André Marcadier

From aluminum bicycles to race cars

André Marcadier swung open the doors to the huge workshop that occupied most of the backyard of his house in a village on the outskirts of Lyon. My breath was taken away. Inside was a huge jumble of machine tools, workbenches, welding equipment, car engines and half-finished sports cars. Just the place I dreamt of having when I was a teenager.

To my right was a Porsche 550 Spyder, the seductive curves of its bodywork painted in exactly *that* shade of silver. Behind was the body for one of Marcadier's earlier creations, a red sports car so low that it barely reached my chest even though it was propped up on sawhorses. Further in the back was a Ford GT40, the iconic car that won Le Mans. The Ford and Porsche race cars were replicas of the unaffordable originals, the last stage of André Marcadier's amazing manufacturing career that had started with innovative bicycles.

We had come here to look for a tandem frame he had made decades ago, for a young couple who then split up and cancelled the order after the frame had been brazed. After some rummaging, he found the frame, and proudly put it into my hands.

Fillet-brazed from oversize tubing, it was superlight, and to my surprise, there was no eccentric to adjust the tension of the connecting chain. *"You don't need it. Just select your chainring size so you get the chain tension right, and change your chain from time to time. Then it works fine. It weighs less that way,"* explained Monsieur Marcadier. That summed up his engineering philosophy: Less weight through simple and innovative solutions.

Learning to Make Frames

André Marcadier started making bikes after the end of World War II. He told me:

"When I was about 16 years old, I went to Charrel[1] and asked to learn how to make bikes. Charrel's bikes were something else. He was better than Herse, better than Pitard, it was the ultimate. The bikes were works of art, painted in a chocolate color with orange pinstriping. He knew what he was doing, but he didn't want to take me on. So I went to work in a machine shop and learned how to work metal. In the evenings, I went to brazing school. And then I started to make bikes."

Making Components

Like many constructeurs, Marcadier also made his own components. He brazed his stems from steel tubing. Front derailleurs were operated by a simple (and lightweight) lever, similar to the ones made by René Herse.

Marcadier's masterpiece was the C.I.M. brakes. Unlike a simple cantilever that swings on an arc, Marcadier's brakes use a cam mechanism that pushes the pads straight toward the rim (see p. 14). This eliminates the risk that the brake arm will dive under the rim once the brake pad wears. Another neat feature is the quick release (see p. 17). André Marcadier: *"You could swing the brake out of the way to remove the wheel. The first time you applied the brake, it went back into position. The rider didn't have to do anything. We patented that design."*

André Marcadier also made 6-speed freewheels by brazing an extra cog to a 5-speed freewheel, long before 6-speed freewheels were commercially available.

Opposite page: André Marcadier in 2004 with his wife's 6.9 kg bike in his backyard. The body parts belong to Porsche Spyder replica.

Left: Brazing a frame during the 1940s.

Photo courtesy of Roger Thorouss

Cycles Imbert-Marcadier

Marcadier's first bikes were sold under the *Cycles Imbert-Marcadier* (C.I.M.) brand. André Marcadier explained: *"I was young, about 20 years old, and back then, you couldn't find components. There were restrictions. Imbert had connections to obtain components from the manufacturers. But he didn't know much about bikes. I designed them, I brazed them, I did everything."*

The association lasted until 1950, and from then on, André Marcadier sold the bikes under his own name.[2]

Becoming a Cyclotourist

Unlike most constructeurs, Marcadier was not an avid cyclist at first. He recalled:

"I made bicycles, and the guys told me: 'You make bikes but you don't ride them.' So in 1947, I went on an organized tour from Lyon to the Pyrénées. The first few days were hard, but then it went almost without effort. By the time we rode back up the Rhone valley from Béziers, I had so much training, it was fun."

André Marcadier met his wife cycling. She recalled: *"It was in 1947. I had a flat tire. And then this charming young man arrived and helped me fix it… We got married in 1949."*

Aluminum Frames

Around 1949, André Marcadier began making frames from aluminum, because *"it's lighter, it doesn't rust, it doesn't change."* Since conical tubes were not available, Marcadier made his own : *"I took flat sheetmetal, rolled it and then welded the seam. The top tubes and head tubes you could buy, but I made my own tubes for the conical down and seat tubes."*[3]

The frames were gas-welded: *"Aluminum does not turn red when it gets too hot, but just runs like water when it melts. It was difficult to do. You really had to* ***want*** *to make aluminum bikes."*

This meant that the aluminum bikes were reserved for special customers. Marcadier told me that René Vietto, Apo Lazaridès, Robert Chapatte and other professional racers rode his aluminum frames during the 1950s: *"They rode them in time trials and hillclimbs. In the Tour de France, they used them for mountain stages. The bikes of Vietto and Lazaridès were painted French blue, but they were made from aluminum."*[4]

Most customers got steel bikes, fillet-brazed to save the weight of the lugs and to allow ovalization of the tubes at the bottom bracket for improved stiffness. Marcadier: *"Even with steel tubing, my lightest frames weighed only 1200 g."* Marcadier made his own twin-plate fork crowns, and most of his steel bikes featured seatstays that crossed over the seat tube and ended on the sides of the top tube.

Above: Marius Jacquelin (on Marcadier) leads Roger Thorouss (on Herse) in the 1952 *Boucles de la Seine*.

Right page:

1 Aluminum frame with internal expander seatpost (1950).

2 Unusual four-arm stem (1952).

3 Steel stem (1950).

4 Brake opens for wheel removal (1951).

5 Cage for "topette" (small bottle; 1952)

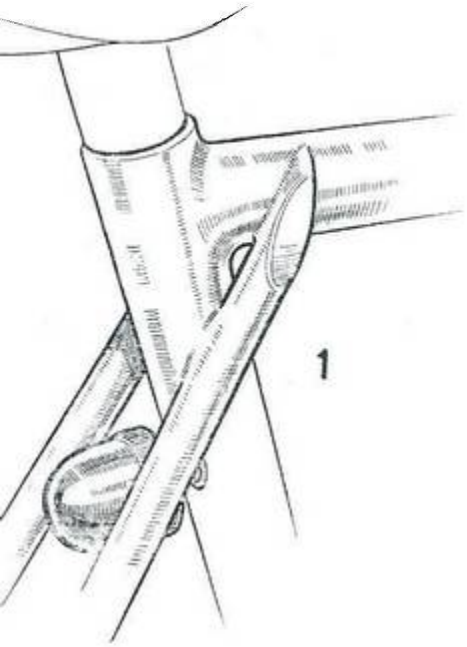
6 Twin-plate tandem fork crown (1949).

7 Simplified bottle cage (1952).

8 Fender stay mount (1952).

9 Prototype pedal: single-row bearing (inside) and floating double-row bearing (outside). (1952)

10 - 11 Rack with generator mount (1954).



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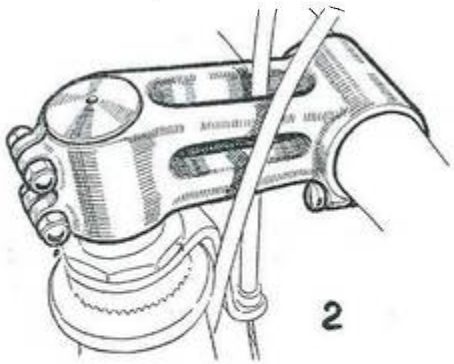

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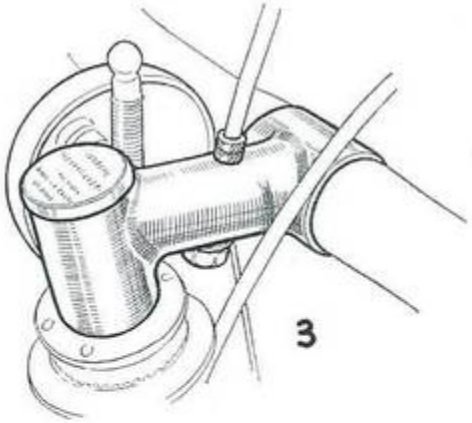

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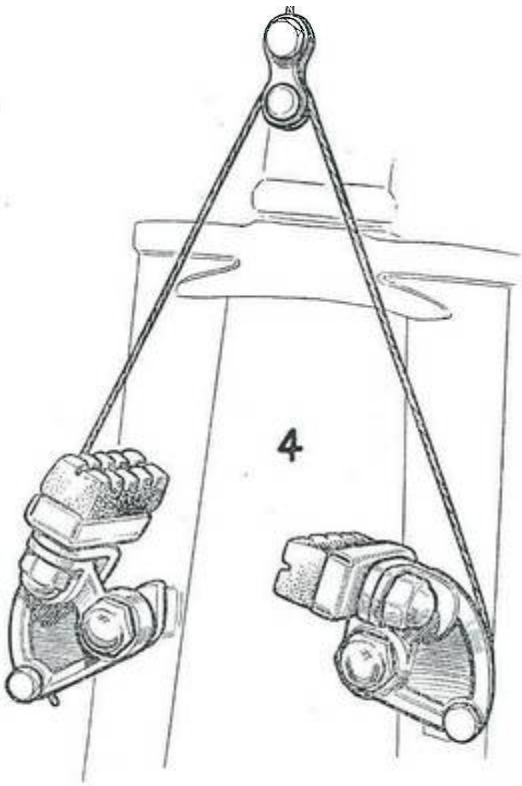

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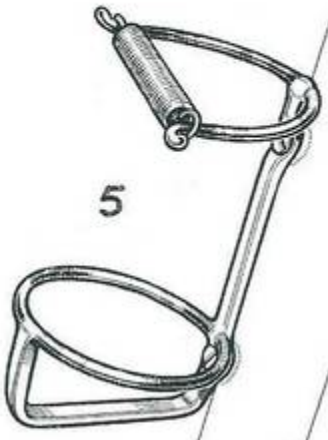

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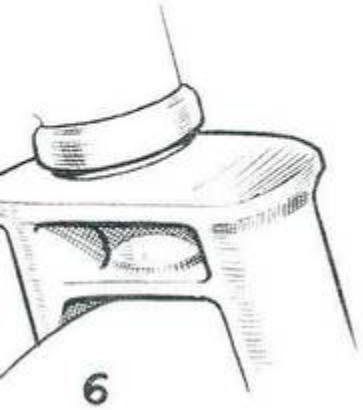

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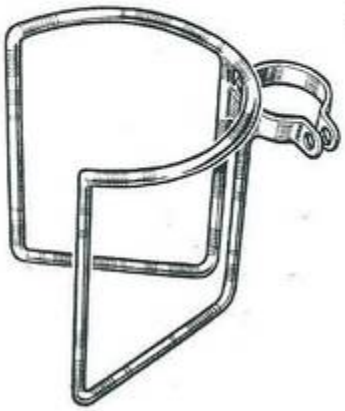

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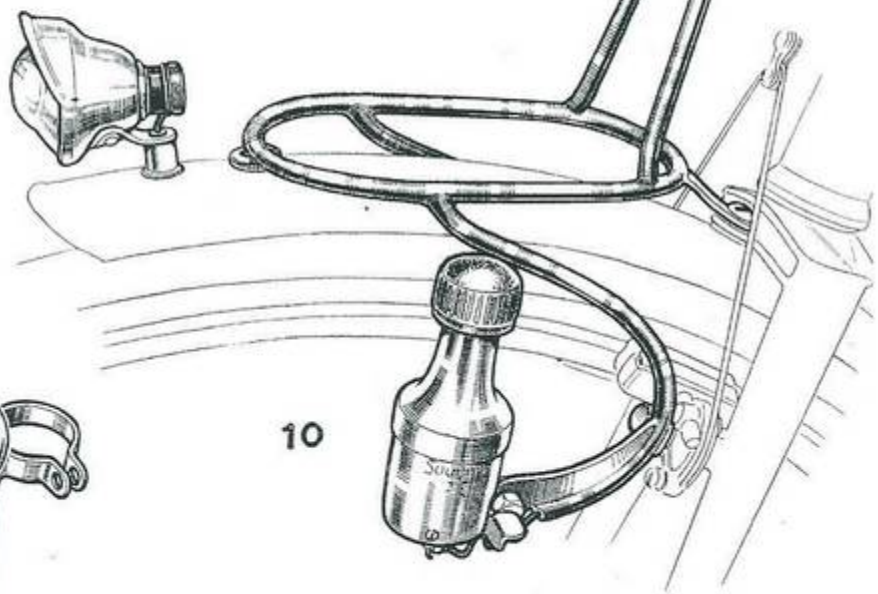

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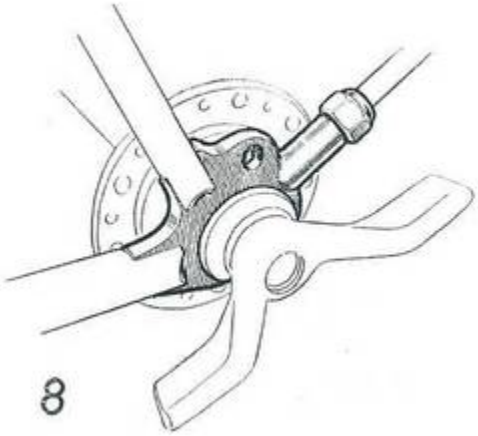

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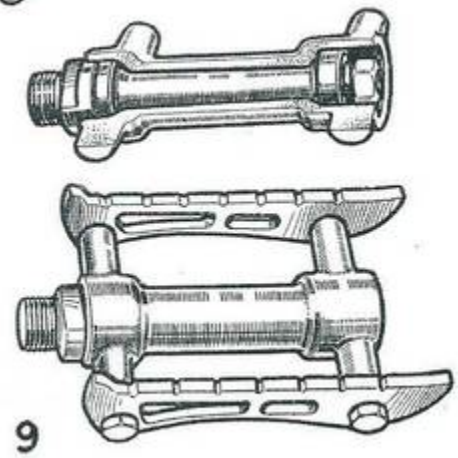

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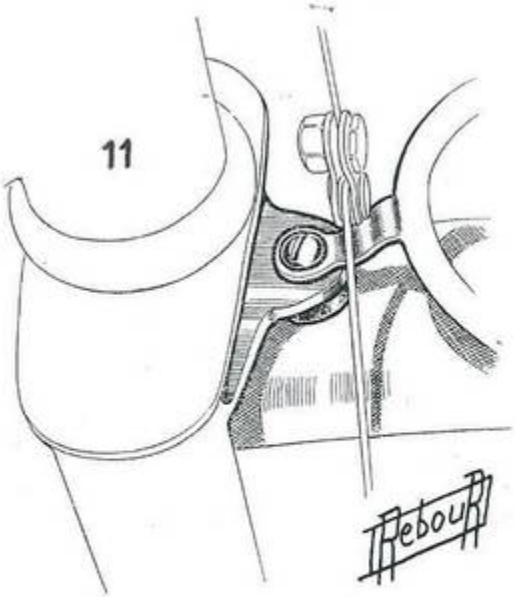

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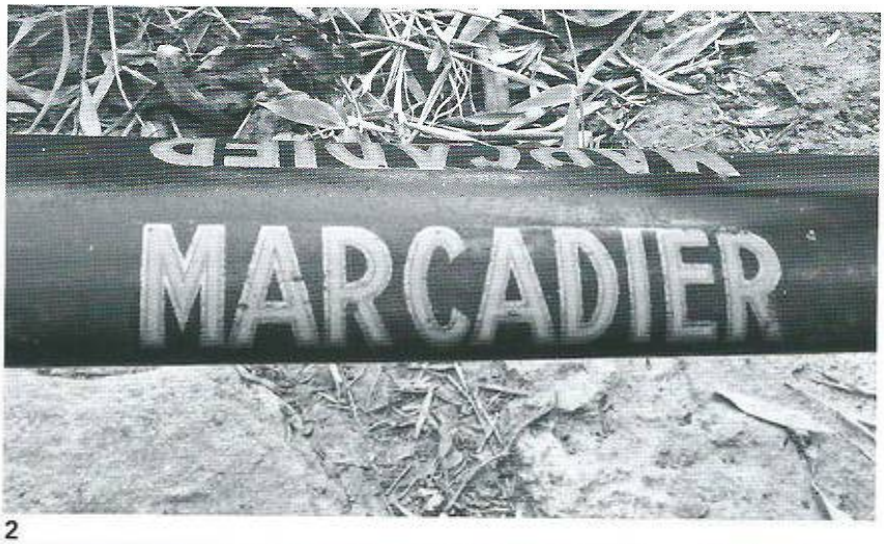

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Photo Christophe Courbou

1 Marcadier brake: The cam pushes the pad inward. Its path is guided by the curved slot in the plate nearest to the camera.

2 Marcadier steel frames were black. Lettering is green with gold outlines.

3 Sixth cog is brazed to five-speed freewheel on 1950s tandem.

4 Cantilever brakes of a 1984 racer. The brake shoe holders are welded onto the brake arms.

Competition Success

Initially, most bikes were sold to Marcadier's friends, as well as members of his cycling club. Word-of-mouth helped, as did some competition successes after a false start.

The C.I.M. entry in the 1949 Technical Trials was withdrawn in a dispute over a rule change regarding rims. Bonus points for special rim features were struck from the rules 15 days before the event, and Marcadier had built the bike according to the new rules. Another builder protested the late rule change, and a compromise was found that awarded half the originally foreseen bonus points. This put the C.I.M. entry 10 points in arrears before the event even had started, and Joannès Imbert decided to withdraw his bike in protest.[5]

After breaking up with Imbert, Marcadier saw more success in the *Poly Lyonnaise*, a local hillclimb race that came second only after the *Poly de Chanteloup* in Paris in importance and popularity. The Lyon race actually was more competitive, since it brought together the strongest randonneurs from the Paris region, especially the René Herse team, and the true *montagnards* from the Alps, riding for Jo Routens and Sablière.[6]

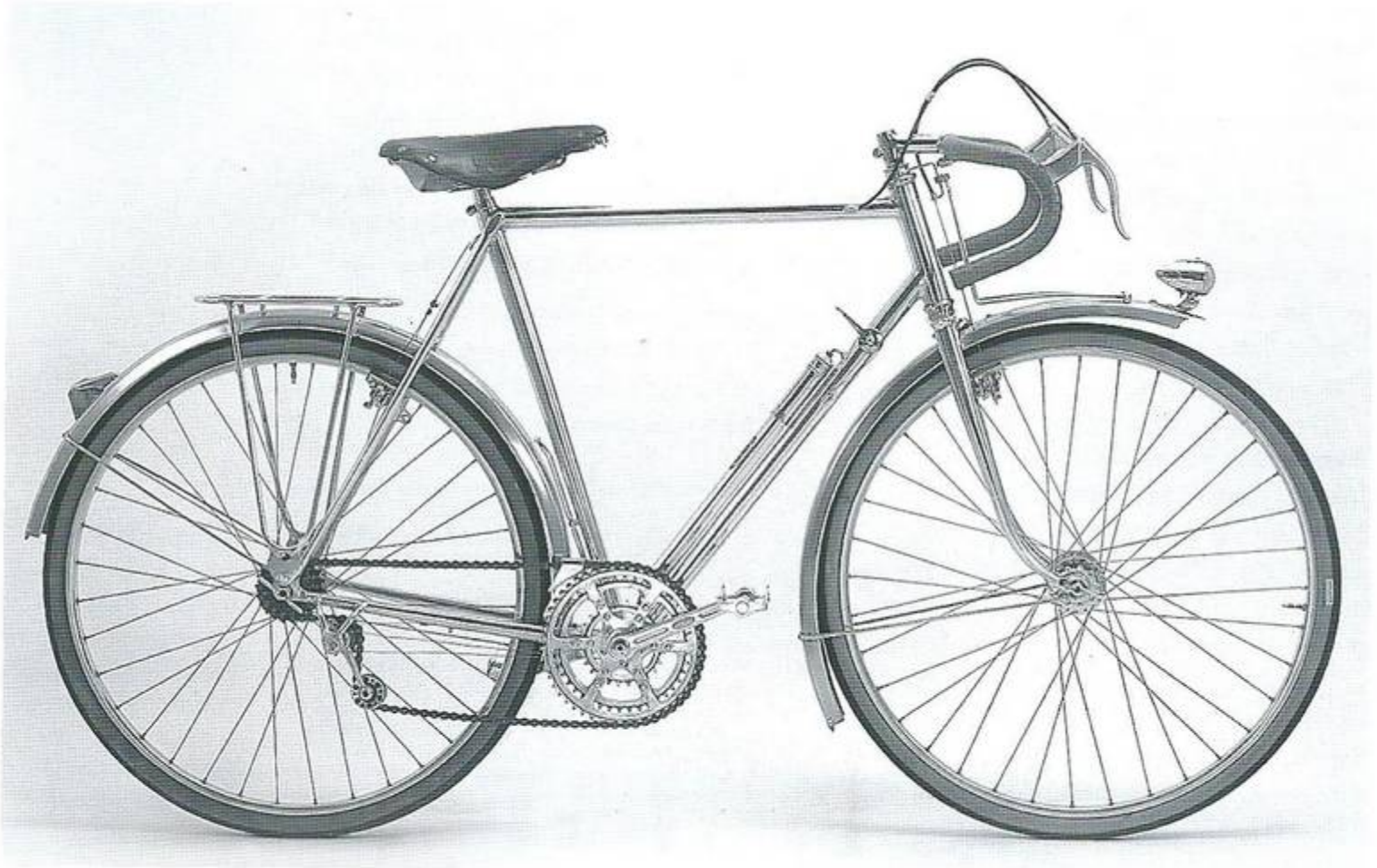
Marcadier's riders rode well against this strong competition, with a third place among the mixed tandems in 1951 (Basset et Madame).[7] In 1952, the six-man Marcadier team won the *Challenge des Constructeurs* for the best team performance.[8] For 1953, Marcadier engaged Marius Jacquelin, one of the strongest *cyclosportifs* in France, who did not disappoint: He won the *Poly Lyonnaise*.[9]

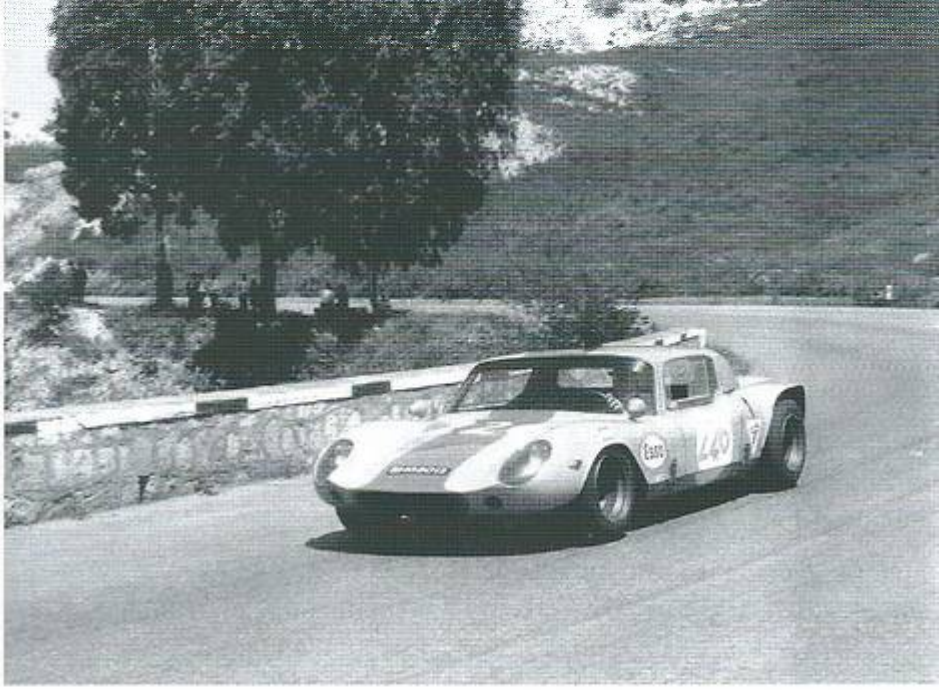
Ca. 1950 Marcadier

Photos by Jean-Pierre Pradères

Marcadier's aluminum frames were beautifully crafted and finished, as illustrated by this randonneur bike built around 1950. The clean welds impress especially when compared to other aluminum bikes of the era. The racks also are welded from aluminum tubing, contributing to the incredibly low weight of 9.8 kg (21.6 lb) fully equipped.

Internal cable routing for rear brake and rear derailleur make this frame even more special. The spring for the Cyclo rear derailleur is hidden inside the chainstay. The rear brake cable goes through the seatpost before exiting the seat tube on a curved guide: simple and effective. Marcadier also made the stem, front derailleur and the marvelous cam-actuated brakes. He modified many components to reduce their weight, and chose others because of their lightness. The superlight Piel pedals weigh just 130 g. In 1950, this must have been a true dream bike. —*JH*





Top left: André Marcadier with one of his superlight carts.

Left: The shop of Marcel Fournier in Lyon with Fournier-Marcadier sports cars in 1965. Each car weighed just 420 kg (925 lb).

Above: A Barzoï driven by Dumas and Soleil at the 1969 Targa Florio in Italy. They abandoned the race due to a mechanical problem.

Motorsports

Bicycles were losing favor in France, and André Marcadier saw the writing on the wall. In the late 1950s, he moved on to racing motorcycle frames and then karts. His karts immediately found great success, winning the European endurance championship in 1961:

"Coming from a bicycle background, the karts I made were very lightweight. My karts for the world championships weighed 28 kg. The karts from my competitors weighed 58 kg. Our karts were quite successful. Once, three Marcadier karts raced in Berlin. Among 150 starters, they took first, second and third."

Then a rule change implemented a minimum weight, and Marcadier moved on to cars. Inspired by the Lotus cars of Colin Chapman, Marcadier designed a lightweight sports car equipped with Renault engines and components. The frame was fillet-brazed from steel tubing, just like a Marcadier's bicycle frames.

Marcadier collaborated with Marcel Fournier, who made a lightweight glassfibre body. The Fournier-Marcadier was introduced in 1963 as a kit for impecunious enthusiasts and racers. This was followed by the Barzoï, the low-slung coupe I had seen in the workshop. Racing successes culminated in winning the French hillclimb championships in 1974.

In the late 1980s, Marcadier branched out into replicas of famous sports and race cars, built around affordable mechanics. Unlike most replicas, Marcadier's machines offered excellent performance, since they usually weighed less than the originals. He also returned to making a few bicycles, including one for his wife that weighed just 6.9 kg (15.2 lb) without a single piece of carbon fiber. —*JH*

Post-script: *André Marcadier died on April 7, 2013, while this article was being prepared. He was 88 years old. The world has lost a talented and charismatic innovator.*

Notes:

1 See Henry, R., 2009: Paul Charrel, Constructeur and Cyclotourist. *Bicycle Quarterly* Vol. 8, No. 2, p. 30.
2 In 1950, Marcadier's exhibit at the *Poly Lyonnaise* still listed the C.I.M. brand, but in 1951, photos and press reports show only the name Marcadier.
3 Marcadier aluminum frames had ovalized seat and down tubes, but they do not appear to be conical. Perhaps he actually made the stays by rolling his own tubing.
4 I could not confirm this story. Both Vietto and Lazaridès rode Barra aluminum frames in the late 1940s.
5 Rabault, A., 1949: Les 24 Heures d'Auvergne sur le Circuit de Ceyrat. *Le Cycliste* 9/1949, p. 177 and Rebour, D., 1949: Les 50 24 Heures d'Auvergne. *Le Cycle* 27 Aug. 1949, p. 8.
6 Heine, J., 2012: *René Herse: The Bikes • The Builder • The Riders*. Bicycle Quarterly Press, Seattle, p. 191.
7 *Le Cycle* 22 Sept. 1951, p. 18.
8 *Le Cycle* 20 Sept. 1952, p. 12.
9 *Le Cycle* 19 Sept. 1953, p. 5.

Thank you!

Pierre Tedeschi of the **Club des Automobiles Marcadier** provided photos and information. Visit the club's website with many photos at **www.marcadier.com**