

## Press Release

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

Feed out, stretch, click and pull taut. A simple movement of the hand and the belt is in place and, at the same time, reduces the risk of fatality or serious injury in a collision by more than 50 percent. To this day, the three-point safety belt remains a vehicle's single most important safety feature. It is the most widely used and most significant safety innovation in the automobile's 120 year history.

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

### Nils Bohlin understood the forces at work

It was towards the end of the 1950s that the safety belt evolved into its current design, thanks to Volvo engineer Nils Bohlin. Yet, the industry did offer different types of safety belts before the Bohlin's innovation. For example, in the 1930s, American doctors were beginning to impose demands that vehicles should be equipped with safety belts.

The two-point lap belt was the most common, but there were also different variants of the three-point safety belt. The problem was they did not protect their users sufficiently and effectively, especially at high speeds. As a former aviation engineer with work that included the development of catapult seats, Nils Bohlin understood 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 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 same principles apply today.

On the Nordic market, the Volvo PV544 and Volvo 120 (known as the Amazon in Europe) were the first vehicles to feature this innovation. Volvo was thus the first automobile manufacturer to equip its vehicles with three-point safety belts as standard equipment. The company applied for an open patent on the technology, ensuring anyone was granted free use of the design.

A giant step towards improved automotive safety had been taken, but the three-point safety belt was not universally adopted immediately. It would take another few years before customers and the rest of the automobile industry realised the three-point safety belt's effectiveness as a lifesaver.

### **Volvo survey convinced the world**

In 1963, Volvo launched the three-point safety belt in the US and other global markets. Ahead of the launch, the company conducted sled tests and crash tests with vehicles featuring various types of safety belts. The results were crystal-clear: Volvo's three-point belt provided the best protection for occupants by far.

A few years later, in 1967, Volvo presented its ground-breaking "28,000 Accident Report" at a traffic safety conference in the US. The report was based on data from all collisions involving Volvo vehicles in Sweden over a period of one year. The effectiveness of the three-point safety belt was again made crystal-clear, and the world began to realize the safety belt saved lives and reduced injuries by 50-60 percent.

### **More than a million lives saved**

Today, the three-point safety belt is fitted to vehicles around the world and Volvo vehicles have featured the system as standard equipment in both front and rear seats since 1967.

The modern safety belt is the cornerstone of interior automotive safety systems, working alongside airbags, belt pre-tensioners and force limiters to reduce the likelihood of injuries to occupants. Pre-tensioners and force limiters position the belt correctly in an impact, tightening the strap across the torso, and then releasing a set amount of slack so the body can be restrained as gently as possible. Both systems engage within a few thousandths of a second.

It is difficult to give an exact figure for how many lives the safety belt has saved as there are no globally coordinated traffic safety statistics. However, based on in-house statistics and external studies from select countries, Volvo Car Corporation estimates more than one million people owe their lives to the safety belt, and many times that number were saved from serious injury.

### **Considerable potential still remains**

Use of the safety belt is still the most important factor for boosting traffic safety among vehicle occupants and, from a global perspective, there is still considerable potential for improvement. Safety belt use differs immensely between different parts of the world and every time the population of a country increases usage by one percentage point, it makes a significant difference in the number of lives saved.

In the US, the National Highway Traffic Safety Administration estimates that each percentage increase in belt usage would save 270 lives a year. Studies by the Global Road Safety Partnership in Europe show that another 7,000 lives would be saved if every EU country had the same usage statistics as the top-performing countries. The potential is even greater in parts of Africa, Asia and South America where the number of vehicles is increasing very quickly.

Volvo Cars of Canada Corp. is part of the Volvo Car Corporation of Göteborg, Sweden. The company provides marketing, sales, parts, service, technology and training support to the 41 Volvo automobile retailers across the country. The company's product range includes the stylish and sporty C30, the elegant C70 hardtop convertible, the compact S40 sedan, the S80 flagship sedan and the versatile V50 and V70 wagons. For customers looking for a Volvo vehicle with all-road capability, the company offers the versatile XC60 crossover - equipped with City Safety as standard equipment - as well as the XC70 and XC90.

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### **Media Web site:**

<http://www.media.volvocars.com/ca/>

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