good design, and use the recommended equipment that has been proven to work. Talk to the

people who are successful and copy what they're doing. The one thing I do know about modelers is that they are always willing to share their knowledge with those interested in what they are doing.

(Reprinted from the Albuquerque Radio Control Club, Albuquerque NM, Pat Trifle. Editor.) ☺

TCRC Raffle Coming

by Gerry Dunne

The TCRC Auction is just around the corner, and that means the TCRC Raffle is coming too!

The prizes for the raffle have already been procured:

- e-Flite Mini Funtana X Electric airplane
- Spectrum DX6 Radio
- OS Max 46 AX Engine
- Hobby Warehouse Gift Certificates

As you can see, these are really great prizes!

This month we will be sending every member of TCRC \$15 of raffle tickets, to be bought or to be sold. These sales are what are used to pay for the prizes and it is very important that every member sells his tickets. Remember, you don't have to be present to win. Winners will be drawn during the TCRC Auction on February 10th.

Last year, we had a great raffle, and with these prizes, we should have even a better raffle this year. Be sure and get your ticket stubs back to Gerry Dunne before the Auction. Thanks for making this year's TCRC Raffle successful. ☺

2007 AMA All Season Flyers

2007 should be your year to earn an AMA All Season Flyer patch.

To be an all season flyer, a pilot must make at least one flight outdoors in every month of a calendar year. That means, to earn a patch in 2007, you have to start in January!

There are a large number of TCRC members that make it a point to be an all season flyer and they usually designate one day per month in the cold weather months to meet at the field for a flight.

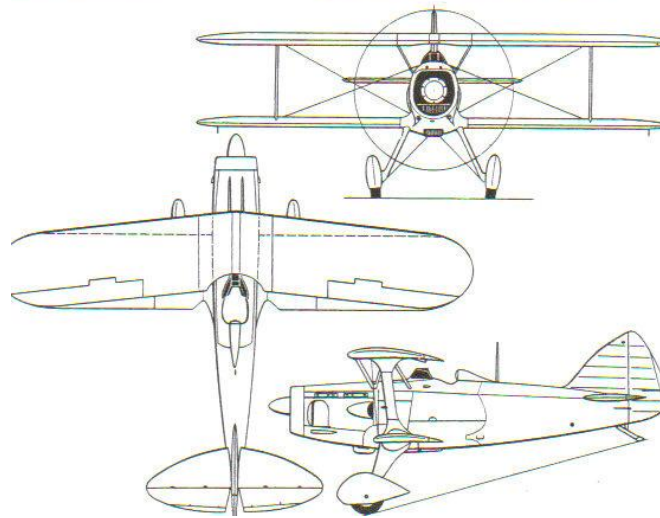
To get you started in 2007, the first All Season Flyer day has been scheduled for 11:00 AM on Saturday, January 6 at Jordan Field.

With the popularity of the electric planes, it has made earning you ASF patch a lot easier. You no longer have to struggle to get a cold glow engine started and then adjust the carb with your hand in a very cold backwash from the prop.

If you haven't been an all season flyer yet, 2007 is your year. Come out to Jordan on Saturday, January 6 to get started toward your All Season Flyer patch. ☺

TCRC meets every month on the 2nd Tuesday at 7:00 PM in Fellowship Hall of CrossPoint Church located on the southeastern corner of the intersection of 98th Street and France Avenue in Bloomington. Guests are welcome to attend these meetings.

January Mystery Plane



Calendar

- Jan. 6** **2007 All Season Flyer Kick-Off, 11:00 AM**
Jordan Field
- Jan. 9** **TCRC Membership Meeting, 7:00 PM**
Fellowship Hall
CrossPoint Church
Bloomington
- Jan. 13** **Kit Building Workshop #1**
9:00 AM, CrossPoint
- Jan. 13** **Shop Tour, 2:00 PM**
- Jan. 15** **TCRC Early-Bird Dues Deadline**
- Jan. 23** **1st Qtr Board Meeting**
7:00 PM, Shepherd Of The Hills
- Jan. 27** **Kit Building Workshop #2**
9:00 AM, CrossPoint
- Feb. 3** **All Season Flyer**
11:00 AM, Jordan
- Feb. 10** **TCRC Auction**
8:00 AM
St. Peter's Church
6720 Nicollet Ave.
Richfield, MN

TCRC Auction February 10th

Saturday, February 10th at St. Peter's Catholic Church in Richfield is the time and place for the 2007 edition of the TCRC Auction.

This is the biggest RC airplane auction in the upper Midwest, and attracts buyers and sellers from Minnesota and its surrounding states.

This is also the biggest manpower project that TCRC has, and it requires the help of every club member to make it a success. Set-up for the auction starts at 7:00 AM, registration at 8:00 AM, and the auction itself begins sharply at 10:00 AM. It is expected that the auction will continue until 5:00 PM that afternoon.

Mark your calendars and plan on being a worker, a buyer, and a seller at the TCRC Auction. ☺

Editor, Jim Cook
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1177 Polk Street
Shakopee, Minnesota 55379

Field Improvements Underway



Several piles of brush cleared from the area east of the runways are set on fire and burned by a hard working crew of members during the Christmas holidays. Our neighbor Jim Cooper volunteered his Bobcat and time and the crew made good use of his generosity. ☺

THE TCRC FLARE-OUT Monthly Newsletter



** TWIN CITY RADIO CONTROLLERS INC. **

Purpose: To preserve, encourage, and further develop the hobby of building and flying radio controlled model airplanes.

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