

Old Car vs New

how the modern car has changed beyond recognition

REMEMBER THE VAUXHALL CAVALIER? REMEMBER THE FORD ESCORT?

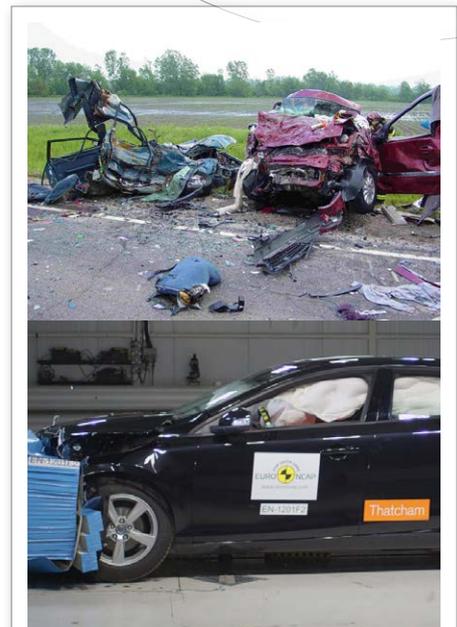
Well, comparing those to the cars of today is akin to comparing a car with a cart and horse.

In pretty much every respect, today's car is far more sophisticated than the cars of 20 years ago. We accept current mobile phones as being light years ahead of the early Motorola "bricks" because they look so different, yet we tend to have no idea of the evolution of the car as it's essentially still a metal box with 5 seats and an engine at the front.

For many years, consumers and legislation have created greater and more challenging demands on car designers. We want a car that is faster, more dynamic (journalist terms for those track day photos of cars powering through corners with tyres smoking), but more comfortable, cheaper to insure, service and repair and cheaper on fuel. And, of course, despite us driving faster on ever more crowded roads, we want to be able to walk away from any crash.

Today's younger consumers also expect complete integration of their smartphones and playlists with ability to receive, and perhaps more worryingly, send SMS text messages and emails.

On top of this are legal demands for the environment; the car needs to be recycled at the end of its life whilst having used less fuel and emitted less harmful gasses during its life.



THE CONSUMER IS PROBABLY UNAWARE OF THE CONFLICTING DEMANDS ON THE CAR ENGINEERS OF TODAY. THE CAR MUST BE ABLE TO GENTLY ABSORB ANY POTENTIAL PEDESTRIAN OR CHILD AT THE FRONT SO AS TO MINIMIZE THE INJURY RISK AND TO AVOID FATALITIES AS FAR AS POSSIBLE, YET TO BE STRONG ENOUGH TO ABSORB ANOTHER CAR HITTING IT HEAD ON AT 40MPH, OR SLAMMING INTO THE SIDE OF IT AT 31MPH.

Driver Zone

TO ACHIEVE THESE DEMANDS, THE CAR BODY IS MADE OF A SOPHISTICATED RANGE OF STEELS AND ALUMINIUM; ONE CAR CURRENTLY ON THE MARKET IS MADE UP OF NO LESS THAN 53 DIFFERENT STEELS, ALUMINIUM ALLOYS AND PLASTICS, WITH DIFFERENT JOINING METHODS INCLUDING AEROSPACE INDUSTRY BONDING!

These are shaped and joined to one another in complicated and sophisticated ways and tested in computer simulated crashes time and time again until the car withstands all the crash impact demands predictably enough for the car maker to carry out real and expensive crash tests. These simulations ensure that the car is more than a steel cage, but instead that clever structural collapse behaviours occur that protect the occupant such as the side and floor lifting the passenger up and away from the impact, and the front of the car gradually deforming to absorb the impact force.

IT IS A FACT THAT EVEN A SMALL CAR OF TODAY HAS A MUCH GREATER PROBABILITY OF SAVING YOU FROM SERIOUS INJURY THAN A BIG PRESTIGIOUS CAR OF 20 YEARS AGO.

BUT NOT ONLY ARE THEY STRONGER AND SAFER, BUT THESE CLEVER STEELS AND ALLOYS ALLOW THE USE OF THINNER PANELS WHICH ARE LIGHTER, REQUIRING LESS ENGINE POWER AND FUEL TO MOVE ALONG.

Mechanically and electronically cars have evolved beyond the comprehension of many. The days of home servicing in the driveway are all but gone. Many maintenance tasks such as oil and brake fluid changes now require a specific diagnostic system to complete. And this will continue as many functions are built into a car, yet only unlocked according to the specification bought and paid for.

Engine sizes have reduced as power output efficiency has increased. That Ford would release a 3-cylinder 1.0litre Mondeo would once have been unthinkable, but as cars are made lighter in weight, the developments in engines have made this possible. Add to this the electric motors which support the combustion engine in hybrid models. Originally these, powered by large higher voltage batteries, were for 'green' environmentally friendly models, yet the engineers and consumers are quickly beginning to appreciate the added advantage of the lively acceleration from a standing start which electric motors can bring. So we will continue to see a growth in hybrid cars, not just for their better fuel consumption, but for the increased performance that they can bring.

10 or 15 years ago, a major selling point on any car would be anti-lock brakes or power assisted steering. Today you'd be hard pressed to find a new car that hasn't got Electronic Stability Control, and that's something to be grateful for. These systems are very effective in preventing accidents by subtly intervening and keeping the vehicle stable even before the drivers realises the danger of imminently losing control. These have evolved further to give better grip and traction on corners or uneven road surfaces.

Driver Zone

But on top of this, we now see many cars with radar and/or cameras to assess the road ahead and to feed information to a host of assistance systems. These can warn the driver of a potential collision, or even intervene and brake automatically far more effectively than most human drivers will do. But they can also make life easier for the driver by keeping the car at a chosen distance from the car in front, even taking over the tiring stop/start driving of inner-city traffic queues. Of course there are those who say we don't need this, but most of us at one time or another have been lightly bumped by the car behind, or returned from shopping to find our car scuffed whilst it is parked, and these systems can prevent this!



The power assisted steering has developed to be electrically powered now, which has given rise to systems that can automatically make minute adjustments to keep the car in its lane, or again to provide assistance in maintaining stability. Today, many cars can manoeuvre themselves into a parking space, with differing levels of driver input, aiding a task that many people really do struggle with.

Many commentators will tell us that we don't need these developments, that we need proper "drivers' cars" without all these gadgets and "nannying technologies". Yet in 2012, 61 children in the UK were killed by cars, 316,000 people were injured and £2.7 billion was added to our insurance bills to repair cars. Recently retired Formula 1 driver Michael Schumacher, widely regarded as one of the best drivers ever, supported the driver aid campaign acknowledging the limitations of human capabilities when driving. And these systems can even also monitor the driver to check his/her alertness or physical state!



But, perhaps more importantly, it is you, the consumers, who are driving these changes with car manufacturers responding to the calls from their customers to make your daily commute and school runs safer, cheaper, and easier. You asked for it, you pay for it when you buy the car that suits you, so you have a right to benefit from some of the most advanced technology available.