

## OCCUPATIONAL HEALTH AND SAFETY PERFORMANCE OF THE EUROPEAN GAS INDUSTRY

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### 1. Introduction

In most Countries, data concerning work related incidents are collected in line with National legislation. In the literature these data are grouped by major industry sectors, e.g. oil, chemicals, agriculture etc., MARCOGAZ collects data on occupational safety specifically for the Gas Industry at European level.

Although the intrinsic properties of gas are hazardous (flammable and conveyed at high pressures) the safety record of the Gas Industry world-wide remain good compared to other industries.

However, there is no room for complacency and the industry firmly believes that it is important that data should be collected and analysed on those incidents that do occur so that trends can be identified and lessons learned for the future.

MARCOGAZ has established a working group to share information on health and safety for comparing, exchanging, analysing and standardizing on a European level. This working group also collects data on health and safety performance, using an annual questionnaire sent to all MARCOGAZ members.

Recognising the widespread use of contractors in the industry, the working group has started to collect information relating to incidents involving the employees of contractors. Although incidents involving contractor's employees are not routinely reported, the group has succeeded in getting data on contractor safety, however data has only been collected for recent years and there is currently an insufficient data history to demonstrate any reliable trends. Data for contractors working for member companies will be published as soon as sufficient reliable data is available.

It is important to stress that the information received from individual member Companies has been dealt with confidentially, and the data are reported anonymously.

### 2. Results from questionnaires

#### 2.1 Frequency rate own employees

For reasons of confidentiality, data of individual Companies are not shown. The mean Lost Time Incident Frequency (LTIF) of the Member Gas Companies for 2005 - 2009 is shown in the graph below. The frequency rate LTIF is the number of incidents with lost days (x 1.000.000) divided by the sum of the hours worked by the Company. The data only refer to member companies own employees.

Figure 1: Average LTIF (Lost Time Incident Frequency) (own employees) 2005 - 2009

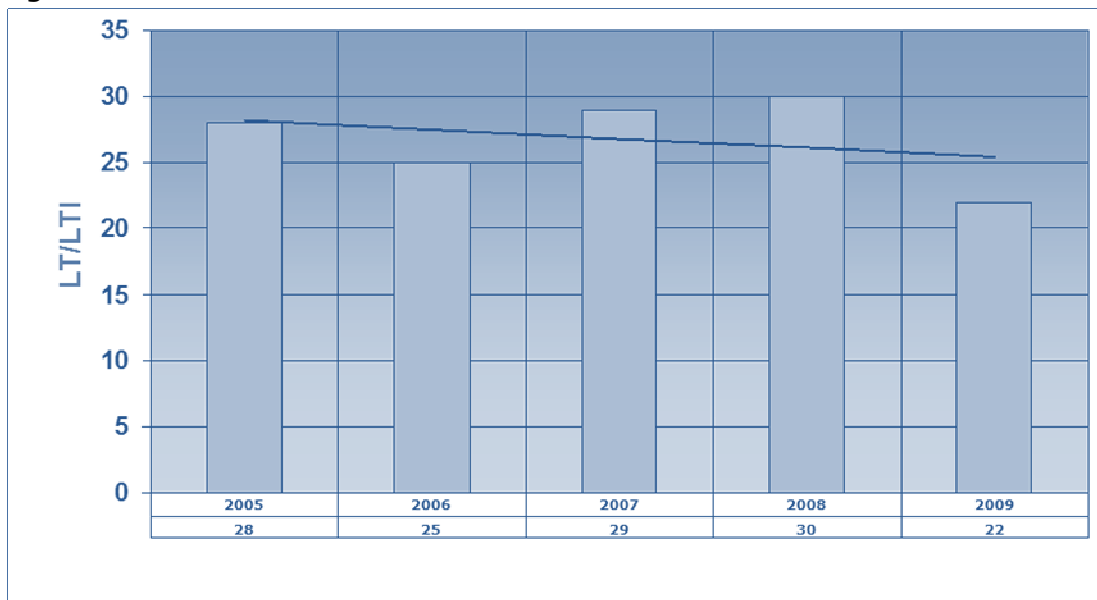


Figure 1 graph shows that, whilst the LTIF varies over the period, the overall trend over 5 years is downwards.

### 2.2 Mean lost time

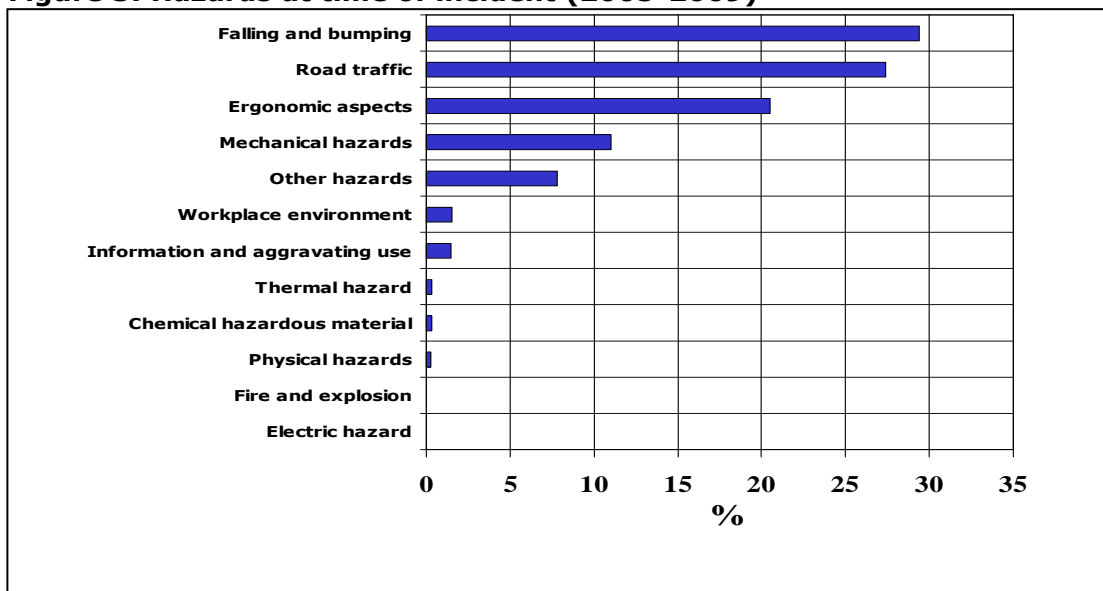
Lost Time Incidents are defined as those incidents resulting in at least one lost day's absence from work (excluding the day of the incident itself). Over the years the mean lost time per LTI is decreasing slightly, however the data over the period 2005-2009 shows some variation and it has not been possible to draw any significant conclusions regarding deviations in this area caused by natural dispersion. The trend line shows however a clear decrease in LT/LTI.

**Figure 2: Mean lost time**



Data provided by Member Companies also indicates the type of hazard at the time of the Lost Time Incident (LTI). In figure 3 is shown the number of incidents caused by a specific hazard. Based on these numbers, hazards have been ranked according to the frequency of involvement in incidents.

**Figure 3: Hazards at time of incident (2005-2009)**

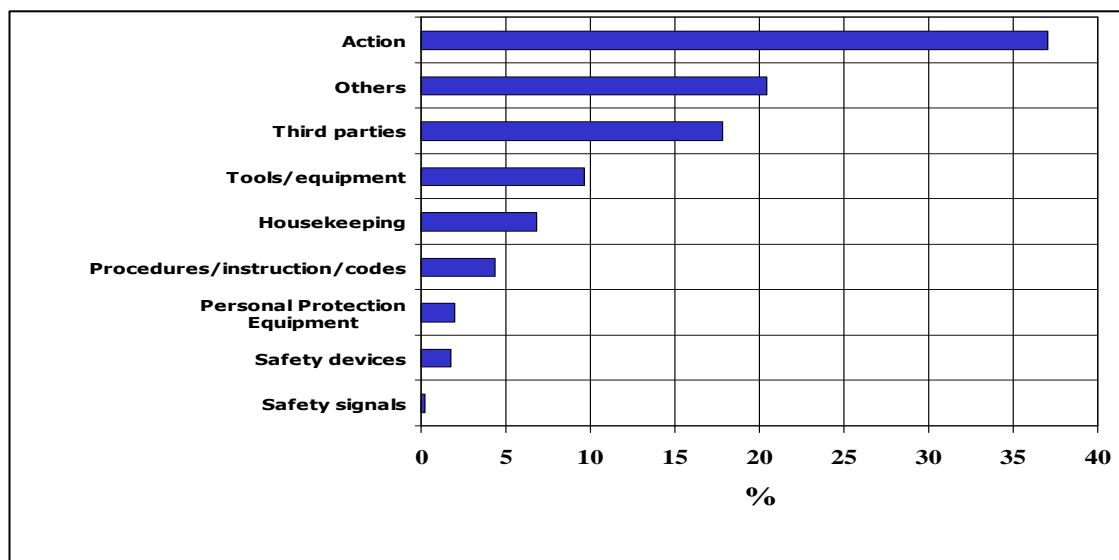


As shown in Figure 3 road traffic and falling and bumping cause more than 50% of all lost time incidents in the Gas Industry. No lost time incidents due to fire and explosion or electrical hazards were reported by Member Companies in response to the questionnaire.

### 2.3 Direct causes at the time of LTI

An overview of direct causes of incidents is shown in the following figure:

**Figure 4: Direct causes at the time of the LTI (2005- 2009)**



Most of the incidents happen as a result of a wrong action. The category "others" is still too large to draw any reliable conclusions, however, it would appear that human failure is an important underlying cause.

### 2.4 Health

The questionnaire also asked for the sickness rate amongst Member Companies, however, due to different legislation in Countries and different social security systems, the comparison of the data is difficult. The health figures presented in table 1 must, therefore, be considered as indicative.

## 3. Health & Safety Performance Indicators

The table below shows an overview of the Health and Safety performance based on the data received from Member Companies (including transmission companies, distribution companies, integrated companies (including exploration activities)).

It should be noted that the number of respondents varies from year to year and hence the reported length of the transmission system is seen to vary.

**Table 1: Health and Safety Performance Indicators of the Gas Industry period 2005- 2009**

	<i>Unit</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>
Number of responding Companies		(11)	(10)	(10)	(10)	(11)
Length of transmission system	10 <sup>3</sup> km	424	326	255	253	275
Number of employees	-	27.049	19.892	22.849	15.141	19.922
Total worked hours	10 <sup>6</sup> hours	45,44	35,18	37,60	26,95	34,25
Number of LTI's	-	287	171	185	142	186
Number of fatalities	-	1	3	0	0	0
Total lost time	days	7906	4278	5935	4345	4046
Sickness rate	%	2,8	2,75	4,0	4,6	2,4
LTIF	LTI/10 <sup>6</sup> hours	6,32	4,86	4,92	5,27	5,43
Severity rate	LT*1000/hours	0,17	0,12	0,12	0,16	0,12
Mean lost time	LT/LTI	28	25	29	30	22
LTI per pipeline length	LTI/10 <sup>3</sup> km	0,95	0,52	0,72	0,56	0,68

#### 4. Conclusions

The data collected from Member Companies shows:

- A reduction over time of the Lost Time Incident Frequency Rate (LTIF) and the mean Lost Time per Lost Time Incidents (LT/LTI).
- The mean lost time per incident requires further data to establish more accurate long term trends.
- Falling/bumping and road traffic incidents account for over 50% of all lost time incidents in the Gas Industry.
- Ergonomic aspects account for over 20% of all lost time incidents in the Gas Industry.
- Lost time incidents caused by fire and explosion are very small compared to other causes.
- The majority of incidents are the result of human actions and/or third parties.

#### NOTE

The information and data included in this document have been compiled by MARCOGAZ from a variety of sources from its Members. MARCOGAZ will not accept any liability for the data accuracy and completeness.



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Created in 1968, MARCOGAZ is the Technical Association of the European Natural Gas Industry. It has developed over the years an efficient reputation with the official bodies in the European Union and other industry partners.

- MARCOGAZ chief mission is to serve its Members as the European window for any technical issue regarding natural gas.
- As the representative organisation of the European Natural Gas Industry, it aims at monitoring and taking influence when needed on European technical regulation, standardisation and certification with respect to safety and integrity of gas systems and equipment and rational use of gas.
- Environment, Health and safety issues related to natural gas systems and utilisation are also of paramount importance for MARCOGAZ

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