

# Gorham Model Products

# CRICKET

by DICK TRISTAO

*Refinements in design lead the Cricket to the top of its category!*

**J**OURNALISTS covering the 1984 Olympics coined the phrase "going for the gold" to signify the goal each participant was striving for. It has a nice ring to it and still denotes the stride toward excellence. Applying the phrase to the Gorham Model Products\* Cricket is very appropriate for two reasons: one, it is the black and gold anodized Custom Cricket, and two, consistent refinements to the original design have placed the Cricket at the very top of its intended model helicopter category.

About 1979 BC (that's "before Cricket"), experienced helicopter modelers usually assisted a beginner who brought his complex machine to the Sunday morning flying sessions. Normally several tanks of fuel were expended getting things into working order and sometimes the session ended with many little parts scattered about the field.

While the rest of us were buzzing around the sky, John Gorham set out to do something about the beginner's difficult and expensive dilemma. Armed with the engineering philosophies of KIS (keep it simple) and SAAL (simplify and add lightness), the Cricket was designed, tested, and put into production within a year. Since then, over 10,000 (that's *ten thousand*, folks) Crickets have been manufactured and sold. With that many out there, it's no wonder these little critters show up at numerous flying fields performing alongside complex, high dollar models.

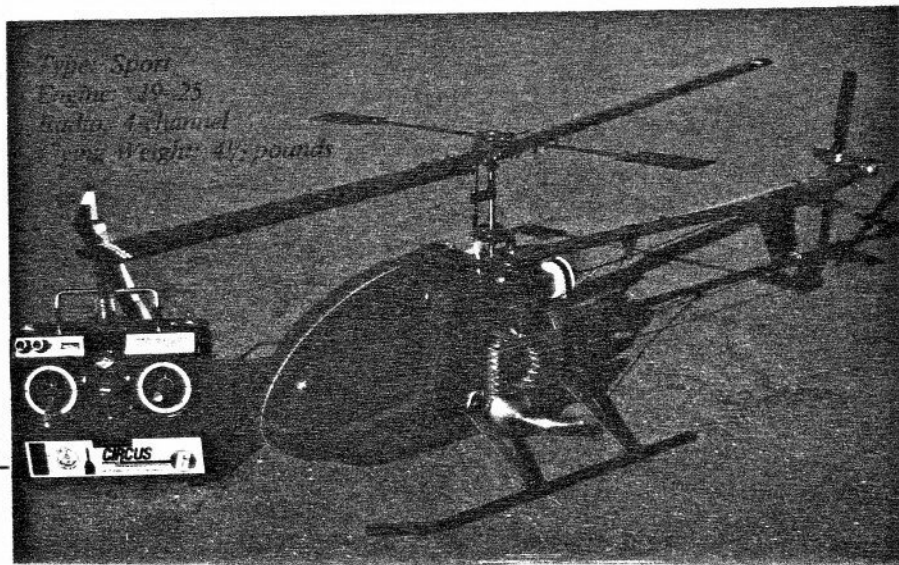
My own helicopter experience dates from the early '70s and I've flown just about everything ever



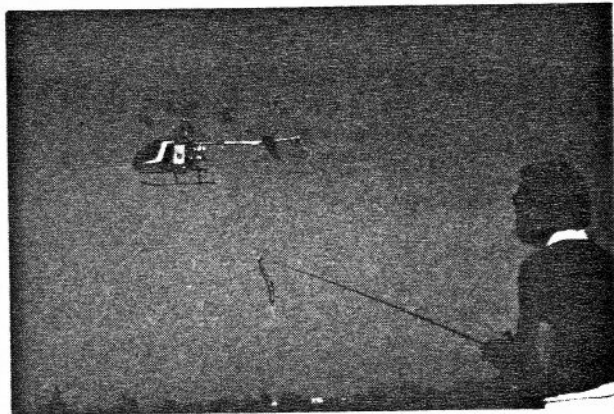
manufactured. As is the case with most modelers, I kept moving up to more sophisticated aircraft as skill and pocketbook volume increased, thus often taking no more than a cursory glance at the new arrivals in the simpler categories. The Cricket invasion convinced me to look closer at this diminutive machine.

A trip to a trade show found me pointing like a kid at a displayed custom Cricket, repeating, "I want, I want." John Gorham cheerfully explained the Cricket's history and characteristics. Believe me, after years of sophisticated and sometimes complex helicopters, the Cricket's appeal was grabbing.

Soon after, I ordered the kit and then faced the other decisions about choice of engine, muffler, radio, etc. Decision time made me think again about beginners and the usual pocketbook problem. Armed with that attitude, I



## Docile, yet a zoomer if asked to be!

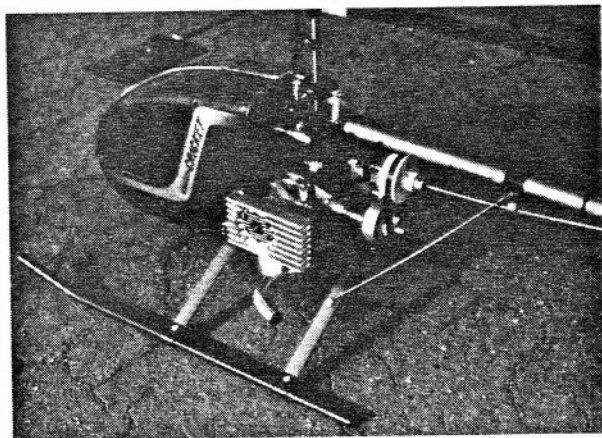


Precise control response makes hovering a cinch.

Next came the gyro. I had to study several considerations before stuffing many items into the Cricket's tiny cabin. The gyro needed to be small, lightweight, and inexpensive. Experience helped me here but any novice would probably reach the same conclusion through visual inspection of several gyro makes. The final selection was the Kraft\* gyro.

Lastly, the radio. The Cricket is designed for a simple four-channel, four-servo radio and virtually *any* system with standard servos will fit. This is quite a departure from 99% of the available helicopter kits today which require up-scale, multi-feature helicopter systems. I decided to look for the least expensive helicopter version available, since any modeler should be thinking of future use. My search ended in the center of a radio ad from Circus Hobbies that featured the Circus Six helicopter radio for an exceptionally low price. A telephone call to Circus found me chatting with president Tony Bonetti about the radio. He was so informative, I placed the order on the spot and the pretty little radio arrived several days later.

O.S. .25FSR uses the GMP heat sink for cooling and Heliball muffler from MAC.



made the rounds of several hobby shops to negotiate for the needed accessory items.

Since the Cricket was designed to fly with a .25 engine, I chose the popular O.S. .25FSR ABC from Great Planes Model Distributors\*, remembering that heat-sink cooling might require an engine more tolerant of heat. GMP has tried almost every .19 to .25 engine in the Cricket with varying differences, but all were more than adequate in performance. The engine I chose was not the helicopter version, so I needed a heat-sink and chose the one offered by GMP for the O.S.

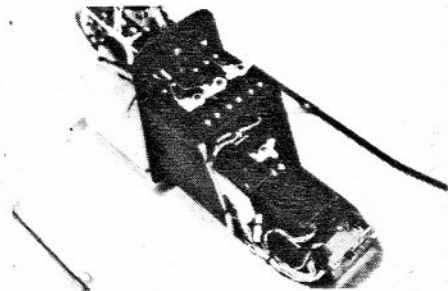
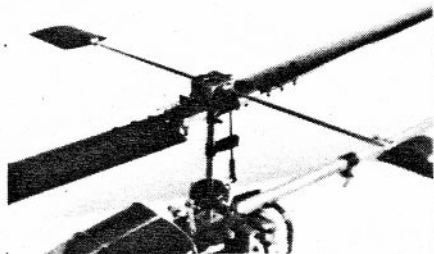
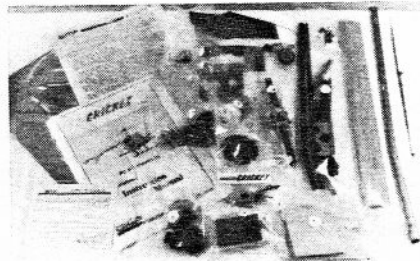
Selecting a muffler was merely a matter of choice since the stock O.S. can be easily fitted. I like the quieter tone and lighter weight offered by MAC's\* Heliball so I purchased one.

**THE KIT.** When I opened the kit I was greeted by a detailed 24-page instruction manual loaded with easy-to-follow photos, diagrams, and written copy geared toward the newcomer as well as the experienced modeler. Every step of the Cricket's construction is carefully outlined, and the numbered sequence matches a parts bag in the box. I particularly liked the inventory for each bag given right at the beginning of every construction step, plus a photo of the contents on page 21. This allowed a quick check for any missing parts.

**CONSTRUCTION.** Working with the anodized pieces featured in the custom kit was sheer pleasure, as each step always had that "finished" look. Parts fit was exact and at no time did I need to dress anything with a file, sandpaper, or a

*(Continued on page 110)*

Left: Kit parts are bagged and neatly packaged. Middle: Fixed-pitch Hiller head is the simplest form of a helicopter rotor system. Right: Circus Six radio and Kraft gyro fit easily.



reamer. The Cricket's parts fit and finish are equal to any top-dollar kit in today's market and, from my own experience, better than quite a few.

The instructions for this model are the best I've seen and you will find the little helicopter growing before your very eyes in short order. Time to complete each step ranges from ten minutes to about an hour.

Take a little extra time during mounting and aligning the rotor drive gear train so there is a little play in the gears. A nice feature of the kit is sealed ball bearings which are used throughout, for a maintenance-free transmission.

The clutch hub and centrifugal clutch are mounted to the engine using an extra spacer which is provided. Be sure when mounting the clutch to center and align it carefully so there is *no wobble* at the end of the stub shaft. This will cause vibration problems if done incorrectly. The pre-lined clutch bell and starter cone are installed, then the whole assembly attached to the main frame. Snug the

engine mounting bolts, then pivot the engine down at the clutch to achieve proper belt tension. The cog belt will appear floppy but little tension is required for proper operation.

The preassembled tail rotor gear box is ready to use and only requires final assembly of blade mounts, ball links, etc.

The rotor head comes pre-assembled and only needs the addition of the stabilizer bar, control paddles, and related linkages. Blade mounts are attached and the whole assembly mounted on the main shaft. Take time to study the components of the rotor head so you will be able to detect wear or binding as time goes on. The Cricket's flying performance depends on a properly maintained and free moving system. Keeping the head clean and properly lubricated will provide hundreds of trouble-free hours. Main and tail rotor blade assembly is straightforward and well covered in the instructions.

I always lightly sand the blades, then use Satellite City's\* Hot Stuff on the entire blade root out to 1/4 inch past the mounting holes, sand smooth, then cover. I wanted to try the heat-shrink covering offered by GMP and I chose black. I sealed it with Hot Stuff, attached the blade mounts and assembled them on the respective hub, head, or tail for balancing.

Cleanly cut plywood makes the cabin assembly a joy to build. Measure and trim for your servos, switch, and charging jack. I used Hot Stuff for all the wood assembly. I painted the exposed wood with lacquer primer or paint to fuel-proof it.

The plans show the switch being mounted with a vertical On/Off rod protruding through the canopy. An alternate method is to mount it on the back firewall, which I did. The Cricket's cabin area allows a surprising amount of radio space and my Circus Six standard servos went in easily with plenty of room for receiver, battery, and gyro.

Four 505 servos are supplied with the Circus Six helicopter radio, and they are well made and appear to share the same case top with the more expensive 501 and 401 ball-bearinged versions, although the 505 does have a longer bottom case.

The servo output is listed at 40 inches, which is better than top-of-the-line servos available just a few years ago.

Hook up of the control linkages is the next stage of the construction. Provided threaded rods, clevises, and keepers make the job go by fast. Pay particular

attention to the tail rotor pushrod so that it operates freely without any binds. The instructions offer a diagram for proper travel direction and range, and should be followed closely.

Fabricate the simple wire pitch gauge shown in the instructions and set the main rotor pitch. Check the CG and add nose weight if necessary (mine took 2 ounces). Final checkout is accomplished with the transmitter in your lap and the instruction book on the table.

Versatile is a good description of the Circus Six transmitter design and comes from its ability to convert to a six-channel airplane radio just by turning the ATS (automatic tail rotor compensation) switch to off. A helicopter radio one minute, an airplane radio the next!

Since the Cricket is a fixed-pitch helicopter, I dialed the "REVO" to 0, as tail rotor mix is not needed. I dialed the ACC to about mid-range to provide a little overshoot and return to center of the tail rotor servo during rapid throttle stick movement. This minimizes tail rotor swing during acceleration or deceleration of the main rotor speed.

With all servos moving in the right direction, the gyro properly mounted, and the radio charged, it was time to go flying.

**FLYING.** Setting up at the flying field for picture taking brought the usual oohs and aahs from fellow fliers. The Cricket is a cute machine that draws even more attention because of its small size. Questions came rapid fire, with the most often-asked being, "Won't it be squirrely because it's so tiny?" or "I'll bet the wind will raise havoc with that flyweight!" Well, it was time to find out the answers.

The O.S. .25 purred to life at the first touch of the starter and I allowed it to run for several minutes to loosen things

up. Advancing the throttle several times and carefully adjusting the needle valve produced a smooth liftoff right at 1/3 stick. A tiny bit of tail rotor trim plus a tad of right cyclic trim had the little chopper hovering steadily.

Flying the Cricket required a readjustment to my flying style since I'm used to a quick-as-a-gnat control response. Cyclic response is smooth and very

positive, but requires more stick movement. It took only a few minutes of the first tank to develop the feel and timing required to hold the model in a stationary hover. Tail rotor response is quick and extremely positive, just like the big boys. The vertical response takes a little more getting used to. Since collective pitch is absent, vertical position is obtained by opening or closing the throttle, thus

speeding up or slowing the main rotor. Obviously a slight time delay occurs but is very short (perhaps several seconds maximum) due to Cricket's light flying weight, which averages 4 1/4 pounds. Still, one must learn to fly mentally slightly ahead of what you want the Cricket to do vertically. This is true of any fixed-pitch helicopter and is the way we early pioneers had to fly for years. It is no wonder we thought we were in hog heaven when collective pitch first appeared.

My overall impression of the GMP Cricket is certainly positive in all areas—building, flying, and quality for its cost. Experts will find it to be a fun machine capable of most flight maneuvers, including loops and rolls (a Cricket was flown in Expert Class at the Nats several years ago). For the beginner, the Cricket offers a helicopter that is low in cost initially and, later, in repairs. Mine went

through the rugged test by flaming out 20 feet over a 12-foot cornfield. The damage report: a 1-inch hole in the canopy bottom, a slightly bent left skid, a small dent in one rotor blade, and lots of pollen and smelly pesticides.

The Cricket is docile in all flight modes, yet a zoomer if asked to be. Beginners will appreciate the detailed instructions for assembly, setup, and flying. Cost will not break up the family nor will it take up half the house for storage. Operating expenses are low, as well as replacement parts. High-quality, low-cost radios such as the Circus Six provide all the electronic gadgetry that the Cricket is capable of using. What more can a modeler ask for than a low cost, time proven R/C model helicopter?

Get the winner and go for the gold, GMP Cricket.