

Sprinkle a seed and you get a sprout. So a whole river gives you a dense forest. Fun comes running uphill in woods flying unseen aircraft. His problem!

The "Viking" Breaks a Record

by Bryce Petersen

It requires an efficient hull to lift a belly full of fuel for a new F.A.I. World Record.

When one sits down to build a model to win a World Record, some unusual things have probably taken place in the modeler's mind to create the belief that he can win it. He knows he must have a gimmick that will give him a slight advantage.

Five years ago, the U.S.S.R. held the seaplane distance record totaling 11 miles.

With off-the-shelf equipment and fun fly designs, I was able to advance the record to 26.5 miles. Since that time, I have observed with amazement how the U.S.A. and U.S.S.R. have played ping-pong with the record. Back and forth it went, until it settled down in the U.S.A. at 83.1 miles.

These super modelers were using advanced technology and designs and having a ball. I studied their designs and advanced techniques, hoping to get back in the race

someday. After you win one of those records, it becomes a necessity to get it back.

When the Perry fuel pump was announced, I felt sure I could modify it to work with a small engine. This would solve that almighty fuel supply problem. My next advantage was my experience with Ucon lubricant. Using only 15 percent Ucon and half throttle, my engines purred like a kitten, cool and happy during field tests. There were many problems to overcome. I sizzled one engine during my first attempt at the record. It turned out that the "G" forces leaned the mixture during the tight pylon turns. My trusty Kraft radio had to be rigged with one amp-hour batteries to handle the four-hour duration. I was really surprised to find that the flight pack had a mere 125

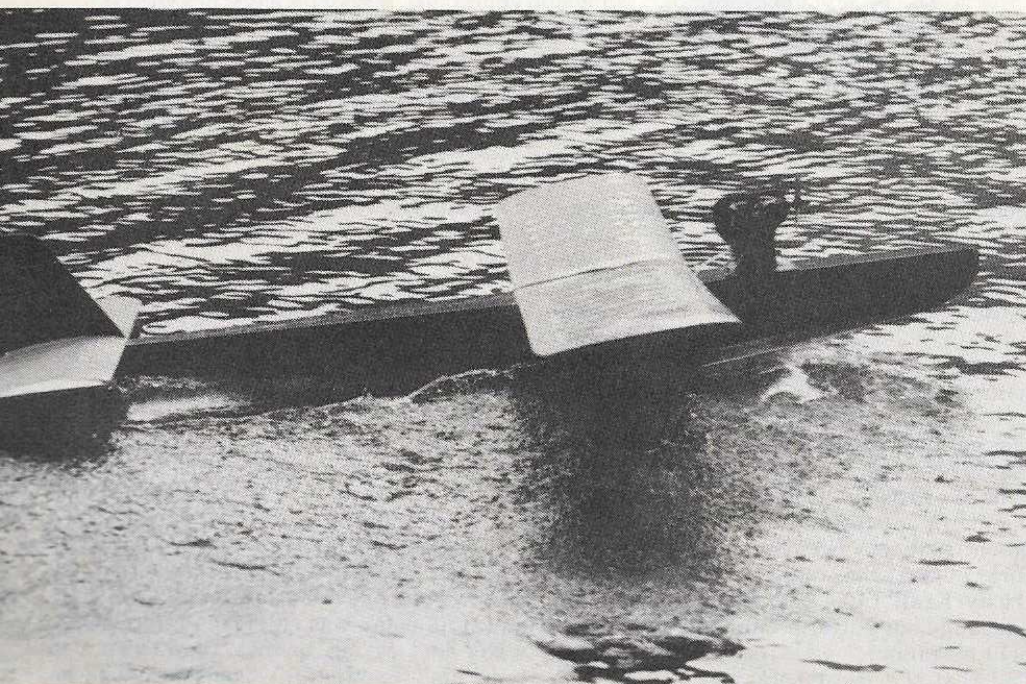
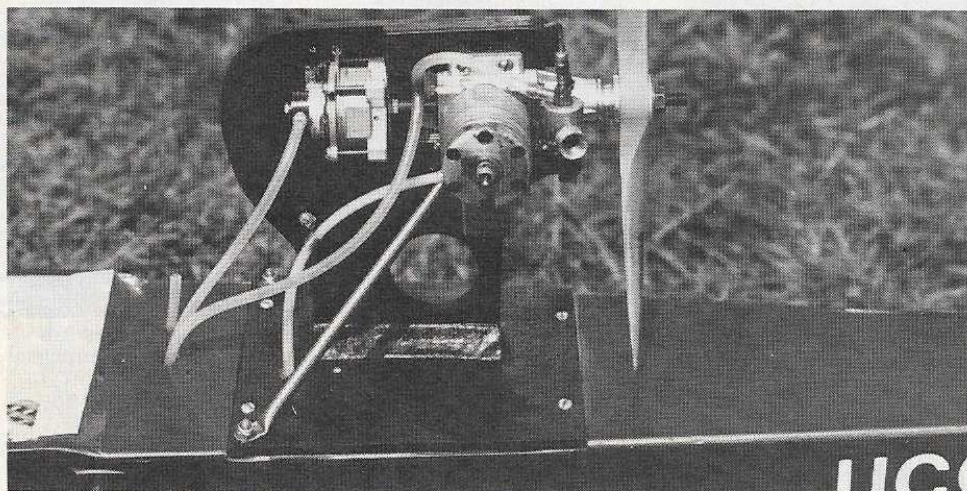
milliamp drain with two servos in motion, so the one amp-hour batteries were just a safety measure.

A New F.A.I. World Record

On September 14, 1975, at 3:43 p.m., a giant, fuel-laden seabird was released from the sandy shores of the Kanawha River at Diamond, West Virginia. Its nervous pilot was standing halfway up the muddy riverbank peering through an open spot in the trees hoping it would become airborne before it went out of sight. My fears were uncalled for because the "Viking" has proven itself time after time to perform unbelievable feats. In about 150 feet, the model was skipping on top of the water and saying to me, "Man, give me some up." Now that it was airborne and in



It's the same old problem, excessive bodily fluids. 32 ounces worth in the big old belly. Pumping it to the engine has always been a problem, it won't all fit in a nacelle. Enter the Perry Pump, problem solved. Worked to perfection! **Below:** Earlier test set-up that proved to be unsatisfactory.



a gentle climbing turn, my next problem was to climb up the riverbank. This was scary because the overhanging trees meant I could not see my big bird for a few seconds. When someone shouted that I was high enough to clear the trees, a course was set for Pylon No. 1.

Up that riverbank I went and when I reached the top, there was my bird flying straight for Number One at about 200 feet.

Next on this precarious flight plan was a 500 foot walk to the center of the 500 meter course.

A right turn at Pylon No. 1 and the official counting began, but I still had to walk to the center of the field. This proved to be no problem and the butterflies began to leave when I reached the swivel stool and settled down to some serious pylon flying. I got tickled when I heard a woman in the background trying to understand how this big model suddenly appeared flying around the field with no pilot.

It was Sunday afternoon at the club field, and the regulars were out in force, so an F.A.I. record attempt only stopped the regular flying for a few minutes.

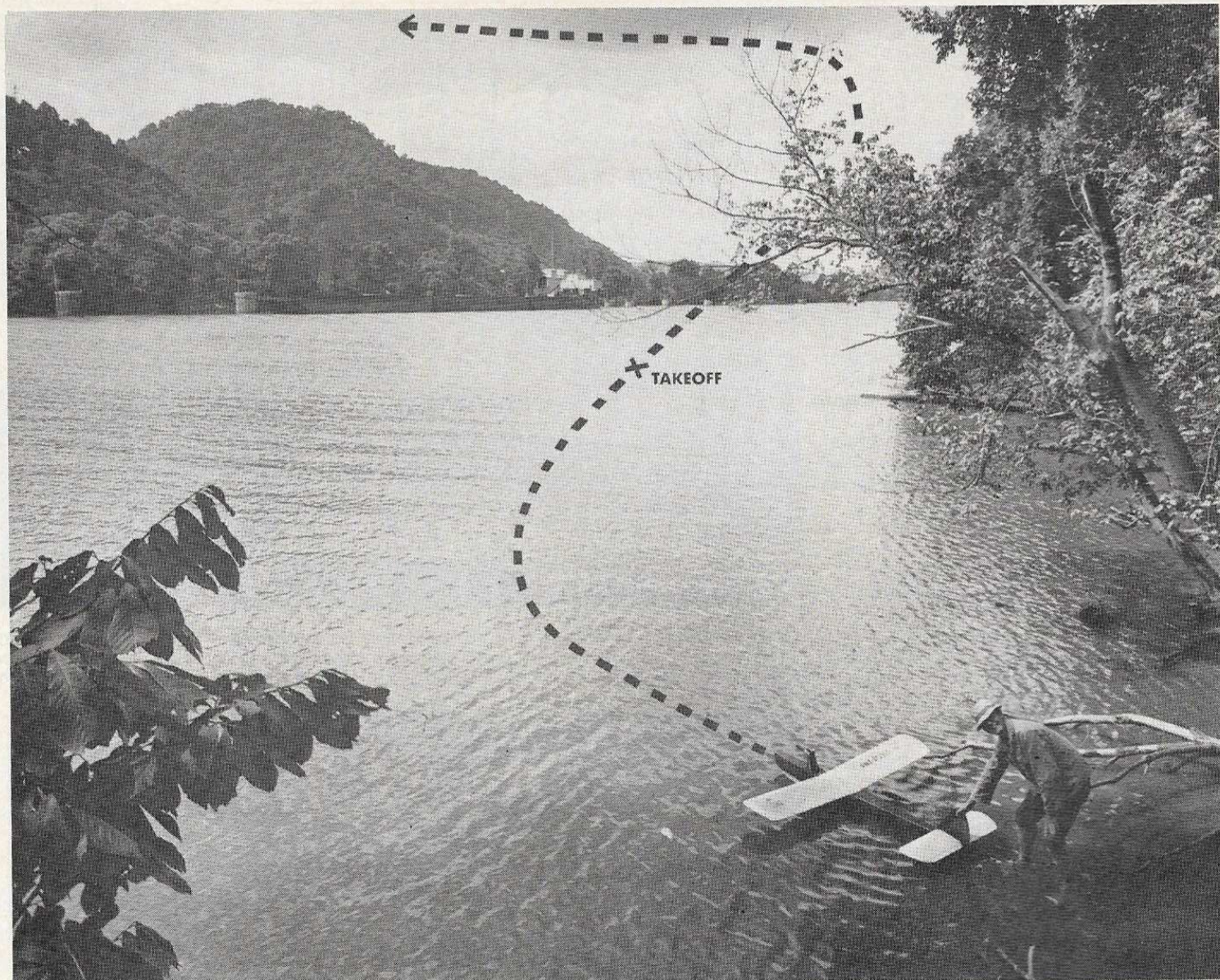
Tony Scribner, my flag caller, began to coach me on my pylon turns. It seems that I was so happy to have that big bird up there that I was turning too wide and using up too much time. He wanted that left wing pointing straight down and full up elevator to recover. I was losing four or five seconds per lap. With that heavy fuel load, this was a scary maneuver, so I continued the light turns until things lightened up a bit. Most turns were diving turns with slight altitude recovery to the next pylon. The trick was to fly low upwind and high downwind.

One must have many dedicated friends to challenge world records. They must be willing to give up days of flying, slide down muddy riverbanks, get their feet wet, and wake up early. How can I ever repay them?

On lap Number 80, something began pulling on my pant's leg. A quick glance down and I saw that it was my poodle, Michelle, whining for recognition. A day at



Kind of a misty morning look. All the observers, CD's, and playmates arriving, will pound Bryce to butter if he aborts it. What're friends for? **Left:** Like a sea-sled it's off, lifting airfoil.



the field is the delight of her life. This meant that my wife, Jennie, had arrived (with some beer, I hope), and for the first time I felt I just might break the record.

On approaching the halfway mark, I throttled back again to somewhere between $\frac{1}{3}$ and $\frac{1}{2}$. It was obvious that the fuel economy far outweighed the speed loss. No trim change was needed, so the upthrust on the engine must be close to perfect.

By now things began to get boring, the sun was going down, and the Sunday flyers were leaving for home (after wishing me good luck). I did enjoy a conversation with one modeler about my new Kraft Signature Series rig that arrived the day before. I could talk about this little jewel while doing almost anything.

After Lap 200, I stopped worrying about mechanical failures, etc. Now it was a question of fuel supply. At less than half throttle, I had a good chance. Daylight began to fade and so did the wind. My left thumb was numb from pulling all those up elevators.

Words of encouragement began to come from everyone because I was approaching Lap 239. That is the present record lap and all that I needed was four laps to beat it the required two percent. When those were completed, every lap was pure gravy.

On Lap 245, my engine began to falter, so I advanced the throttle for extra altitude. The engine responded, and the ship climbed to 400 feet. Now I was on Lap 247 when I throttled back again. This was a mistake because the engine sputtered and died. High throttle would have given me an extra five laps. But at this point, who cares? A gentle glide to my chosen landing point, and the flight was over.

There is no way I can describe the joy of winning a World Record. I would rather hold one than win the Nationals.

About the Model

It was Dale Reed's fine article on seaplane records, using his "Queenie" design that rekindled my interest. His statement that "Queenie II" could rise off the water weighing eight pounds using a .40 engine at $\frac{1}{3}$ throttle convinced me that his hull design was superior to anything I have seen, so I copied it with the exception of thinning it down 30 percent.

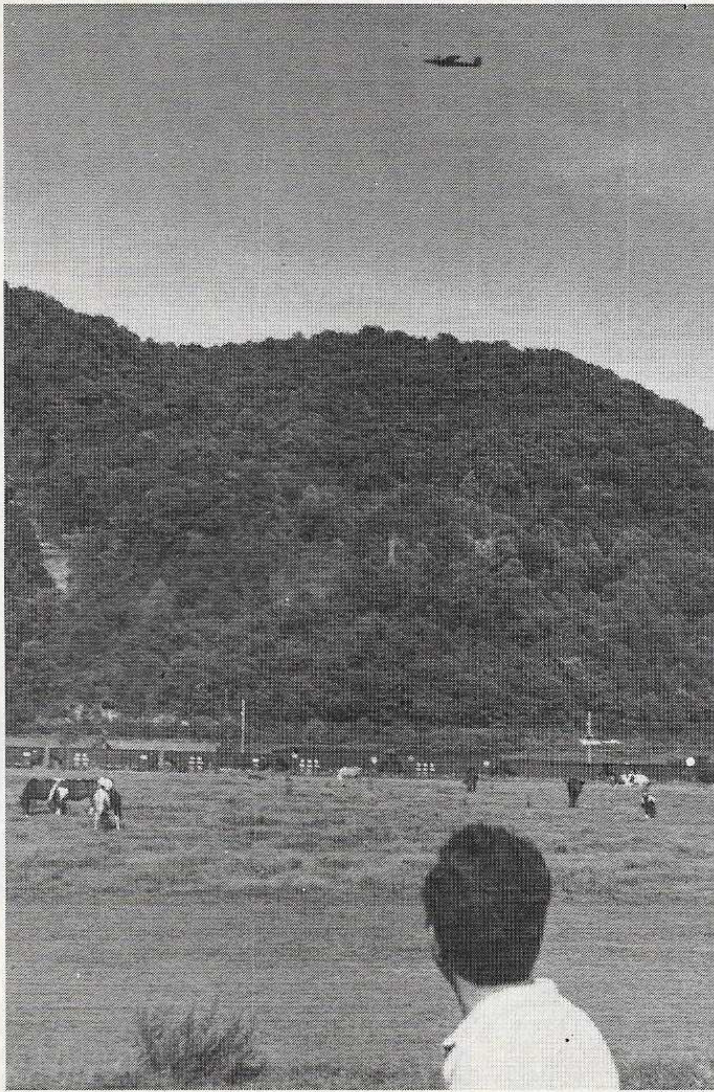
Close inspection during water tests using a speedboat revealed its secrets. The big flat board under its nose raises the weight of the model progressively while the prop wash gets under the lifting tail, pulling the rear end out of the water. It is so simple and efficient because there is no wasted energy deflecting water side-

ways. My "Viking" will take off from the water at 11 pounds in 150 feet in approximately 7 seconds. Dale Reed, you are a genius!

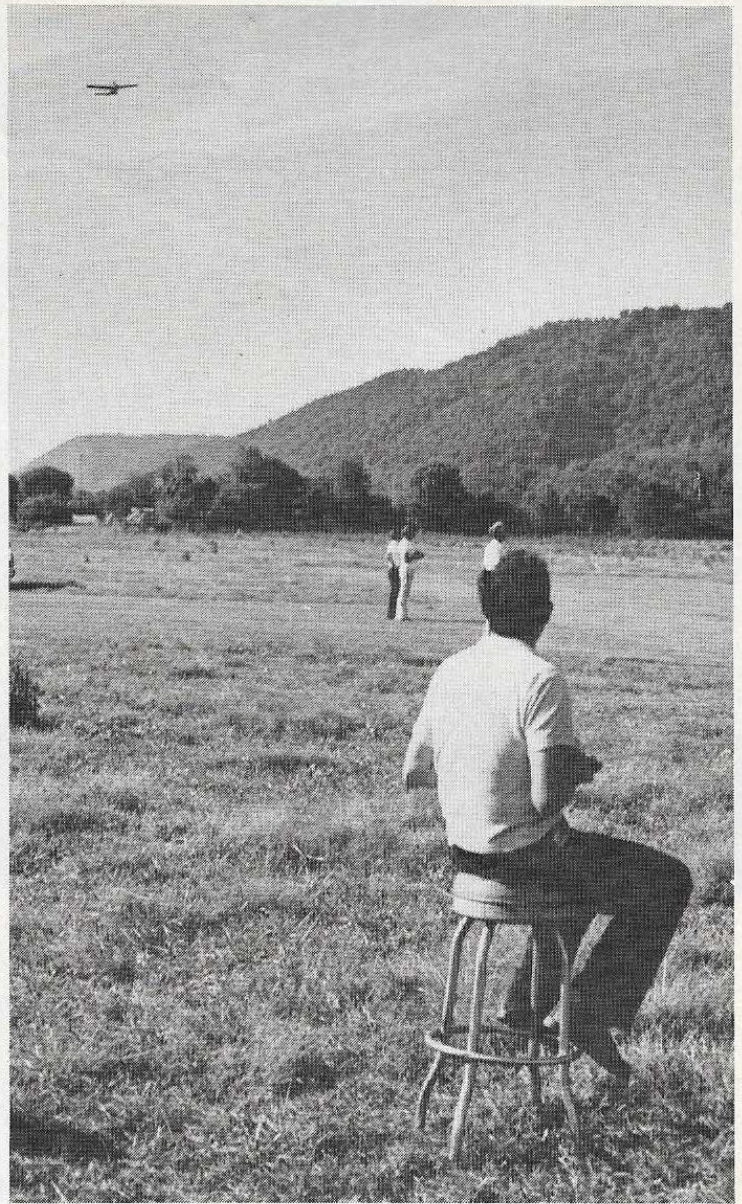
The Fuel System

When the Perry pump and carburetor were introduced, I made a quick call to Mr. Perry hoping he could supply me with a pump for my HP-40. Not for some time was his reply, but he convinced me that his pump was of high quality, so I purchased two of them for tests.

A plate was machined to fit over the end of the pump with an "O" ring seal. A brass fitting was installed to the HP-40 backplate. The pump was connected to the engine with 10 inches of tubing which was twice the length I needed. Using a standard fuel tank, I fired up the engine while whispering a little prayer. The engine fired on the second flip, and the pump filled the 12 inch fuel line instantly. Further tests revealed that the pump could supply over twice the fuel needed at full throttle. Now that I had a way to get the fuel from the tank to the engine, a series of tests were run using all kinds of bypass tanks and closed loop fuel systems. These systems added extra bulk and plumbing, so a series of tests were run hooking the pump directly to the HP carburetor. With



50 laps and the moo cows couldn't care less. Technology is wasted on some people. Nothing is level in mountainous West Virginia except the airplane. **Right:** 100 laps, all is well. Viking flies on. That's not a stool pigeon. **Facing page:** Flying on that dotted line was the hardest part. Fuel laden.



the needle valve open eight turns (very wide), a series of perfect runs in the air proved that I had the perfect fuel system. "Mr. Perry, you are also a genius."

Model Construction

Start your model by cutting your foam sheets with a hot wire. Be sure to use the natural, closed cell foam and not the beaded type. It can be found at insulation supply stores and is blue in color. Those of you that are foam shy, I beg you to try this construction technique. It is stronger, lighter, and cheaper. Lay your fuselage sides down on a flat table and sheet the outsides with $\frac{1}{32}$ " balsa, using contact cement. Next comes the $\frac{1}{16}$ " sheeting and $\frac{1}{32}$ " plywood on the inside. Now you tape the tail together and add F-1 at the step and F-2 and -3 at the engine mount area. Draw a straight line on your work table and use it for a centerline, pull your nose section together, and secure it with masking tape. Add your $\frac{1}{8}$ " sheeting on top and bottom, cross-grain. Use epoxy for this. Last is your nose block and splash plate.


By now you should be convinced how easy this type of construction can be. The plans give a step-by-step view of the wing and stabilizer, and the rest of the model is standard construction.

You will notice that the center of gravity FLYING MODELS

is at 50 percent of the wing chord. This is because of the lifting tail. If you are building the model for sport flying, I suggest you enlarge the elevator a little for more active fun flying instead of the slight corrections needed on record flights.

In closing, it is my hope that some of you

ambitious modelers out there will use these ideas and improve on them and win new records. That is what it's all about.

And a special thanks to Tony Scribner, Stan Hines and Rusty Ratrie—all of the Mountaineer Radio Control Club. Without them, it would have been impossible. 



Sweet taste of victory! Bryce and the "Viking" sharing a happy moment. It takes more than a lucky flight to topple an F.A.I. record. It would be tough without the assistance of friends and helpers.