

Human Behaviour within Transport Operations

Introduction

The root or basic causes of the majority of all incidents in the industrial and medical gases industry are unsafe behaviours by people (employees, contractors, managers etc.), not failures of plant or equipment. Even immediate causes that may be classified as unsafe conditions are usually created, or allowed to persist, through the behaviour of a person or a group of people.

Transport is one of the highest risk activities in the industry and blame for incidents is often put on the drivers prematurely. Root causes for unsafe driver behaviour are often a result of a poor safety management system.

When implementing a transport safety management system, it is important to give employees of both the industrial and medical gases companies (referred to in this document as Gases Companies) and their contractors, work instructions, rules and policies as to what kind of behaviour is considered to be safe or unsafe. However, it is even more important to help them understand the reasons behind these work instructions, rules and policies so that complying with them becomes a personal commitment and is reflected in their behaviour. Ideally, they should be empowered to promote the safety culture towards colleagues and management to further improve overall safety.

Scope

This Transport Safety Information (TSI) provides advice on how to guide management and drivers of both the Gases Companies and their contractors to create an 'interdependent' safety culture. The goal is to help achieve an environment inside Gases Companies and their contractors that promotes an open communication between employees and management to improve their overall safety performance.

The topic of human factors in general is extensively covered in EIGA's *Safety Information - Human Factors* series of documents [1] and is not the focus of this publication. This TSI focuses on management's and employees' behaviour within transport operations. The aim is to help managers and drivers understand how their behaviour influences transport safety.

Terminology

- TSI: Transport Safety Information
- OBC: On board computer
- ABS: Anti-lock braking system
- PPE: Personal protective equipment
- The terms 'managers', 'drivers' and 'employees' are used to refer to Gases Company employees and to the employees of contractors or sub-contractors.

Learning more about human behaviour within transport operations

1. Does management demonstrate visible leadership concerning safety issues (e.g. attending site safety reviews, participating in local safety programs, auditing and incident investigation)?
2. Do all employees involved in transport operations actively promote safe behaviour to other employees and colleagues?
3. Is there an open communication of risks and hazards (e.g. is near miss reporting encouraged)?
4. Does your transport safety management system include behavioural components? Are you focusing on the *how* and *why* as well as the *what*?
5. Do all employees understand the role they play within the transport safety management system (clear definition of roles and responsibilities)?
6. Are all managers and drivers aware of their companies' work instructions, rules and policies?
7. Are managers aware that their attitudes directly influence the drivers' behaviour?
8. Do managers always act on the safety related feedback they are given?
9. Is management really committed to all drivers coming back home safe at the end of the shift?
10. Are drivers empowered not to follow unsafe practices (e.g. not speeding when in a hurry)?
11. Are drivers aware that the majority of factors that cause road incidents are under their control while driving (e.g. speeding, distraction and fatigue)?
12. Are managers aware that many drivers' unsafe behaviours are the result of poor management (e.g. no effective speed monitoring, drivers answering their calls while they are on the road)?

If the answer to any of the questions above is "no", then you should consider taking action!

THIS TRANSPORT SAFETY INFORMATION SHEET DESCRIBES HOW THE OVERALL SAFETY PERFORMANCE CAN BE IMPROVED BY MANAGING HUMAN BEHAVIOUR.

Elements of transport safety management

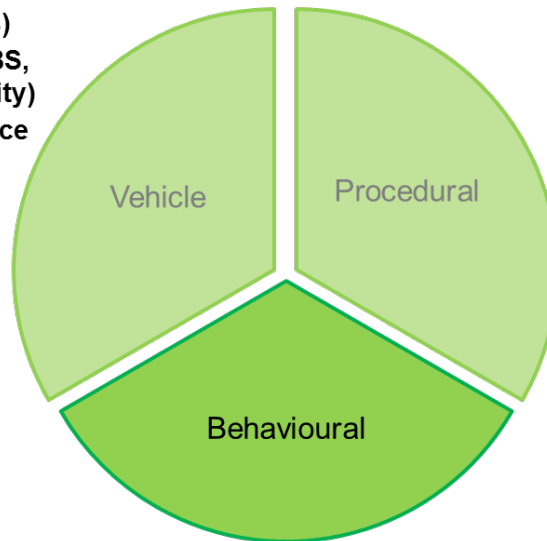
There are three key elements to controlling risks and thereby improving transport safety:

1. **Vehicle** technology provides the foundation of safe transport. There are those aspects which are legally required and others that can vary, depending on the safety policy of the Gases Company or contractor.
2. **Procedural** aspects such as work instructions, rules and policies. As above, some are legally required and some may vary depending on the Gases Company or contractor.
3. **Behavioural** aspects are an integral part of an advanced transport safety management system but are sometimes neglected or seen as less important. This is a misconception since vehicle technology and procedures have their limits. Improving employees' behaviour towards safety supports the other two elements and enables a sustainable safety culture.

The diagram below shows the three elements with examples of which items should be considered for transport safety. How these are implemented will vary depending on the country of operation, the Gases Company and their contractors.

Vehicle and procedural elements are not within the scope of this TSI which focuses on behaviour within transport.

- 3-point seatbelts
- Driving style monitoring (tachograph/OBCs)
- Vehicle design (ABS, low centre of gravity)
- Vehicle Maintenance



- PPE
- Procedures
- Training
- Audits
- Inspections
- Legislation
- Regulatory

- Following the rules and procedures (dependent)
- Introduce controls and processes to manage the risk (dependent)
- Identify the hazards (independent)
- Assess the risks (independent)
- Looking out for one's self (independent)
- Looking out for others at all times (interdependent)

Types of human behaviour within organisations

In principle, in transport operations there are typically three types of human behaviour concerning safety. *

1. Dependent behaviour

Employees see safety as a matter of following rules, made by their supervisors or managers.

Managers only focus on fulfilling the necessary legal requirements and enforce these with controls of employees.

2. Independent behaviour

All employees have learned to take responsibility for themselves. They believe that they can make a difference with their own actions.

The management system is considered best practice and not only a fulfilment of the legal requirements. In addition, managers coach their employees on safety issues according to this best practice.

3. Interdependent behaviour

All employees have learned to take responsibility for themselves and for others. They feel ownership for safety and do not accept sub-standard conditions, actions or risk-taking. There is open discussion on safety related topics and there is the belief that improvement can only be achieved as a group.

The management system is considered best practice (fulfilling the legal requirements) and managers work together with their employees on safety issues to improve safety for everyone.

* The Bradley Curve (DuPont) also identifies a fourth type of safety culture, namely "Reactive". This is "safety by natural instincts" which is not covered by this publication, as it is expected that gas companies have at least a dependent safety culture.

It is believed that an interdependent safety culture will reduce the number of incidents over time and is believed

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