

Fatigue: a major cause of commercial livestock truck accidents

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Summary

Accident reports on 415 commercial livestock truck accidents were tabulated between 1994 and June 2007 in the United States and Canada. Data was collected from Google internet searches of newspaper and television news reports, unpublished industry sources and Alberta government agencies. Fifty-nine percent of the accidents occurred during the early morning hours from midnight to 9:00 am and 80% involved a single vehicle. Driver error was blamed for 85% of the wrecks. In 83% of the accidents, the vehicle rolled over and 84% of the truckers tipped over on their right side. In North America, vehicles travel on the right-hand side of the road and if a driver falls asleep at the wheel he usually drifts off toward the right. Driver fatigue is the most likely explanation for many of these accidents.

Keywords

Accident, Animals, Fatigue, Long distance, Movement, Transport, Truck, Welfare.

Stanchezza: principale causa di incidenti nel trasporto commerciale su ruote di bestiame

Riassunto

Tra il 1994 e il mese di giugno 2007 negli Stati Uniti e in Canada sono state registrate statistiche sugli incidenti riguardanti 415 camion adibiti al trasporto commerciale di bestiame. I dati raccolti da una ricerca sul motore Google sono desunti da giornali e notiziari televisivi, fonti inedite aziendali

e agenzie governative dell'Alberta. Il 59% degli incidenti si è verificato durante le prime ore del mattino, da mezzanotte alle nove di mattina e l'80% coinvolge un solo veicolo. L'errore del conducente rappresenta la causa nell'85% degli incidenti. Nell'80% degli casi, il veicolo si è ribaltato e nell'84% pare che i camion si siano rovesciati sul lato destro della corsia. Nel Nord America i veicoli viaggiano sulla destra della carreggiata e quando l'autista si addormenta al volante di solito le ruote deviano verso destra. Nella maggior parte degli incidenti l'eccessiva stanchezza del guidatore è la spiegazione più plausibile.

Parole chiave

Animali, Benessere, Camion, Incidenti, Lunga distanza, Movimenti, Stanchezza, Trasporto.

Introduction

There is a need to improve conditions during livestock transport (2). Preventing accidents during the transport of livestock will greatly improve welfare and reduce losses. Data collection tools made available by Google have made it possible to locate news reports on truck accidents involving livestock. For this survey, data was collected by using Google and unpublished industry data to gain an insight into the cause of accidents so that ways can be developed to prevent them.

Methods

A total of 415 commercial livestock truck accidents in the United States and Canada were tabulated between 1994 and 10 June 2007.

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The majority of the accidents occurred between 2000 and 2007. A total of 398 truck accidents were tabulated during this period. The first author received daily Google alerts that led her to newspaper and television news reports of accidents. The alerts were set for the following keywords: cattle, accident, pigs, horses, poultry, chickens, rollover, trailer, truck, bison, buffalo and sheep. In addition to the Google alerts, extensive searches of the internet with different combinations of the keywords were also conducted. Sources obtained from internet searches were used to document 348 of the accidents. The remaining accident data came from the Alberta, Canada, Incident Tracking Program, private company records, insurance companies, fire departments, police, veterinarians and Alberta Agriculture. The first author has visited many wrecks and she trains fire and police departments on how to rescue animals from wrecks.

The following data was tabulated:

- time of day
- month of the year
- animal species and type
- position of the trailer following the accident
- average death loss, location of accident (state or province) and number of vehicles involved
- cause of the accident
- type of vehicle (single or multi-deck).

Not all of the news reports obtained from Google contained all of the information. On each graph, the number of accidents surveyed for each variable is listed.

Results

Figure 1 shows that 56% of the accidents involved cattle trucks, 27% pigs, 11% poultry and the rest were other species. Double-deck cattle trucks were the most common type of truck involved in accidents (Fig. 2). They accounted for 73% of the accidents. Lower profile double-deck pig vehicles were involved in only 12% of the wrecks (Fig. 2). Figure 3 shows the accident data displayed by month.

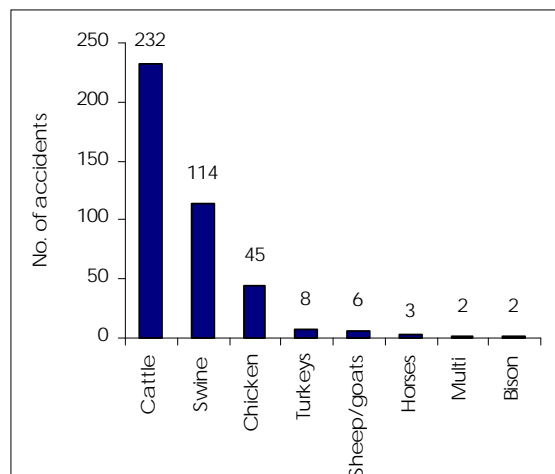


Figure 1
Species involved in truck accidents in the United States and Canada: 412 documented

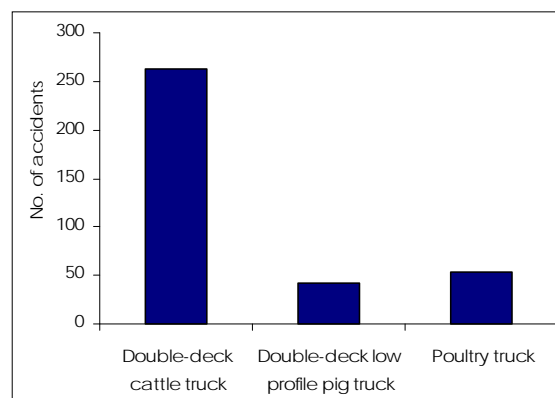


Figure 2
Type of truck: 357 documented cases

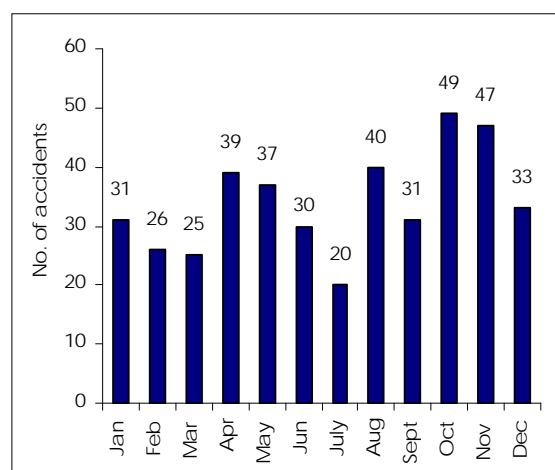


Figure 3
Occurrence of accident according to month: 408 documented

Time of day was a major factor in the cause of truck accidents (Fig. 4). Fifty-nine percent of the accidents occurred during the early morning hours between midnight 12:00 and 9:00 in the morning. Rollovers, where the vehicle rolled on its right side, were recorded in 84% of the accidents (Fig. 5). In the United States and Canada, vehicles are driven on the right-hand side of the road. Figure 6 shows that 80% of the accidents involved a single vehicle and only 20% involved more than one vehicle. Figure 7 shows that 85% of the accidents were caused by truck driver error and only 10% involved another vehicle whose driver was at fault.

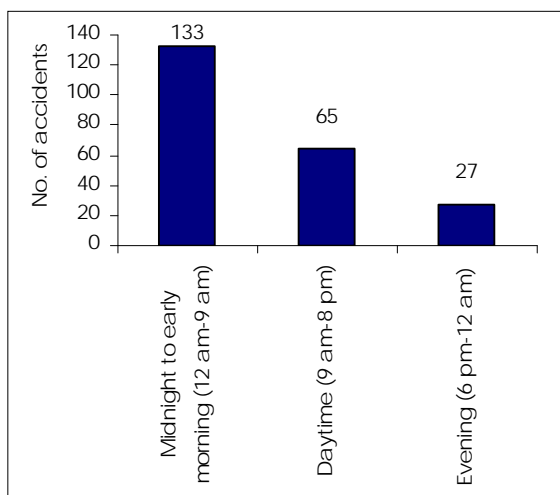


Figure 4
Occurrence of accident according to time of day: 225 documented

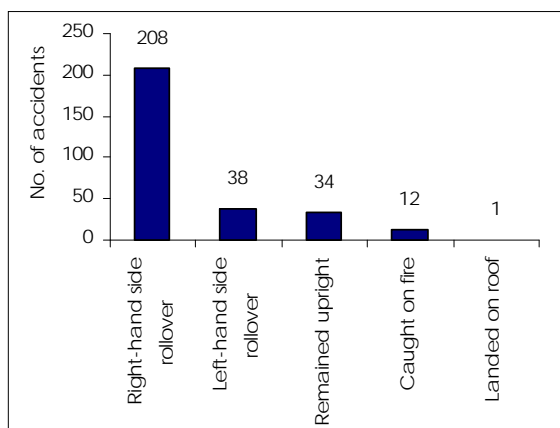


Figure 5
Position of the truck after accident: 293 documented

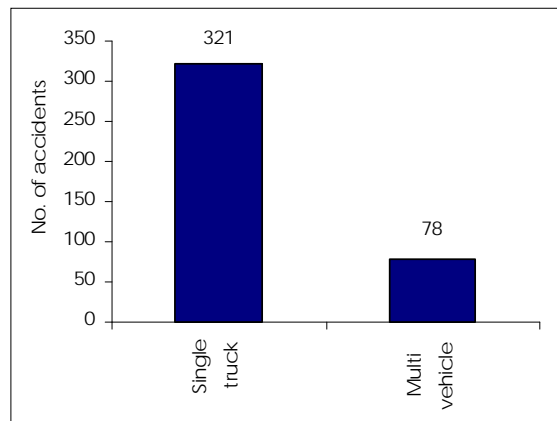


Figure 6
Number of vehicles involved in accident: 399 documented

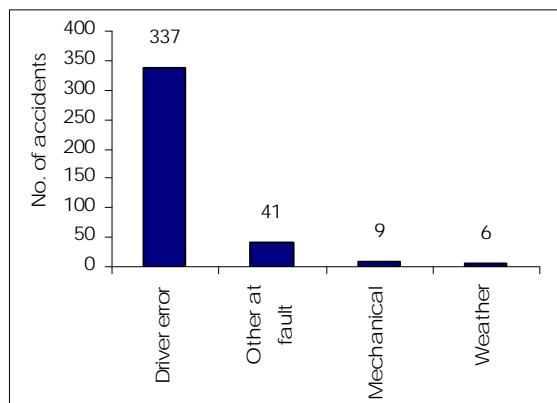


Figure 7
Cause of accident: 393 documented

Discussion

Weather had relatively little effect on the number of accidents compared to other factors. During the months of December, January and February, most of Canada and half of the United States are often covered in snow and roads are icy and dangerous. It was surprising that bad road conditions during the winter were not the main factor related to accidents. The data on time of day, side of roll over, single vehicle and driver error led us to the conclusion that driver fatigue was the major cause of many accidents. Figure 3 shows that the most accidents occurred during October and November before most of the severe winter weather begins. During these two months, high numbers of yearlings and weaned calves are transported.

The fact that many of these accidents occurred at night or in the early morning is an indicator

of fatigue. A study by Mitler *et al.* (4) indicated that the greatest vulnerability of becoming sleepy during long-haul truck driving was recorded late at night and early morning. Wylie *et al.* (5) reported that drowsiness was greatest during the night. When a driver falls asleep at the wheel, he will usually drift off the road to the right. If the truck hits a soft shoulder, it will roll over to the right. The high number of single vehicle accidents is another indicator that indicates fatigue is the major cause of these accidents. The truck is just running off the road with no other vehicles involved. A third indicator is the low percentage of accidents in which another driver was found at fault.

In the United States and Canada, livestock are transported either on company controlled trucks or by independent owner operators. When the cattle data was examined in more detail, feedlot cattle being transported to slaughter were involved in only 23% of the cattle accidents and vehicles transporting yearlings and calves that were not going to slaughter were involved in 69% of the accidents (Fig. 8). The feedlot slaughter cattle are usually transported over shorter distances compared to weaned calves and yearlings. Most slaughter cattle in North America are within six hours of a plant and the other types of cattle are often transported over much greater distances. Many loads of yearlings or weaners travel over 500 km. Another factor in both the United States and Canada is that many of the younger cattle are transported by independent truckers who often do not participate in the driver training and safety programmes that are provided by the larger slaughter companies.

References

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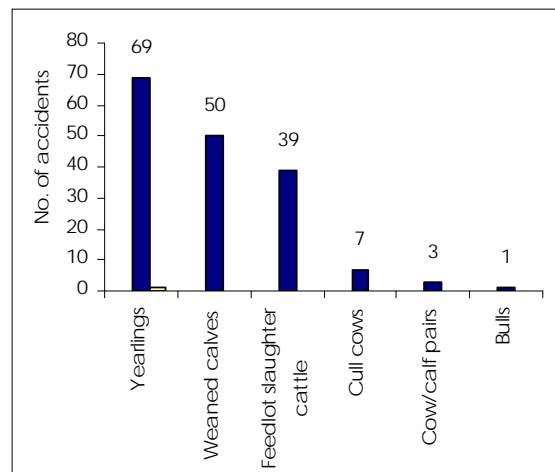


Figure 8
Cattle type involved in truck accidents: 169 documented

Another variable that may contribute to more accidents with weaned calves and yearlings is that the drivers are more likely to have irregular schedules. Drivers who transport cattle to slaughter plants had more regular schedules. The lack of a regular schedule also contributes to fatigue (1, 5). Some of the yearling and weaner calf loads are transported by solo drivers who may have trips of over 20 h. Research with long haul livestock truckers in Australia indicated that solo drivers became more fatigued than drivers in a truck where two drivers took turns (3).

The results of this survey clearly show that drivers need to get more rest so that they can transport both the livestock and themselves in a safe manner. The entire livestock industry should take action to reduce driver fatigue. Truck drivers are often pushed by their employers to drive schedules which do not provide adequate rest. The entire industry must take responsibility for the problems caused by fatigue.