

The evolution of accidents on tractors in Germany from the 70's to present



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SVLFG
Sozialversicherung
für Landwirtschaft, Forsten und
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About our organisation:

Legal insurance covering accident at work, occupational diseases, health care, old age assistance and care.

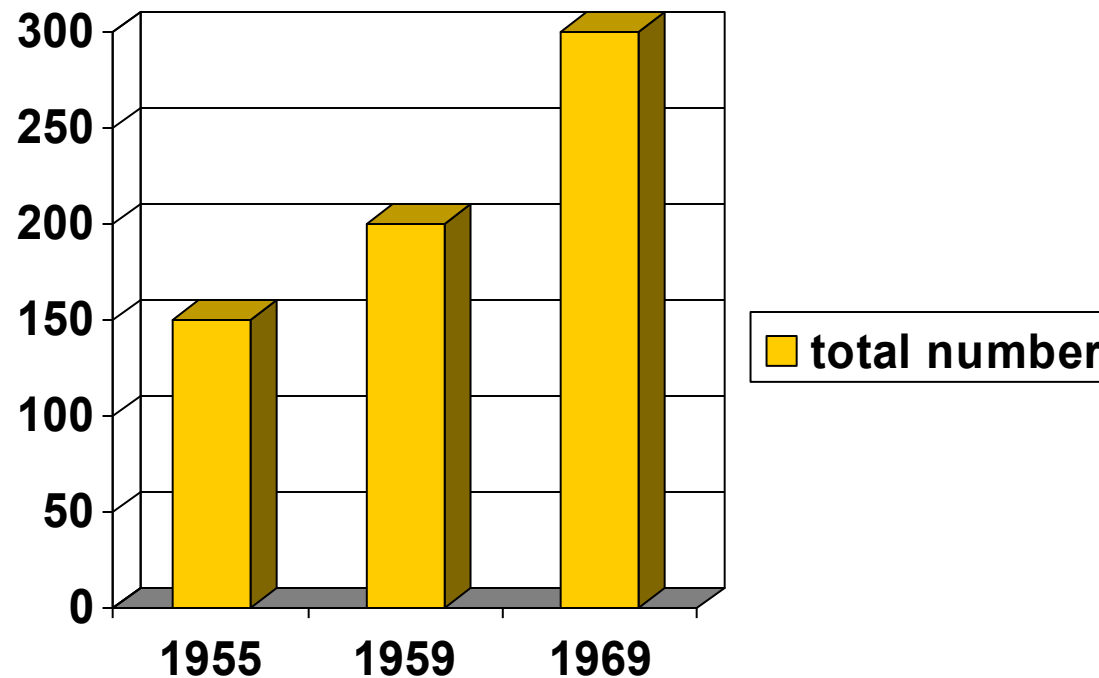
Circle of insured persons:

- Farmers (agriculture, horticulture, forestry) and family,
- workers (accident at work, occupational diseases)



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Evolution of the fatal accidents with tractors in west germany



Improvement of safety with a national regulation of the accident insurance for farmers

1. All tractors which were brought into the german market after 31st. of December 1969 must have a rops strukture
2. All tractors which were on the market on December 31st 1969 must be backfitted with a rops latest on January 1st. 1979 .



Elaboration of testing criteria for rops strength taking into account

- Practical roll over tests
- Scientific researches



Directive 74/150/EEC concerning operating licenses for agricultural tractors

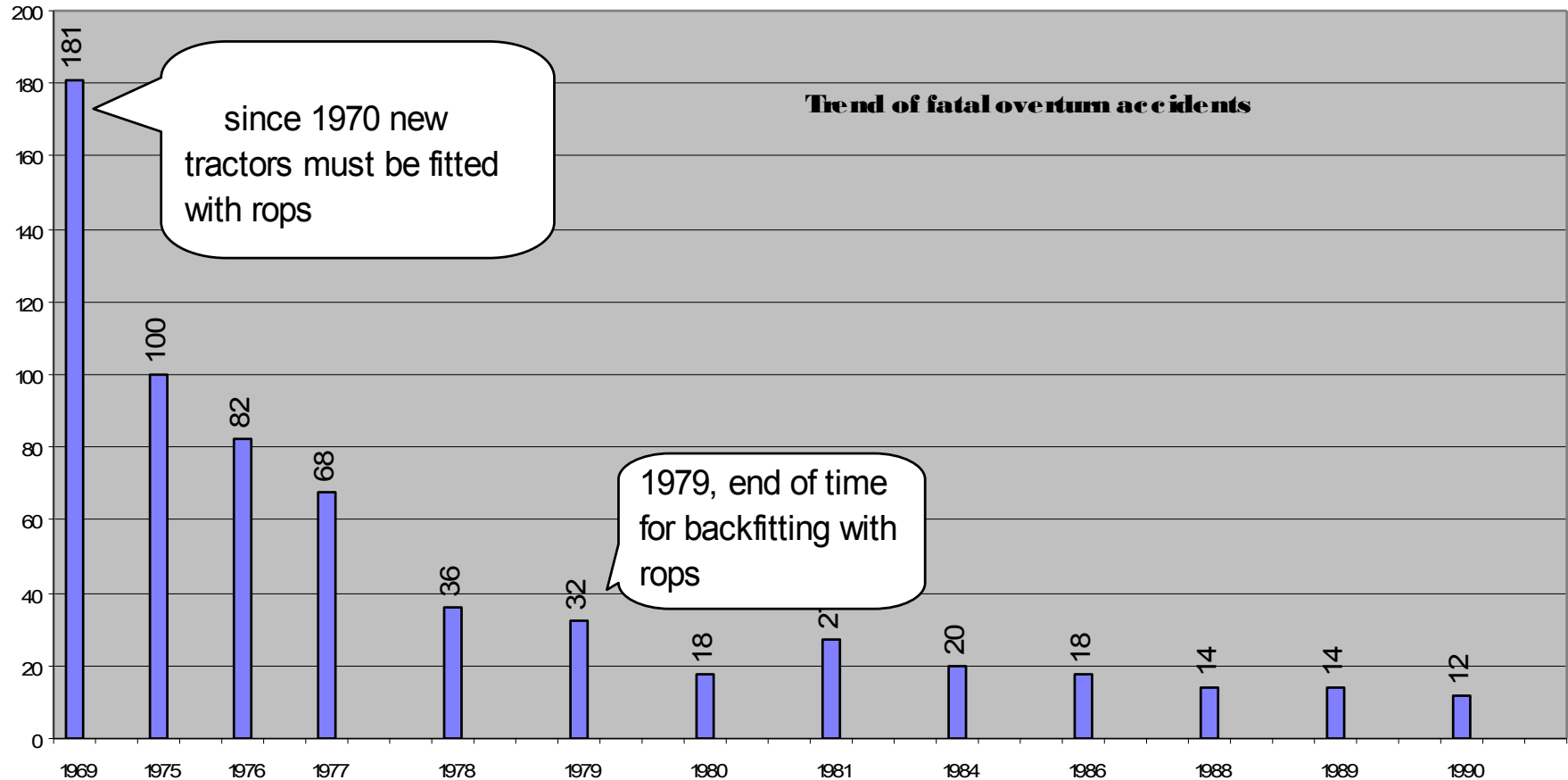


Several EU countries supportet the idea to combine rules for road traffic with Requirements for technical safety
-the requirements for rops are optional



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Trend of fatal overturn accidents with tractors



Quelle: Sozialversicherung für Landwirtschaft, Forsten und Gartenbau - Prävention



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Exemples for overturn accidents with tractors

During preparing a corn hopper the driver arrived the edge of the hopper. The tractor slipped of and overturned

Year of construction: 2008

Structural weight: ca. 12.000 kg

Overall weight: 18.000 kg

Actually weight: ca. 17.000 kg



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Exemples for overturn accidents with tractors

The cabine is strongly distortet

The clearence above the drivers seat was reduced at 500 mm.

Requested are 900 mm above the seat reference point



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Present requirements for protective structures depending on OECD test Code 4 - 2014

static test

1.7.3 Referenz-mass

basic mass for test labeled by the manufacturer

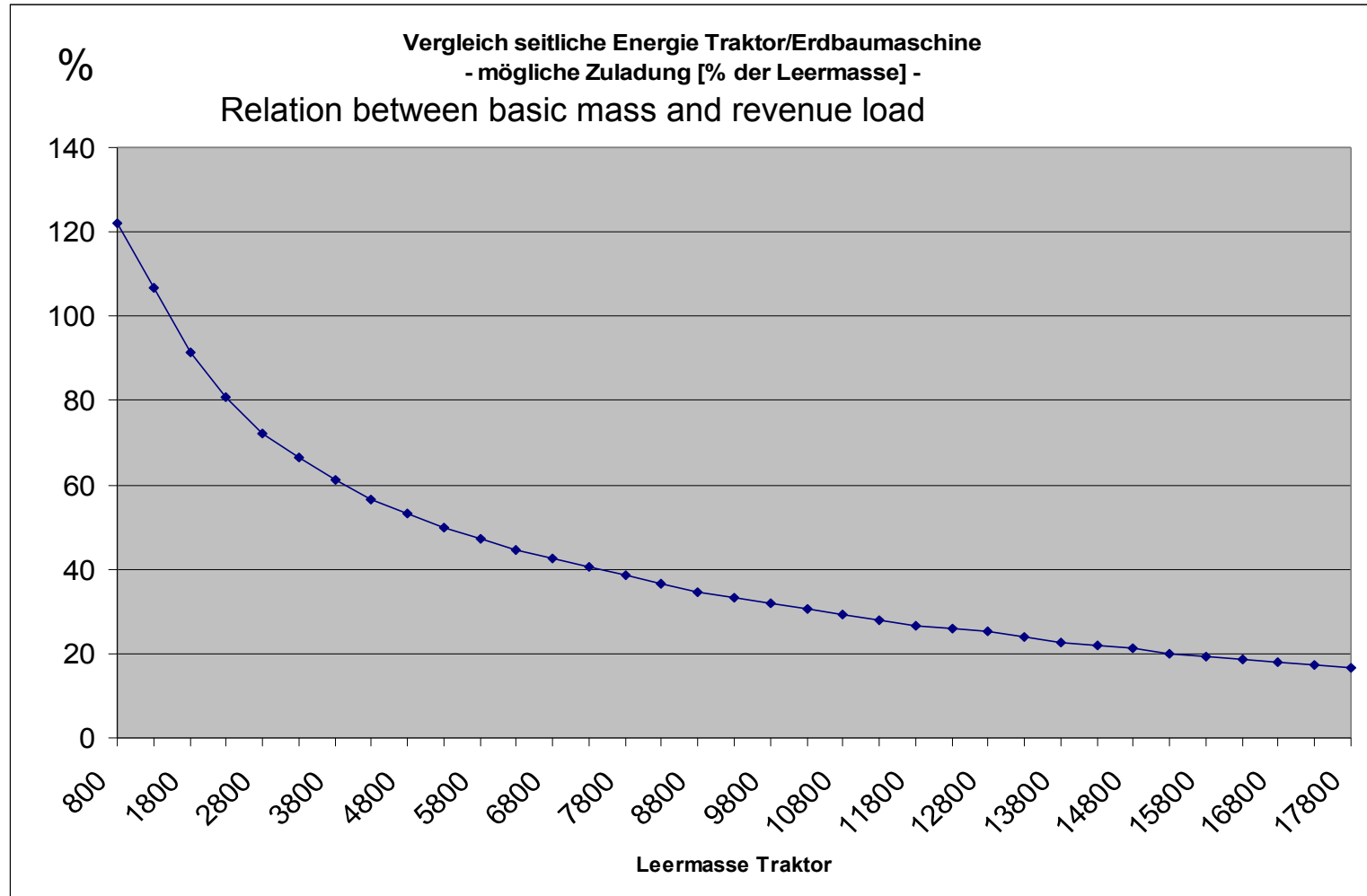
Basic mass must not be lower than structural mass

Basic mass and overall weight must have a rate of 1.75 or less.



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Present requirements for protective structures depending on OECD test Code 4 - 2014



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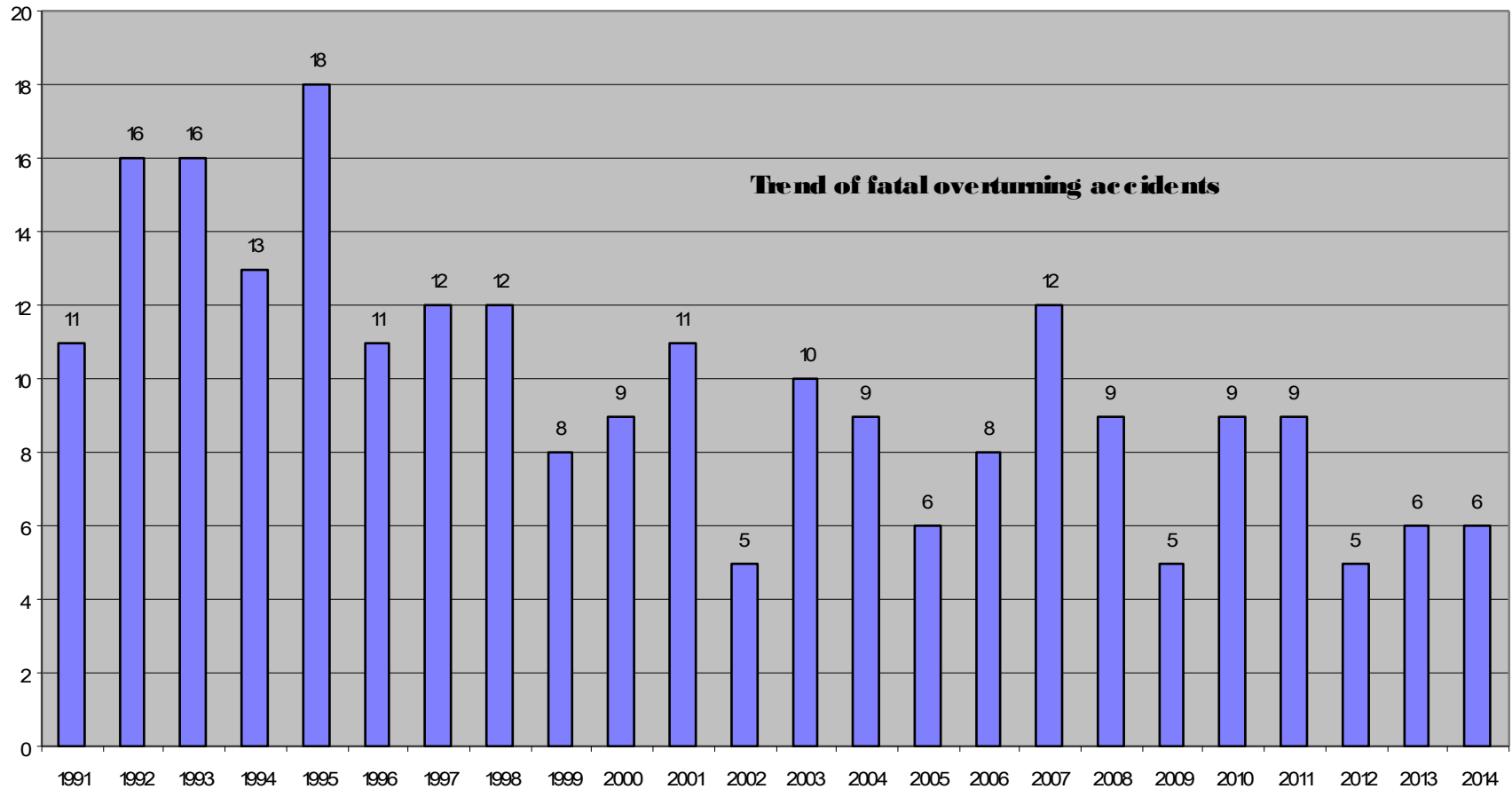
Prospective targets:

OECD test code 4 2014

- Lower the rate between basic and overall mass from 1.75 to 1.4
- Justification: more than 90% of the tractors are within the rate, but the cabins are not always strong enough



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Hazards in road traffic

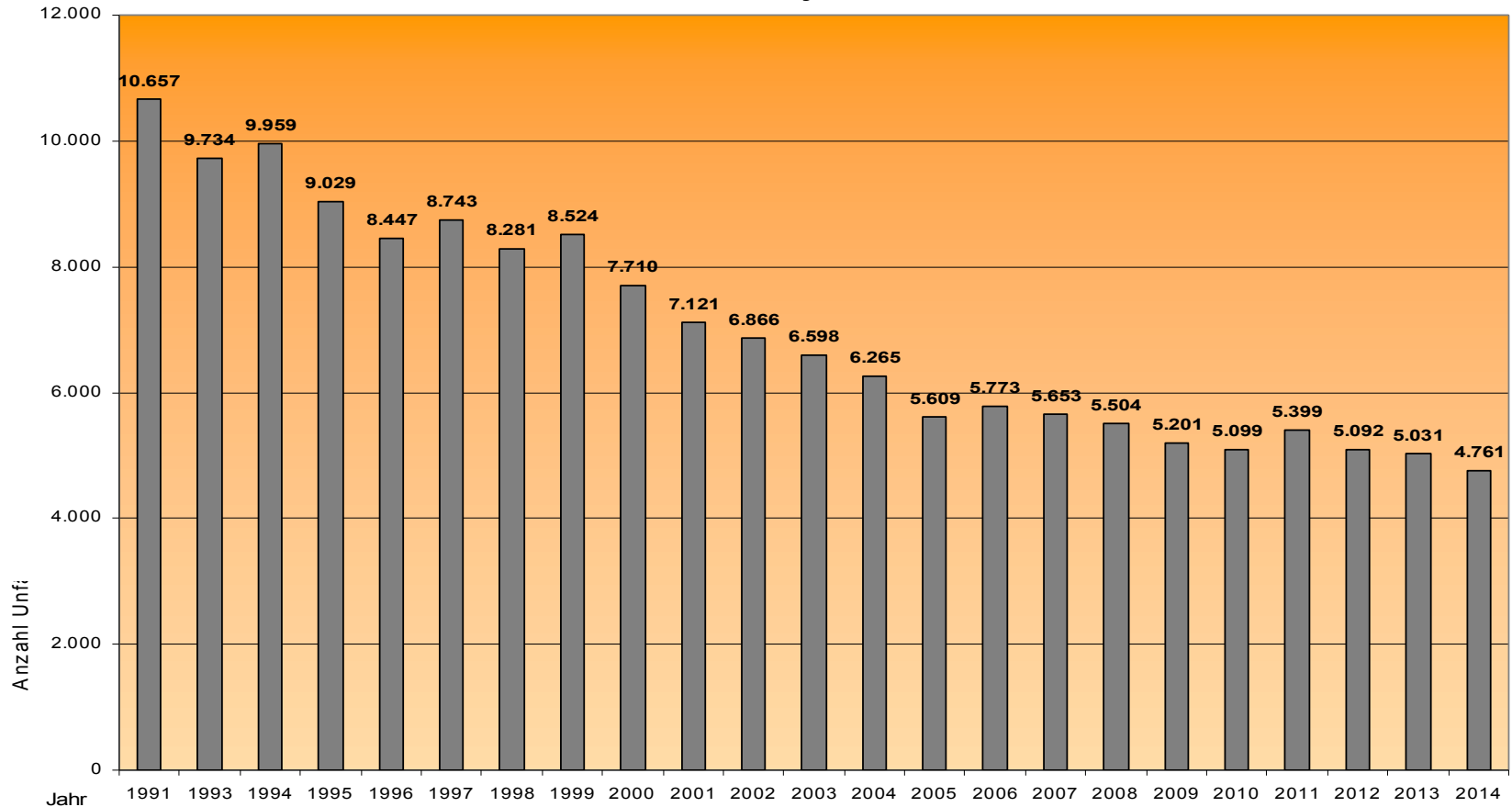
- In Germany we have 1.3 million registered tractors
- The average of the age is 16 Years
- The transport speed accelerates
- Any or 2 point safety belts
- Pure energie crushing elements



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The last 25 years

Trend of accidents with tractors
-injured -



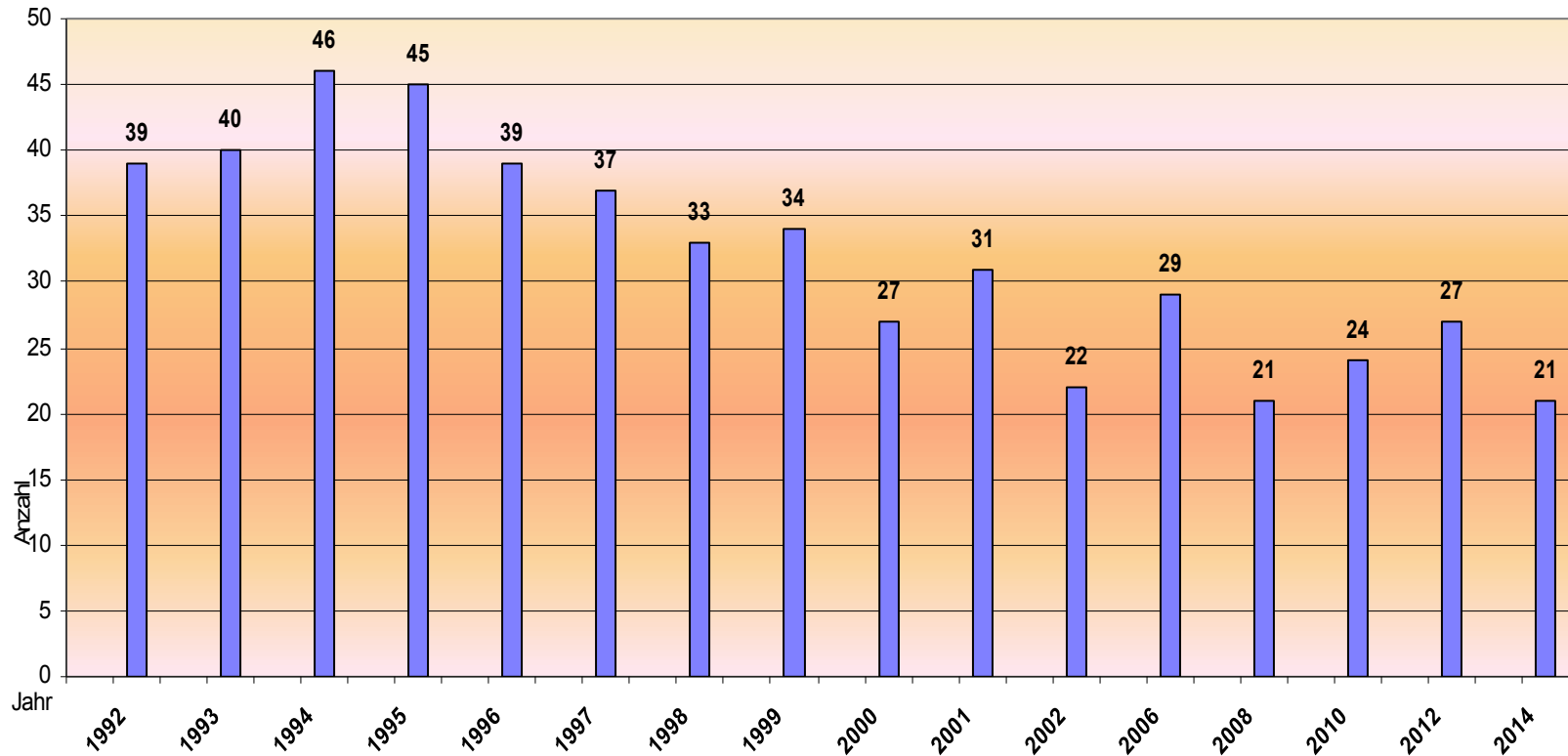
Quelle: Sozialversicherung für Landwirtschaft, Forsten und Gartenbau - Prävention Hauptverwaltung Kassel-Weissensteinstr. -



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Trend of total number of fatal accidents with tractors



Quelle: Sozialversicherung für Landwirtschaft, Forsten und Gartenbau - Prävention Hauptverwaltung Kassel-



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Danger while using CVT joy sticks



The joystick control allows the tractor to slow down over manual control.

In this case, the compressed air-braked trailers receive no brake signal.

These circumstance leads to an overriding of the trailer to the tractor (called a “jackknife” situation). The tractor can be pushed to one side and overturn.

Often collapses the cabin, which can result to serious or fatal injury.

In some circumstances, the vehicle can only brake so strong that the drive wheels block.



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Danger while using CVT joy sticks



Examples of accidents



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Thank you very much for your attention

