

## A Particular Speed Record

Roy Lewis epitomizes what it means to have a great time monkeying around with automotive stuff. He is the first person to set a land speed record in excess of 300MPH using a diesel engine; the same kind found in Dodge pickups.

Lewis, 67, laid claim to the C/DS class record with a 306.86MPH average on Wednesday, August 16th, during the 2006 SCTA Speedweek. Andy Green, a.k.a. "world's fastest man" needed two engines and two additional days before he could coax the JCB Dieselmex above 300 with a 317MPH record in unlimited Diesel Streamliner class.

The sweet twist is that Lewis beat the British team, who had sloshed millions of dollars into their racing program, to the "3

four-cylinder inline mid-range diesel with four valves per cylinder. The streamliner's main job was to prove the four-banger was a tough little solider. Mission accomplished, but I'll bet the car returns, sniffing about for 400 MPH next year.

Lewis wanted to earn the simple pleasure of being the first in excess of 300MPH, while Bamford was banking on a land speed record to prove to the world his 444 was reliable. Same hunt, different quarry, both honest goals.

Bamford and Lewis are old guys possessed of youthful enthusiasm emanating from the heart, both profoundly inspired by yesteryear heroes. Each had a dream they nurtured until they found a way to live it. I hope someday these two guys get

5.9L engine. With the help of calm and methodical diesel mechanic Dave Rau, they reworked the diesel into a race motor by modifying the intake manifold and injection pump, installing a new camshaft and fabricating trick headers. The block, crank, rods and pistons are stock.

Cummins does not sponsor Lewis in any fashion, the name is on the car because of Steve and Dave's affiliation with a local OEM distribution center. Unlike Bamford's corporate treasury, Lewis paid for everything himself. JCB blew up 17 Goodyear Front Runners at 350 MPH and Lewis doesn't even have a spare.

Lewis retired in 1999, sold the business to daughter Jeanne and son-in-law Jim Donovan, to concentrate on getting 250 MPH out of the car. The first year was beset with teething problems. Licensing runs took place in the second year where Lewis also set a class record at 226 MPH.

"Jim is responsible for that 226 record; he is excellent at managing people and projects," insisted Lewis, "He discovered a serious problem and got it repaired while we were in line for the record run. Without him we would not have the record."

Donovan noticed a leaking braided oil line, right above the turbo – a very bad place. He, Steve, and Dave found a replacement back in Al Teague's pit.

"We grabbed it, drove back, and installed the line while rolling up to line with Roy already strapped in," said Donovan, who considers Roy's success a matter of personal as well as professional pride, "Talk about intense! We were all mentally and physically exhausted."

The car also ran 260 MPH and it was at that time Lewis figured that 300 MPH wasn't unreasonable. In 2004, exhaust temperature problems persisted, the team burned up the headers, as well as melted a stainless steel racing valve into a wad of chewing gum that spit itself out to lodge in the turbo during a 292 MPH run.

"We struggled to get the exhaust temperature under control, from day one," said Lewis who started Chassis Engineering in 1966, while still in college, "I probably could have gone 300 in 2003 if we didn't have to fight the exhaust temps."

Lewis again caught fire as he whistled through the timing lights in 2004. The team changed the pressure differential and water injection, got a better pump and began experimenting with CO2 as a coolant to reduce the heat.

This year the water injection was over-compensating, coming on too soon and "extinguishing the candle" explained Donovan, "Once we got that worked out it was just a matter of putting together a couple of good runs."

"The car itself is a pussycat," Lewis confided, "From day one it handled well, it doesn't wander, doesn't lift, doesn't exhibit any odd tendencies. Even with a crosswind it only required a little correction."

Lewis doesn't have room in the car

for a Dieselmex "ice chest", "Not unless I hold it in my lap, but I think the tech guys would have a something to say about that, and if they missed it, the starter would catch me I'm sure," he joked, "I didn't think we were on their radar, but when the Brits came over and talked to me, I was surprised at how much they knew about my car."

Lewis was referring to 2005, when a number of the JCB team members made a trip to the salt with Richard Noble trying to get a handle on what land speed racing was all about. The Chassis Engineering Special was high on their inspection list.

"Roy Lewis was a prime example of the open spirit of the salt racing community," espoused Project Manager Dr. Tim Leverton in genuine praise and admiration, "Of course, then, we didn't entirely understand what he was saying to us!"

Roy had a very clear vision of what his recipe was to get the speed. I was impressed by the packaging of his car design and how he managed to get all that gear into a tiny cross-section of the car. The build quality of his car was excellent and became something we aspired to replicate on our own car. We now know only too well how hard it is to get a high performance diesel power system to work the way you want, and Roy has maximized each element, whether turbo specs or carbon dioxide gas for the intercooler, and he clearly got it all together this summer!"

For years Roy was locked in friendly competition with Carl Heap's Phoenix, swapping speeds for two years during Speedweek. Carl always came out on top, once by only one MPH, but enough to be top dog.

"Carl was quite a competitor," Lewis recalled, "The Phoenix was the most amazing thing I ever saw out on the salt, even the 400MPH runs don't quite stack up to what it takes to make 18,000 pounds go that fast."

Besides crew chief Donovan, 42, and son Tony, 14, who was elevated from the "junior team" to the "real team" after putting in five years of grunt labor. The quiet lad also races go-karts where Grandpa and dad (also a karter) work as his pit crew.

Steve Mallicoat helps with mechanical chores and belts in Roy. Doug Humble, who lettered the car, lends a hand, as does Jim Huber, a retired firefighter, who keeps the pit organized. "We couldn't do without them," said Lewis, "they do a great job."

Crew Chief Donovan noted, "We knew that the Brits were coming, so that was added pressure. There were so many of them, we met quite a few, they were real nice people and were the first to cheer our 309 run."

Lewis has dyno time scheduled to help work out the heat problem. What's more, he has obtained a set of aluminum center wheels onto which a two-tread pattern has been wound with carbon fibers. When will this sport get a supplier of decent tires?

"I don't have to grow up until he does," said Jeanne of her father, "so I'll be a kid forever. He races because it is fun, a challenge. The same reason he builds other weird things like his electric car, the dragster, riding that penny farthing high-



Club" party. And Lewis did it with less than 6 liters where the Dieselmex team used more than eight.

"Dad always wants to build a better mousetrap," explained his daughter Jeanne who now owns Chassis Engineering (which was founded by Roy in 1966) with her husband Jim Donovan, "As long as I can remember dad has come up with weird ideas and always figured out how to make them work. He started [the racecar] sitting on a box with his hands up as though he were holding onto a steering wheel. The next day a few tubes appeared. This went on for months until it was a racecar."

"What a great effort from Roy and the whole CE team," remarked Green who felt privileged to share the salt with them, "We were all so pleased to see him crack the 300MPH diesel record after years of effort. It was also a pleasure to become the second diesel driver, after the estimable Mr. Lewis, to exceed 300MPH. Even though the JCB team was struggling at the time, we were still delighted to see our fellow 'oil burner' going so fast!"

In all fairness, the JCB team entered land speed racing mainly from a business perspective, so the money spent getting the record is more of a research and development program realized through a racing project. How much? Several million at least...but hey! How many of you guys tell your wives how much you spend on your speed machine? For that matter, do you EVER add up all the receipts yourself? I thought not.

JCB Chairman Anthony Bamford, 60, wanted to build his own engine to power the company's heavy equipment. The JCB444 engine was born in late 2004 as a

to share a beer together; the conversation would be richly animated.

Lewis fabricated the CE Special first out of flexible wood plywood, built to the width of his hips, added the powertrain, and then stuffed everything else in the space left over.

JCB employed famed aerodynamicist Ron Ayers to design an aerodynamic slippery shape and then convinced the brilliant designer John Piper of Visioneering to fit fast and safe inside the shape. Both marvelous approaches, unraveling the same physics yet running so differently down the course.

Lewis started toying with the diesel idea nine years ago, while still running his business. It took three years to build the streamliner. JCB had a staggeringly short 12-month concept-to-creation timeline. Each admired the other for what they accomplished and that reflects the true spirit of land speed racing.

"It took a lot longer than I thought," said Lewis, who has a mechanical engineering degree, "It is a pretty complicated car with lots of detail. Many parts required special finessing, and just about everything was hand-built with very few off-the-shelf parts." Bamford also learned that lesson.

"Steve Mallicoat and I were talking about how interesting it would be to go to Bonneville," recalled Lewis, who was looking for a racing pastime, but didn't want to drag race every weekend, "having read about it in magazines as kids, he was the instigator of the diesel." Bamford told me that he also was inspired by reading car magazines as a kid.

Long-time pal Mallicoat, a representative for Cummins Diesel, suggested the

### Chassis Engineering Special

#### SPECIFICATIONS

Designed, Built, Owned and Driven by Roy Lewis

**Height:** Front – 24 inches; Back – 35 inches

**Width:** Front – 24 inches; Back – 28 inches

**Length:** 29.5 feet

**Wheelbase:** 210 inches

**Track Width:** Front 12 inches; Rear 20 inches

**Tires:** Front - Goodyear Front Runners;  
Rear - Mickey Thompson

**Engine:** 359 CID Cummins 6  
(Riverside Engines)

**Turbochargers:** two Holset

**Clutch:** Crowerglide

**Headers:** Sanderson Custom

**Transmission:** Lenco 5-speed

**Rear end:** Custom

**Safety Equipment:** All Deist

**Body:** Built by Dick Crees

wheeler bicycle.”

If you ever meet “chip-off-the-old-block” Jeanne, ask her to explain the two-hump camel grazing out back with the Alpaca herd. Asked if she worried about dad’s racing, she replied, “No, not really, only once when we were at the line, but it only lasted a couple seconds and when he started to move everything was fine.”

Lewis has been hooked on the sport ever since he and wife Lorna first visited the salt in 1990. He’s not done, either.

“It is nice to get it over with,” concluded Lewis, “Until I got to 300 I couldn’t set any other goals. There is a nice sound to ‘World’s Fastest Diesel’, but I do have the ‘World’s Fastest Single

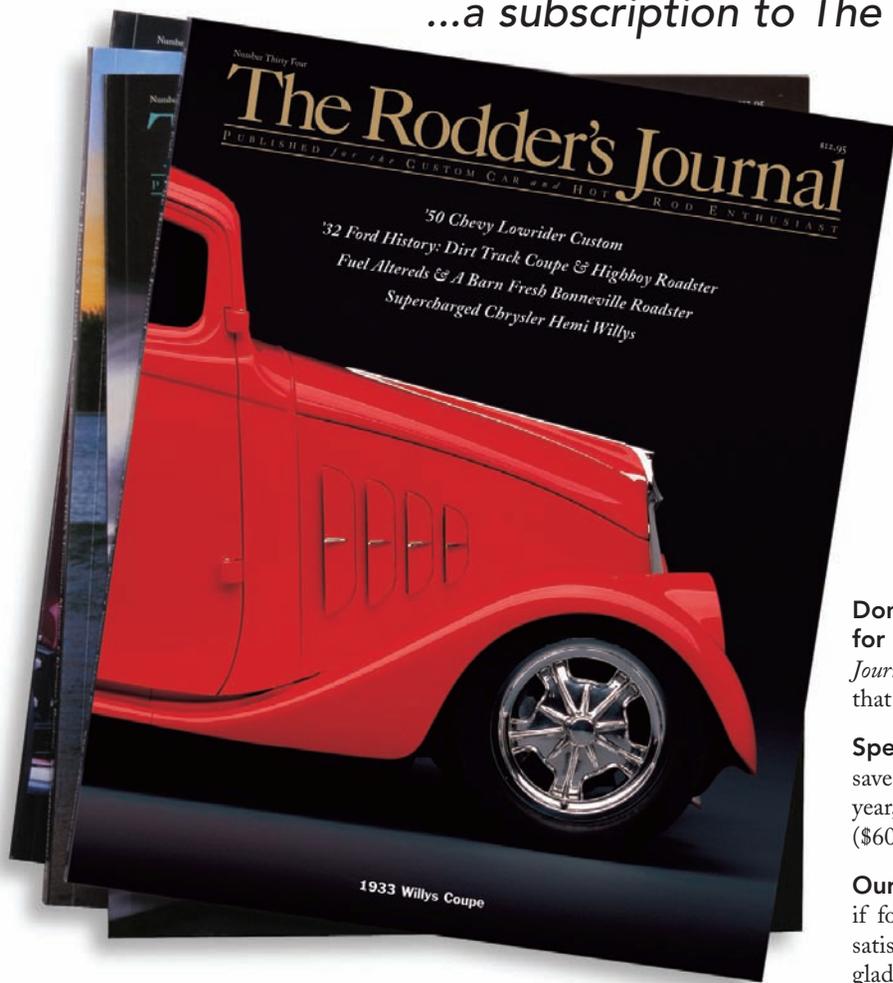
Engine Diesel’, so I am halfway there with my big toy.”

“There is a nice ring to world’s fastest diesel,” quipped Lewis, “I do have the fastest single engine diesel, so I am halfway there. I figure the existing engine would go another 20 MPH, but I’ve already pulled it out to replace it with a 406 stroker motor for Class B next year.” 

*Note: Photojournalist Louise Ann Noeth is the authoress of the award-winning book, “Bonneville: The Fastest Place on Earth,” a complete historical review of the first 50 years of land speed racing now in its 6th printing. For more details and to order, go to: [www.landspeedproductions.biz](http://www.landspeedproductions.biz).*

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