

50 years of breaking safety barriers

Over the years, Volvo Trucks has acquired a reputation for devising and carrying out safety tests that go beyond the industry standard. Here's a closer look at some of the defining moments in 50 years of cutting edge safety testing at Volvo Trucks.

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PHOTOGRAPHY VOLVO TRUCKS



1979 VOLVO BARRIER CRASH TEST

■ A test designed to provide a complete overview of the way in which a truck behaves in the event of a frontal collision. The very first barrier crash test was performed outdoors in 1976. However, in 1979 it was carried out under controlled circumstances and with accurate measurements, against a flat barrier. The method was further developed up to 1990, when it became a standard validation test for every new Volvo truck. The truck is pulled into a barrier at 30 km/h, after which the damage to each of the truck's functions can be studied.

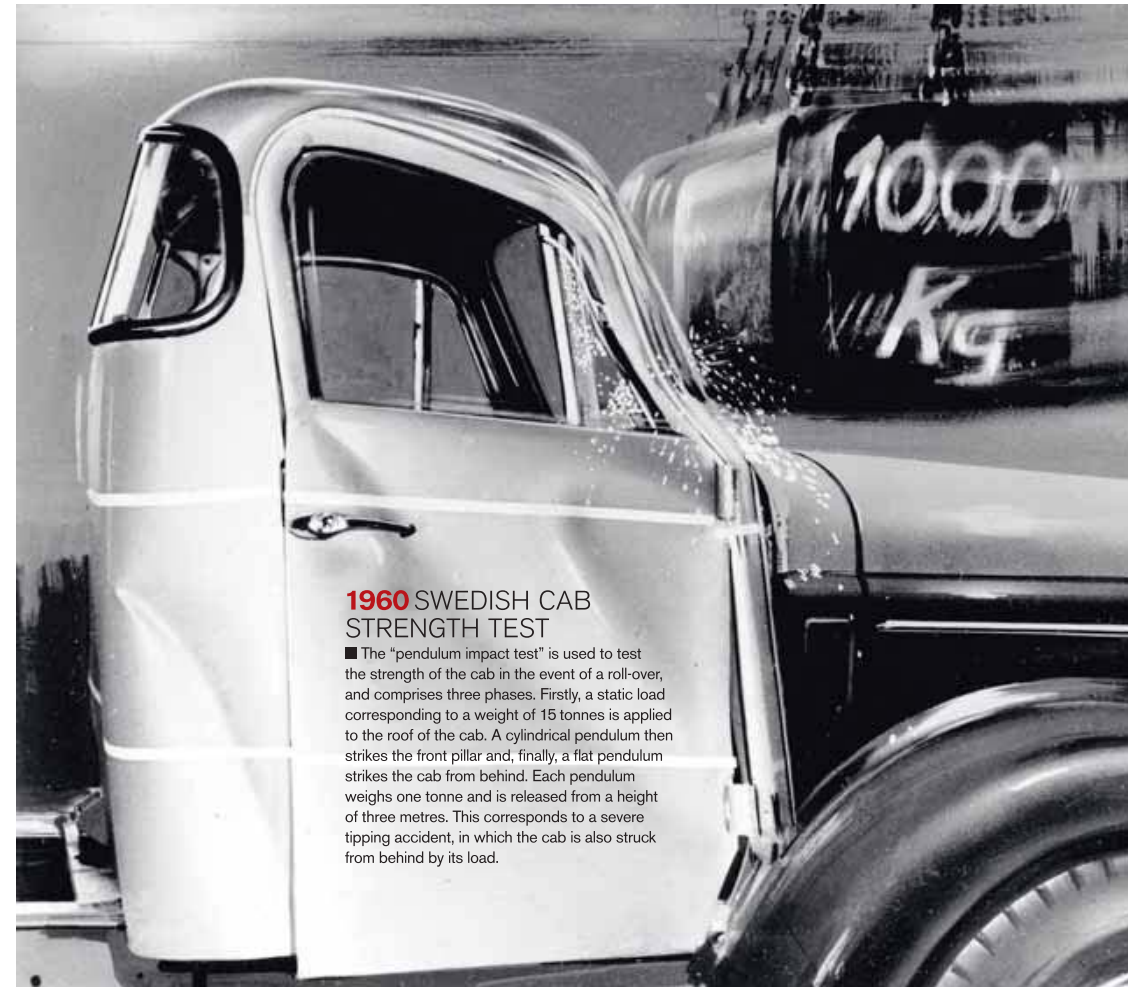
1985-1986 SLED TESTING OF THE DRIVER'S POSITION

■ This test method was first developed by the automotive industry in the 1970s. A considerably more sophisticated version is now used to ensure the safety of the driver's area in all Volvo trucks. The cab is mounted on an undercarriage and is propelled backwards under acceleration corresponding to a frontal collision. This method is used to test every feature of the driver's area, including the seat, seat suspension system, safety belt and steering wheel, both individually and in combination, in order to minimise injuries to the driver in the event of a collision. A state of the art crash test dummy (known as Hybrid III) is used to measure various types of impact on the driver.



1992 FIRE TEST

■ The intention was to impede the spread of fire from the engine compartment to the inside of the cab in order to give the driver time to escape. In the test, a gas fire is lit under the cab. Test engineers then study how components such as the floor of the cab and the cable grommets behave. The test was first used during the development of the FH cab. Volvo Trucks sealed the gaps between the engine compartment and the cab and used fire-resistant materials for components.



1960 SWEDISH CAB STRENGTH TEST

■ The "pendulum impact test" is used to test the strength of the cab in the event of a roll-over, and comprises three phases. Firstly, a static load corresponding to a weight of 15 tonnes is applied to the roof of the cab. A cylindrical pendulum then strikes the front pillar and, finally, a flat pendulum strikes the cab from behind. Each pendulum weighs one tonne and is released from a height of three metres. This corresponds to a severe tipping accident, in which the cab is also struck from behind by its load.

2000 FRONT UNDERRUN COLLISION TEST

■ Front underrun protection became available as an option in 1996 and has been standard on all forward built Volvo trucks since 2002. Volvo Trucks' test method analyses a head on collision between a Volvo V70 travelling at 40 km/h, and a Volvo truck travelling at 20 km/h. Volvo Trucks has been carrying out this test since 2000 – well before the relevant EU legislation was introduced. Furthermore, the relative speed of 60 km/h goes far beyond the legal requirement of a force of 160 kN, corresponding to about 50 km/h. This test is used specifically to minimise damage to a car and its passengers in the event of a collision with a truck.

