

The Legacy
Issue 3: Yester-Year Tech Talk
by Bill Cline



RIDE A Racycle

THE RENO WHEELMEN'S RELAY TEAM all ride RACYCLES. The Racycle is the best and easiest-running bicycle made. The best time made at Carson July 4, 1901—Sacramento vs. Reno—was made on a Racycle by Robert Backrath of Sacramento. The race there was won on Racycles by Reno's Relay Team.

The best time made at Reno July 14th was made on a Racycle. All the Reno boys, except Thompson, rode Racycles on the 14th of July and Keddie beat both Hirsh and Downing on a Racycle. They were the champion sprinters of the Pacific Coast.

"The Crank Hanger Does It!" "Does What?"
Makes the Racycle run easier than any bicycle manufactured.

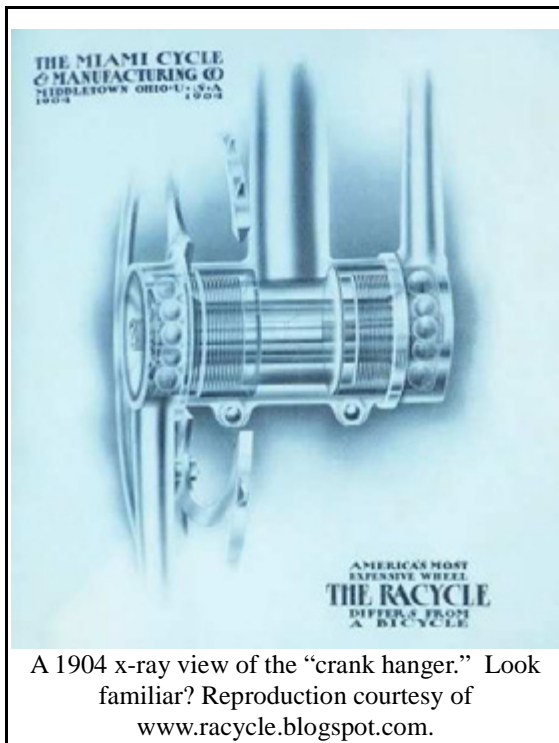
Prices on Racycles are—Road Wheels, \$35 to \$55; Racers, \$52.50; Pacemakers \$60; Chainless, \$50 to \$75.

RENO CYCLE CO., Reno, Nev.
Renting, Repairing by Mechanics. Everything for Bicycles.

Reno Cycle Co. advertisement. Reno Evening Gazette, July 1901. The vast majority of riders on the RW relay team rode Racycle.

The Machines They Rode. In an era when there were nearly 3,100 different bike brands in the U.S. (www.thewheelmen.org) the c. 1900 Reno Wheelmen rode Racycle brand racing bikes nearly exclusively, made by the Miami Cycle & Mfg. Company of Middletown, OH. Racycle was also the choice of noted racers around the country.

Racycle was sold in Reno through the Reno Cycle Company. The unique feature of the Racycle was the "crank hanger." As with today's "new" out-board bottom bracket design, the crank hanger housed the bearings outside the bottom bracket shell, and the manufacturer claimed its design reduced pressure on the crank by as much as 20-30% over other models of the day, greatly enhancing efficiency of each pedal stroke. These machines were equipped with oak, steam-bent maple or aluminum rims carrying 1 ¼ or 1 3/8 inch pneumatic tires with pressures +/- 45 psi. This is interesting and another potentially unique feature of Racycles. Other research suggests that aluminum was not widely used in bike wheels until the late 1930s.



For us the gear sprocket choices offered would be unfathomable, but were dictated by the chain technology of the day. None-the-less, they of course generated comparable gear ratios to those used today. According to Brian Doan, www.racyle.blogspot.com publisher, a 1901 Racyle brochure specs the racing model with a 30-tooth front chain ring and rear sprocket choices from 7 to 12 teeth. This would afford between 70 and 120 gear inches. Sprockets and chainrings were built on a 1" pitch (twice the size of today's) so this would mean that even with just 30 teeth on the front chainring, it would still measure more than a full inch larger in diameter than today's 53 or 54 tooth chainrings! A rear 7 tooth sprocket, size-wise, would about equal the diameter of today's 14. On the very positive side, Racyle chains measured a weight-saving, scant 1/8" wide, compared to the average of the era at 1/4 or 3/16" wide.

Frame tubing was 20 gauge, 1" steel. The joints were brazed. Overall, depending on options, a 1901 Racyle racer weighed in at [for the time] a svelte 21-24 pounds.

Brian also says that by 1901, the Racyle brand had grown to a size where Miami Cycle could apparently afford to turn custom business away. The 1901 racing machines were offered in one frame size only, that being 21", or approximately 53.5cm. The catalog says, curiously, "We do not make tandems, nor can we build odd-sized racing or trick wheels to order. We have no time for it." Essentially, the only difference between Racyle track and road bikes was not the frame, but simply putting on different tires to match the situation. The catalogs say as much. For full details on Racyle machines, go to www.racyle.blogspot.com. [Thanks to the site's publisher, Brian Doan for his help and generous cooperation piecing the information together for this article.]

Attention to Details. The Reno Wheelmen certainly benefited from professional help. A close look at the photo at right of RW's Will Hart suggests a tremendous amount of attention to detail—positioning specifically—after Ryan's arrival. The photo of George Kornmayer in *Legacy Issue 2* is similarly impressive. Look at Hart. Frame fits rider size. Saddle height and setback seem millimeter perfect as does handlebar drop allowing for an aggressive, relatively flat back. The big difference between yesterday's and today's machine is the head tube angle. It was very slack with a huge fork rake, putting the front axle well-ahead of Will's head. On today's track machines with steep, aggressive front ends, his chin would be about over the axle. This was the norm for the day as riding surfaces being what they were, a shallow front angle and longer wheelbase were necessary to make for anything resembling a comfy ride. It is clear



RW member Will Hart shows near perfect position on his machine of the day. c 1900. With permission, Nevada Historical Society.

that overall, while machine geometry has changed, the principles of positioning have not. All-in-all, post-Ryan, the boys deserve a solid “A “ for positioning.

Putting It All to Use. The first two *Legacy* issues relayed feats of averaging nearly 24.5 mph for five miles, of hitting 40 mph on a back stretch, and turning a single mile in 2:19 (that's 25.9 mph). According to the handy speed chart from *The Complete Book of Bicycling*, 4th Edition by Eugene Sloane, p. 225 the five mile average of 24.5 mph and single mile in 2:19 can be hit comfortably (for these fit riders) with a gear combo in the range of 75-92 gear inches, depending on cadence, say in the 90-110 rpm range. That would have had them in something between a 30x9 (91”) to a 30x11 (76”). Further, the power calculator at www.analyticcycling.com puts this effort at an average power output of +/- 300 watts. Entirely conceivable. As for the 40 mph back stretch?

Again, referring to the speed chart, to hit this speed and cranking up to say max 90 rpm in the heavy gear Art Peckham used he needed to be turning about 100+ gear inches. Also, there was this from a Reno Evening Gazette article recounting a later race in Carson City, “...The Reno giant showed what fine physique is able to accomplish with a 105 gear,” a clear statement of what was actually ridden. According to the Racycle gear chart a 30x8 is 105 gear inches. The power calculator at www.analyticcycling.com puts the power output for this 40 mph effort at nearly 1,000 watts, plausible for a man of this fitness over a very short burst riding even the higher-drag machines and conditions of yester-year. All-in-all, there is no reason whatsoever to discount the possibility of hitting 40 mph or near to it on the back stretch—plus, it was timed!

Summary. The Reno Wheelmen of 1900 had access to and used the finest technology of the day: 1/8” chains, aluminum wheels, 20-gauge 1” steel tubing, out-board bearing “crank hangers.” Thought they had to be riding around on 45 lbs clunkers? Not so! They combined the technology with excellent professional training. It is clear that yesterday's Wheelmen were every bit the tech and detail-nerds we are today, who also knew how to take full advantage of professional help, and put it all to use.



Though a 1908 Racycle Model 135, and the RW had stopped racing by then, it is quite similar to the ones the RW rode and this picture is too beautiful not to include! Photo courtesy of www.racycle.blogspot.com.