



The history of ESV experimental safety vehicles

17 June 2019

The Mercedes-Benz ESV 2019 experimental safety vehicle, which the company recently unveiled to the public, showcases pioneering automotive safety technology. It is the latest in a long tradition of ESV vehicles, dating back almost 50 years. One of these automotive heritage vehicles can be seen at the Mercedes-Benz Museum: ESV 22 from 1973.

Sindelfingen. Since 1971, Mercedes-Benz has designed more than 30 experimental safety vehicles. In doing so, this manufacturer conducts research on numerous automotive safety systems, refines them and makes them fit for series production. The ESVs are embedded in the long history of continuous safety development at Mercedes-Benz.

Some early milestones of this tradition are:

- Door locks that prevent doors from bursting open after an accident (1949, 1959)
- Safety body with energy-absorbing crumple zones (1959)
- Injury-attenuating interior construction (1959)
- Systematic crash tests (1959)
- Accident research: Evaluation of real accidents and systematic application of the results to enhance safety development (1969)

From the 1970s onwards, the ESVs paved the way for a large number of other innovations, some of which could not be mass-produced until years later. These include the anti-lock braking system (ABS) (1978), belt tensioners (1981) and belt force limiters (1995), airbags (1981), passenger airbags (1987) and side airbags (1995).

As part of the 1970s ESV programme, Mercedes-Benz presented the following four ESVs to the public:

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- ESV 05, based on the 114 model series (“Stroke/8”) presented at the 2nd International ESV Conference from 26 to 29 October 1971 in Sindelfingen
- ESV 13 as a revised version of ESV 05, presented at the 3rd International ESV Conference, held in Washington (USA) from 30 May to 2 June 1972
- ESV 22 based on the S-Class (116 model series), presented at the 4th International ESV Conference from 13 to 16 March 1973 in Kyoto (Japan).
- ESV 24 as a modified S-Class (116 model series), presented at the 5th International ESV Conference from 4 to 7 June 1974 in London (UK)

As a continuous pacesetter in vehicle safety, Mercedes-Benz presented another vehicle in 2009 that, in turn, anticipated numerous subsequent series developments.

- ESV 2009 as a modified S-Class (221 model series), presented at the 21st International ESV Conference from 15 to 18 June 2009 in Stuttgart

The ESV 2019 shown in spring 2019 seamlessly continues this tradition. It has more than a dozen innovations on board and also picks up on current trends for the future, such as electric drivetrains and autonomous driving. The solutions include both developments close to production level and others that extend far into the future – as is always the case with Mercedes-Benz’s experimental safety vehicles. Every ESV reflects the extremely broad technological horizon that underlines this brand’s uncompromising drive to advance innovations in vehicle safety.

To be seen at the Mercedes-Benz Museum:

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Legend room 5: Visionaries – Safety and the Environment

Mercedes-Benz Experimental Safety Vehicle ESV 22, 1973

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Captions:

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Mercedes-Benz Experimental Safety Vehicle ESV 22 at the Mercedes-Benz Museum.

19C0381_0029

Mercedes-Benz Experimental Safety Vehicles ESV 2009, ESV 22a (1973) and ESV 13 (1972), from left to right. Photo from the TecDay Mercedes-Benz ESV 2019 in May 2019.

2008DIG27458

Mercedes-Benz Experimental Safety Vehicle ESV 03, 1971.

71459-31

Mercedes-Benz Experimental Safety Vehicle ESV 05, 1971.

C7288

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Mercedes-Benz Experimental Safety Vehicle ESV 13, 1972.

73044-4

Mercedes-Benz Experimental Safety Vehicle ESV 22, 1973.

09C530_11

Mercedes-Benz Experimental Safety Vehicle ESV 22, 1973. Photo from a contemporary exhibition.

09C530_09

Mercedes-Benz Experimental Safety Vehicle ESV 24, 1974.

09C439_035

Mercedes-Benz Experimental Safety Vehicles ESV 2009 (2009), ESV 24 (1974),
ESV 22a (1973), ESV 13 (1972) - l. to r.