Transport Accidents: Causes Consequences Conclusions

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1. Previous consideration

Nowadays, most of explosives transportation takes place by road.

Incidents of this kind have a great impact on the media, rise considerable social alarm and contribute to establish new constraints and controls.

This situation is getting worse in the last years due to international terrorism, production of home-made explosive devices using precursors and misuses of all kinds of explosive products.

Just an example of a real newspaper article…

Explosives in truck fire didn´t explode

Jim Walsh. The Arizona Republic. Jun. 16, 2006 12:00 AM

"Mesa averted major disaster early Thursday morning when a load of explosives larger than the one used in the 1995 Oklahoma City bombing caught fire…"

"We´re very blessed. The lord was watching for us…"

"All the ingredients were on board for it (an explosion) to occur, but it didn`t,"

Another one…

No "boom!" in I-680 truck collision

By Sophia Kazmi Knight Ridder. Mar. 31, 2006

"Only luck may have prevented an enormous explosion…"

"Given the quantity of explosive ammonium nitrate on the truck, the collision could have been far more destructive,…"

"Potentially an explosion was there,…" "Luckily, nothing detonated"

"Ammonium nitrate was used in the blast that destroyed the Alfred P. Murrah Federal Building in the 1995 Oklahoma City bombing…"

1. Previous consideration (2)

The Authorities are concerned about safety and security issues regarding transport of explosives and precursors, in particular Ammonium Nitrate.

More and more attention and new legal restrictions are being applied to transport activity.

Several researches and studies, which are not worth telling now, have been made in the last years in order to analyse this situation.

From these studies, conclusions and legislative proposals to improve both safety and security have been developed. However, we think that they do not give an in-depth assessment to the contribution of the human factor when an incident happens.

2. Causes

Where do accidents take place?

a) In manufacturing processes? Yes …

... and industry keeps improving.

b) In transport operations?

- Loading, not remarkable
- Unloading, not remarkable

… and National and International regulations are being constantly updated.

c) In road transport? Yes…

2. Causes. Relevant Road Accidents: 2004-2007

Total: 21 (among those reported to SAFEX)

- According to type of product:
  - 10 Ammonium Nitrate
  - 4 ANE's / Bulk
  - 1 ANFO
  - 6 Blasting Explosives
- According to type of accident:
  - 7 Collisions
  - 11 Off-road drive
  - 3 Fire in the vehicle ("spontaneous")

} **90% traffic accidents**

- According to the consequences: 5 Explosions:
  - 2 collisions:
    - ANFO: 28 killed, 150 injured
    - AN (fertilizer grade): 1 killed, 5 injured
  - 2 off-road drive:
    - Boosters: Burned for 15 minutes and detonated. No injured
    - AN: 17 killed, 10 injured
  - 1 fire:
    - ANE: no injured

2. Causes. What happened in these accidents?

- Most of them were traffic accidents.
- All of them had a huge impact on the media. We have seen some examples.
- In which situation have there been fatalities, apart from traffic casualties?
  - Only when evacuation and area isolation measures have NOT been observed and consequently there has NOT been compliance with the established Emergency Procedures.

2. Causes

… and what are the means to control these hazards?

What are we doing about it?

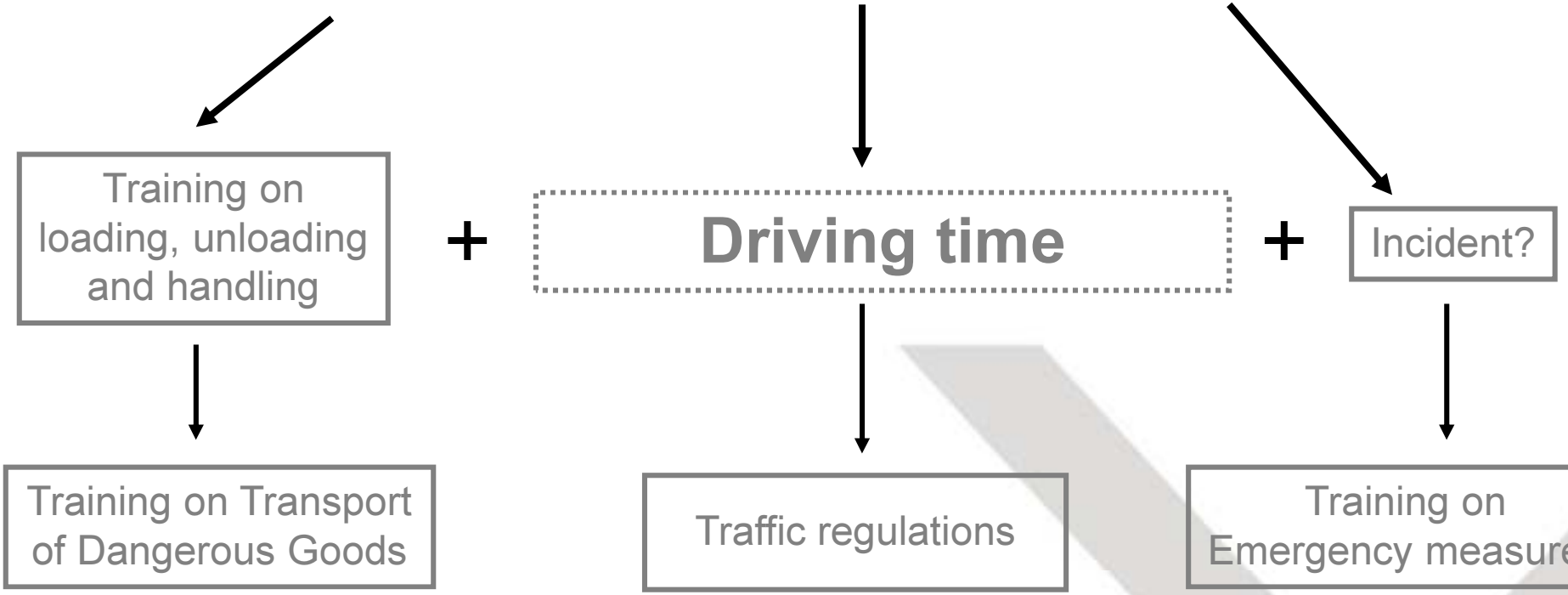
During researches of accidents involving manufacturing processes, basic causes are always identified, and preventive actions are taken to avoid reoccurrence.

When a traffic accident takes place and the basic cause is on the driver`s side, the action usually taken is a disciplinary one. Nevertheless, we do not adopt any measures to avoid reoccurrence.

How could we eliminate or - at least - try to minimise the hazards of traffic accidents? How could we minimize the hazards during road transport?

3. Consequences. Legislation on TDG

Specifics rules on TDG's: ADR, etc.



Normally, in transport activities, driving operations are by far the ones that last more. Who is in charge of controlling this operation during such a long time?

3. Consequences

ADR: Driver's training

- Basic and periodic training of drivers covers loading, unloading, handling and emergency procedures.
- Official certificate of having undergone both a basic and a specific training (Class 1).
- Reissued every five years.
- Regulates the type of certificate and the minimum content of the courses, both initial and periodic.
- **How could we make sure that the driver follows all regulations?**

4. Conclusions

- There are several legislative initiatives, at an international level, mainly aimed at improving of the security of road transportation. For example:
  - Task Force in EU
  - WP15
  - Multidisciplinary Group of Experts on Inland Transport Security
  - Etc.
- Not one of these initiatives is aimed to control, in any way, neither the behaviour of the drivers during the transport nor the fulfilment of the regulations.

4. Conclusions (2)

- It is a proven fact that the biggest accident hazards can be found in road transportation.
- It is a proven fact that many hazardous situations could be avoided if the drivers acted correctly in every moment and under any circumstances.
- It is a proven fact that legislation cannot ensure that the drivers will not make mistakes and provoke hazardous situations or even accidents.
- It is a proven fact that traffic accidents, apart from their possible tragic consequences, provoke serious economical problems in the industry as well as damage to its image.

4. Conclusions (3)

Is it enough to say “everything is in the ADR, let it be fulfilled”?

We think it is NOT:

- Society is showing a growing concern for road acidents of all kinds.
- We must all share the same goal: reduce road accidents.
- Avoiding them is a matter for all of us.
- It is just NOT enough to have driving licenses.

- Then, how could this situation be improved?

4. Conclusions: a proposal

Recognising that it is impossible to completely prevent accidents on road.

Bearing in mind that Industry can NOT elude its commitment to actively colaborate with the Authorities to improve progress, development and the safety of the citizens.

We propose to set up a Working Group, within the SAFEX organization, with the aim of giving an in-depth assessment for all kind of measures, contributing to control the behaviour of Class 1 drivers in regard to traffic regulations, and therefore to propose new rules to the UN Recommendations that could be later taken into consideration by the WP15.

4. Conclusions: a proposal (2)

The Working Group task extend should be carefully determined. Some issues worth considering could include, for instance:

- Set up the procedure to analyse the behaviour of the drivers in all the accidents reported to SAFEX.
- Ensure that drivers undergo periodical training regarding their performance in emergency situations.
- Procedure of updated training on traffic regulations for drivers.
- Periodically updated certificates of both physical and psychical aptitude (no alcohol, no drugs).
- Training on defensive driving.

4. Conclusions: a proposal (3)

The Working Group task extend should be carefully determined. Some issues worth considering could include, for instance:

- Reports from the transport companies to the manufacturers, including the records of the tachographs devices in each shipment.
- Automatic systems to detect and avoid the driver from falling asleep, as well as devices for alcohol control previous to start the engine.
- GPS-based systems to ensure on real time: adequate speed, scheduled itinerary, driver's rest, etc.
- Automatic devices of warning (both acoustic and luminous) in wrecked vehicles to dissuade people from gathering near the place of accidents.
- And so on.

TO CONCLUDE

Do we all think that this proposal might contribute to the safety improvement of the explosives transport?

If we agree, we encourage SAFEX to arrange this Working Group.

Thank you for your attention.

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