Preview of the 2014-15 Club Project Plane

the

"STICK 2 IT"

RCCD 2014-15 CLUB PROJECT

"STICK 2 IT"

By popular request, the Radio Control Club of Detroit will reintroduce an "Ugly Stick" similar to the original 2011 Ugly Stick club project plane. This new project plane was redesigned to be similar in size and looks, but updated with many weight saving features not contained in our original design.

In each of our previous club projects, various construction methods were intentionally used to build those airplanes. This project will also include different construction methods to complete various parts of this airplane. There will be more hand work required by the builder. The builder will be have to cut and fit more pieces to complete the plane. There will be less detailed instructions in the build manual, so each builder will be required to make use of their own mechanical common sense. This is done purposely to try to widen the new builders' background in model making. As in all of the club project planes, the emphasis is placed on building your own model airplane. Keep in mind, there will be help available if you need it. Help is just a phone call or an email away.

There are now many more club members who have become experienced builders by participating in our previous club projects. We encourage the builders to group together as teams to build their individual airplanes together. If a club member is a new builder, teaming up is a perfect way to learn many different construction techniques from the experienced builders on your team. We also encourage the builders to incorporate their personal changes or design revision to our basic design. Naturally, if so desired, the plane can be built and flown just as designed.

This new project plane program will be conducted in the same fashion as our previous projects. There will be short kits available for purchase only by the club members for the discounted purchase price of the wood. The balance of the components needed to complete the model will be at the builder's option and expense. The short kit method is used for our projects

to help lessen the expense of building the plane. Most of the builders have engines and components they accumulated over time. There is no need to duplicate what you already have, by including them in a kit. To save cost, the build instructions will be posted on the club web site so there is no need for a 'full' set of plans to build the plane too.

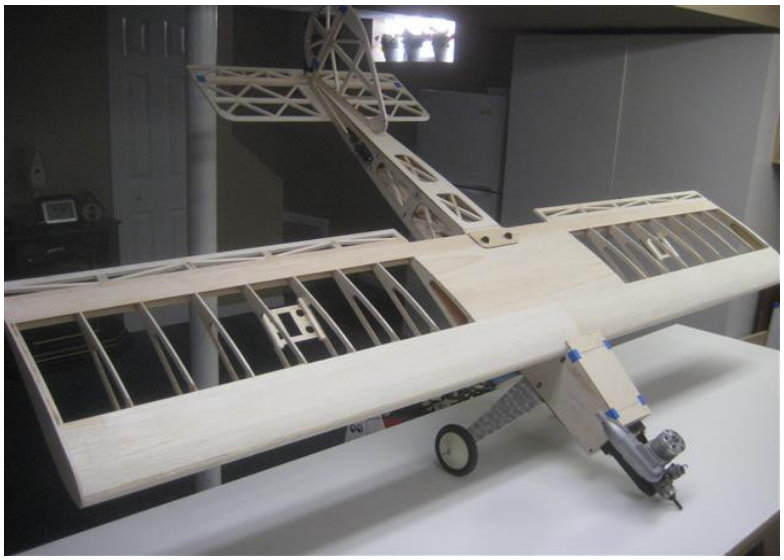
It seems right after our first club project plane was introduced and our project published in the AMA magazine, there has been a more asserted effort made by other clubs, hobby shops, model airplane magazines and even the AMA to promote the building of your own model airplane. I think, it was the participation and enthusiasm shown by our club members toward the club projects, that was the lead factor in the overall effort to promote building your own airplanes. I am proud to have joined in with you to be one of the builders.

Rather than just purchasing and assembling a pre-made plane, join the fun and satisfaction in the great part of our hobby--- building your own model plane. If this is your first attempt at building your own model or if you are an experience model builder, welcome aboard to the

2014-15 RCCD project plane

THE

"STICK 2 IT"

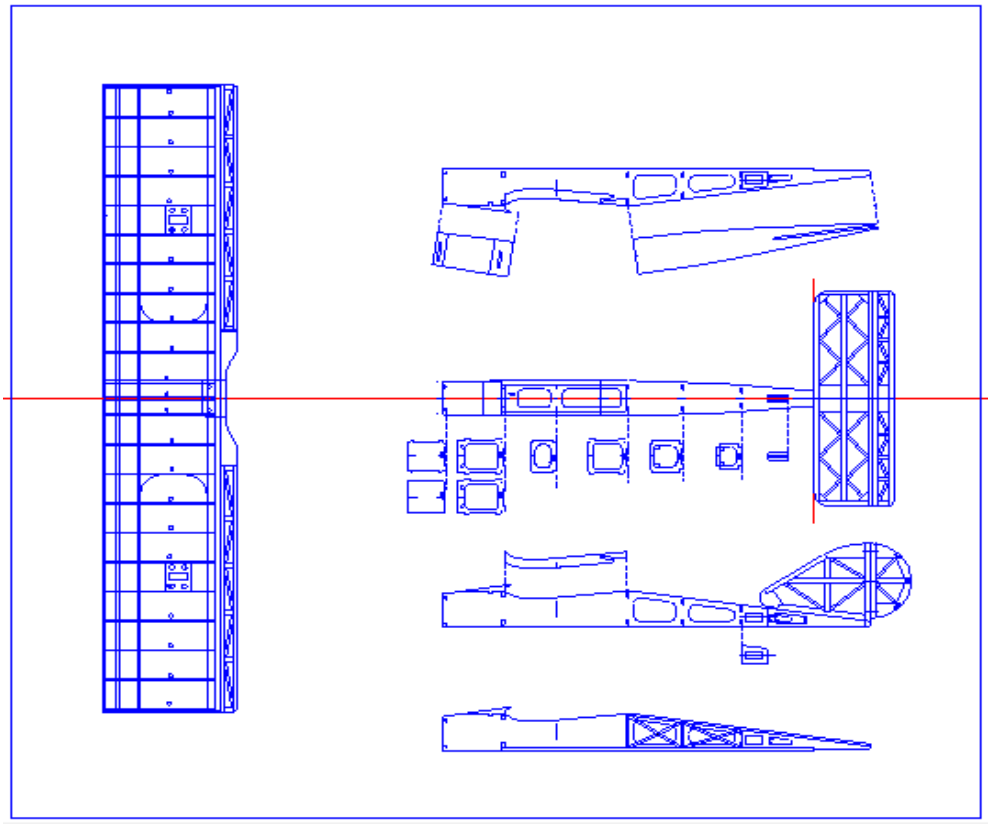


The following is a brief pictorial preview of the "STICK 2 IT" design and its prototype build.

Please Note: This project plane was designed using DraftSight, a professional 2D CAD system, which is available for download direct from that company's web sight at no cost. They encourage you to down load their system for your own use. Yes,there is a learning curve, but there is a lot you can do with the system while and after you learn how it to use it. There are many You Tube tutorial videos available to help you. All the club project plane design dwg files will be available to club members upon their request, once they have the CAD system installed on their computer.

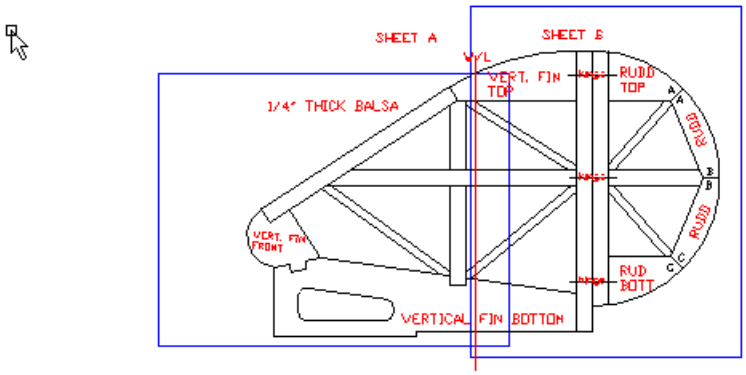
Also Note: The degraded line quality shown in the pictures below is a result of data transfer and data manipulation, and not a true representation of the high definition quality of the line detail in the CAD design system.

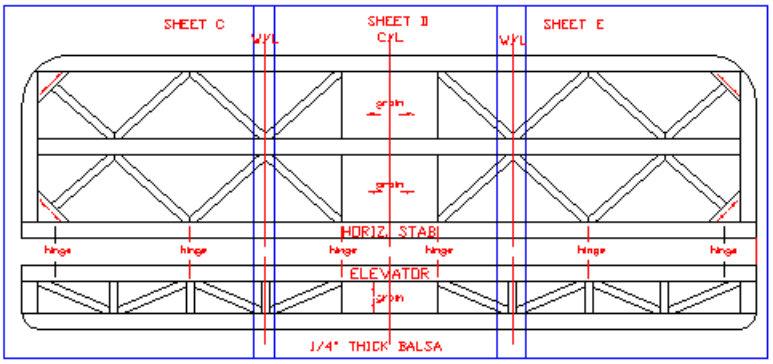
CAD development drawing of the prototype

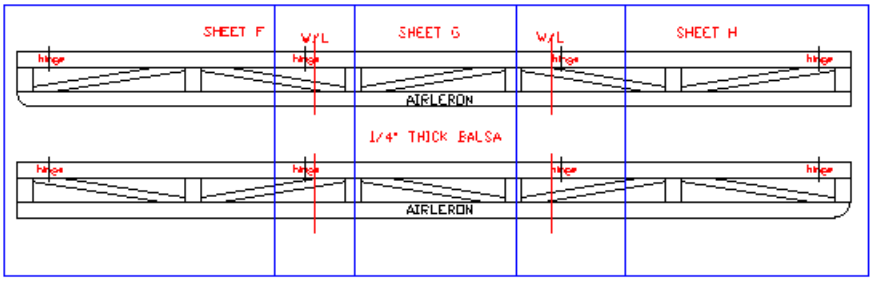


Hand built tail feathers and ailerons

The tail feathers or empennage and ailerons will be hand constructed by each builder on partial prints using balsa sticks and laser cut balsa parts all supplied in the short kits.

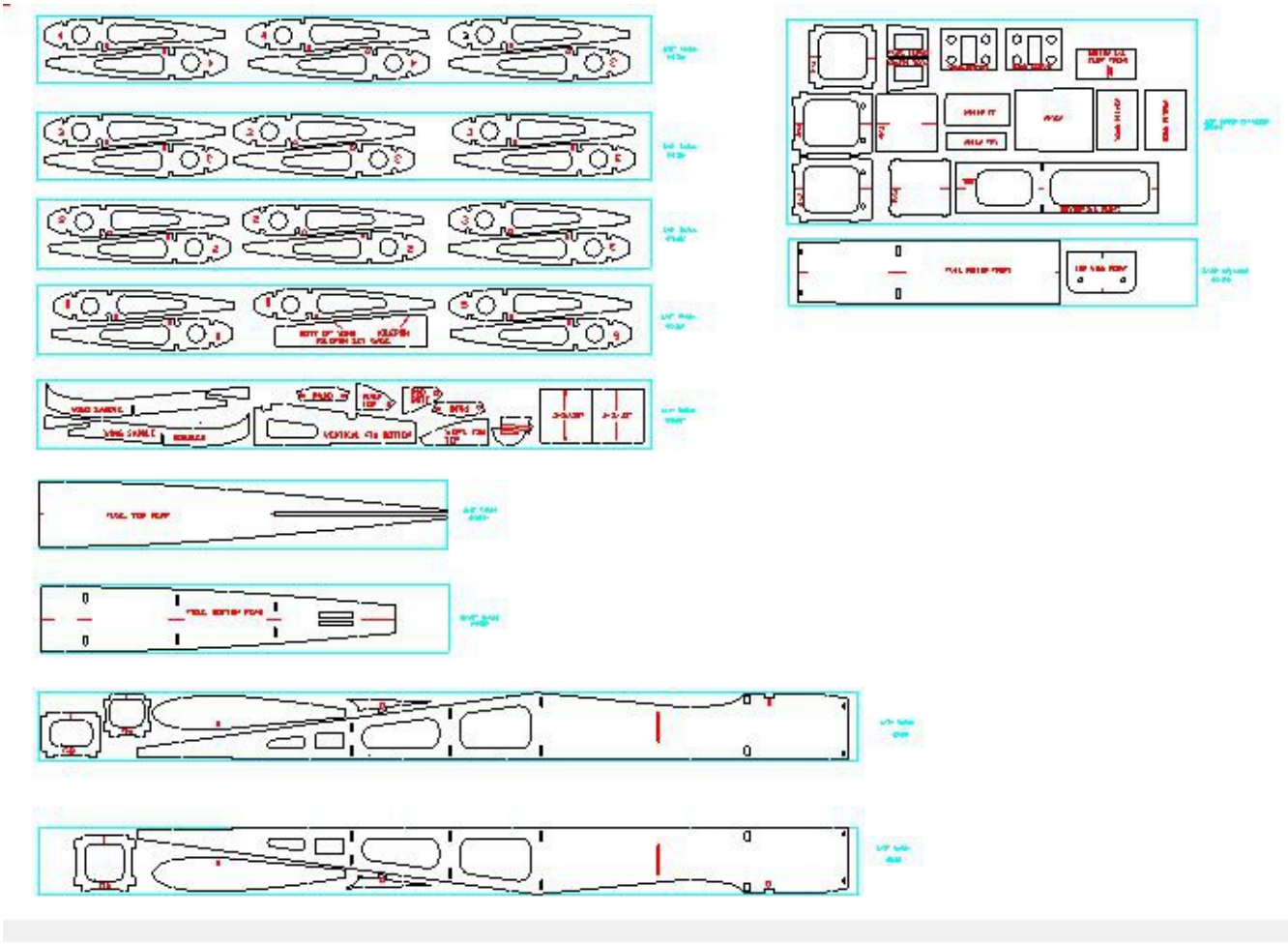






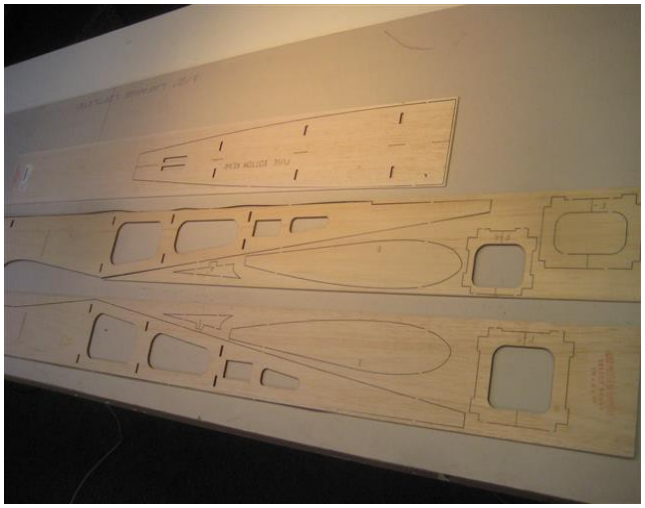
Laser scribe & cut parts

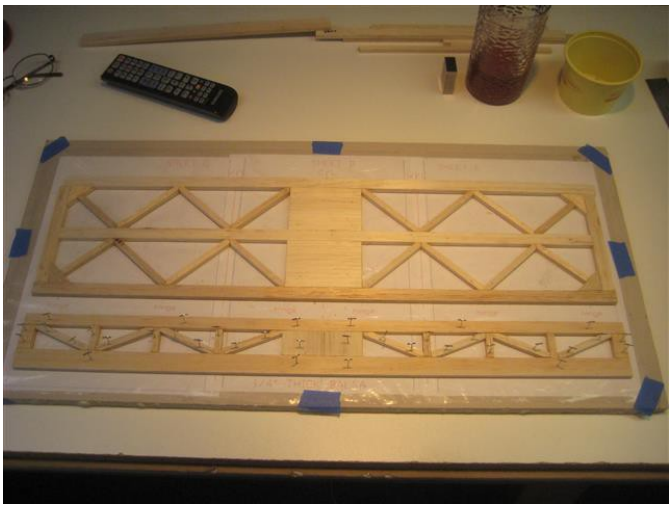
The following balsa and hard plywood parts will be laser scribed and cut from supplied sheet stock

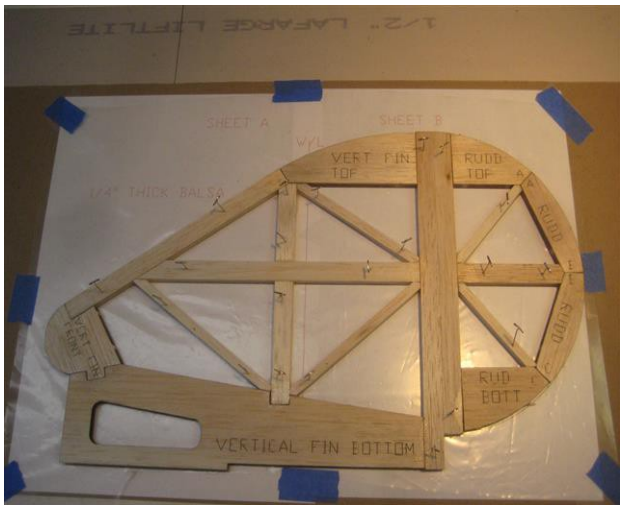


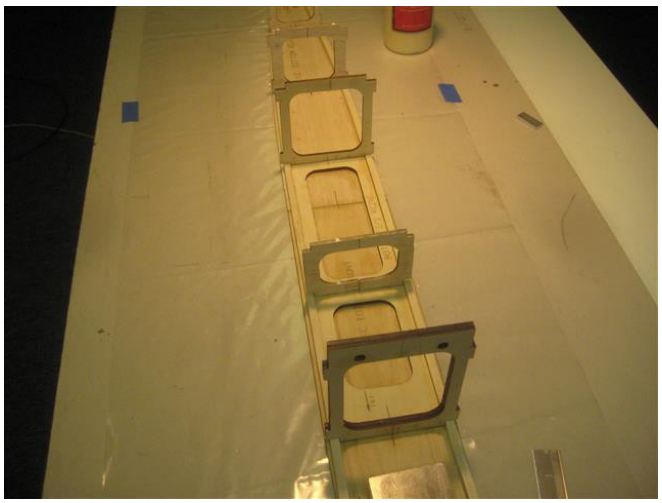
The balance of the Balsa wood sheets and sticks needed for the build will also be included in the short kit.

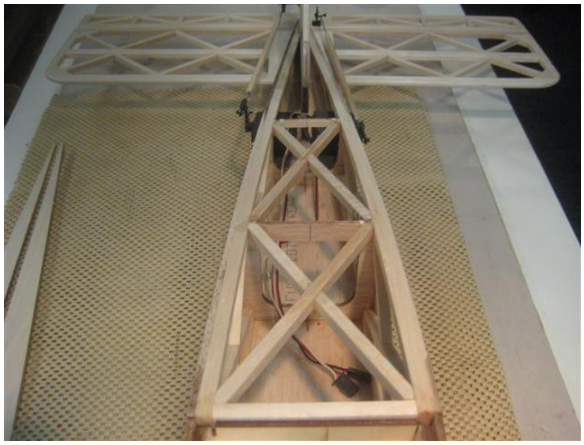
Photos of the Prototype build

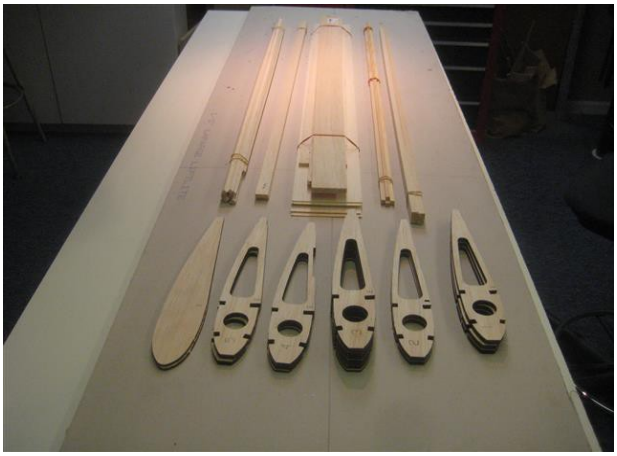


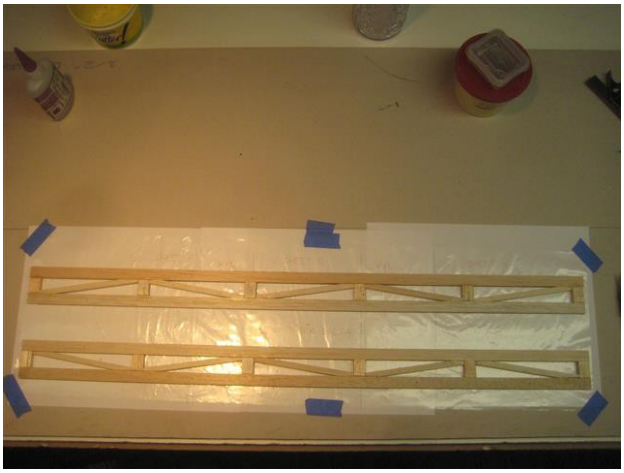


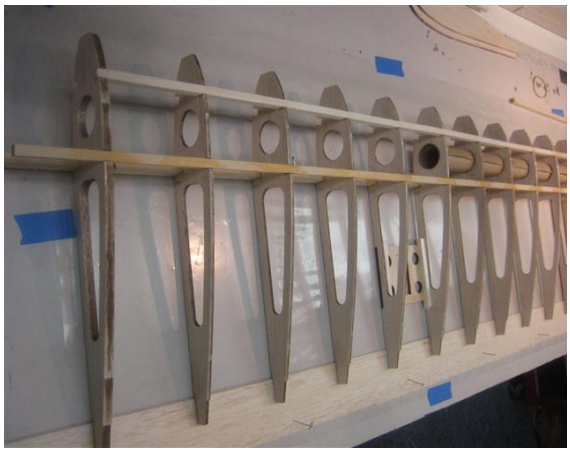


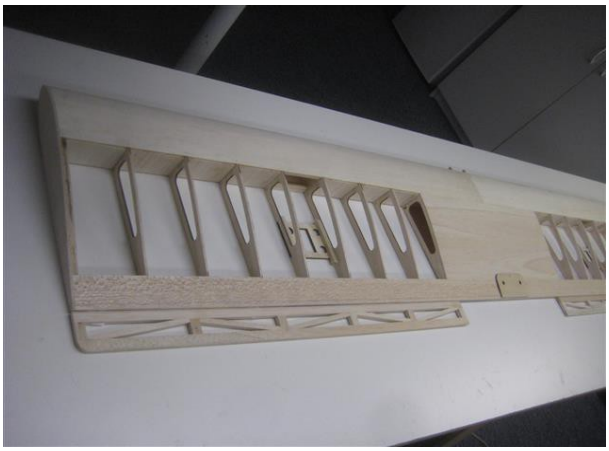


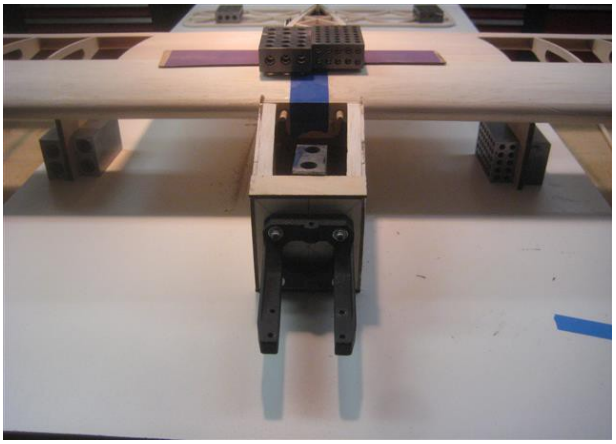


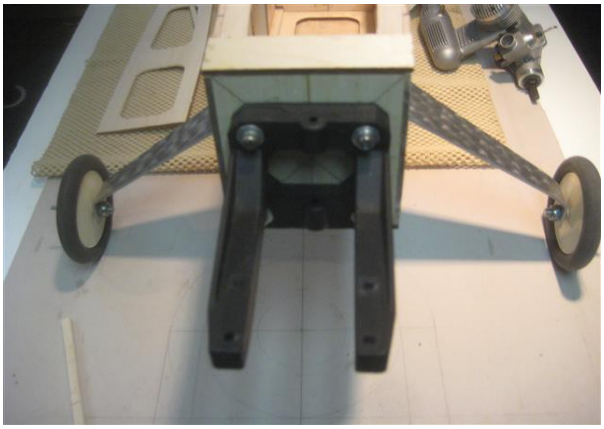


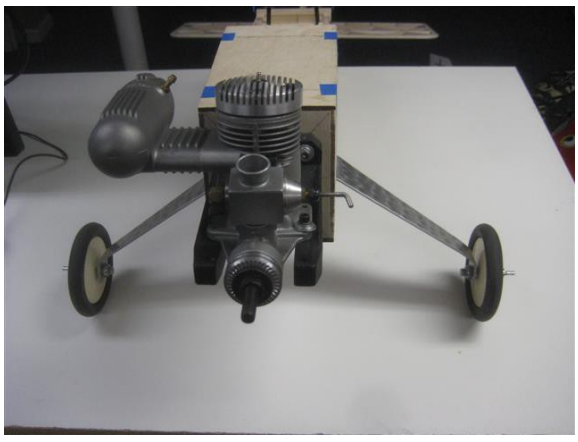


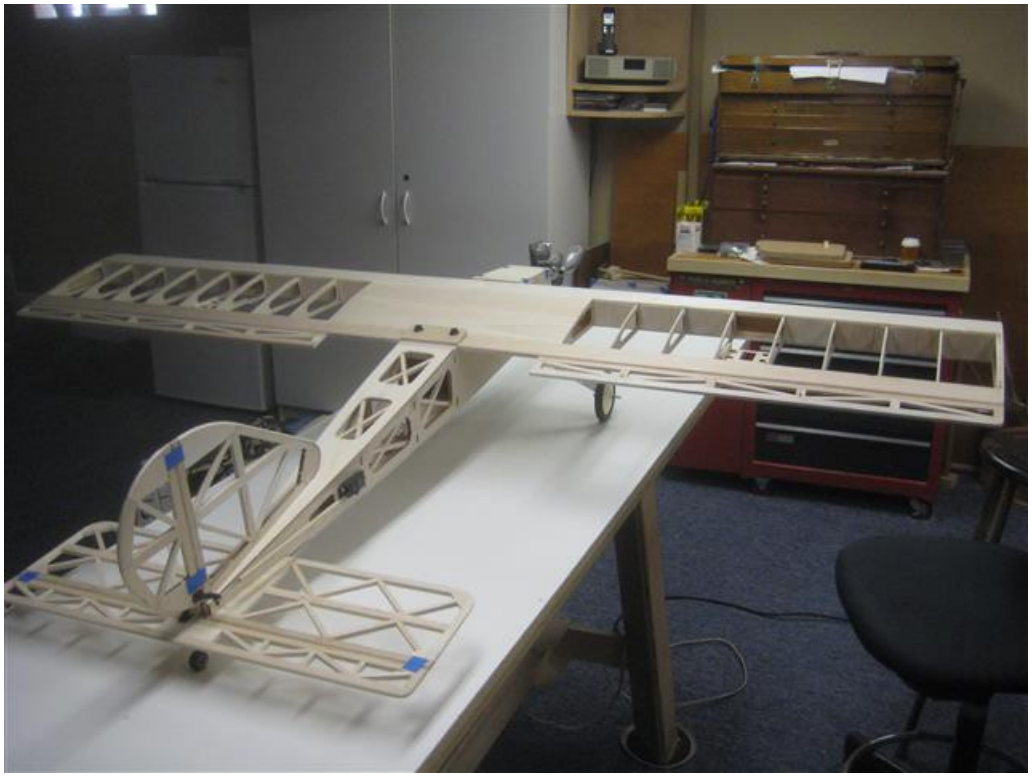










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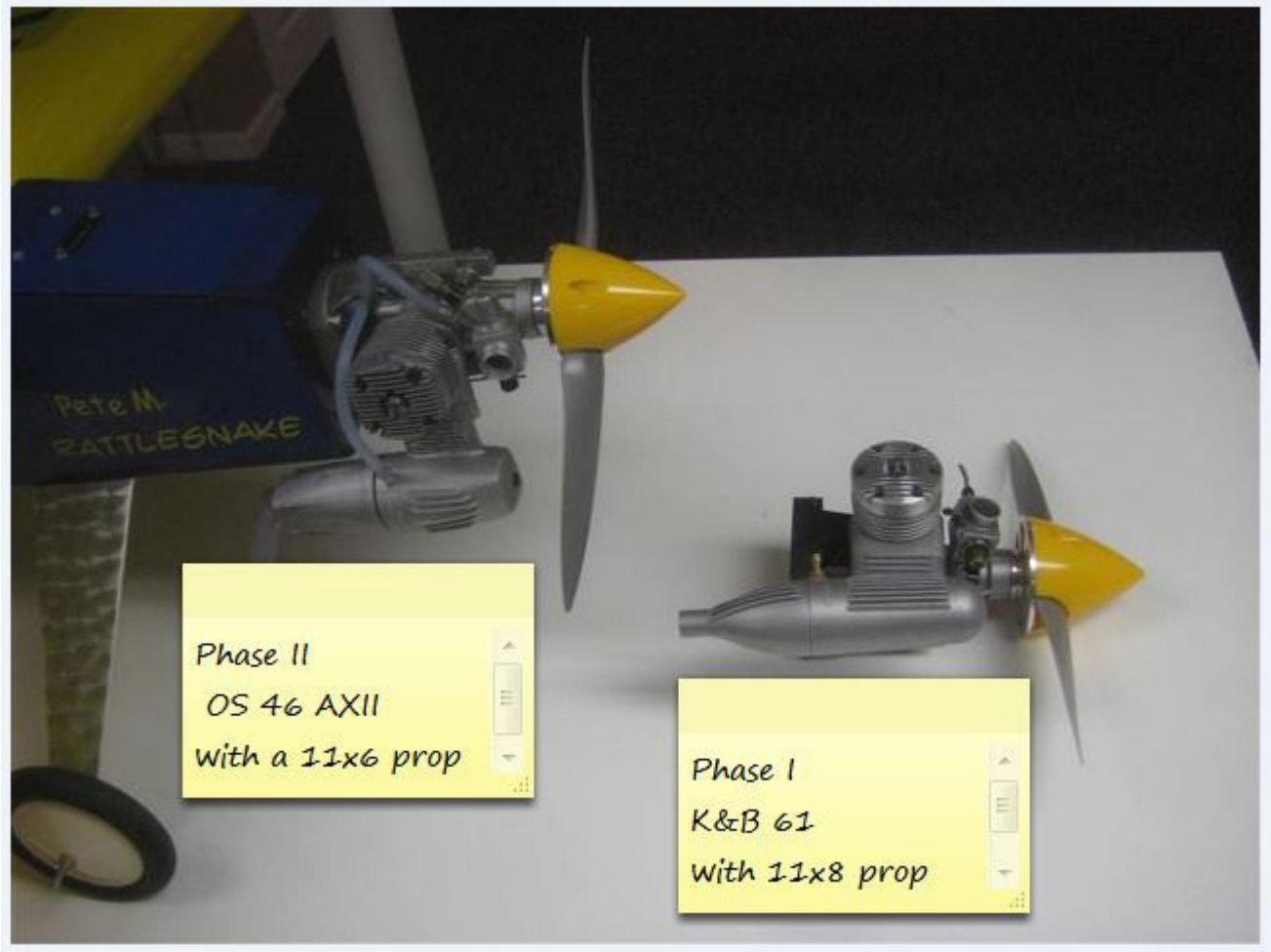
*The **"STICK 2 IT"** prototype model build was built as designed and then test flown in two Phases as described below.*



Phase I:

The plane was first flown with a K&B .61 engine with its muffler and the recommended 11x8 prop installed. This engine, muffler, 60 size plastic engine mount and 12 oz. fuel tank installation required two additional ounces of dead weight added to the rear of the plane to achieve the CG balance of 28% of the wing cord length (with the fuel tank empty). This set-up was successfully flown starting with a full 12 ounces of fuel on July 20, 2014 and required only minor transmitter trim adjustments and minor engine adjustments. The flight characteristics of the plane were very good.

Phase II:
The K&B .61 engine, its muffler and its motor mount was removed. An OS 46AXII with its muffler and the recommended 11x6 prop was installed using a 40 size alum. motor mount. 1-1/2 ounces of dead weight was removed from the rear of the plane (leaving 1/2 ounce of dead weight) to achieve the CG balance of 28% of the wing cord length (with the tank empty). The original 12 oz. fuel tank remained for the phase II maiden flight on July 24, 2014. This set-up was successfully flown starting with a full 12 ounces of fuel and required only minor transmitter trim adjustments and minor engine adjustments. The flight characteristics of the plane were also very good.

Conclusion:
The OS 46 AXII powered the plane slightly better than the K&B 61 engine set-up. The OS 46 AXII weighs less and puts out more horsepower while eliminating 1 1/2 ounces of dead weight from the tail.
The original 12 ounce fuel tank was later replaced with a 8 ounce fuel tank. This replacement tank should enhance the flight characteristics by further reducing the weight of the 4 ounces of fuel at the start of the flight.

The engine size and set-up is up to the builder to determine based on his/her preference. If properly balanced the plane will perform great using engines ranging from the 46 to the 61 size.

There are two videos documenting both Phase I and Phase II maiden flights.

The prototype plane build is now complete and has flown with optional motor sizes. The prototype data will be used for the production models as designed with no changes. To optimize the wood used for the production models, some of this now production data will be duplicated so multiple plane parts can be combined with and or re-arraigned on the wood and plywood sheets to optimize the wood and optimize the laser cutting and set-up time thus reducing the overall cost of each plane.

Photos of the finished prototype model with the OS 46 AXII engine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Peter M.
RATTLESNAKE


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Come on and join in the fun of building and flying the.....

"STICK 2 IT"

Pete M.....
Rattlesnake
7-29-14