

ALL POWER TO THE PEOPLE - OR, IN THIS CASE, FROM THEM

With its two-man crew pedaling and cranking like mad, White Lightning broke through the 50-mph barrier to win the Human-Powered Speed Championships

by SARAH PILEGGI

As the clear sky of a May morning began to lighten over Southern California and the San Bernardino Mountains emerged from their nighttime silhouettes, a stream of uncommon people and vehicles moved through the gates of the Ontario Motor Speedway. The light grew, shadows became shapes—an ant-eater, a chicken without legs, a gliding tea cozy, a cockroach on wheels. The Fourth International Human-Powered Speed Championships were about to begin, and each shape, however primitive, was someone's solution to a problem that has long plagued man—how best to slice through the wind and leave it relatively undisturbed.

Stick your head out the window of a car going 50 mph: the force of the wind in your face will give you an idea of what the engineers and athletes who designed and pedaled the vehicles at Ontario were up against. Now, pull your head back and consider that while the average American automobile can produce 200 horsepower for as long as its fuel holds out, the average American college athlete, fueled most likely by tacos and beer, is capable of about half a horse, and that for only a short period.

Jan Russell, a 28-year-old Los Angeles architect, and Butch Stinton, 26, the owner of a bike shop in California's Simi Valley, are cycling sprinters, weekend competitors who train some 300 miles every week. Together they form a champion

Southern California racing team. Two weeks ago Russell, a tall blond who does for rimless eyeglasses what Prince Charles does for ears, and Stinton, a sturdy 200-pounder with flaming red hair and mustache, found themselves in a new kind of partnership. They were the "engine" that powered *White Lightning*, a vehicle designed by Tim Brummer, Don Guichard and Chris Dreike. The three young engineers from Northrop University in Inglewood, Calif., had devised a supine-recumbent tandem tricycle entirely enclosed in a 20-foot-long lightweight streamlined box, or fairing, made of honeycombed Nomex sandwiched between two layers of epoxy-impregnated fiber glass and coated with "a thin candy shell, like an M&M." The entire vehicle—frame, fairing, wheels and all—weighed only 75 pounds.

The Northrop engineers had worked nights and weekends for months, with three goals in mind. They intended to break the world record of 49.93 mph over 200 meters. They hoped to be the first to exceed 55 mph for 200 meters and thereby win the \$2,500 Abbott Prize for surpassing the national speed limit in a human-powered vehicle. And they wanted to "show everybody," especially the student designers from Harvey Mudd College in Claremont, who had similar intentions.

On the first weekend in May the huge Ontario Motor Speedway, normally host

to such noisy, gaseous, piston-driven entertainments as the California 500, was overgrown with weeds and seemed deserted, with a crowd of only a thousand or so to kick up the dust. Pickups, vans, campers and U-Hauls streamed through the gates and disgorged their freight of cyclists, inventors and ecologists onto the speedway infield. Tinkerers tinkered and kibitzers kibitzed. Cyclists pedaled up a sweat on training rollers, and children on skateboards glided among the grown-ups. Dreike, 24, the electronics specialist on the Northrop team, was applying heat from his sister's hair dryer to the Plexiglas windshield of *White Lightning*, hoping to keep it from fogging up.

The vehicle to beat here in the single-rider class was Paul Van Valkenburgh's *Aeroshell II*, whose wind resistance had been reduced by streamlining to an almost unmeasurable .9 pound at 25 mph. "Human-powered vehicles can make a major contribution to solving problems of petroleum consumption," said Van Valkenburgh, until 10 years ago a designer of racing cars for General Motors.

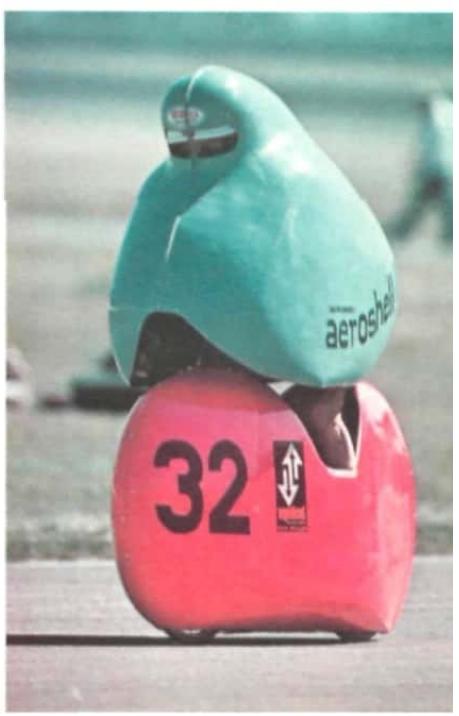
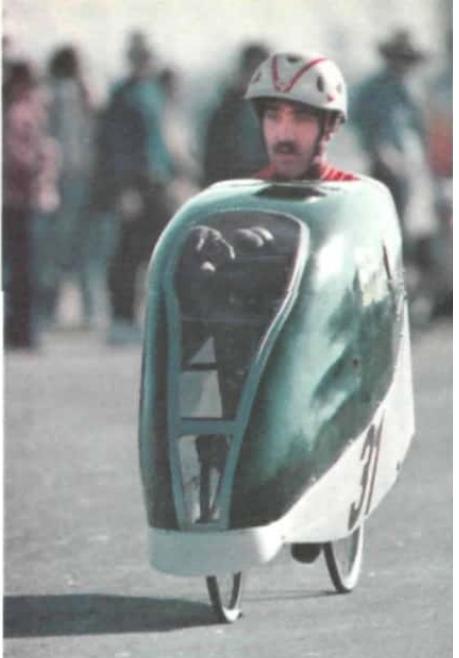
"You have probably read that the bicycle is the most efficient means of transportation. We can double that efficiency with the most basic aerodynamic principles. At the same time we can enclose the rider, keep him warm and dry and even protect him in case of accident."

As it turned out, the protection factor in Van Valkenburgh's design was tested several times at Ontario. *Aeroshell II*, with Olympic cyclist Ralph (The Horse) Therrio at the pedals and hand cranks, crashed twice. But no blood was spilled and no ambulance summoned, though

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Taped within their 75-pound contraption are Jan Russell and Butch Stinton, who powered it to victory. For some far-out competitors, turn page.





Therio had been traveling briskly with only cardboard, contact paper and a clear molded material called butyrate between him and the tarmac.

In spite of its misfortunes, *Aeroshell's* first run, timed at 48.21 mph, held up for two days and won the \$1,000 first prize in the single-rider class, but the disappointment in the Van Valkenburgh camp was palpable. He and his crew had devoted approximately 500 hours to the project and had had every reason to anticipate at least 52 mph.

Meanwhile, in the multiple-rider category, *White Lightning* was performing as if greased. Its first run, 49.65 mph, made it clear that not only was the 50-mph barrier going to be broken, but also that 55 mph and the Abbott Prize were not out of the question.

The sun had hardly warmed the morn-

ing air on Saturday before Russell and Stinton had sped through the time trap at 50.21 mph and a voice on a loudspeaker was shouting, "Ladies and gentlemen, you have just witnessed history!" But Russell and Stinton knew they could go faster. Their on-board speedometer had indicated that they were still accelerating as they went through the trap. By beginning their sprint earlier, they felt they would reach their optimum speed going in and be able to maintain it for the necessary eight-plus seconds.

On Sunday morning the air was dead still as the qualifiers—those timed at at least 40 mph on Saturday—bustled to get ready for the 7 a.m. start. Matt Rawdon, "ace bike mechanic," from Lil' Henry's bike shop in Riverside, was trying to shrink the heat-sensitive fairing on his *Iron Bustard* to an even tighter fit. "Of all the vehicles expected to go fast, this is the most crude," he observed of the *Bustard*, which Nellie Randolph, part owner of Lil' Henry's, added was made of half a Motobecane, parts of a Peugeot and a Colnago and "my favorite curtain rods." In spite of the 105 pounds all this added up to, the *Bustard* tandem went 48.26 mph and finished third in the multiple-rider category.

By a chain link fence, Dr. Chester Kyle, professor of mechanical engineering at Cal State-Long Beach, pumped up the tires of his *Teledyne*, preparatory to making the first run of the day. Kyle is a founder of the event and the enthusiasm behind the International Human-Powered Vehicle Association, a 4-year-old organization that already has vice-presidents for land, air and water, though none





yet for stationary power production, such as pedal-powered television. As he says, "Anything that goes, goes."

Out about a mile away from the timing area, *White Lightning* was ready for its first run. As it glided around the turn and into the straightaway, Stinton's muffled voice could be heard yelling at Russell, "Just get us down there straight, man!" And at 7:30 a.m. the Northrop machine broke its own record with a speed of 52.20 mph. At 8:43 a.m. it broke it again, going 53.45 mph.

With only one more shot at 55 mph and the Abbott Prize, things grew a little tense. One of the crew members lay on the ground spraying the bottom of the vehicle with Lemon Pledge and wiping it off. Tim Brummer detached a brake from the rear rider's position to lighten the load. Finally, at 9:40 a.m., Russell and Stinton were in place and the fairing sealed. Other crews chanted "Fifty-five! Fifty-five!" as the Northrop machine glided by, gathering speed into the turn. Then there was silence as it moved out of sight. Seconds passed.

"Oh, no!" somebody shouted. "The timer broke!"

Gradually word filtered back from the timing area. "And they had 56 on their speedo all the way through!"

There was some debate as to who should break the news to Russell and Stinton, who, being sealed up, presumably did not yet know. They did by the time they had made the full circle back to the start, and said they would be ready to try again in half an hour.

But they couldn't pull it off a second time. Their legs were tired, the wind was



up, the tension was down. They managed a very creditable 54.43 and called it a day, the winner by 3.7 mph.

On Sunday afternoon Paul McCready, designer of the celebrated *Gossamer Condor*, sat in the open door of his van. The *Condor* now hangs in the Smithsonian, next to the *Spirit of St. Louis*, and McCready is the man to put the Human-Powered Speed Championships into historical perspective. "Nothing has been done here today that could not have been done in 1915 if the Wright brothers had been motivated toward human-powered flight," he said.

But it was a writer for a motor sports magazine, Pat Bedard, who best described the attraction of the event. As he says, "...there is something terribly appealing about finding out 'what'll she do' when she is you."

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PHOTOGRAPHS BY PETER READ MILLER

