

The T&H "Gull"



by Jerry Dunlap

Photos: Jerry Dunlap

What happens when a model boater gets the urge to loft into the blue? He can build a sailplane like this one.

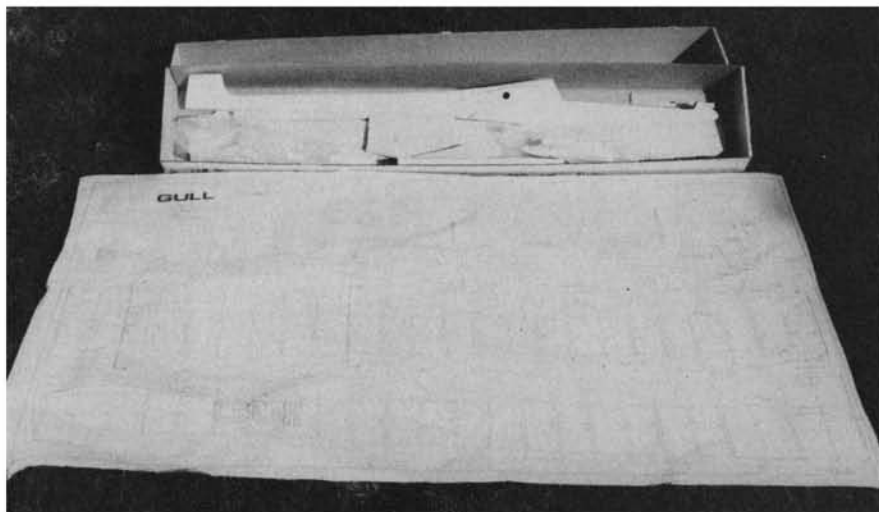
A funny thing happened one day on my way to the pond to run a model boat. While driving through the park to get to the pond, I saw a fellow standing out in the soccer field flying a model sailplane. This wasn't the first time I'd seen an R/C sailplane fly, but it was the first time I'd seen one flying from the same park where I run my boats. I pulled over to check frequencies and chatted briefly with the fellow who was flying, and after watching him make a few flights, the thought occurred to me that this might be something I'd like to try. It wasn't too much later that one of my boating friends called to tell me he'd bought a sailplane and wanted to know if I'd like to try flying it. Having had some experience with power models, I figured why not? After a couple of flights I was hooked and knew I'd have to acquire a soarer of my own. The question was, which one? There are all shapes and sizes to choose from, priced from under \$20.00 to over \$100.00.

Remembering that a former model boater from the Spokane, Washington, area was selling a model that had done very well in northwest soaring events, I decided to call Randy Holsapple of T & H Enterprises. Originally I thought that building a fast slope ship would be the way to go, and the T & H "Highjacker" was what I

had in mind since it's one of the hotter slope ships available. Randy asked me about my flying experiences with sailplanes and suggested a thermal soarer would be much better suited to my skills. He suggested that the "Gull" would be a good choice, and arrangements were made for sending me one. I thanked Randy for his counsel

and assistance and waited for the kit to arrive.

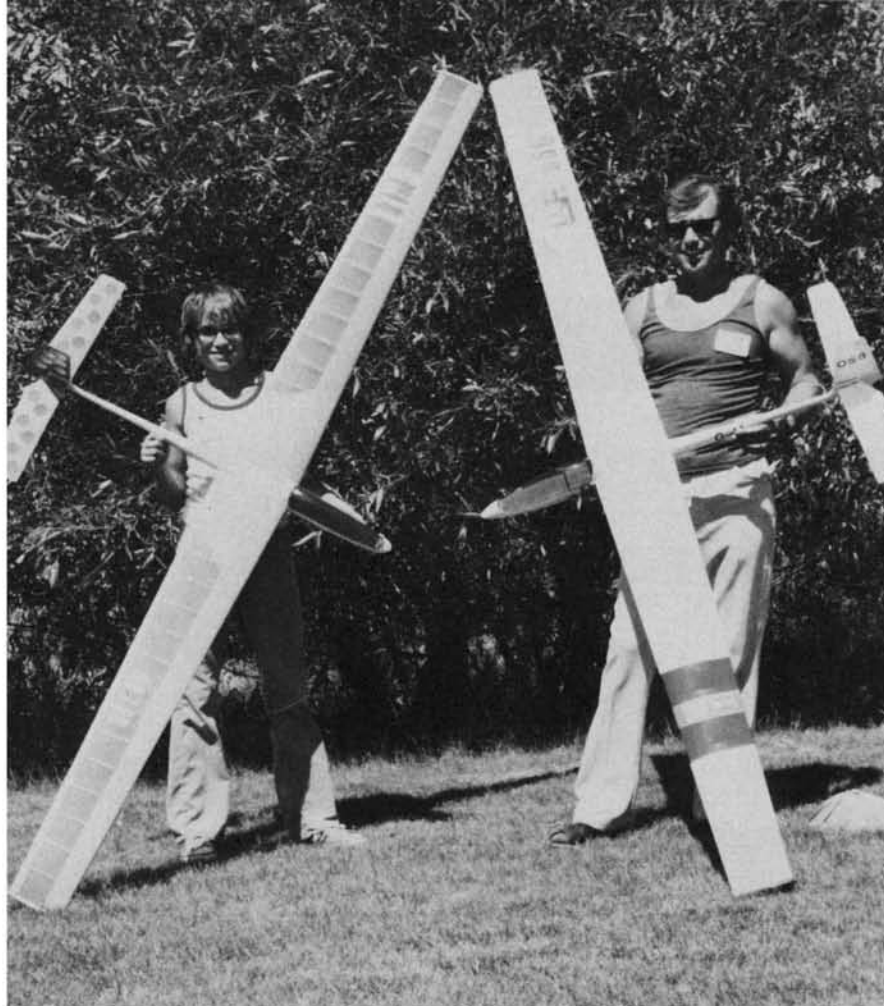
The "Gull" kit features a lightweight fiberglass fuselage, plastic canopy and the necessary balsa wood for the built-up wings and solid stabilizer and rudder. Some of the necessary hardware is also included, along with a set of full sized plans and



building instructions. The "Gull" was designed by Randy and has a 99-inch wingspan with 642 square inches of area and a wing loading of 7 ounces per square foot. The wing has a 10% chord thickness with a 17:1 aspect ratio. The white gel-coated fuselage is 42 inches in length. Flying weight with a two-channel radio is 32 ounces. The kit sells for \$59.95 and can be ordered from T&H Enterprises, 7025 N. Stevens, Spokane, WA 99208.

Building the "Gull"

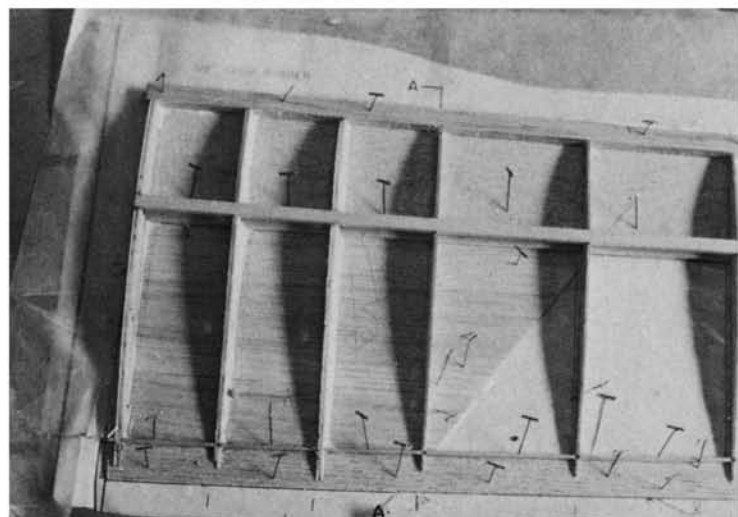
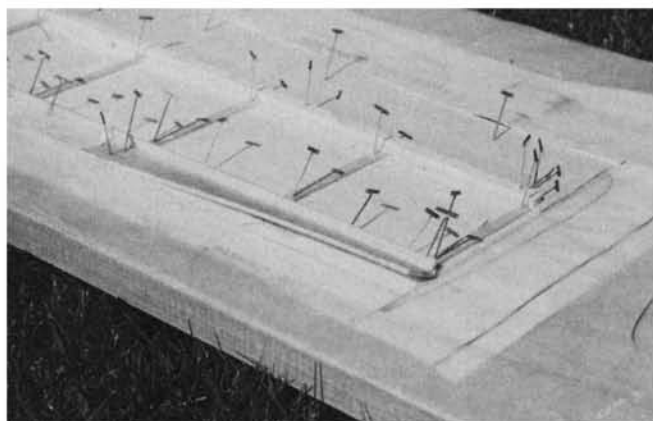
The main building components in this kit are the wings and rear control surfaces. This was my first experience building a set of wings for a sailplane, and there were a few differences compared to the wings I'd built for power models. Most noticeable was the increased length which meant an increased number of parts and longer building time. The most critical part of the whole wing assembly process is making sure that the wing is built on a true flat surface. After the bottom pieces are pinned in position on the plans it is simply a matter of adding all the remaining wing parts—spars, ribs, webbing, dihedral tubes and capstrips—until the wing is ready to be covered. The top and bottom leading edges are sheeted with balsa, but remember that the bottom sheeting is laid down when the wing is first being pinned to the flat building surface. Care should be taken when rounding the leading edge to insure a consistent curve from frame one to wing tip; it's rather easy to develop lows between ribs. Prior to covering the wings, the brass tubing used to hold the dihedral braces is inserted into both wings and aligned. The wings are temporarily held together while the epoxy cures around the tubing. After the glue has set, a razor saw can be used to saw the tubing in half. Obviously, great care should be taken to prevent any glue from finding its way between the wing halves. The wings can be covered with any of the popular heat-shrink coverings. I'll have to admit that I still have someone else to do my covering for me. Everyone keeps telling me it's not all that hard to do, and I guess I'll have to begin covering my own models when I run out of friends who say, "I'll cover this one for you and you can learn to do it the next time."



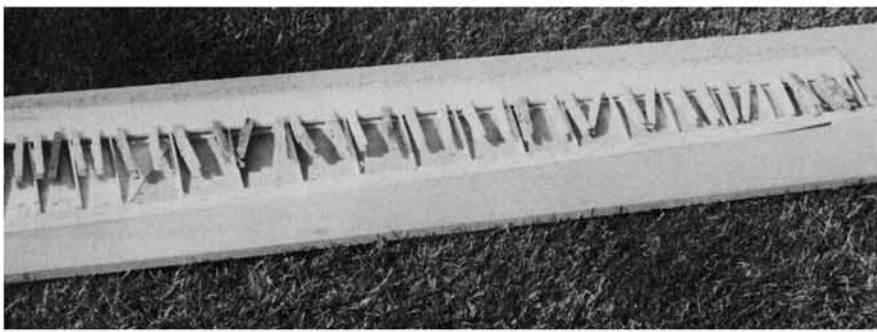
Stephan and Randy Holsapple of T&H Enterprises strike the classic pose with their winning "Gulls." Randy, of Spokane, is the designer of the "Gull" and very active in the LSF and other activities.

The rear stabilizer and vertical fin on the "Gull" are also full flying elevator and rudder controls. The stab and fin are shaped from solid sheet balsa. A center line is drawn around the width of both parts to begin the shaping process. Following the airfoil shape provided on the plans, it then becomes a matter of removing the excess material until the proper foil is achieved. I rather enjoyed this phase of the construction process. It was a much

easier method than building the control surfaces by using the framework method of construction. Holes are then cut into the surfaces to lighten them. I found that the lid from my one-ounce spray bottles was the same size as the holes shown in the plans. A Dremel saw was used to cut the holes. By wrapping fine sandpaper around the spray bottle, I had an easy method of reaming the holes to achieve a fairly true circle. Like the wings, the ele-



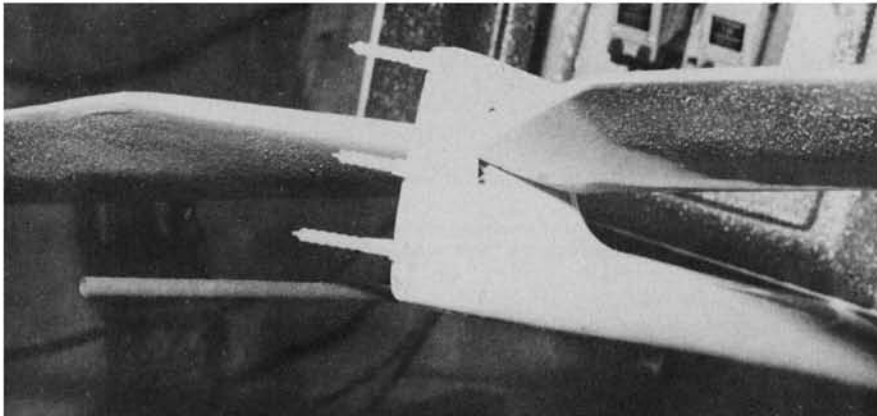
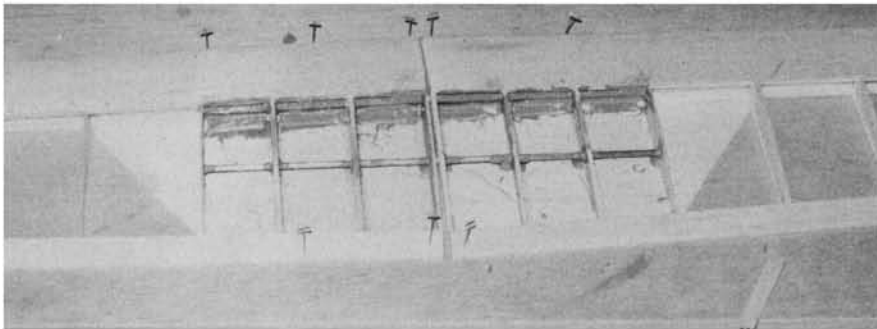
The contents of the kit are spread out with the plans at left; it is an impressive kit. The wing is constructed on a flat surface over the plans with lots of pins and patience as shown in the photos above and at right.



vator and rudder can be covered with a plastic shrink material. The elevator is mounted to the fuselage through the use of a pivot rod and a second rod to keep both surfaces even. The rudder is attached to the rear of the fuselage with horned-point hinges. These two attachment methods provided the freest control surfaces I've ever built on a model airplane.

Radio installation

An EK Logitrol 4-channel "Little Red Brick" system was originally mounted in the "Gull". When it comes to ease of installation, one certainly finds it difficult to beat a brick system. For those of us accustomed to the room available in many power aircraft, fitting an R/C unit into a slim glider fuselage can appear as quite a challenge. It will all fit in there, but it just takes a little more planning and squeezing. Even though sailplanes don't have a vibration problem like power planes, pack as much foam as possible around the receiver and airborne battery pack, since they land on their fuselages and there is impact on landing. Watch a few spot landing events, and you'll see that there's a whole lot of impact after some of those landings. When using wood servo mounts, remember to sand the inside of the fuselage where the mount will be affixed to it. Unless the fiberglass is roughened, the mount will break loose during a hard impact landing. The elevator control push-rod runs inside the fuselage to the control horn, which is also inside. A Sullivan Golden Rod was employed to connect the rudder servo with the rudder control horn. Sailplanes generally can use all the elevator and rudder control movement that can be achieved, and the "Gull" was set up with maximum throw on control surfaces.

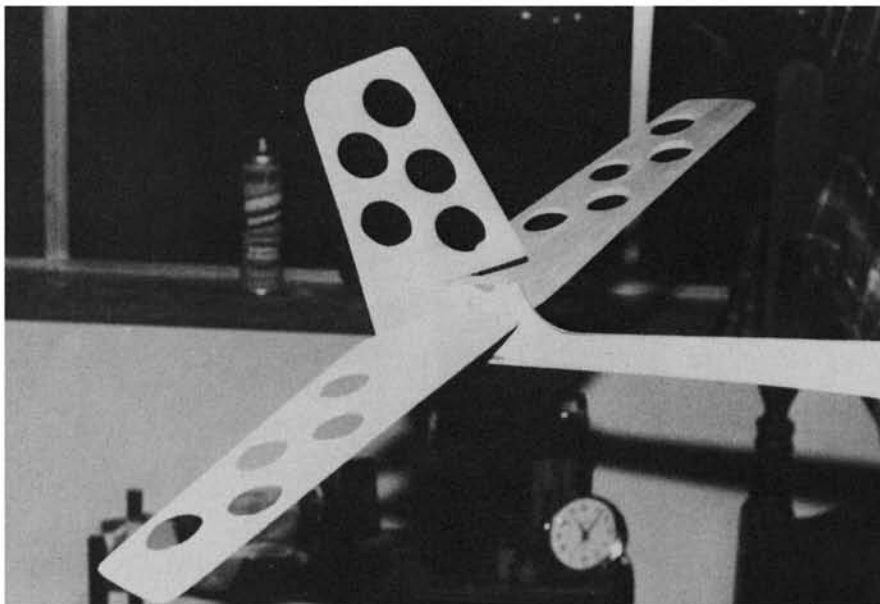


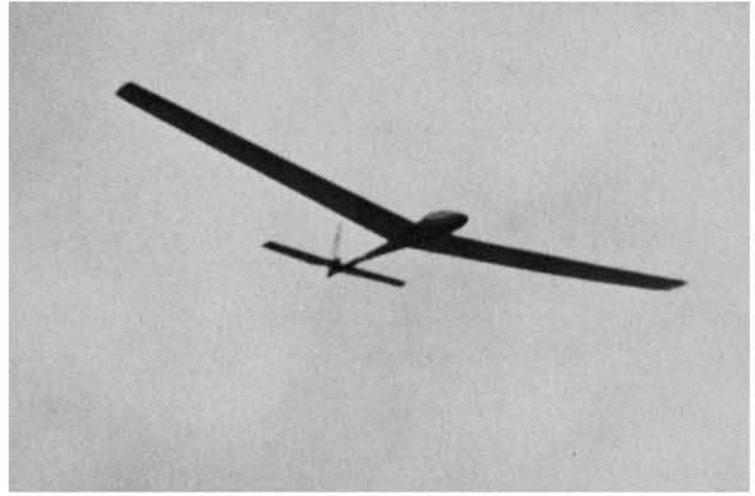
Flying the "Gull"

Since the "Gull" was my first attempt at building an R/C sailplane, I sought out the assistance and advice of some experienced sailplane pilots before attempting to fly it by myself. The importance of having an experienced pilot during the initial test glides and flights can't be over emphasized. R/C sailplanes have one advantage over power models when it comes to trimming the plane for flight. With a power model, the only way to trim it is to make a flight. This can sometimes be a very harrowing experience if the ship is badly out of trim. A sailplane, however, can be hand tossed to check out its flight characteristics. Like any airplane, having the CG in the proper location is most important, and the old adage about better to be a little heavy in the nose than in the tail holds true for sailplanes. The "Gull" was given numerous hand-toss test flights prior to launching it on a power winch.

There are two main methods to launch thermal soarers: power winches and high starts. Luckily for me, my "Gull" was first launched on a power winch. The reason I say luckily is the right wing panel folded right after a fairly easy power launch. A friend, with a good amount of experience in using the power winch, was making the initial flight. He let off the foot control and the "Gull" fluttered in from about 20 feet. Damage was confined to the broken right wing and a couple of minor scratches on the fuselage. Everyone

Dunlap's finally gone nuts with clothespins and T-pins on those lovely long wings in the two top photos. Robert pointed horned hinges (above) make rudder assembly easy. The rudder and elevator are both full flying for efficiency. The holes in the surfaces (below) reduce tail weight.





The "Gull" is in its element here, although the photographer apparently isn't in his. The photo at **bottom** shows the "sanitary" radio installation in Randy Holsapple's "Gull." There's a judicious use of cushioning foam.

present gathered for an autopsy to try to determine the cause of the wing failure. The general opinion seemed to focus on the use of a balsa wing spar, rather than spruce. I later called Randy and asked if what had happened to my bird was common. He said mine was the first wing he'd known to have folded on a "Gull," and he said he'd check some of the other kits to see how the balsa spars were in them. Randy called me back later to relate that apparently there was some bad wood in the spar material, and that he was replacing all the balsa spars with spruce. I elected to do the same thing and replaced the spars in both wings, even though the left panel was still intact.

The next weekend we were out again, and this time everything went fine. The hand launch test flights were done, and when everything was properly trimmed it was again put on the winch. This time my friend didn't experience any problems and the "Gull" flew very well. He handed me the transmitter after the model disengaged from the line and I flew it around

until it was time to think about landing. My friend then landed it for me, and the maiden flight was accomplished. I'll have to admit that I still like more experienced flyers to run the power winch when I'm launching, but I can fly it up on the launch and land it without much difficulty, although I'm still a little timid about it.

I enjoy flying the "Gull" and other types of R/C sailplanes. R/C sailplanes and sailboats are rather similar in that nature is providing the power source. The other obvious comparison is the lack of noise in both activities. Having previously flown power models was most helpful in learning how to steer the sailplane. There is a tremendous difference, however, between steering a sailplane and flying a sailplane. One thing I learned very quickly was that any sailplane was only as good as the person's skill and knowledge at the controls. I'm still learning how to fly them and have a long way to go before I even become an average flyer. I can get them up and down but there are numerous soaring skills that I still lack.

Last summer I had an opportunity to attend an R/C soaring contest where Randy Holsapple and his son Stephan were both competing with their "Gulls." I was really impressed with the skills they demonstrated. I believe Stephan is 12 years old, and he flew like a veteran. Stephan won the Junior Division and Randy was either second or third in the Open Division. Unless you have tried to participate in a soaring contest, you really can't appreciate the talents that the expert flyers have developed. You don't have to participate in contests, however, to enjoy R/C soaring. It's an activity you can enjoy simply because it's a pleasant experience to see your ship floating in the sky and know that you're in command. The feeling of satisfaction and accomplishment derived from being able to take off, fly around and land is probably a reason why so many of us are attracted to R/C flying be it power or sailplanes. I've greatly enjoyed flying my "Gull", and once my soaring skills reach the potential of this plane, I might even be able to make a spot landing. ☞

