official digital newsletter of

Skywriter

AMA Charter Club #970 www.skymasters.org 24 year Gold Leader Club

Skymasters Radio Control Club of Michigan

it's another beautiful day at Skymasters...

February, 2023

In this issue

Happy February!

Hope you had a nice January with this weird weather. The lake we live on finally froze over Monday night with this cold snap. Hopefully I can get some ice flying in this winter still. A reminder if you go out to fly at the field, please sign in. And the new heater is stored in the shed if you will be there long enough to fire it up. Note, please let me know and I'll give you that combination since it is different than the gate.

I attended PMAC's snow fly and had a great time. While they had much better weather than we did on the 1st, there was no snow on the field. More weird weather! David Wendt's presentation on float flying at the January meeting was very informative. If you get going now on a float conversion you should have time to fly it off the snow too!

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On the upcoming events front, we have our weekly indoor flying at UWMSC every Tuesday 9-noon until late April. A reminder that flying on the back wall is limited to two cells max. With some of the newest UMX planes switching over to 3 cells packs, they are much to fast for that flight area.

The next club event is our monthly meeting at Seymour Lake Park on Thursday 2/16 where Joe Rubinstein will chat about 3D CAD modeling. With the proliferation of inexpensive 3D printers, it's now very practical to design and print anything from widgets to scale details to entire airframes.

We created a private Skymasters R/C of Michigan Members Facebook group. This is in addition to the club page. The group is located here: https://www.facebook.com/groups/2001672713391672 and is a great place to share pictures etc.!

Finally, I'm very happy to report that I signed a 5 year extension of our use permit for the field. The state did increase our lease by about $400/year but that's the first increase in many years.

Fly Safe!

Pete

Pete Foss, President

Skymasters RC

president@skymasters.org

Front Cover

Brian and Carl, hard at work in "helicopter central" on the north end of the field. If you need a "helicopter whisperer", Brian is your man!

Paul Goelz photo

First flights of the year

Thinking that I would be able to sneak in a flight or two before winter set-in, I had kept several packs charged and ready to go. An opportunity presented itself on January 2nd with calm winds and mild temperatures; I loaded the Fazer into the car and headed out to the elementary school behind the sub. The field was a little muddy but flyable. I managed five flights and now all my packs are ready for winter storage. For some reason, when flying C/L, it always takes me a few flights before I start to feel comfortable once again. I am not sure why, with R/C it might just take one flight to get back on the saddle.

I prefer to fly at our field but on occasion I will fly at the school if I feel it is safe to do so. The electric models are reasonably quiet and do not attract a lot of attention. I do not mind having a spectator or two, I just want to make sure that they stay a safe distance away. In-between maneuvers I am always keeping an eye out for bystanders. If there are too many people nearby or if someone else shows up to use the field, say to practice their golf swing or walk their dog, I just pack up and go home.

Notes from the R&D department

Newer electric ARF's such as those made by Extreme Flight, SebArt, or AJ Aircraft use control horns that are glued in place rather than bolted on. They are easier to install and make for a neater installation; no screws or anchor plates to mar the visible side of the control surface.

The horns are normally made from a composite material, either fiberglass or phenolic, generally about 2 mm thick. Another nice feature of these horns is that they can be tapped to accept the bolt used to anchor a ball link. It makes for a nice, slop-free connection. Below I have enclosed a photo of the elevator horn used on my SebArt Angel.

The strength of the glue joint must be adequate because the model has been flying since 2008 without any issues.

You can purchase fiberglass control horns from Esprit Models in Florida; they sell them in a variety of sizes. I have used them in a couple of builds and they work well. Even the Fazer uses one for the main flap horn, which carries both flap and elevator loads.

I had hoped to do the same on the Oriental but had no fiberglass horns left. On a lark I decided to find out if aluminum was suitable; I was just a little unsure if the glue joint would hold.

To find out I built a sample and tested it to see how much load it could take. Using 1/16 aluminum sheet I fabricated a 1.25" tall horn which I then glued onto a piece of basswood. To strengthen the joint, I cut small notches into the base of the horn to achieve a better bond to the wood. The moment arm from the point of load application to the hinge line was of 1". The model also uses basswood, so it was the logical material to use.

I initially tested the horn by pulling on the string using a fish scale; it reached 15lbs without any issues.

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Having reached the limit of what the scale could handle I proceeded to use dumbbells, starting at 20 lbs and working my way up to 35 lbs. The horn held and there was no evidence of glue line failure. I am convinced that an aluminum horn will work just as well as a fiberglass one.

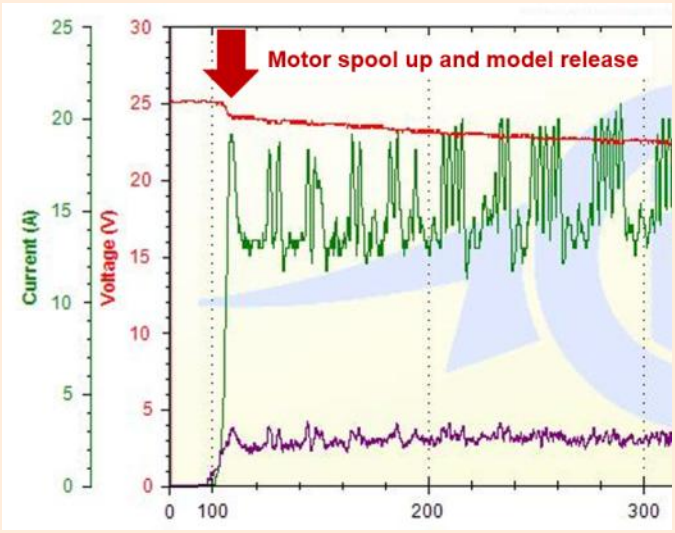
Math comes to the rescue!

Last month I made a series of simple calculations to determine if I could use the motor which powers the Shark 402 to power the Oriental 2.0 as well. The main concern was determining if the motor had enough stretch in it to power the larger Oriental. Encouraged by the results I ordered the 11x4 in prop I intended to use and ran a bench test:

	Prediction	Measured
Power (W)	447	470
Current (A)	30.2	33.5
Voltage (V)	14.8	13.8

The power prediction is off by 5.1% but given the nature of the calculations the result is within the margin of error.

The differences in the current and voltage were unexpected and an indication that the pack I used is getting a little soft. It is important to remember that a constant amount of power is needed to spin a prop at a given RPM provided that the ambient conditions remain the same. In this instance the ESC compensated for the voltage drop by increasing the current draw to reach the power level needed. In flight, the ESC is constantly compensating for the voltage drop as the pack is drained as indicated by the graph below:



The voltage trace is shown in red while the current trace is shown in green. If you look carefully, you will also notice the current trending upward as the voltage drops; however, the ESC keeps the RPM constant at 8750.

Supply chain forces a change of plans:

Before Christmas I decided to order the motor only to find out that it was out of stock. In the end, this exercise was for naught; seems about par for the course given my luck. After a little research I opted for an E-Flite Power 15; its specs are close to those of the motor I intended to use. For a model of this size, it is also somewhat of an overkill; power should not be a concern.

On the bench – Oriental 2.0

Building the fuselage:

Profile models are quite common in C/L; they are easier to build, repair and service. Since most of the flying takes place relatively close to the ground accidents are not uncommon, especially while learning. Just ask Steve, my models have had a few close shaves… Shown below is a photo of the Fazer which has a profile fuselage, as you can see many of the components are simply hanging out in the breeze.

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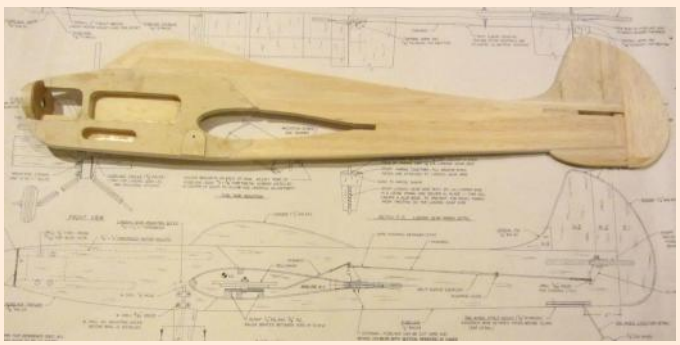
Such a fuselage is normally built around a ½" sheet of balsa with cutouts made to allow for the wing, stab, and other components to be mounted. The nose section is generally reinforced with thin plywood to give it the strength needed to carry the engine and landing gear loads.

Electric motors do not vibrate as glow engines do thus making it possible to use thinner plywood. Whereas a glow powered model may require 1/16" or even 1/8" ply, an electric model can get away using 1/32". Not shown in the photo are the short lengths of 1/2" x 1/2" basswood used to reinforce the area near the motor. In my experience this has proven to be completely adequate as well as being a little lighter.

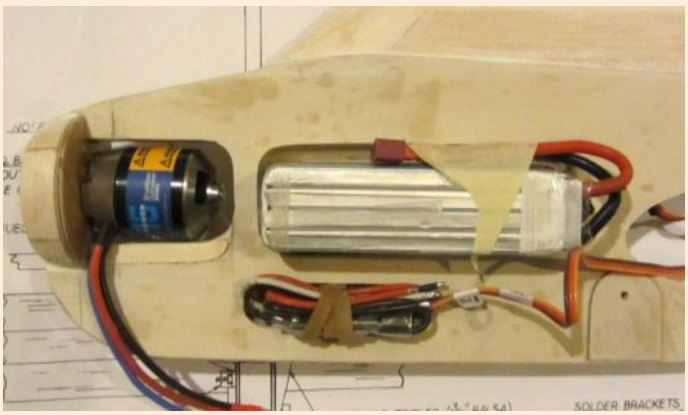
The photo below shows the nearly completed fuselage laying on the plans next to the original design.



As you can see the two are significantly different; the nose got a little shorter, the tail moment grew a little longer, the fin and rudder a little larger and finally the fuselage is significantly taller.

The whole enterprise is an experiment as I also shortened the wing by 4", blended the flap profile into the wing profile and made a new stab and elevator. The changes are based on things I have read in the forums or old magazines, but truth be told, I have no idea of how well it will fly. I suspect that it will be decent enough to be able to have some fun with it; if I get lucky it might turn out to be a good flyer.

The pockets you see in the nose area allow for the battery and ESC to be semi-recessed into the fuselage as shown below.



From the photo you can see that the motor will be front mounted with the propeller shaft poking through the firewall to reach the prop. Using this approach leads to a more balanced mounting system; the rotating mass of the propeller is now forward of the firewall while the motor and it's rotating can are rearward of it. It is also a little lighter as you can directly attach the motor to the firewall without having to use the cross mount.

The motor mount/firewall starts out as an octagon shaped piece of 1/8" aircraft ply with a couple of circles drawn on it to indicate how far the edges need to be sanded down.

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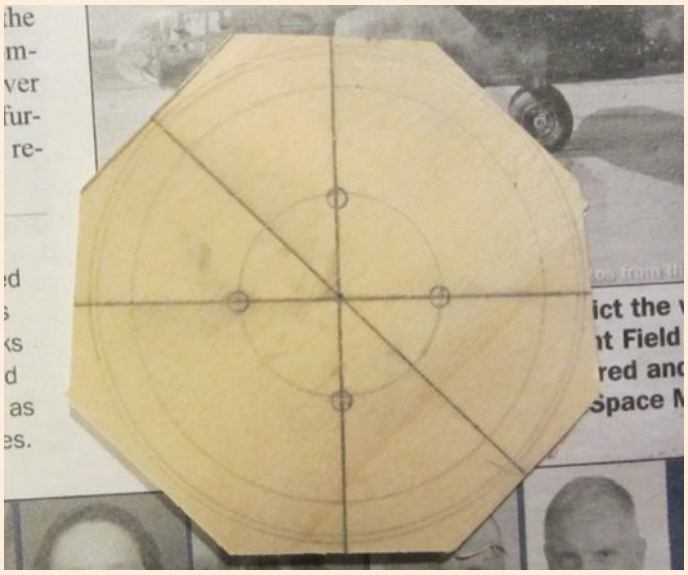
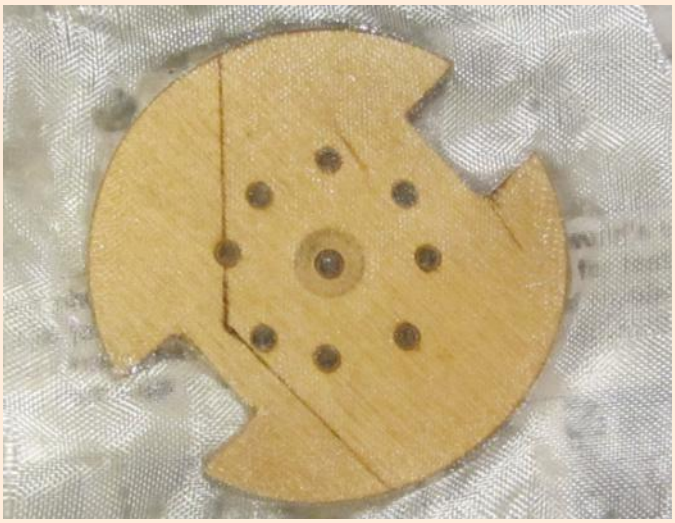


Next I chuck the part onto a drill (or drill press if you have one) so that it can be sanded down into the shape of a disk.

After sanding it into the proper shape I drilled the motor mounting holes, added two notches to locate it on the fuselage and then finally covered it with a layer of fiberglass on both sides. I am not sure that the fiberglass adds a any strength, but it makes me feel better, so I do it.



The final step is to glue and turn the balsa fairing which will help the fuselage blend onto the spinner.

The mount is now ready to be attached to the fuselage. Next month I will explain how I used a laser level to get everything lined up.

Teo Terry

Lasers

Actually what I'm going to discuss here is a HOBBY laser as distinct from industrial lasers. Even more specifically it will be about the use of a laser for cutting typical model airplane materials. A little background first.

The First Laser

Dr. Theodore Maiman of Hughes Research Laboratories, with the first working laser in 1960.

Theodore Maiman developed the first working laser at Hughes Research Lab in 1960, and his paper describing the operation of the first laser was published in Nature three months later. Since then, more than 55,000 patents involving the laser have been granted in the United States.

I'm not going to get into the physics of how a laser works or describe all of the different kinds of lasers. For our hobby purposed there are only two different kinds of lasers: the C02 laser and the diode laser.

Both of these lasers were first demonstrated in the early 1960's. The CO2 lasers developed faster for industrial applications such as cutting materials. It has only been recently that diode lasers could produce enough power to do any cutting. Even so, hobby level CO2 lasers can produce far more power than hobby level diode lasers. So, what about laser power?

There are many measures of the power of a laser. For our purposes there are only 2. First is the power required to operate the laser cutter. It is the total power input to the machine at the wall plug. The second power number is the power of the light beam itself. This is the specification that defines the ability of the laser to cut our materials (wood). Again, for our purposes there is another specification that matters: the wave length of the laser light. CO2 lasers typically operate in the infrared (invisible) wavelength of about 1000 nm and diode lasers typically operate at about 500 nm (green) wavelengths. So why do we care?

All materials have a certain reflectivity / absorptivity of light. That's why we can actually see them. Every material is different. It turns out that wood generally absorbs lower wavelengths better. It is the absorption of the light that creates the heat that vaporizes the material and allows the laser beam to cut.

Another important specification is the diameter of the beam itself. There are several reasons for this. First, for a given optical power from the laser, the smaller diameter delivers more power per unit of area which in turn can vaporizes more material per unit of time. So, assume a laser beam 0.02" in diameter or 0.000314 in^2. lets assume a 20W (optical) laser with that beam diameter. That laser would deliver 63,661W per in^2. Now lets look at the same 20W laser with a 0.01" diameter beam or 0.0000785 in^2. so this smaller beam would deliver 254,777W per in^2. So to deliver the same watts per in^2 as the smaller beam, you would need an 80 watt laser with the larger beam. In other words 4 times more powerful. More on this later.

Last fall I decided to take a look at getting a laser for making model airplane parts. I had looked at them in the past and thought they were too expensive for what I wanted to do. I was looking at CO2 lasers. This time I looked into diode lasers. At first I was turned off as they were describing them as laser engravers (not cutters). But as I read more and looked at the available machines, I discovered that the laser engravers could be used for cutting also. Hmmm. I found that there are many 5 Watt engravers but at 5 Watts, they were not that useful (in my opinion) for cutting model parts. But then I found some machines that combine (2) 5 Watt diode lasers into a single beam.

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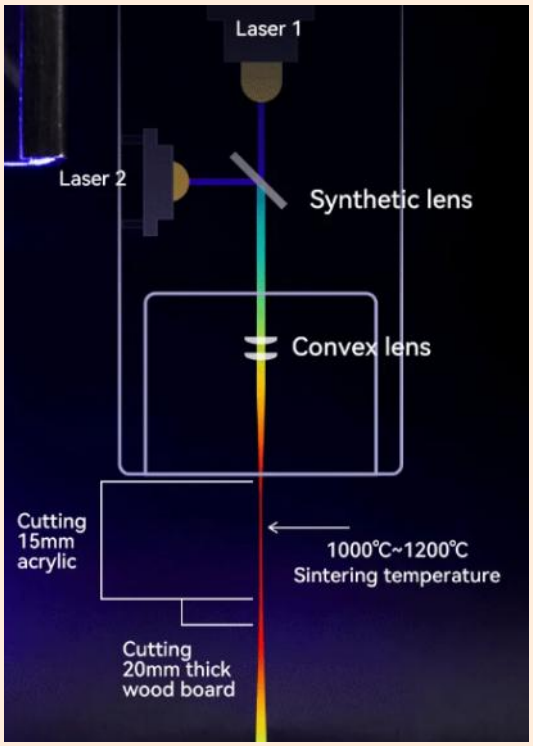

Combining (2) 5 Watt lasers

These lasers can cut 1/4" plywood and of course balsa in typical model airplane thicknesses. I watched videos showing them cutting those materials and thicknesses. Even better yet, the diode lasers are much cheaper and simpler to set up and use compared to the lower power CO2 lasers I had seen. Furthermore they use a very small beam diameter (0.0025") which is about half of the beam size of the typical hobby CO2 lasers I saw. Remember the previous calculations showed that in this case, a 10W diode laser is roughly equivalent to a 40W CO2 laser. Anyway, after a lot of reading and YouTube videos I bought an AtomStack S10 Pro machine for **$385** delivered. This price was a Black Friday deal. There are other similar machines out there and they all have slightly different configurations and prices.

AtomStack laser

When you look at the picture above you will notice a couple of things: first, It looks a little "spindly" and 2nd , it looks small. Regarding the apparent lack of substance, remember, the cutting or engraving happens with no forces introduced in the cut material so the rigidity of the machine is less important. And regarding size, the work area is about 16" by 17". You will notice that the frame stands above the table on legs so your material can be larger than the machine. Most brands also sell an extension kit that will make the length about 33". For my purposes the 16"X17"doesn't pose a problem

This class of machine is NOT a production machine. It is extremely accurate but the lower power compared to lets say a 100w CO2 machine is a limitation. For example, the 100W CO2 machine can easily cut 1/4" plywood in one pass. The 10W diode laser will take 2 or 3 passes (depending on the type of plywood). I'm ok with this.

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So, lets look at what I have done with this machine and what I have learned.

My Atomstack S10 Pro laser setup

Visible in the picture is the laser unit itself, my laptop which runs the cutting software, an accessory air pump (the silver cylinder on the left and an accessory honeycomb cutting base. The machine comes with its own software set up for engraving. Since I want to cut, I downloaded a program called LightBurn for that purpose. It may be possible to cut with the onboard software but the LightBurn software is much better I think. The air pump introduces a stream of air around the laser beam to increase the depth of cut and or speed. The honeycomb base is useful as it prevents the laser from damaging the surface under the machine and it seems like it allows a slightly faster speed. Absent in this picture is a means of dealing with the smoke. Remember you are burning through the material so there is some smoke. A good friend has a 100W CO2 laser and he built a small room in his garage with forced ventilation to the outside to deal with it. I had several ways to deal with this, one pretty standard and one pretty wacky. The standard approach would to vent to the outside of the house from my basement shop. The other idea was to use the vent hood over the cooktop in the kitchen. Our vent hood vents to the outside at 350 cfm. I would set the laser on a plywood base on top of the cooktop. I got a huge eye roll from my wife but as long as I didn't set off a smoke detector she'd be ok with this. As it turns out I didn't use either method. My wife is an artist and she dabbles in pastel (chalk) art. The pastel dust can be bad for you so I got her a free standing HEPA air cleaner for her studio. Hmmm. Maybe that will satisfy the need. So, here is what I did.

HEPA filter with the laser cutter.

Now to be honest, the cutter makes very little smoke and doing early testing I did not set off a smoke detector just outside of my shop door. Anyway, I thought using the filter would be a good idea.

So how do you actually cut a shape? First we need to understand how the onboard software works. You need to provide a cutting data file to the machine. The machine uses a programming language called "G-code". This is a pretty primitive language that is fairly easy to learn if you want to write your own cutting program, but you don't have to as there are apps that take care of that for you. Next, you need a CAD program to create the shape you want to cut. If you already use a CAD program, set your output file to create a .dxf file. This is a vector file which is necessary for cutting. If you are new to CAD, you only need to use a simple 2-D system. I use a program called A-9CAD. It is FREE and very simple to learn. There are so many CAD programs with widely varying capabilities that I am not going to discuss here. I'm just describing what I use. In A9CAD, I import a .jpg picture of the drawings I'm going to be working with and using the CAD tools, I trace the parts and shapes. This gets them into a vector format that I'll need for the cutting software. You might ask why I don't just use a .jpg (raster image) to .dxf (vector file) conversion software package. Believe me, I've tried and got terrible (at best) results.

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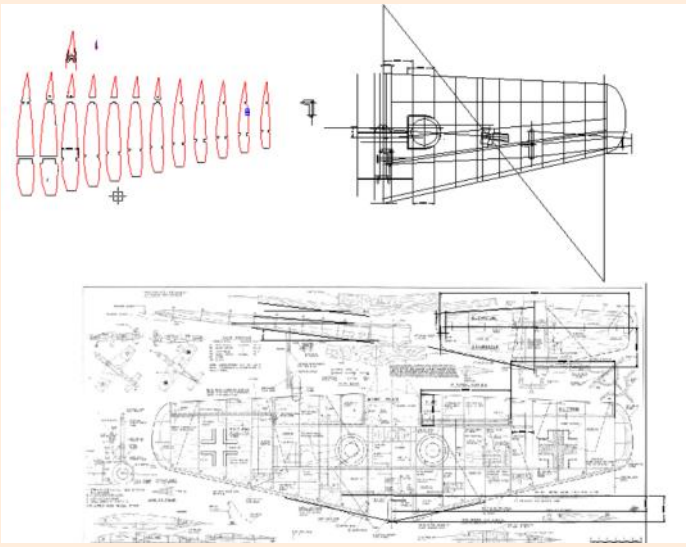

Creating .dxf file from .jpg file by tracing in CAD

As you can see from above the "drawing" is not pretty. I don't really care, as the drawing is only for me and is the minimum necessary to get the data I need. Even when I design from scratch my drawings are ugly for the same reason. All I can say is that it works for me :-)

So, we have the desired shape created in a CAD program, and we have the .dxf file output from the CAD program. Next we need to generate a G-Code cutting file. This is really easy to do. There is an app called LightBurn that does this for you. As far as I can determine, this is the most widely used app for this purpose. Sadly it is not free. There is a $60 per year subscription fee. It kills me to buy this kind of stuff so I've found a free app that looks like it will work but it is not as simple to use as LightBurn and I have not tested it on my machine. If you are more sophisticated at the software end of the world than I am (not hard to do) you will easily find freeware for this purpose. So, at this point you have opened the .dxf file in LightBurn. Lightburn will run your laser cutter directly via a USB connection.

My AtomStack machine came with a USB cable to plug into my laptop computer. Once it is plugged in, LightBurn should recognize your laser cutter and you are ready to cut. I know that you have read the instruction manual that came with your laser cutter and know how to set the "home" position of the laser and how to set the laser focus position. With my machine, you can simply move the laser head to the start (home) position by hand… simple. To set the focus, my machine came with a 2mm thick height gauge to position the laser head above the material to cut….simple. At this point, we are almost ready to cut but first we need to set a couple of critical parameters in LightBurn.

LightBurn needs to know how fast to cut (0 to 6000mm/min), the laser power level (0 to 100%) and how many passes you want to use. Sadly, there isn't a a simple look-up chart for these settings. It is material type and thickness dependant. So, lets talk about materials. For us model builders, the typical materials are balsa, light ply plywood and birch aircraft plywood. There is also the sheet foams that are used to make "foamies". I have no experience with the foam materials so I'll limit the discussion to balsa and the two plywood's.

Balsa.

We know that there is a wide range of densities of balsa ranging from about 4 lb/ft3 to 14 lb/ft3. Obviously they will not cut the same. Making matters worse the currently available balsa can vary quite a bit within a single sheet. So here is how I decide the speed, power, passes: trial and error. First, I always set the power level to 100%. at 100% I can maximize the speed and minimize the number of passes. My machine is only 10 watts so I think this is reasonable. If you have 100 watt laser, lower power settings will make sense at times. For the range of materials I've tested, I've settled on a speed range of about 200 mm/min to about 600 mm/min. Obviously we'd like to cut a part in one pass. So with 1/16" medium density balsa I set LightBurn to 100%, 550 mm/min and 1 pass. To validate that combination I will set Lightburn to make a test cut across the width of the balsa sheet about 1/8" from the end. If it cuts through across the width, I'll do another test at a higher speed until I don't get a good cut. Then I'll back off the speed

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a bit to allow for variations in hardness. As the balsa gets thicker or harder I'll adjust the speed accordingly. At some point the thickness and hardness pushes the speed way down. Remember, we are BURNING through the wood. It is possible with thicker materials and very slow speeds, the wood can catch on fire.

WARNING

PAY ATTENTION TO WHAT IS GOING ON. NEVER DO ANY CUTTING UNATTENDED. HAVE A FIRE EXTINGUISHER AVAILABLE.

At some point the speed gets very slow so it's time to raise the speed and add a 2nd or 3rd pass.

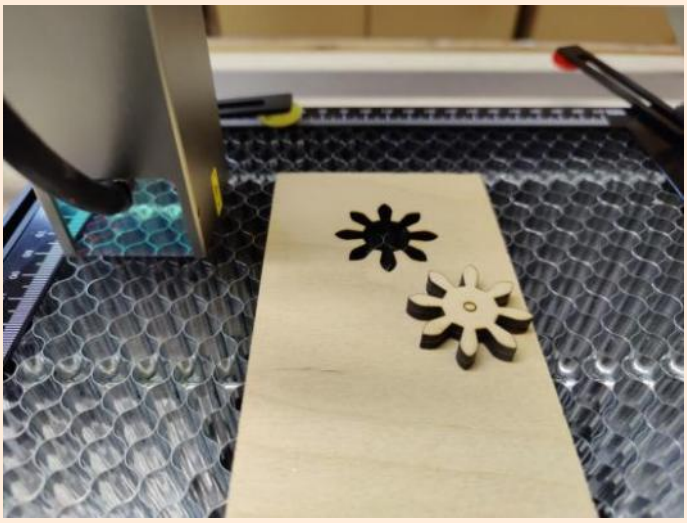
Plywood.

Low power laser cutters work well with so called lite ply. This material is typically made out of poplar. In the 1/8" thickness common in modeling, you may be able to cut your part in a single pass at slightly lower speeds. There is also a plywood product called baltic birch. In 1/8" thickness it is 3 plies with the faces made of the very nice white birch and (I've read) the center ply is poplar. The wood is stronger than lite ply and has a better grade of face plies. On-line sources sometimes call the material "laser plywood". It cuts similar to lite ply and is readily available online. A third type of plywood is also a birch plywood but in this case it is made with 5 plys and the plys are usually yellow birch. This is usually called "aircraft plywood" this is a very strong material and it is heavy. To cut it takes lower speed and more passes. I've cut 1/8" thickness using 200 mm/min and 3 passes. Plywood has glue lines between the wood layers. The type of glue can have a big impact on cutting. Most sources recommend that you stay away from exterior grade wood because of the type of glue used in that material.

Now that you have set your speed, power and passes in LightBurn, your laser head is positioned at the start point and the focus height is set, you have turned on the vent fan or air filter, you are ready t cut. Click on the "cut" button in Light Burn. You will be amazed by the quality of the cut and the resulting part. If you have done your CAD work correctly, part to part fit will be perfect.

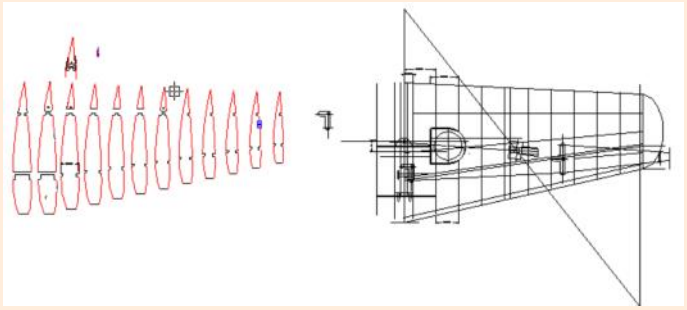
As you read through this it may seem really complicated…it really isn't. The machines and software are pretty well developed and user friendly.

The first part I cut was a small gear from one of my wood gear clock designs. I have a CNC router that I used to make all of the gears for my clocks so I have all of the .dxf files. The laser cut gear came out perfect. I cut it in 1/8" lite ply, 1/4" aircraft plywood and 3/8" balsa. They all came out perfect.



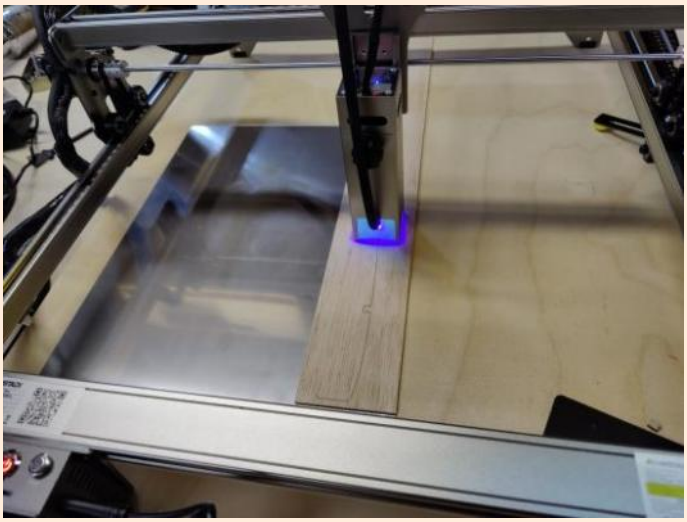
First laser cut part in 1/4" aircraft plywood.

My first model airplane project is a 65" wing for a control line scale model. The wing is complicated as it is tapered, and has flaps and retracts.



Wing project.

The red items are the parts I will be cutting.



Laser cutting a wing rib in 1/16 balsa. 600mm/min 100% power, 1 pass

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Horizontal stabilizer part in 1/4" balsa

1 complete set of balsa and plywood parts.

I can't leave the subject of lasers without talking about safety. These lasers, even the lower powered one that I have can blind you if you are careless. My particular laser is designed to minimize the chance of laser light entering your eye but the likelihood IS NOT ZERO. **Wear the proper eye protection for the type of laser that you have! Read and heed the safety section of the owners manual! And NEVER EVER let the laser run unattended!**

My laser is wifi enabled and I read an article where a guy operated his laser remotely via the wifi connection. That's unbelievably stupid in my opinion. If you have a wifi enabled laser only use the wifi capability to eliminate the need for the sub connection to your computer right at the laser bench.

So, I've given you a brief look at the use of a diode laser for hobby purposes. The price and user friendliness makes these machines practical in our work shops. If you get interested, read, read, read all of the available articles on the different brands and compare their specs and features and pick the one that makes sense for you.

That's all I've got for this month. More later.

Steve Kretschmer

January Indoor Flying

Click anywhere in the collage to view the entire photo album on the Skymasters web site

Skymasters R/C Club

We'll Teach you to fly!

Join the Skymasters Radio Control Club for an R/C Aircraft Event
PUBLIC WELCOME!

3D CAD Design

Thursday February 16th, 2022
7PM

Oxford Senior Center at Seymour Lake Park
2795 Seymour Lake Road, Oxford MI 48371

Join Joe Rubinstein for a demonstration of 3D Computer Aided Design for RC

Bring in your winter RC projects!
Show and Tell

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Cost: $150 for Season Pass (25 sessions) or $10 Cash/session at the door.
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Proof of AMA Membership is required.

Opening day is	10/25/2022	1/10/2023	3/28/2023
	11/1/2022	1/17/2023	4/4/2023
	11/8/2022	1/24/2023	4/11/2023
	11/15/2022	1/31/2023	4/18/2023
	11/22/2022	2/7/2023	
	11/29/2022	2/14/2023	
	12/6/2022	2/21/2023	
	12/13/2022	2/28/2023	
	12/20/2022	3/7/2023	
	Closed 12/27/22	3/14/2023	
	1/3/2023	3/21/2023	

"UWM" is United Wholesale Mortgage (formally Ultimate Soccer Arenas) located at
867 South Blvd, Pontiac, Michigan 48341

For rules & additional information go to : www.Skymasters.org
For questions, contact Indoorfly@Skymasters.org

SKYMASTERS RC
MICHIGAN

ON THE WING

The Retirees and Wannabes Breakfast At Ram's Horn

9AM, 1st and 3rd Mondays

1990 Rochester Road, Rochester Hills

Skymasters Breakfast At the Orion Grill

Every Saturday at 8:30AM

3667 Baldwin Rd
Orion Charter Township

Indoor Flying at UWM Sports Complex (formerly Ultimate Soccer)

(AMA required - *See web site for more info*)

Every Tuesday

9AM — 12PM (note new times)
UWM Sports Complex field #1, in the rear of the complex
Park and enter in the back
867 South Blvd E, Pontiac, MI 48341

Other local area indoor flying

Premiere Sports Center

14901 23 mile, Shelby Twp, MI

(northwest corner of 23 mile and Hayes)

Every Thursday beginning October 13th, 9AM to 3PM

Electric planes and helis (separate heli space)
$10/session, AMA required
Info: Steve Durecki 586-246-4203 (text or voice)
http://www.stevesindoorflying.com/

Legacy Center

9299 Goble Dr.

Brighton, MI 48139

(Off of Winans Lake Road, between Rickett Rd. and M23)

Wednesdays 12:30PM—2:33PM November 2nd through April 26th

$10/session

Sponsored by the Hamburg Flyers RC club

February 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2 Indoor flying 9AM—3PM Premiere Soccer	3	4 Breakfast 8:30AM Orion Grill
5	6 Skymasters Breakfast 9AM Ram's Horn	7 Indoor Flying 9AM—12PM UWM Sports Complex	8	9 Indoor flying 9AM—3PM Premiere Soccer	10	11 Breakfast 8:30AM Orion Grill
12	13	14 Indoor Flying 9AM—12PM UWM Sports Complex	15	16 Indoor flying 9AM—3PM Premiere Soccer Skymasters Meeting 7PM Seymour Lake Park	17	18 Breakfast 8:30AM Orion Grill
19	20 Skymasters Breakfast 9AM Ram's Horn	21 Indoor Flying 9AM—12PM UWM Sports Complex	22	23 Indoor flying 9AM—3PM Premiere Soccer	24	25 Breakfast 8:30AM Orion Grill
26	27	28 Indoor Flying 9AM—12PM UWM Sports Complex				

Skymasters Information…

The Skymasters field is located in Lake Orion, within the Bald Mountain Recreational Area on Scripps Road, between M24 and Joslyn (see map). A recreation passport or sticker is required and can be obtained from the Park Headquarters located on Greenshield Road or you can check the box on your tab renewal for a "Recreational Passport".

Flying hours:

QUIET ELECTRICS ONLY from 8AM to 10AM and 8PM to 10PM and the noise limit is 80dBa at ten feet. **Regular flying is permitted between 10 AM to 8 PM and the noise limit is 94 dBa at 10 feet. These noise limits are enforced.**

Student Night & Pot Luck Every Wednesday, May 11th through September. Flying any time but we eat at 6:00 p.m. – rain or shine, literally!

For those participating we ask that you bring something for the grill – enough to feed (at least) you and your guests –OR- bring a dish to pass –OR- bring your own (non-alcoholic) beverage. **Something for the grill:** The obvious choices are burgers, sausages/brats and hotdogs - but other alternatives are welcome. If you bring it we will cook it! We've cooked pork tenderloin and chops, salmon, venison burgers, steaks and more. Don't forget the buns.

We start cooking about 5:30 p.m. - having grill items by then helps us get everything ready on time.

Potluck dish to pass: Don't know what to bring, working late? Each week we'll let you know what is needed for the next week from plates to condiments, charcoal, etc. **Pick one of the needed items to bring instead**! Not one to cook? A quick stop at local supermarket deli for a side salad, or bakery for dessert always works!

From June through August, club meetings are held at the field, on the second and fourth Wednesday of the month at 8 PM . A great chance to fly and socialize. **Winter meetings (September through May)** are held at the Orion Center, 1335 Joslyn, in Lake Orion. Bring a model for Show and Tell, enjoy coffee and donuts and listen to the speaker of the evening.

The Skywriter newsletter is available online at the Skymasters web site and is free to all. It may also be printed from the web site if desired. All contributions are welcome. Please send photos and articles to **newsletter@skymasters.org**

Want to talk to someone? Call us at 248-403-8279 and leave a message. We'll get right back to you.

2022 Club Officers & Appointees...

President:	Pete Foss	Oxford	president@skymasters.org
Vice Pres.:	John Billinger	Troy	vicepresident@skymasters.org
Secretary:	Phil Saunders	Rochester Hills	secretary@skymasters.org
Treasurer:	Kurt Kettler	Lake Orion	treasurer@skymasters.org
EOC at large	Paul Goelz	Rochester Hills	at.large3@skymasters.org
EOC at large	Joe Rubinstein	Oxford	at.large2@skymasters.org
EOC at large	Steve Kretschmer	Oakland	at.large1@skymasters.org
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Newsletter:	Paul Goelz	Rochester Hills	newsletter@skymasters.org
CFI	Ken Gutelius	Lake Orion	cfi@skymasters.org
CSO			cso@skymasters.org

Newsletter Submissions

Please send all articles, photos and announcements to the Skywriter editor at:

newsletter@skymasters.org

Deadline is the 20th of each month.

The Skywriter newsletter is published bi-monthly by the Skymasters Radio Control Club of Michigan

www.skymasters.org