

revved up

BLOODHOUND SSC project update | January 2015

BACKING BRITAIN

How Parker is supporting BLOODHOUND's world land speed record bid

BRAKE TIME

Inside the supersonic car's airbrake system

YOUNG BLOOD

Getting tomorrow's engineers involved through schools



Image: Flock London



ENGINEERING YOUR SUCCESS.

BLOODHOUND SSC: Backing Britain



BLOODHOUND SSC is an international education initiative focused around a world land speed record attempt.

Launched by Richard Noble and Andy Green, the aim is to inspire the next generation of scientists and engineers by breaking the FIA's world land speed record (currently 763 miles per hour) and driving faster than 1,000 mph.

As a product sponsor, Parker has been actively involved in contributing to the project's development, as project manager and BLOODHOUND advisor **Mark Cattermole** reports.

The challenge

One man, one vehicle and 1,000 mph across a South African desert. BLOODHOUND is all about pushing engineering boundaries to break the world's land speed record.

The technical challenges and risks involved are huge. First, get to 1,000 mph safely. Second, make sure the vehicle doesn't lift off the ground. Third, get back from 1,000 mph to zero before you run out of desert...

Parker's work

Parker is proudly supporting Bloodhound's stability, braking and safety.

Work to date includes:

- Using hydraulic cylinders and related products to open air brake doors and brake more effectively
- Integrating hi-tech composite accumulators into the air brake hydraulic system for back-up power
- Supplying hydraulic equipment to control the vehicle winglets, and help keep the vehicle stable
- Collaborating on design and layout of three manifold blocks that will control the air brakes
- Providing technical advice, support and products to support the Bloodhound designers.

The combination of Parker's breadth of products, leading-edge technologies and team of trusted advisors was key to being accepted as a BLOODHOUND product sponsor.

The project demands cutting-edge technologies and Parker products are a key part of the vehicle specification. This includes supplying composite piston accumulators for the airbrake mechanisms, which would deploy automatically in the event of an emergency; these will store energy and be much lighter than traditional steel versions.

History in the making

The project team is aiming for a new world speed record in late 2015, and then intends to break the 1,000 mph target next year. It's a piece of history in the making and Parker is delighted to be supporting Richard, Andy and their team in the adventure.

"The engineers at Parker are helping us to solve some big engineering challenges around acceleration, braking and safety."

"When the stakes are this high, you need someone you can trust, and we're so glad to have the Parker team on board."

CHRIS FAIRHEAD
BLOODHOUND SSC DELIVERY
DIRECTOR

New Parker and BLOODHOUND film now online!
Click the airbrake picture below to watch



Brake time

Engineers working on the 1,000mph BLOODHOUND Supersonic Car (SSC) and motion control experts at Parker Hannifin unveiled a closer look at the vehicle's airbrake system today (13 January 2015).

Parker is supplying advanced equipment to operate BLOODHOUND's airbrake doors, store backup hydraulic power and assist vehicle stability. A short film released on [Parker's website](#) by the two partners today gives an overview of how the airbrake system works.

To slow BLOODHOUND SSC from 800mph and below, driver Andy Green will press a button on his 3D printed titanium steering wheel to operate the twin Parker linear actuators (cylinders).

These cylinders will push the airbrake doors open into the airflow, carrying a load of five tonnes per door and increasing the drag on the car - slowing it at 3G deceleration, equal to losing 60mph per second.

"It will be uncomfortable... most people would call this a crash".

ANDY GREEN
*BLOODHOUND SSC
DRIVER*

The metre square doors are manufactured from carbon fibre and aluminium by URT Group with material from SHD and Sigmatex. The Parker cylinders can exert a force of seven tonnes as they open the 28kg doors out into the airflow.

This is the second time that Parker's UK team has supported a world land speed record. The company also backed Thrust SSC, which set the existing world record in 1997.

YOUNG BLOOD

key to project

BLOODHOUND has a strong focus on inspiring the next generation of scientists and engineers.

The BLOODHOUND Education Programme will be available to all pupils in primary and secondary schools, as well as students in further and higher education.

Almost 5,700 schools have already registered. There have also been presentations to groups and professional institutions to make sure that BLOODHOUND is integrated into communities.

From the outset, BLOODHOUND has made all information about research, design, building and testing available to teachers and students.

The project team has worked hard to excite students about the possibilities of engineering, by teaching them skills and [working on rocket-powered cars...](#)

There is also a team of BLOODHOUND SSC STEM Ambassadors - people who help and advise communities about the project. If you'd like to know more about becoming a STEM Ambassador for the project, please [visit the BLOODHOUND website](#) for further details.



Supersonic effort by Parker people

In supporting the BLOODHOUND project, there has been a huge amount of input and expertise from colleagues across Parker.

Thanks to their hard work, we've been able to make a really positive contribution to the supersonic car's development. So our grateful thanks go to the following Parker stars...

Hydraulics Group

Bruce Otte - composite accumulator design and technical input

Andy Lingram - cylinder design and calculations

Richard Pepper - manifold design

Parker Sales UK

Mary Welsh and *Saty Kandola* - product ordering and co-ordination

Michelle Sozanska - marketing

Mark Cattermole - BLOODHOUND liaison and project management

Parker spotted!

Seen on a recent Royal visit to BLOODHOUND...



Image: Stefan Marjoram

BLOODHOUND FAST FACTS

- At top speed the car will run a mile in 3.6 seconds
- BLOODHOUND is being built at the Technical Centre in Bristol, UK
- The team aims to achieve 1,000 mph (1,609 m/h) on its run at Hakskeen Pan in South Africa next year

FIND OUT MORE

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