

John Stapp – the fastest man on Earth

The US airforce scientist John Stapp who underwent experiments in the 1950s to see what acceleration forces the body can withstand. Here are some questions for a short discussion, based on an obituary published in The Guardian 11 December 1999.

What you need

- A copy of the obituary can be downloaded free from The Guardian website, <http://www.newsunlimited.co.uk>
- Search in their archive 'Find an old story' using the date and key words 'John Stapp'.

A classroom discussion

1. Human interest. Isn't it unlikely that John Stapp, a man who risked death so many times in his working life, would survive to die from natural causes at the age of 89?
2. Human interest. From the obituary, how would you describe the character of the man? What do you think made him the kind of person he was?
3. Calculations. What is 623 in m s^{-1} ? What was his acceleration in m s^{-2} when he reached 623 mph in 5 s? And his deceleration, when stopping in 1.4 s? [In both cases assume his speed changed uniformly.] Now express your answers as multiples of 'g'. (take $g = 10 \text{ m s}^{-2}$)
4. Any acceleration is proportional to the force acting. Which of Newton's laws is this? State the law completely.
5. Why did the American airforce sponsor these experiments? Why do fighter pilots experience 'g' forces?
6. Ralph Nader is a great American publicist and campaigner for consumer rights. Why did Nader campaign in the USA after the Volvo car company introduced safety into their design process?

You have seen

1. The need to understand physiological limits to the accelerations humans can withstand.
2. How military research led to improvements in safety not just for pilots but also for motorists.
3. A man with a very unlikely career! (and no children)

Files provided

nil

Getting it to work

A copy of the obituary can be downloaded free from The Guardian website,

<http://www.newsunlimited.co.uk>

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You might like to print out and photocopy a sufficient number for your students.

Alternative approaches

Nil

Social and Human context

Given above

Safety

nil