

Press Release

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On Thursday August 13, 1959, the world's first car with standard-fit three-point safety belts - a Volvo PV544 - was delivered to the Volvo dealer in the Swedish town of Kristianstad. Over the next 50 years, the V-shaped three-point safety belt saved well over one million lives.

Feed out, stretch, click and pull taut. A simple movement of the hand and the belt is in place - at the same time as the risk of fatality or serious injury in a collision is cut by more than 50 percent.

To this day, the three-point safety belt remains the car's single most important safety feature. It is the most widely used and most significant safety innovation in the automobile's more than 120 year long history.

It is the belt that links together man and car. It is the belt that restrains the car's occupants in an impact. At the same time, the occupants are held in place in the car and do not risk being thrown around inside the passenger compartment or hurled out of the vehicle in more complex accident scenarios.

Nils Bohlin understood the forces at work

There is a saying that the simplest is often the best. However, it was only towards the end of the 1950s that the car safety belt evolved into its current design, thanks to Volvo engineer Nils Bohlin.

There were different types of belt before that. Back in the 1930s, US doctors were beginning to impose demands that cars should be equipped with safety belts.

The two-point lap belt was the most common solution, but there were also different variants of the three-point safety belt. The problem was that they did not protect their users sufficiently effectively, especially not at high speeds.

Former aviation engineer Nils Bohlin - before moving to Volvo he worked on the development of catapult seats, among other things - understood early on the forces generated in a collision.

The same principles to this day

The belt must absorb force in the right area - across the pelvis and chest where the body is strongest. At the same time, it must be easy to use and adjust.

The most important properties of Nils Bohlin's design were that the system consisted of a lap belt and a diagonal body belt, that the belt straps were anchored at a low attachment point beside the seat, that the belt geometry formed a "V" shape with the point directed toward the floor, and that the belt stayed in position and did not move under load.

The very same principles apply to this day - every time you use the belt.

On the Nordic market, the Volvo PV544 and Volvo Amazon (120) were the first cars to feature this world innovation. Volvo was thus the first car maker to equip its cars as standard with three-point safety belts. The invention was patented with what is known as an open patent that is to say anyone who wanted was granted free use the design.

A giant step towards increased safety had now been taken, but the three-point safety belt still did not achieve an immediate breakthrough. It would take another few years before the vast majority of customers and the rest of the automobile industry realised the safety belt's effectiveness as a lifesaver.

Volvo survey convinced the world

In 1963, Volvo launched the three-point safety belt in the USA and on other markets. Ahead of the launch, Volvo conducted sled tests and crash tests with cars featuring various types of safety belt. The results were crystal-clear: Volvo's three-point belt gave by far the best protection to the car's occupants.

A few years later, in 1967, Volvo presented its ground-breaking "28,000 Accident Report" at a traffic safety conference in the USA. The report was based on data from all collisions involving Volvo cars in Sweden over a period of one year.

Here too the result was crystal-clear - and the world finally began taking notice. The report showed clearly that the safety belt saved lives and that it also reduced injuries by about 50-60 percent.

More than a million lives saved

Today the three-point safety belt is fitted to cars the world over. Volvo introduced this feature as standard in both front and rear seats as far back as 1967.

The modern safety belt is the cornerstone of the car's interior safety system, working alongside additional features such as airbags, belt pre-tensioners and force limiters.

The belt positions itself correctly in an impact - the pre-tensioner tightens the strap across the torso. It then gives at exactly the right moment so that the body can be restrained as gently as possible. All within a few thousandths of a second.

It is difficult to give an exact figure for how many lives the safety belt has saved - there are no globally coordinated traffic safety statistics. However, it is estimated that more than a million people owe their lives[i] to the safety belt, and it has saved many times that number of people from serious injury.

Considerable potential still remains

Use of the safety belt is still the most important factor for boosting traffic safety among car occupants. In a global perspective, there is still considerable potential. Safety belt use differs immensely between different parts of the world and different countries.

The three-point safety belt has been saving lives for 50 years - and it will continue to save lives within the foreseeable future. Every percentage of increased usage makes a difference.

In the USA, it is estimated that each percentage increase in belt usage would save 270 lives a year[ii]. Studies in Europe show that another 7000 lives would be able to be saved if all EU countries had the same usage statistics as the best[iii].

And the potential is even greater in parts of Africa, Asia and South America where the number of cars is increasing very quickly.

Remember! Everyone in the car should wear the safety belt. Click! Every time.

Footnotes:

[i] Estimate by Volvo based on general and in-house statistics on accidents and belt usage.

[ii] National Center for Statistics and Analysis (National Highway Traffic Safety Administration, NHTSA), Traffic Safety Facts, 2007.

[iii] Global Road Safety Partnership (GRSP).

THIS RELEASE IS A PART OF THE "VOLVO SAFETY BELT 50 YEARS ANNIVERSARY" KIT DURING 10-13 AUG.

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