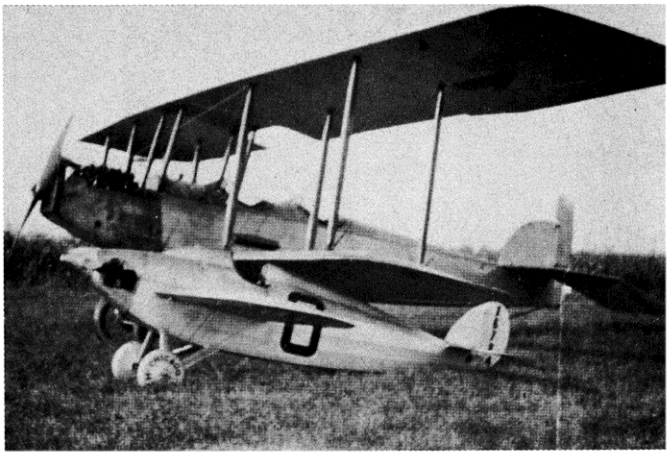
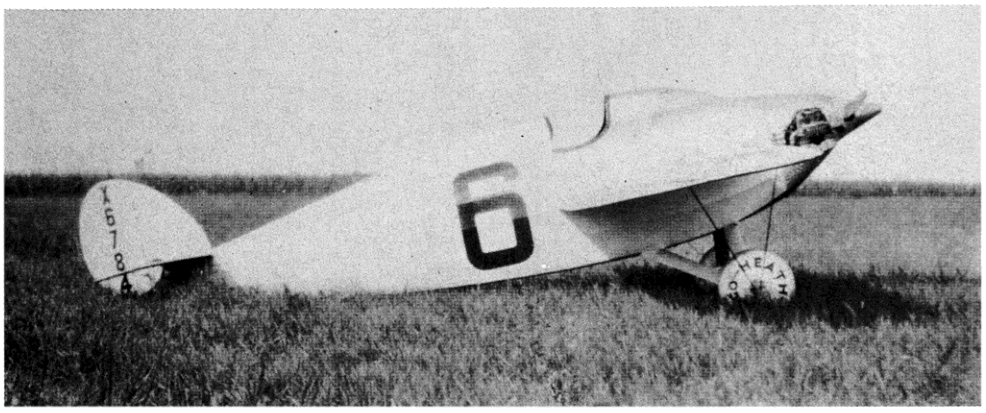


The tiny racing plane had a span of 16 feet and a Bristol Cherub engine for power. ▲



Ed Heath and his Baby Bullet created a sensation at the 1928 Los Angeles National Air Races.

On August 18, 1928, the Baby Bullet was test-flown by its designer, Ed Heath. ◀

ED HEATH'S BABY BULLET

IN 1928, THE AIR RACING FRATERNITY WAS AMAZED BY THE PERFORMANCE OF ED HEATH'S TINY MONOPLANE RACER

BY JIM PEPINO
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Greensboro, NC 27403
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Several years ago, I designed a 1/3 scale model of the famous Ed Heath "Baby Bullet." I'd always loved this airplane because it fairly oozes of nostalgia, it's as American as Mom's apple pie, and it's a racer from the Golden Era — what more could you want!? Well, it's also easy to build, especially now that Fiberglass Masters is producing all the sexy-shaped hard parts, including the upper and lower front cowls, as well as the top cowling, all the way back to the cockpit. As an additional bonus, the Baby Bullet is also a great flyer!

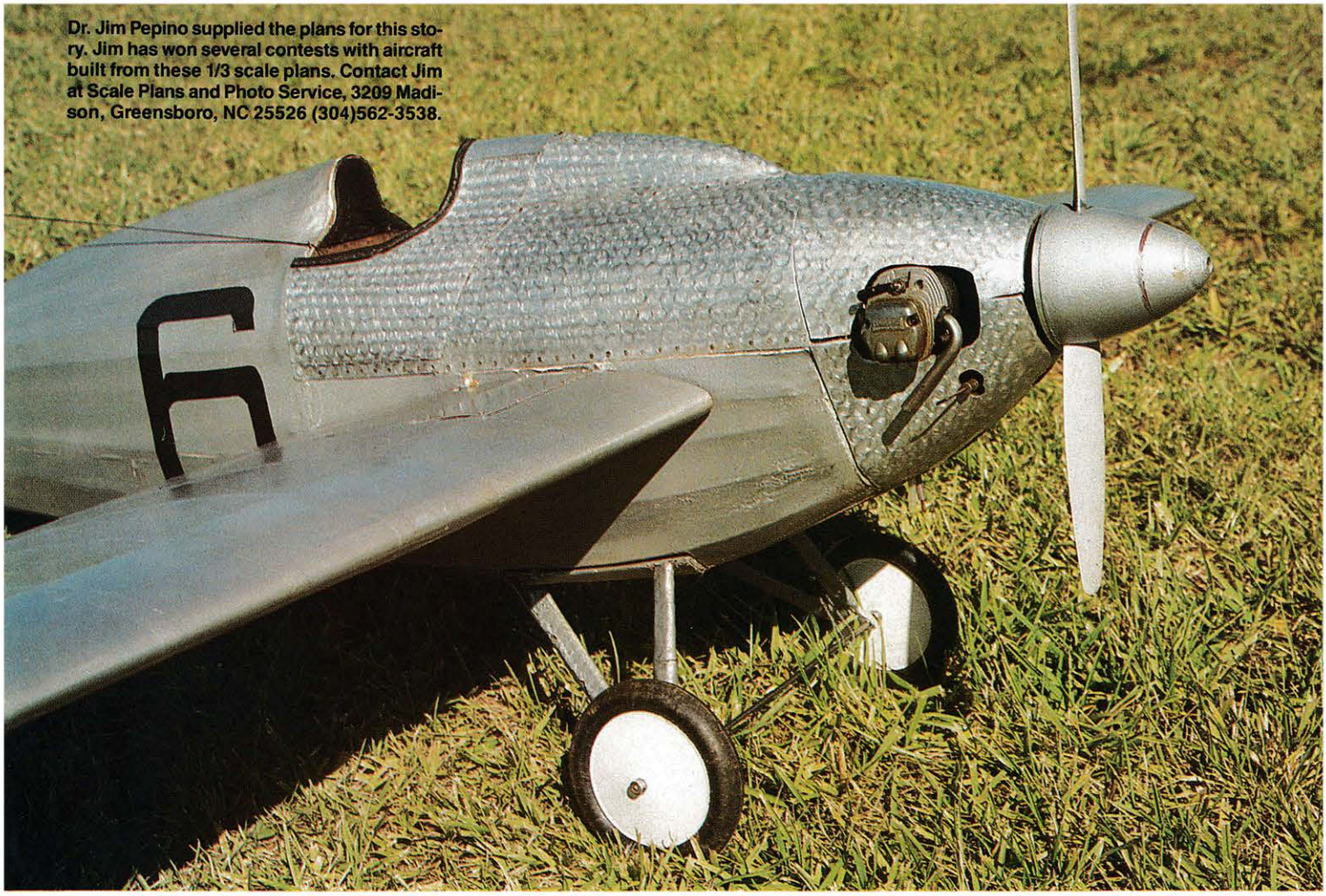
I've been flying my latest Bullet now for over five years, so you know it's durable too. My plans incorporate everything I've learned during my five years of test-flying and routine maintenance.

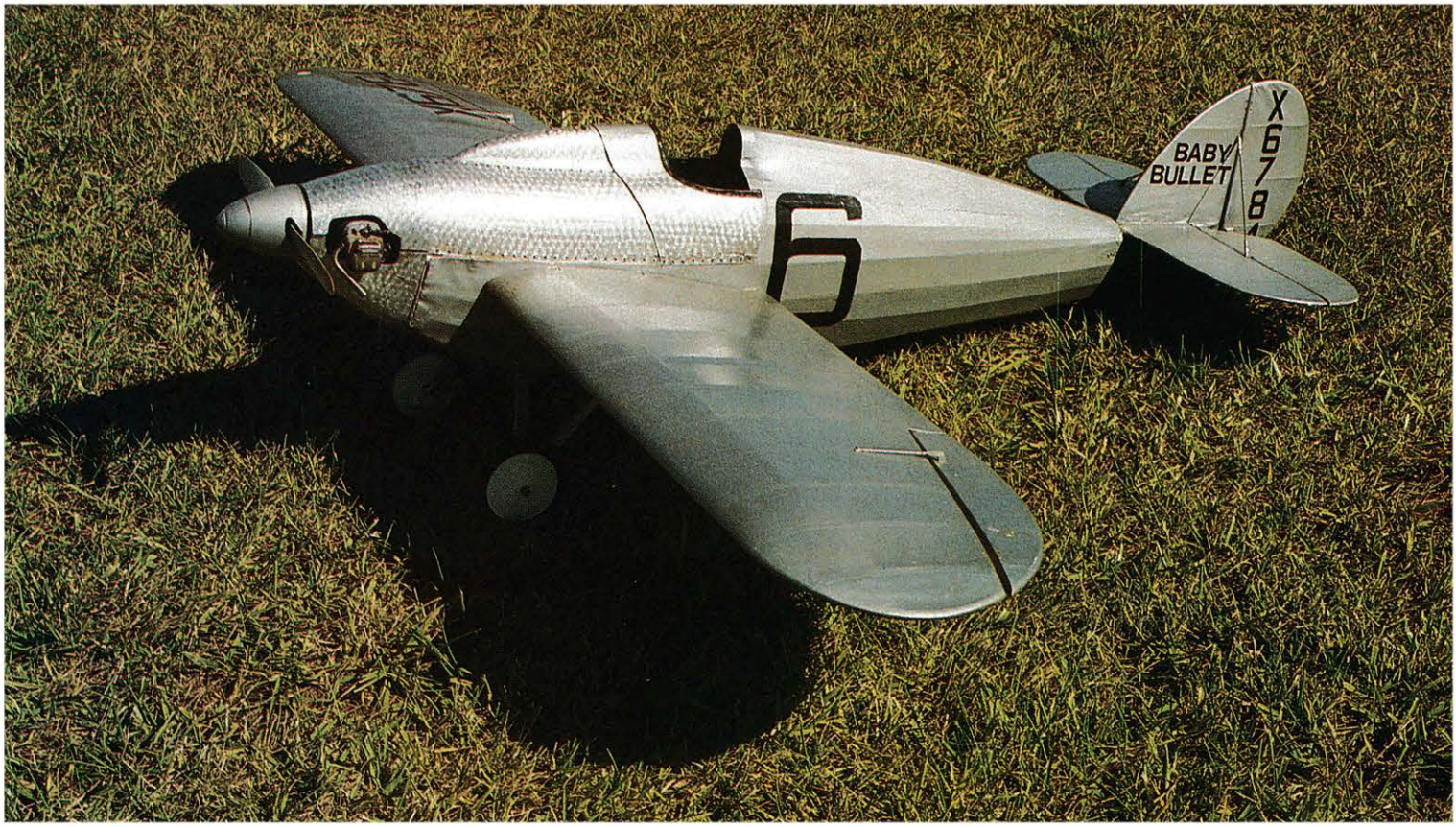
For those who are really serious about scale competition, there's also an excellent booklet available for you; with more documentation in it than any scale judge could ever use.

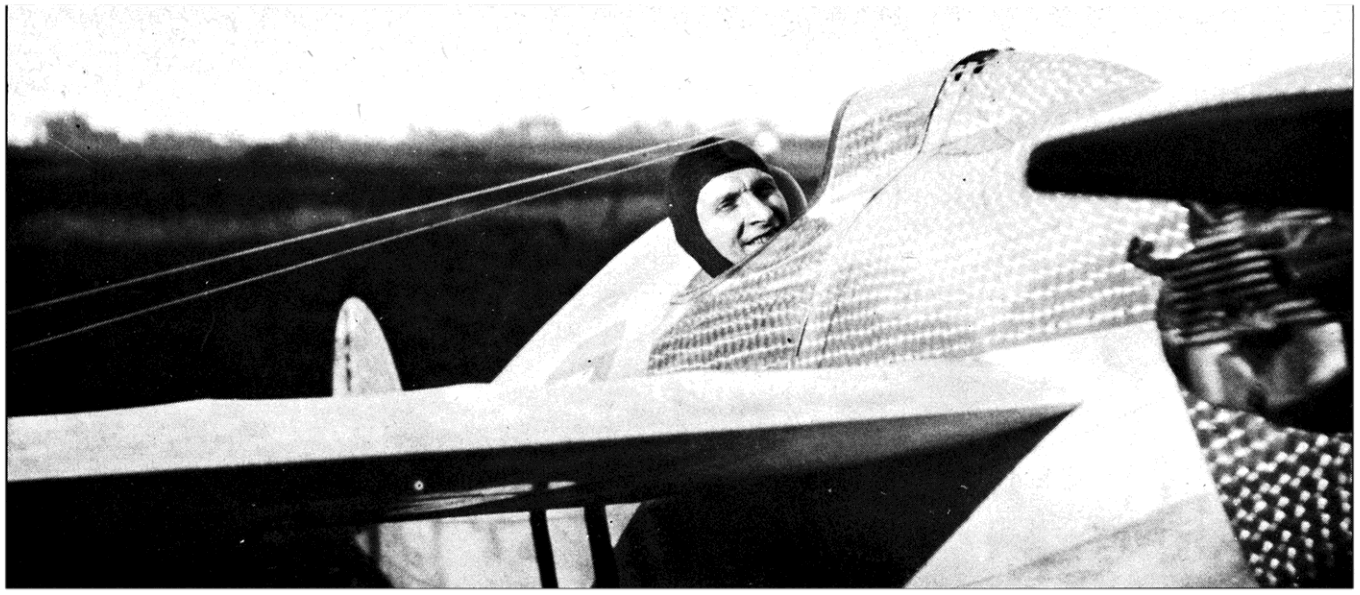
This plan is 100% authentically scale in all outlines — rib locations, bulkhead locations and airfoils — so there won't be

(Continued on page 62)

Dr. Jim Pepino supplied the plans for this story. Jim has won several contests with aircraft built from these 1/3 scale plans. Contact Jim at Scale Plans and Photo Service, 3209 Madison, Greensboro, NC 25526 (304)562-3538.







Heath also designed the Heath Parasol — one of the first Homebuilts to have its plans published in a national magazine.

BABY BULLET

(Continued from page 32)

any "automatic static deductions" to worry about!

Four years ago, I won in Giant Scale Category at the North Carolina State Championships, with my own Bullet. The model is 1/3 full-size. My aircraft now has a Gemini 1.6 twin in it, but before that, I flew it for three whole years with a Gemini 1.2 in it — and an old one at that! Plenty of power for the aircraft.

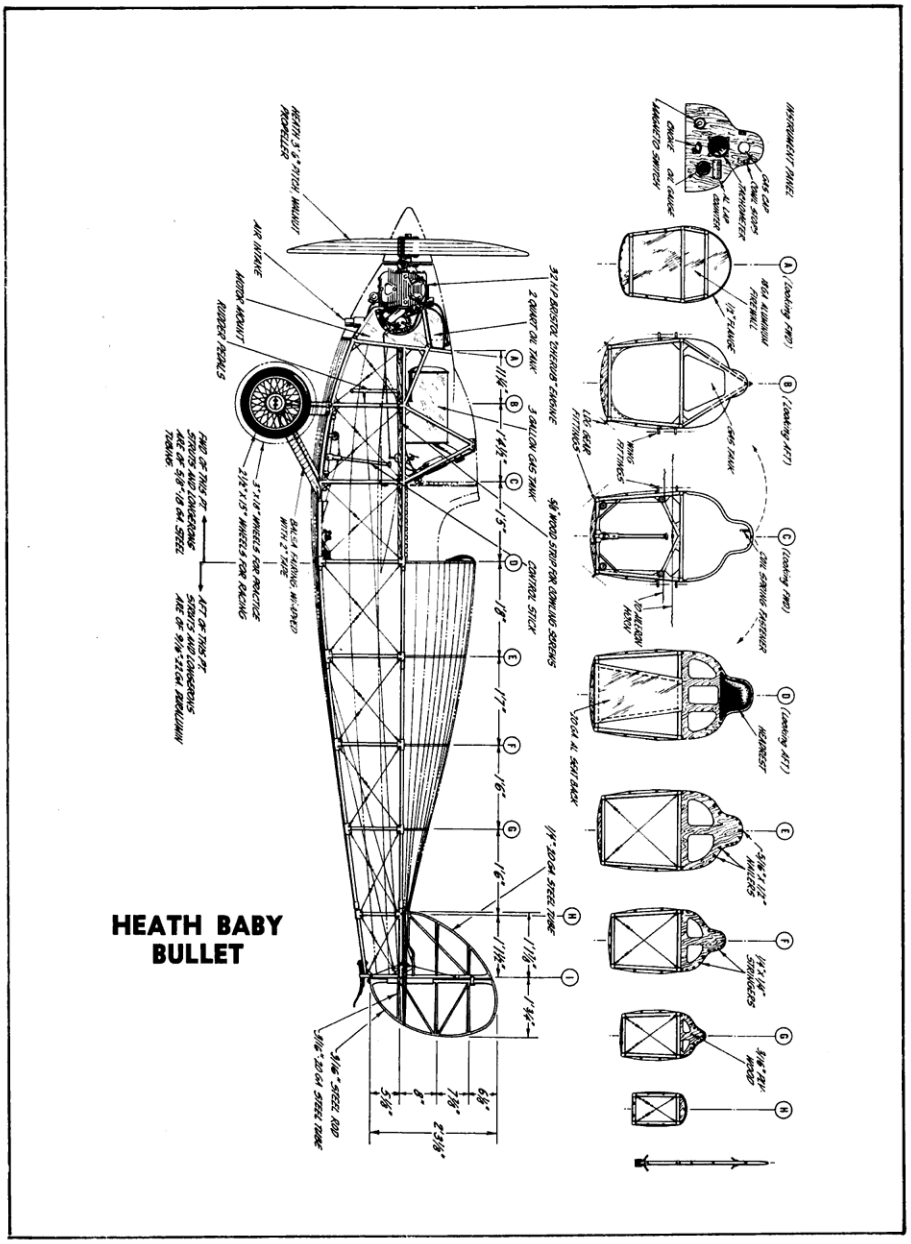
So, for any modeler who'd like to get started with an authentic easy to build, easy to fly, Golden Age racer — the Heath Baby Bullet is *it*.

And for those of you true scale buffs who always find it more interesting to build an airplane whose beginnings you know about, here's a short background history of Ed Heath and his famous aircraft:

The Heath Baby Bullet was conceived and built by Ed Heath and Clare Lindstedt, two prolific, very talented aviation designers. Probably the most talked about and publicized midget racer of its day, the Baby Bullet was highly publicized, and after its outstanding performance at the National Air Races in Los Angeles in 1928, it caught the fancy of the aviation public, and air-minded magazines and periodicals extolled its virtues in their publications all over the world.

Many brilliant ideas were brought forth by those two men who gave America a series of racers and sportplanes of great merit, and even today, Heath airplanes are well-known, and popular topics of conversation. Heath innovations are a part of almost every light plane flying today.

A small man, just a little over five feet tall, weighing about 110 pounds, Ed



This 1928 design looks very similar to that of a modern Formula One racer.

Heath made up for his small stature with his great enthusiasm, and to his employees he was an ever-firing spark plug. They called him "The Boss," and he was highly respected by his workers for whom Heath's every request was their command.

Clare Lindstedt, however, was a quiet and methodical man who balanced the impulsive Heath, so the combination of these two personalities made an ideal team.

Lindstedt was not only a genius at designing airplanes, he also did the preliminary drawings and estimating (stress analysis was not a factor in early aircraft design), and he was also a member of the very crew which actually built the special airplanes. Lindstedt was also a skilled welder, and a talented metal and wood worker.

During the late twenties, air racing became increasingly competitive, and in order to be a top money winner, it was necessary to continually come up with a faster racer each season. Actually, racing was not a money-making part of the Heath business, but served only to bring the company's name before the public. The company was principally engaged in the production of ultra-light sport planes — complete and in kit form — and also engines and accessories.

In 1926, Heath won the National Air Races, held in Philadelphia, with his "Tomboy," a cantilever mid-wing monoplane, and again, in 1927, he took top honors at the races in Spokane with the Heath "Super Parasol." Heath's desire to be a three-time winner spurred him on, and his "Baby Bullet" fulfilled that dream for him in 1928.

No publicity was ever released prior to test flights of his designs, and only a handful of Heath employees were ever on hand to witness any Heath aircraft first flights. So, on Saturday afternoon, August 18, 1928, the first Baby Bullet was trucked to the airfield and assembled. The test flight didn't take place until later in the day, however, when the air was cool and calm. About one hour was required for assembly and rigging. Heath had great faith in his boys and did not appear at the field until after his little racer had been assembled. A casual inspection assured him that all was in order, and he proceeded to occupy himself during the early hours of the afternoon by giving flight instruction to student pilots in one of his World War I Standards.

When conditions seemed satisfactory, Heath returned to the Baby Bullet, conversed briefly with the crew, and then climbed into the tiny cockpit. He was wearing riding breeches, high-topped boots, an oversize leather jacket and a very thin summer helmet without goggles.

The Bristol engine was a balky starter at times, and this day was no exception.

At low speeds, it ran roughly, and the racer quivered from one end to the other while idling. Heath cocked his head as he listened to every impulse, and it was only when he was completely assured that the engine was performing to his satisfaction that he slowly moved the Baby Bullet into position. With a quick wave of the hand, he signaled for takeoff, and went bouncing down the rough field. The tall grass was flattened by the landing gear's spreader wire, but in spite of the drag, the run was short, and in seconds, the Baby Bullet was airborne for the first time.

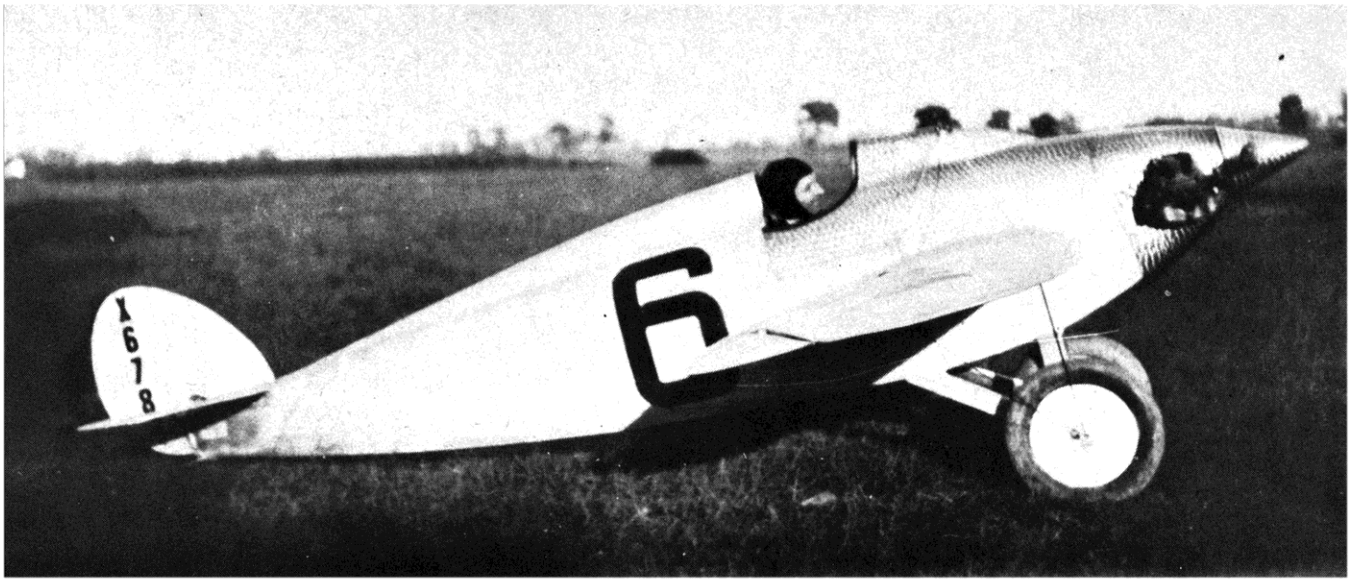
Heath made a rather large circuit of the field as he gained altitude, and after a short time, he dove and made a couple of passes for the benefit of observers. This airplane was truly a bullet! Its speed was breathtaking. Most contemporary airplanes were big and slow, but here was something new which was small and fast. Heath's crew was elated — this was a thoroughbred second to none. The flight only lasted about fifteen minutes, and when Heath landed, his employees rushed over for a report from "The Boss." They knew the news was good, when Heath greeted them with a smile which confirmed their feeling that the Baby Bullet would be a winner in the Heath tradition.

Soon it was time for the 1928 Nationals. Carrying 75 pounds of iron, the Bullet placed First in Speed, and Third in the Efficiency Division, with an average of 112 mph. A pair of Velie-powered Monocoupes came in Second and Third in the Speed portion of the contest, averaging 97.16 and 95.14 mph, and a Moth and an Inland Sport followed in Fourth and Fifth Place, respectively. In spite of this reduced speed, Heath lapped most of the field at least twice.

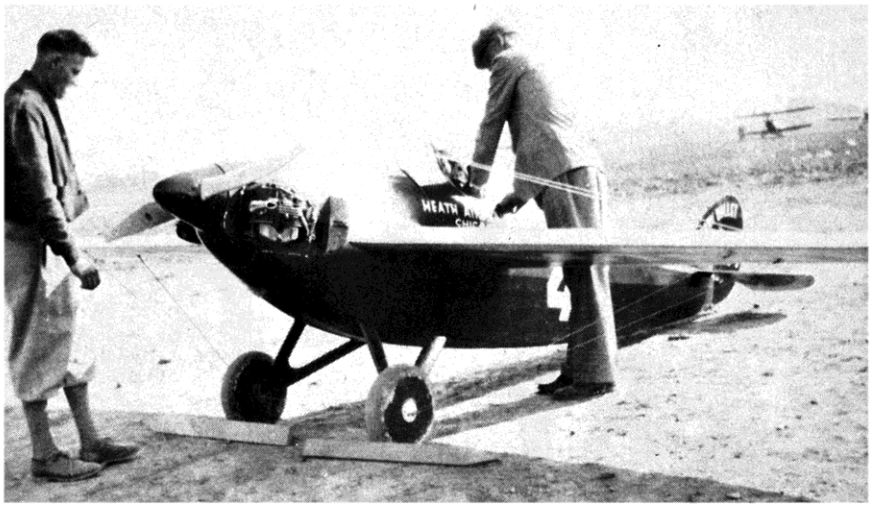
After the 1928 Nationals, the Baby Bullet returned to the Heath factory to be reworked for the next racing season. Tapered wings were built, and a pressure cowling was installed around the engine.

This cowling was a unique feature which subsequently became standard for opposed aircraft engines. The airplane was re-painted maroon, with silver trim, and carried racing No. 47.

Unfortunately, the tapered wings proved to reduce rather than improve the Baby Bullet's performance. The area had been reduced to the point where it was necessary to fly at too great an angle of attack, thus resulting in a speed penalty. This regrettable discovery was made during the test flight, so it was too late then to go back to the Bullet's original straight wings, since they had been dismantled and its fittings salvaged for the new ta-



Even with its small engine, this tiny aircraft clocked 142 mph over the closed course.



The Baby Bullet seen once again, this time just prior to the 1929 races. Note that the smaller wheels have been installed. The airplane has been painted black and yellow and now sports a full cowling for the 32 hp Bristol Cherub.

pered panels, and insufficient time remained for the construction of a new set. Had a more powerful engine been available right then, the problem would have been solved.

Despite the drop in performance, the Baby Bullet still finished in the money during the 1929 Cleveland National Air Races. In Event No. 3, a race for experimental planes, Heath took Second Place in a field of larger and more powerful machines.

He went on to win Event No. 5, a ten-lap, free-for-all, with a speed of 109.46 mph. William Burns flew the Baby Bullet in Event No. 15, placing Second in Speed, and Third in the Efficiency Divisions. After the races, the Baby Bullet was retired from racing, and placed on display at the Heath plant.

Although sixty years have passed since the Baby Bullet sped to victory at the National Air Races, its amazing speed achievements remain unchallenged today. It was truly a remarkable airplane, and will always occupy a place of prominence in the annals of American aviation.

Plans for the Baby Bullet were published in the 1930 Flying and Glider Manual. As a result many of these sensational little racers were under construction in short order. Most builders had more enthusiasm than money, however, because these were, after all, the days of the depression. Although most projects were soon abandoned, a few aircraft were completed. One outstanding example was the Hansen Baby Bullet, which performed well in national competitions.

In addition to the Baby Bullet, plans for the Heath Super Parasol, Driggs Dart, Church Midwing and Powell Racer also appeared in other issues of the Flying and Glider Manuals. Reprints of these manuals are available from the EAA Aviation Foundation.

SPECIFICATIONS:

The Baby Bullet's wings were of conventional wood and wire construction, with spruce spars and ribs, and welded steel tube ailerons. The airfoil section was the French St. Cyr 52, and the chord was 3 feet, 6 inches. The fuselage was wire-braced welded steel tubing from the back of the seat forward; and wire-braced dural aft to the tail post. Plywood formers and spruce stringers formed the turtledeck and fuselage streamlining. Welded steel tubing was also used in the construction of the empennage.

The landing gear was rigid, all shock being absorbed by the tires. External wires supported the wings, and the landing gear was braced by the flying wires which attached to the wheel hubs. The fairings around the cockpit were hinged to the top longerons, and opened outward to permit entry and exit.

The only instruments were a tachometer and an oil pressure gauge. Fabric covering was used throughout, and the original airplane was finished in silver. The propellers were 4 feet, 4 inches in diameter with a 3 foot, 6 inch pitch, and were carved from black walnut salvaged from World War I propeller blanks. Power Plant: 32 hp Bristol Cherub III. Dimensions: Span: 18 feet, 6 inches; length: 14 feet, 6 inches; height: 4 feet; wing area: 55 square feet. Weights and Loadings: Empty weight: 235 pounds; gross weight: 535 pounds; useful load: 300 pounds; wing loading: 9.7 lb/sq. ft.; power loading: 126.7 lb./hp. Fuel Capacity: 4.5 gallons. Performance: Maximum speed in level flight: 150 mph; landing speed: 55 mph; rate of climb: 1,500 fpm; range: 300 miles. ●