
FUEL FOR THOUGHT

July 2003

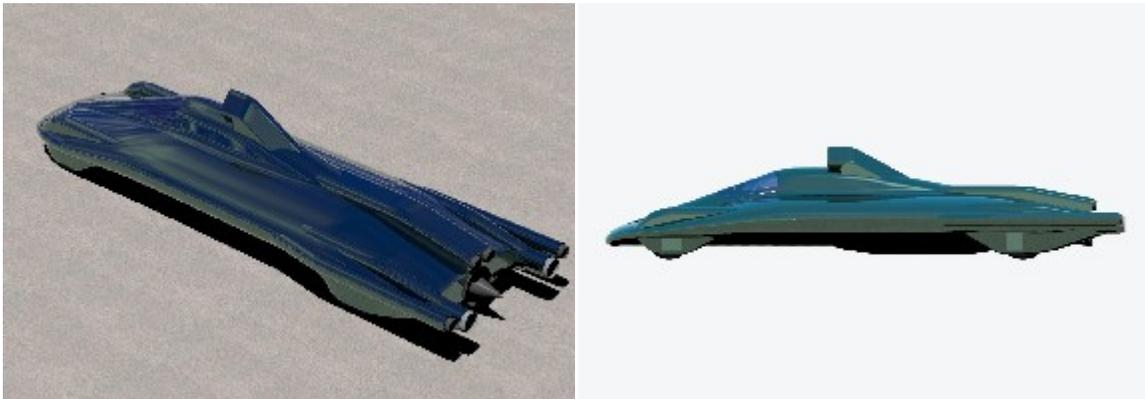
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HOT WET AIR TAKES ON NEW FLAIR

Land speed racing attracts 'em all. Speed hopefuls from every segment of competition discover it is futile to resist the allure and velocity promise of Utah's saline wasteland. Bonneville, so flat, so desolate, so utterly useless to most of the human race is embraced only by those hopelessly lost to seeking speed. Big names get hooked just as hard as unknowns, fat wallets get thin and poverty begets creativity, but the task is the same: speed.

This time it's a fellow named Charles Burnet who has spent a few years been bouncing on the water in fast boats. The happy, or hapless (perspective, you see) bloke has decided to see if he has what it takes to get a speed record on land.

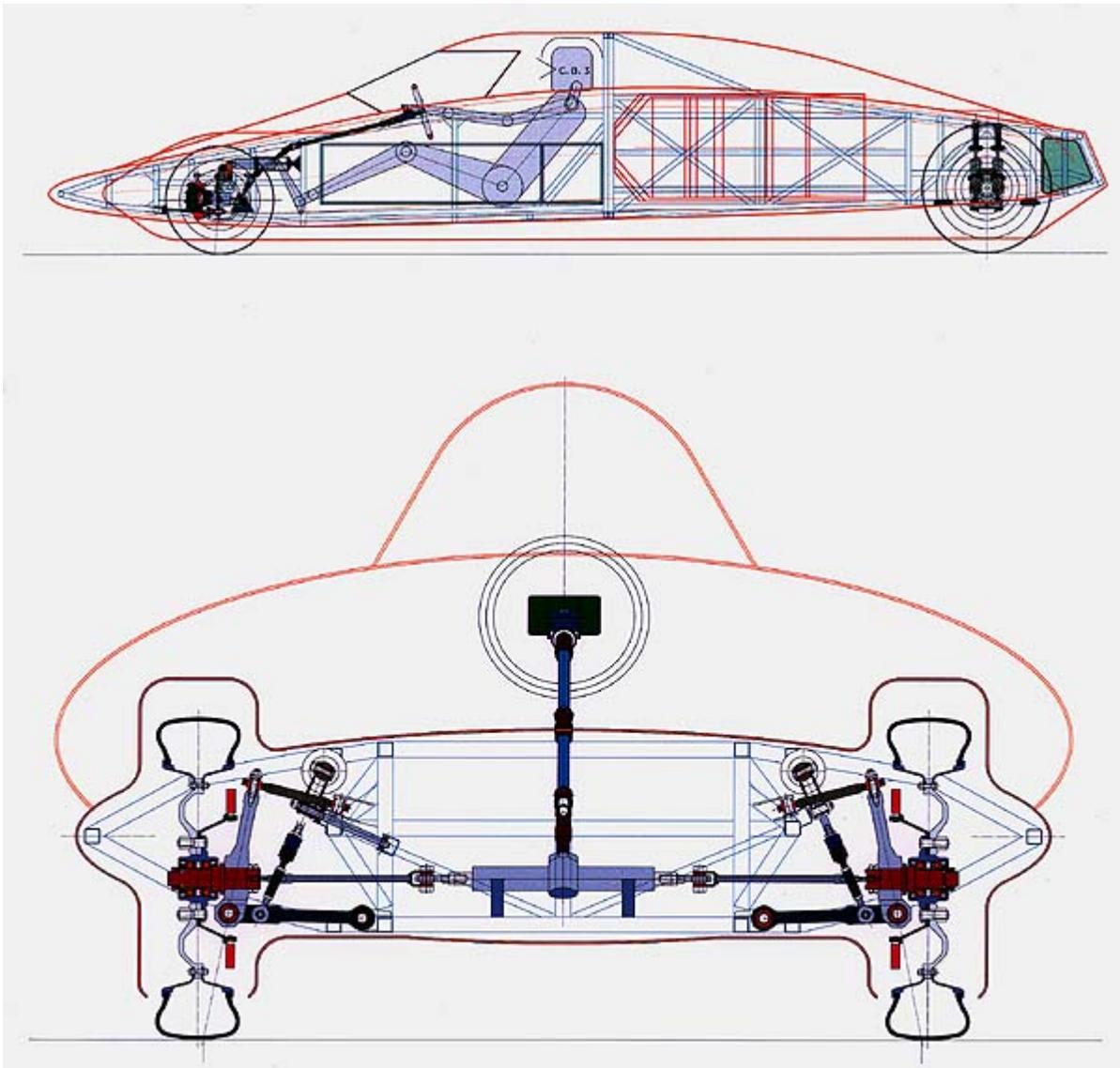
Recognizing that Brits never ones to do something easy if there is hard way to do it, this aspiring Knight of the Realm intends to trip the timing lights with steam. Believe it. Burnet is spearheading a project building a streamliner designed to reach 215mph at the SCTA/BNI World Finals in October 2003.

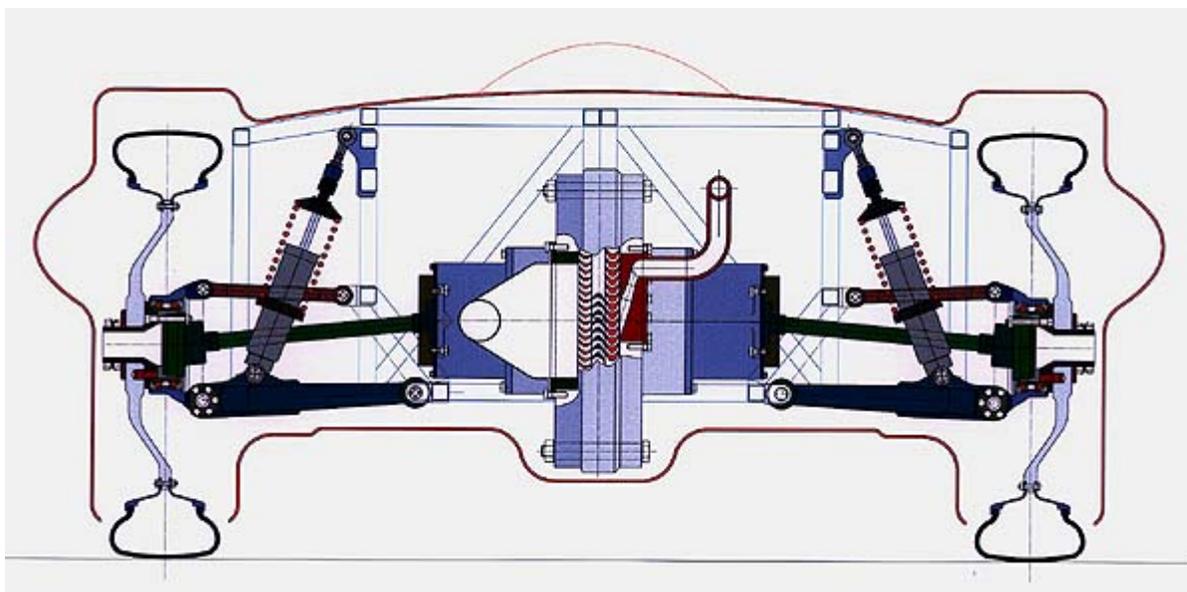


It was almost a century ago, back in 1906 on Daytona Beach, when Fred Marriott drove the Stanley Steamer through the measured mile with a time of 28 1/5 second (127.659 mph) and picked up the Dewar International Trophy, a land speed honor as prestigious as what a Gold Medal is to an Olympian. Fred whopped four gas powered cars that year and became the absolute speed champion for the next four years until a gas burning Benz slipped past the record by a scant 3.5 mph.

Remarkably, Marriott's class record still stands today. More enticing, it is the longest standing land speed achievement on the FIA books to which Burnet wants to terminate. Not entirely nutty, the British Steam Car Challenge also hopes "to create excitement in the arena of alternate fuels. . . , among the next generation of engineers and designers to work toward cleaner and safer forms of transportation, both public and private."

To that end, the car has been named, "Inspiration." That's what I love about speed people; they have such lofty goals, are grand thinkers and if they weren't the whole world would be slower.





It's been nearly 20 years since I published articles in enthusiast publications about the advantages of "earth and human friendly technologies" for private transportation. I knew back in the 80's that clean was mean. There is no argument that carbon dioxide (CO₂), monoxide (CO) and oxides of nitrogen (NO_x) are as poisonous to humans as they are our fragile environment, but we know now they can be kept to a minimum without sacrificing power. Smokey Yunick knew, John Ligenfelter caught on and now most fast folks revel in thought that green can be mean.

Although Burnet and his "Vulture Ventures" offshore racing team set several world speed records and holds World, European, National and UKOBA Championships, any land speeder knows this guy has a whale of learning curve ahead of him if he wants to conquer the salt.

I've never met Burnet, who will drive Inspiration, but I do know he's got great help. For starters, there is the Dr. Glynne Bowsher who looks more like a kindly and quiet country vicar than the maniacal mechanical engineer responsible for such speed machines as Thrust II (633mph) and ThrustSSC (763mph).

Some LSR folks will also remember when Bowsher came to Speedweek with my Bonneville Tour that is sponsored annually through Society of Automotive Engineers (SAE) and gave an astonishingly detailed accounting of how to make a car run Mach one on land.

It warmed my heart to know he's still in the fight for speed, speed and more speed. When last I visited Doc G's home in Solihull England, he showed me dozens of impressive cad-cam drawing of the car, drivetrain and boilers. Moreover, as a perpetual steam train junkie, I suspect Bowsher only signed on to this project so he can come back to the USA and do more train watching.

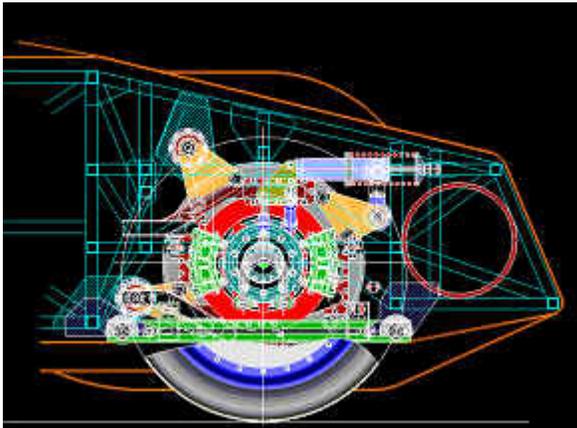
Another bit of engineering gray matter is Jeremy Bliss, reprising his role as the team's systems engineer – just like he did on ThrustSSC – and is managing the cars' build-up process as well. After stint with Lotus where he played with aero problems and developed active suspension systems for Formula 1, Bliss got a taste of land speed challenges at the Black Rock Desert in Nevada.

What I remember most about him was his crotch-ripped overalls, his amazing ability to avoid my 600mm camera lens and his little fascination in driving big American pickups fast as they would go and who cares if the bed liner flies out in the process. I have since discovered he was rather shy, but is a jovial lad that just didn't know how to sew.

Inspiration will be powered by a two- stage 13 inch diameter steam turbine fed by a LPG fired boiler and drives an epicyclical gear train with a 4:1 ratio for a wheel speed of 3000 RPM at 200 MPH. The boiler section is in the center of the car directly behind the single seat cockpit.

There are four separate boilers each capable of being run independently and each feeding one of the nozzles of the turbine. The boilers are laid horizontally behind the driver along the longitudinal axis of the car and each is comprised of 28 finned 321 stainless steel tubes.

The steam system is total loss (all the water will be used on every run) with the turbine exhaust steam being vented with the burner exhaust into the wake of the car. Inspiration was designed so that the volumes of steam generated along with the boiler waste heat will provide a mass flow rate such that the car will effectively have no drag associated with its wake.



The engine and gearbox sit co-linear with the rear axles. The drive unit consists of an epicyclical gear reduction unit connected to a limited slip differential unit. Output is split across two axles to the drive wheels in the rear.

The spaceframe-with-body construction uses 1 inch square stainless steel square tubing (except the roll hoop) and will incorporate single member longitudinal beams. The dual roll hoops for driver protection will be round tubing. Upfront,

the body shell is epoxy carbon fiber and to protect against heat the bodywork from the boiler section rearward is stressed aluminum.

The Stanley brothers steam cars were technologically advanced in its day. Knowing Bowsher and Bliss as I do, it is reasonable to presume these two – together with the rest of the “Steam Team” – will provide a great show to witness as they puff across the sodium chloride. To learn more, log onto the team's website:
www.steamcar.co.uk

We've come a long way from when learned men would espouse that "no human could travel at "unnatural" velocities and live" and this dumb 'ole girl believes "there's a heap more speed in them thar flats. . ."