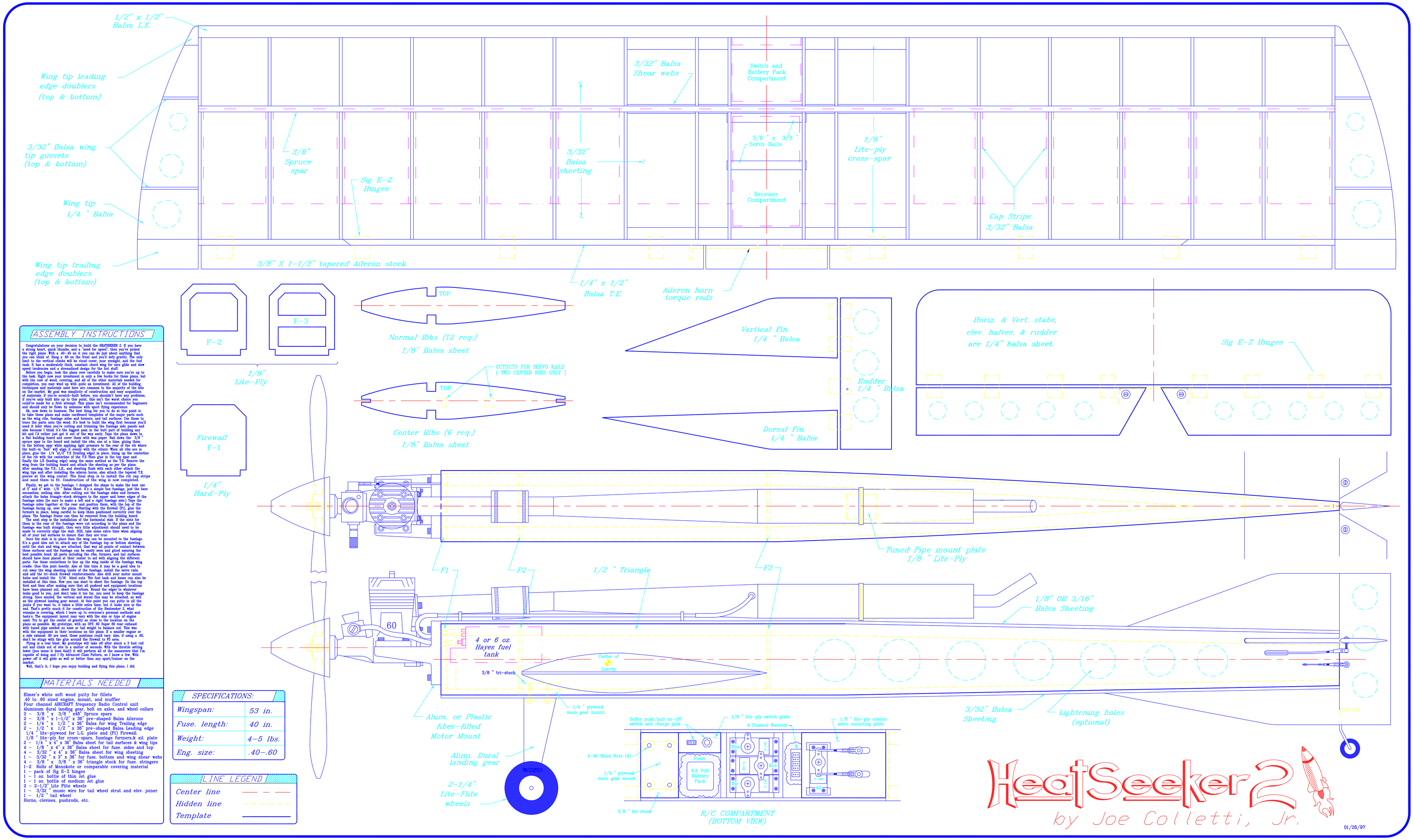

ASSEMBLY INSTRUCTIONS

Congratulations on your decision to build the HEATSEEKER 2. If you have a strong heart, quick thumbs, and a "need for speed", then you've picked the right plane. With a .40-.45 on it you can do just about anything that you can think of. Hang a .60 on the front and you'll defy gravity. The only limit to the vertical climbs will be cloud cover, your eyesight, and the fuel tank. It has a moderately thick, constant chord wing for nice glide and slow speed tendencies and a streamlined design for the hot stuff.

Before you begin, look the plans over carefully to make sure you're up to the task. Right now, everything looks easy on the plans, but when you plunk down the cash for wood, covering, and all of the other materials needed for completion, you may wind up with quite an investment. All of the building techniques and materials used here are common to the majority of the kits on the market. My goal was simplicity of construction and easy acquisition of materials. If you've scratch-built before, you shouldn't have any problems. If you've only built kits up to this point, this isn't the worst choice you could've made for a first attempt. This plane isn't recommended for beginners and should only be flown by someone with sport flying experience.

Ok, now down to business. The best thing for you to do at this point is to take these plans and make cardboard templates of the major parts such as the wing ribs, fuselage sides and formers, and tail surfaces. Use these to trace the parts onto the wood. It's best to build the wing first because you'll need it later when you're cutting and trimming the fuselage side panels and also because I think it's the biggest pain in the butt part of building any kit and I'd rather just get it out of the way early. Tape the plans down to a flat building board and cover them with wax paper. Nail down the 3/8 " spruce spar to the board and install the ribs, one at a time, gluing them to the bottom spar while applying light pressure to the rear of the rib where the built-in "tool" will align it evenly with the others. When all ribs are in place, glue the 1/4 "X1/2" T.E (trailing edge) in place, lining up the centerline of the rib with the centerline of the T.E Then glue in the top spar and finally the L.E (leading edge) using the same method as the T.E. Remove the wing from the building board and attach the sheeting as per the plans. After sanding the T.E., L.E., and sheeting flush with each other attach the wing tips and after installing the aileron horns, also attach the tapered T.E. pieces at the wing center. The final step is to install the rib cap strips and sand them to fit. Construction of the wing is now completed.

Finally, we get to the fuselage. I designed the shape to make the best use of 3" and 4" wide 1/8 " Balsa Sheet. It's a simple box fuselage, just the bare necessities, nothing else. After cutting out the fuselage sides and formers, attach the balsa triangle-stock stringers to the upper and lower edges of the fuselage sides (be sure to make a left and a right fuselage side) Tape the fuselage sides together at the rear and position them, with the top of the fuselage facing up, over the plans. Starting with the firewall (F1), glue the formers in place, being careful to keep them positioned correctly over the plans. The fuselage frame can then be removed from the building board.

The next step is the installation of the horizontal stab. If the slots for them in the rear of the fuselage were cut according to the plans and the fuselage was built straight, then very little adjustment should need to be made to correctly align the stab. Still, take some extra time when aligning all of your tail surfaces to insure that they are true.

Once the stab is in place then the wing can be mounted to the fuselage. It's a good idea not to attach any of the fuselage top or bottom sheeting until the stab and wing are attached, that way all points of contact between these surfaces and the fuselage can be easily seen and glued assuring the best possible bond. All parts including the ribs, formers, and tail surfaces should have lines placed at their center to aid with aligning the different parts. Use these centerlines to line up the wing inside of the fuselage wing cradle. Glue this joint heavily. Also at this time it may be a good idea to cut away the wing sheeting inside of the fuselage, install the servo rails, and add the tri-stock firewall reinforcements. Also drill your motor mount holes and install the 3/16 blind nuts. The fuel tank and hoses can also be installed at this time. Now you can start to sheet the fuselage. Do the top first and then after making sure that all pushrod and equipment locations have been planned out, sheet the bottom. Round the edges to whatever looks good to you, just don't take it too far, you need to keep the fuselage strong. Once sanded, the vertical and dorsal fins may be attached, as well as the plywood landing gear mount. At this point you can putty in all the joints if you want to, it takes a little extra time, but it looks nice in the end. That's pretty much it for construction of the Heatseeker 2, what remains is covering, which I leave up to everyone's personal methods and taste's. The equipment layout may vary with the size or type of engine used. Try to get the center of gravity as close to the location on the plans as possible. My prototype, with an OPS .60 Super 60 rear-exhaust with tuned pipe needed no nose or tail weight to balance out. This was with the equipment in their locations on the plans. If a smaller engine or a side exhaust .60 are used, these positions could vary. Also, if using a .60, don't be afraid to add some glue around the motor mount for a good bond.

Flying is a real blast, my prototype has taken off after about a 3 foot roll out, climbed out of site in about 10 seconds. With the throttle setting low (two meters it does that!) it will perform all of the maneuvers that I'm capable of doing and I fly Advanced Class Pattern, so I know a few. With power off it will glide as well or better than any sport/trainer on the market.

Well, that's it. I hope you enjoy building and flying this plane, I did.

MATERIALS NEEDED

Elmer's white soft wood putty for fillets
.40 to .60 sized engine, mount, and muffler
Four channel AIRCRAFT frequency Radio Control unit
Aluminum dural landing gear, bolt on axles, and wheel collars
2 - 3/8 " x 3/8 " x48" Spruce spars
2 - 3/8 " x 1-1/2" x 36" pre-shaped Balsa Ailerons
2 - 1/4 " x 1/2 " x 36" Balsa for wing Trailing edge
2 - 1/2 " x 1/2 " x 36" pre-shaped Balsa Leading edge
1/4 " lite-plywood for L.G. plate and (F1) Firewall
1/8 " lite-ply for cross-spars, fuselage formers,& ail. plate
2 - 1/4 " x 4" x 36" Balsa sheet for tail surfaces & wing tips
4 - 1/8 " x 4" x 36" Balsa sheet for fuse. sides and top
4 - 3/32 " x 4" x 36" Balsa sheet for wing sheeting
1 - 3/32 " x 3" x 36" for fuse. bottom and wing shear webs
4 - 3/8 " x 3/8 " x 36" triangle stock for fuse. stringers
1-2 Rolls of Monokote or comparable covering material
1 - pack of Sig E-Z hinges
1 - 1 oz. bottle of thin Jet glue
1 - 1 oz. bottle of medium Jet glue
2 - 2-1/2" Lite Flite wheels
1 - 3/32 " music wire for tail wheel strut and elev. joiner
1 - 1/2 " tail wheel
Horns, clevises, pushrods, etc.

SPECIFICATIONS:

Wingspan:	53 in.
Fuse. length:	40 in.
Weight:	4-5 lbs.
Eng. size:	.40-.60

LINE LEGEND

Center line
Hidden line
Template