## **BREAKING THE RECORD**

The performance curve illustrates a run to over 1,000mph. The blue curve, & the right-hand scale, shows the speed against the distance from the start of the run. The red curve, with the left-hand scale, shows the longitudinal acceleration of the car.



The APU will be started & the HTP tank will be pressurized. The car will be held on the brakes while the jet is started. The run starts when the brakes are released. The jet will be accelerated, gradually, following a gauge, to avoid surging.

After 20s, nearly 103m/s, on cue: the clutch will be engaged to prime the rocket.

After 25s, 156m/s, on cue, point a: the APU will be switched to full power, firing the rocket.

After 45s, 470m/s, point b: maximum speed will be reached, & Bloodhound will have passed through the measured mile in 3.6s.

Then the braking sequence will be started.

 $\sim$  447m/s: the rocket will be stopped & the jet engine will be throttled back. Deceleration rate is 3g initially, then falls off rapidly.

On cue, 228 - 358m/s: the airbrakes will be deployed (not accounted for in the graphs). They will gradually open to try to maintain 3g deceleration through the transonic region (358 down to 291m/s).

On cue, at point d, 268 - 279m/s: a parachute will be deployed to increase the deceleration rate back up to 3g.

On cue, at point e,  $\sim$  179m/s: the second parachute will be deployed.

Below 89 (112)m/s, point f: the brakes can be used, following the temperature gauge to avoid overheating.

Just 120s after setting off, the car will be stationary once more, 14 km from its start point.

This was written on 7 FEB 13 & has been updated as new information has been made available. For example, at point c the jet was to be stopped, but then it was decided to use it to turn round the car at the end of the run. Some of the new information gives slightly different speeds, eg, below 89 or below 112m/s for application of the wheel brakes.

The Land Speed record is calculated from the average times of the car over two runs, completed within the space of an hour. If two runs take 4 minutes, then there remain 56 minutes to turn round & service the car.

Even allowing for his many years experience flying fast jets, getting the maximum acceleration at exactly the right time, ensuring that Bloodound is both on course & stable, & bringing it to a halt at the right place, all under a g-force varying from +2.5 to -3.6, will tax Andy Green's powers of concentration, coordination & reflexes. On top of all this he will have to act quickly & correctly if any faults occur.

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