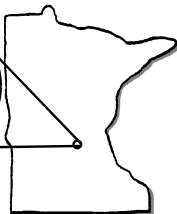
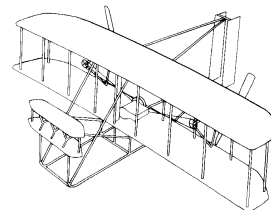




P. O. Box 1303
Monticello, MN 55362



The Wright Flyer



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Meeting Highlights

On Tuesday December 13th, the Wright Flyers held the monthly membership meeting at the Monticello Middle School. This was the third monthly meeting of the winter season at the school.

The business meeting was called to order at 7:35 PM by VP Wayne VanDenBoom. There were 7 members present including two club officers. The secretary read the minutes of the November meeting and they were accepted as read. There was no treasurer's report.

Old Business:

Rich Johnson clarified that the Litchfield RC club would be interested in attending a fly-in at the WFRC field next season as well as hosting one for us to attend at their field.

After publishing the suggestion to start the winter club meetings at 7 PM instead of the current 7:30 PM, no objections were relayed to any officers. A motion was made, seconded and approved to start the meetings starting the first of the year at 7 PM.

None of the current officers declined to serve another term and no member indicated a desire to be nominated to run for a position in the club. So it was moved, seconded and approved by vote of the members at the meeting to install the current officers for another term. The 2006 club offices will be; President-Scott Leiferman, Vice-president- Wayne VanDenBoom, Treasurer- Perry Dziuk, Secretary- Leo Davids, Safety Officer- Ron Bredeken.

Garth Landefeld had contacted EZ Flush to remind them that the club was discontinuing the toilet service after October. Wayne VanDenBoom reported the portable toilet was no longer at the field.

New Business:

Wayne VanDenBoom suggested that the club field could use more safety tables. He and Scott

The next meeting is scheduled for **7:00 PM** on Tuesday, January 10th, 2006. It will be held in room 30 of the Monticello Middle School.

Leiferman are willing to build another pair. The discussion at the meeting concluded that another pair of the safety tables was warranted although the availability of 4x8 flat tables in the pits was also desired. Garth Landefeld and Rich Johnson volunteered to repair the existing flat tables and construct a new one. With these additions, the pit area would have 6 of the safety tables and 3 of the flat 4x8 tables. It was moved seconded and approved to authorize the expenditures necessary to buy material to add two safety tables, repair the existing flat tables and build another flat 4x8 table.

Garth Landefeld asked if there was any interest in trying to put together some kind of fund raising activities to supplement the revenue from memberships to cover club expenses. The typical events a club might put on would include an auction or a flying meet with entry fees. Among those at the meeting, there wasn't a lot of confidence that we could organize something with a meaningful financial benefit to the club so no commitments were made.

The meeting was adjourned at 8:30 PM.

Rich Johnson brought in his latest acquisition, an electric powered mini-Funtana. It was part of one of Rich's multi-plane trades. The Funtana had some cowl damage but was otherwise like new.

TCRC Annual Auction for 2006

The Twin Cities Radio Control club wants everyone to pencil in Saturday February 11th on their R/C event schedule for the annual auction at St. Peter's Church in Richfield. They will be auctioning on consignment exclusively related to R/C aircraft with minimum \$20 opening bid. Check the TCRC web site <http://www.tcrconline.com> for further details currently published in their December newsletter.

Building a Vacuum Press System

There are many ways to make a vacuum press. This article doesn't cover how to cut foam or how to bag wings. (There many Web sites/articles that cover this.) This project is fun if you're a builder, so go for it. A vacuum press is a must for making wings and other parts for model airplanes. If you are a builder and wish to advance your skills, a vacuum press is the way to go.

I have built several vacuum presses. I usually start by using the absolute cheapest parts, and spend the rest of the time working my way out of the mess I have created. The learning curve in life is brutal, but maybe I can save you some pain.

Our perception of what is a fair price seems to depend on rather strange parameters. I'll pay \$100 for a 3-oz brushless motor without blinking, but I'll try to save a few lousy dollars in the strangest ways on most of my projects. Sometimes I win, sometimes I lose. This time I won (it took me four tries).

I started with a hand vacuum pump, progressed to a venturi/air compressor system, then to a compressor out of a defunct refrigerator, and finally to this system.

The hand pump didn't move enough air. The venturi method was wearing out my air compressor, pleasing the utility company, and making a lot of noise. The refrigerator compressor only moved .5 CFM, and the exhaust spewed oil into the air.

My final vacuum press described here is patterned off industrial-type systems. It works without the problems my other version had and it's a real pleasure to use. Commercial systems such as the ones Vacupress or CST make start out at \$300 and go to several thousand, so the \$150 or less you may spend is a good deal.

The Basics

Air is sucked out of a plastic bag, and the resulting atmospheric pressure squeezes the parts together with tremendous and uniform pressure. This pressure is adjust-

able from 3 inches to more than 25 inches Hg. Foam will flatten at anything more than 8 inches. I set my system for 6 inches for this application and at roughly 20-21 inches Hg for woodworking. This system can produce more than 1800 pounds per square foot of pressure and is a lot cheaper than feeding an elephant.

Components

A good pump is the heart of this system. I found a 1/4 hp surplus pump at Surplus Center. It pumps roughly 3-4 CFM. These surplus pumps came from Storage Technology and appear to be in good shape. Surplus Center has a good guarantee and will pay for shipping both ways if you get a defective pump.

The down side of this pump is that it uses a 240-volt motor. If you don't have 240-volt in your shop you may have to use your clothes dryer outlet or find another pump.

You can buy used vacuum pumps on eBay at good prices, but I'm afraid of them. Vacuum pumps are used for biological experiments and with toxic chemicals sometimes. Do I need to explain where the Hulk came from?

My pump made noise like a small air compressor so I screwed a muffler on the exhaust. The compressor runs very little while working, so the noise is not really a problem for most people. I just don't like noise (that's why I fly electric). Some pumps are totally silent, for example a refrigerator compressor, but I found they don't pump much air.

I have a very large shop, 2400 square feet, so I needed a portable system. I bought a small folding table, installed wheels, and added a shelf and the vacuum components. I use the top of the table as a worktable, but I wanted it to be perfectly flat. So, I covered the medium-density fiberboard with Formica on both sides. I used the vacuum press (of course) to install the Formica. Trust me on there—forever! If you don't have the room for a roll-around, you can simply make a small wood tray to carry the press around. It's not very heavy, 40 lbs. maybe, without the reservoir. None of the layout or plumbing is critical so do what ever looks good to you.

Reservoir Storage Tank: The idea behind this is to provide a large vacuum supply so the pump doesn't cycle on and off rapidly. It also is used to help evacuate the bag. The air is pumped out of the large reservoir, and then closed off with a valve. When the wing is installed in the bag, the valve is opened with the pump running and this evacuates the bag quickly. A bigger reservoir is better in this case.

A small-capacity reservoir doesn't provide enough spare vacuum to work very well for big bags. The wings we make, however, don't require much pump down. The large bags I use on furniture require a huge pump down.

I used a 12-gallon portable air tank for a reservoir. You

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really don't need a reservoir with the pump I called out, but it looks so cool. The tank does take out many of the surges and slows down the pump cycling. It can be added later if you decide you need it.

Vacuum Switch: This regulates the pressure. It turns the pump on and off as needed. A small screw setting allows you a wide range of pressure. Air Logic model V-5100 is the one I use. The price is roughly \$25.

The pressure swing is roughly 2-inches with the single switch. If you want less swing than this you will have to use two switches. One switch is used to control the high pressure, and the other to control the low pressure. This particular model is very popular and seems to be the one everyone else uses. I only use one switch, and haven't found the wide swing to be a problem.

The switch is rated 15A by the company. The pump only pulls 1.6A so there is no need to rig a control relay. Break one side of the 240 volt line, and wire it to the switch contacts with push on connectors. I mounted the switch inside a plastic electric box.

Vacuum Gage: This shows you how much vacuum you have in the bag. Without it you cannot set the vacuum. It can be ordered from the same company that carries the vacuum pump.

Miscellaneous Parts: I purchased the rubber vacuum hose and a few other parts at the local auto-supply store. Most of the rest is standard plumbing hardware available at various home-improvement stores.

Bags: There are many articles on vinyl bags and valves. You can buy or make them, but I don't think something this heavy is needed. I use 2 mil sheet poly that I simply cut to fit around the part and make it roughly 8 inches oversize. I seal the edges of the poly sheet together with plumbers caulk. A 1/8 inch brass tube is laid on top of the caulk, and more caulk added on top. The plastic is then pressed into the caulk. When you pull a vacuum the bag self seals. I had a lot of trouble getting a good seal when using small pumps. The big pump seals the bag very quickly.

Mechanical Assembly: I made a PVC manifold with a built in vacuum gauge to manage all of the hoses.

1. manifold line to vacuum switch
2. manifold line to pump
3. manifold line to storage tank "T." (Important: Use a large enough line here to prevent rapid cycling.)
4. "T" mounted to storage tank with shut-off valve; line from the valve goes to bag

Parts List

- Vacuum pump
- Vacuum gauge
- Vacuum switch
- Filter
- Check Valve (Goes between pump and mani-

fold.)

Ball valve

Misc.

- 1/8-inch rubber vacuum hose; 5-7 foot long (used as vacuum hose from manifold to storage tank) I used 1/8 inch hose to the bag. It slows down the evacuation and allows the bag to flow around the part. A bigger hose could be used.
- Line cord for pump and 240-volt plug.
- On/off switch for pump, 240-volt and electrical housing box.
- 1/8 inch hose barbs and T's as needed; 1/8-inch pipe as needed.
- Teflon tape
- Muffler for pump
- Reservoir (12-gallon compressed air tank

Disclaimer

The author has no affiliation with any of the manufacturers mentioned in this article. You are on your own as far as any additional advice. Check out www.joewoodworker.com for his version of a press.

from Electric Flyers Only, Inc., Crosswell MI
Ken Myers, editor

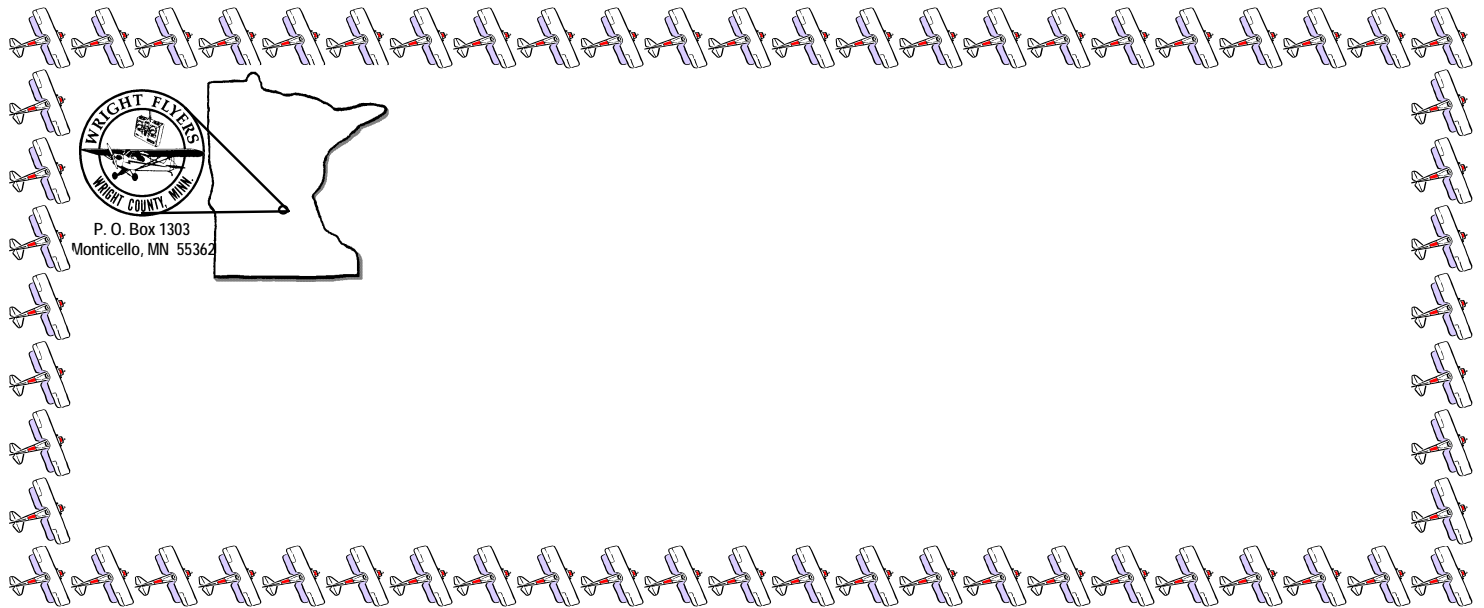


Winter Flying Tips - Electrics

Here in Minnesota, there are only two tips worth passing on for flying electric airplanes. Either wait for a day like the Thursday before Christmas that is dead calm, 45 degrees and sunny or go to the Metrodome to fly. Since days like the 22nd of December are about as frequent as once every hundred days between Thanksgiving and the Spring Equinox and usually not accurately forecasted, that leaves the Metrodome as your best shot at winter flying.

Through the last two months of 2005, there have been six day sessions scheduled at the dome and for the last two weeks of December, a bonus(?) of eight early morning short sessions (4-6 AM). Although there are no reports that any of the Wright Flyers made these early morning bonus sessions, Leo Davids was there for four of the day sessions, John Kossieck for two and Scott Leiferman for one.

The flying conditions at the dome have been ideal. They keep the field well mowed (or is that vacuumed?), it's not very crowded (attendance was 20-25 people per session) and MARCEE even catered a lunch on the last day session for the flyers and the ground crew staff that works there.



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The variety of aircraft has been interesting. Although limited to parkflyer type electrics, there were some “giant scale” models of folded paper airplanes, a lawn mower, a chicken, a witch on a broom and a hydroplane boat. With the recent popularity of the small electric helicopters, there were usually a couple of them flying there too.

Even though the football season is over for the Vikings and Gophers, public events in the dome through most of January will make any day sessions unlikely. The next best chance is a window from the last week of January through a good part of February where a couple of day sessions might occur before baseball takes over the field use. At least based on last year’s experience, that is the hope. If MARCEE does have the opportunity of scheduling dates, their Yahoo group ‘marc98’ or the MARCEE web site (<http://www.marcee.org/>) will have the dates and times.

Written by Leo Davids,

Secretary, Wright Flyers RC, Monticello MN



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