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International Professional Safety Practice: A Comparison with U.S. Practice

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Introduction

In 2002, the European Network of Safety & Health Practitioner Organizations (ENSHPO) embarked on collection of data about the tasks that safety professionals perform in practice. Professor Andrew R. Hale of the Safety Science Group at Delft University of Technology in the Netherlands led the development of a survey instrument and the compilation of results. To date, safety organizations in 13 European countries have participated in the study. Those with sufficient data for analysis included Austria, Finland, Germany, Italy, the Netherlands, Norway, Poland, Portugal, Switzerland, and the United Kingdom. In addition, organizations from Australia and Singapore have also participated. All of these study results to date have been compiled by ENSHPO and can be found on their website: www.enshpo.org.

The information provided in this paper includes results from the United States for the same survey instrument. This study offers the first North American data. The data in this report resulted from information collected by the Board of Certified Safety Professional (BCSP) and provided by individuals holding the Certified Safety Professional® (CSP®) certification.

Method

The Board of Certified Safety Professionals used the survey instrument developed by ENSHPO with minor language adjustments. The survey used in the United Kingdom provided the basis for the BCSP survey. The BCSP survey operated electronically over the Internet using Snap Survey software on a web site established by BCSP for the survey. The survey operated for about two weeks in January 2008. BCSP sent valid email invitations to 5,147 individuals holding the CSP seeking their participation. There were 1,057 valid responses to the survey while it was in place, a response rate of 21%. BCSP did not issue reminders to increase participation.

The survey instrument had five sections. The first asked about the organization in which a respondent worked. Another section sought information on 82 tasks of safety practice. A third section addressed 31 hazards that may be part of professional safety practice. Another section investigated contacts with others and covered 18 internal contacts and 17 external contacts. The final section compiled demographic information on the respondents.

U.S. Results

The Respondents

On average, the respondents had worked as a safety professional for 22.9 years. They worked for their current employer on average for 11.5 years and held the CSP for 14.7 years. Their average age was 50.1 years. 92.4 % worked full time in their safety role.

87.6% of the respondents were male and 11.8% female. 48.7% of the respondents had a supervisory responsibility, while 45.6% did not. About half of those with a supervisor responsibility oversaw the work of 20 or fewer others, most of whom were professionals in the broad safety, health and environmental field.

46% lived in 9 of the 50 states: California, Florida, Illinois, New York, North Carolina, Ohio, Pennsylvania, Texas, and Virginia. Other than the 2.6% who lived outside the United States, the remainder lived in the other 41 states.

75.4% held a professional certification or license in addition to the CSP. 16.9% held the Certified Industrial Hygienist certification, 9.3% held a professional engineer license and 9% held the Associate in Risk Management designation. The average respondent held membership in 1.6 professional organizations. Membership in ASSE was most common (76.7%), while 30.1% held membership in an industrial hygiene organization (American Industrial Hygiene Association or the American Conference of Governmental Industrial Hygienists), 15.7% in the National Fire Protection Association and 14.8% in the National Safety Council.

The education level was quite high with less than 5% having less than a bachelor's degree as their highest education level. 50.1% held a bachelor's degree and 44.2% held a masters (41.4%) or doctorate (2.8%) degree. It is interesting to note that only 41% of respondents entered safety practice following completion of a safety or a closely related bachelor's or master's degree. Others entered safety practice because of a job assignment (25.2%) or because they learned about safety practice and pursued obtaining a job in the field (24.2%).

95.9% of respondents spent at least 50% or more of their time in safety, health, environmental and ergonomics matters, while 72.3% spent more than 90% of their time on subjects of the field. Most reported a broad range of responsibilities, as shown in Table 1.

Percent	Area of Responsibility in Current Position
97.5	Safety
85.1	Health, industrial hygiene, health physics
69.3	Environmental
68.9	Ergonomics
68.4	Fire Protection
53.3	Security
38.3	Other

Table 1. Percent of Respondents Reporting Various SH&E Job Responsibilities

The job satisfaction with a career in safety was very high. 89.9% reported that they were satisfied (46.5%) or very satisfied (43.3%) with their career in safety. Only 3.7% reported being dissatisfied (2.8%) or very dissatisfied. (0.9%).

The Respondent's Organizations

The survey sought to determine the type of organization respondents worked for. 55.1% worked for an organization that was internal to a company in industry or services. 16.2% worked in an insurance organization. 11.6% worked for a consulting or advisory organization providing services to other organizations. 10.9% worked for a government agency.

The distribution of the 55.1% working internally for an industry or service organization is listed in Table 2. It shows that safety professionals work in a wide range of industries.

Percent	**Industry/Service**
16.3	Other
13.6	Chemicals
11.9	Oil and coal
11.5	Building and construction
7.2	Electrical, electronics and optical instruments
4.8	Metal manufacturing and products
4.1	Defense
4.0	Electricity, gas and water
3.6	Food, drink and tobacco
3.1	Paper and printing
2.6	Rubber and plastics
2.6	Car & other transport vehicle manufacture
2.2	Health and welfare
2.1	Mining and quarrying

Table 2. Distribution of Industry/Service Internal Organizations (Industries with less than 2% are not listed here)

Of the 11.6% working for consulting and advisory companies, the following distribution provides additional details about where they worked: 41.5% worked for a consulting/architectural company, 39.8% worked for an occupational safety and health service company, 3.3% for an industry/national/regional advisory body, and 15.4% for other companies.

Of the 10.9% of individuals who worked for a government agencies, 59.1% worked at the federal level, 25.2% at the state level and 15.7% at the local government level.

Most respondents worked for large organizations. The number of people covered by their safety responsibilities were as follows: 30.9% affected more than 5000 people through their practice, 27.6% impacted 1000 to 5000, 11.9% affected 500 to 1000, 19% affected 100 to 500, and 10.5% affected less than 100. Most (59.5%) had more than 5 other safety advisors in their organization. Most commonly the other specialists in their organization were engaged in industrial/occupational hygiene (57.4%), environmental (56.9%), occupational health nursing (43.8%), fire (40.1%), ergonomics (27%), occupational medicine (25.4%), or health physics (20%).

The work of 77.7% of the respondents related to more than one site or company. Their sites or companies were in the U.S. (67.9) or other countries (32.1%). The most common foreign locations involved North America, Europe, and the Pacific Rim countries.

The Tasks of Professional Safety Practice

The survey included a list of 82 tasks related to professional safety practice. There were 8 groups as follows:

Group	Number of Tasks	Description
I	5	Problem Identification and Analysis
II	28	Developing and Implementing of Solutions
III	13	Training, Information and Communications
IV	8	Inspection and Research
V	9	Emergency Procedures and Settlement of Damage
VI	8	Regulatory
VII	6	Knowledge Management
VIII	5	Management and Financial

Table 3. Tasks Included in the Survey by Group

Respondents were asked to check the frequency with which they completed each task or dealt with each hazard or contact using the following five point scale:

- Weekly or more
- Monthly/Quarterly
- Yearly or less
- Never done this task, but it is part of my job
- Not a part of my job

The frequency ratings were evaluated to determine the portion of respondents who participated in the tasks. To be consistent with other studies using this survey, the first three responses were summed to establish the percent of participation.

Table 4 shows the average participation across all tasks in the group and the number of tasks on the survey, the number of tasks in which 60% or more of respondents participate, the number of tasks in which there was between 30% and 60% participation, and the number of tasks in which there was less than 30% participation. The average participation rate simply provides a relative index for comparing participation among groups of tasks.

			Number of Tasks		
Group	**Avg Percent**	**Participation on Survey**	**>60%**	**>30% & >60%**	**<30%**
I	87.2	5	5	0	0
II	77.2	28	25	3	0
III	81.3	13	12	1	0
IV	74.8	8	6	1	1
V	41.2	9	4	0	5
VI	27.4	8	0	3	5
VII	74.7	6	4	1	1
VIII	72.6	5	5	0	0
Overall	65.1	82	61	9	12

Table 4. Overall Performance of Tasks

Overall, more than 60% of the safety professionals in this survey were engaged in 61 of the 82 tasks (74.4%). The average level of involvement was 71.7%. Fewer than 30% of the respondents were engaged in 12 of the 82 tasks (14.6%).

The Hazards Covered by Professional Safety Practice

The study also evaluated the types of hazards and issues that practitioners engaged in. There were a total of 31 hazards or issues.

The respondents chose from among the five frequencies in the same manner as they responded to the types of tasks. The same analysis was performed to assess the degree of participation among hazards. The first three ratings provided the basis for determining whether respondents dealt with each hazard/issue.

The average rate of involvement among all hazards was 86.4%. Of the 31 hazards/issues presented, more than 60% of respondents were involved in 23. Between 30% and 60% had involvement with 8. There were no hazards/issues for which fewer than 30% were engaged.

Internal and External Contacts for Practitioners

This section of the survey sought to determine with whom safety professionals communicate and interact and the frequency of these contacts. The contact descriptions were divided into two groups: internal relations and external relations. Respondents selected the frequency of each type

of relationship in the same manner as they evaluated tasks and hazards. Again, the sum of the first three categories formed the basis for interpreting results.

For internal relations, the average rate of participation was 80.2% for the 18 kinds of relations in this group. More than 60% of respondents participated in 15 of the relationships. One relationship involved less than 30% of respondents and two relationships fell in the 30% to 60% range.

For external relations, the average rate of participation was 68%. More than 60% of respondents participated in 10 of the 17 kinds of relations. Seven of the relations involved between 30% and 60% of respondents. None fell below 30%.

Knowledge Management

An important set of tasks included in the survey sought information on how practitioners kept current in safety practice. Table 5 list the participation rate for each knowledge management task, based on the total frequency of the first three ratings.

Overall Participation Rate	Task
98.7	Read professional safety literature
98.4	Attend courses or workshops about safety subjects
97.2	Exchange knowledge and practical experiences with colleagues at local or national level
56.7	Exchange knowledge and practical experiences with colleagues at international level
29.8	Write on safety in professional or scientific literature
67.6	Document the safety management system

Table 5. How U.S. Safety Professionals Managed Knowledge of Practice

Comparison to International Practice

Hale and Guldenmund reported a comparison among 12 countries. Borys, et. al. reported on survey results for Australia, which were included in the 12 country comparison. The discussion below relies on these two reports and the information derived from the current study of U.S. safety professionals.

One means for comparing results from all countries is to compute the mean participation rate (for the total frequency of the first three categories) within each group of tasks, hazards or contacts. Table 6 provides this comparison. While this provides a global view, there are important differences in practice among countries for particular tasks, hazards and contacts.

Topic	Austria	Australia	Finland	Germany	Italy	Netherlands	Norway	Poland	Portugal	Singapore	Switzerland	United ...	United States
TASK (by Group)													
Problem identification & analysis	75	79	58	72	77	73	65	63	79	72	77	80	87
Develop & implement solutions	71	72	59	72	63	68	52	59	68	76	71	79	77
Training, information & communications	75	80	63	77	76	69	63	78	70	80	79	82	81
Inspection and research	63	69	55	75	57	68	54	69	58	75	69	74	75
Emergency procedures and settlement of damage	43	39	30	47	48	32	29	40	40	50	37	40	41
Regulatory tasks	10	23	22	15	13	13	15	17	31	21	18	25	24
Knowledge management	67	72	52	64	62	68	67	54	75	75	72	73	75
Management & Financial	47	55	44	52	50	55	52	55	54	57	60	63	69
HAZARDS	72	74	67	77	59	64	54	50	54	54	69	76	72
CONTACTS													
Internal	64	71	64	71	70	72	60	69	54	58	68	70	75
External	43	61	53	54	58	51	58	41	46	55	52	63	61

Table 6. Comparison of Mean Frequencies (Percent) by Country

In general, the information in Table 6 suggests that U.S. practice is most consistently similar to practice in the U.K. and Australia.

Hale identified the tasks that are performed by at least 60% of safety professionals in all twelve countries. U.S. safety professionals were also engaged in all of these tasks at a 60% level or higher. The core tasks reported for all countries included (the portion shown in parentheses for each tasks is for U.S. respondents):

- Check compliance of policy & procedures with the law (89%)
- Workplace risk assessment (90%)
- Job safety analyses (91%)
- Develop company policy on machinery, processes, workplace safety (80%)
- Machinery, process or workplace safety (87%)
    - (Specify safeguards, make procedures, give instruction, check compliance)
- Personal protective equipment (82%)

    - (Prepare policy, develop procedures, monitor use)
- Inform/discuss with all levels in the company on risk (95%)
    - (Safety committee, employees, supervisors, line managers, top management)
- Investigate accidents/incidents (92%)
- Make recommendations after accidents (93%)
- Carry out physical inspections (92%)
- Design safety training programs (87%)
- Carry out audits of workplace behavior (86%)

Among the hazards included in the survey, the most common hazards dealt with by more than 60% of respondents in all twelve countries include (U.S. percentages are shown in parentheses):

- Machinery (89%)
- Physical work (88%)
- Lifting (91%)
- Working posture (88%)
- Human error (93%)
- Noise (90%)
- Lighting (85%)

The contacts dealt with most commonly across countries by more than 60% of respondents are the following (U.S. rates are in parentheses):

- Contact with employees, line and top management (96%)
- Contact with maintenance department (85%)
- Contact with personnel department (88%)
- Contact with visitors (80%)
- Contact with government inspectors (76%)

At the other end of the spectrum are tasks performed by less than 30% of respondents. The tasks reported by Hale performed by fewer than 25% of respondents in all countries include the following (U.S. percentages are shown in parentheses):

- Keep statistics about sickness absence (24%)
- Head of company fire brigade (13%)
- Member of company fire brigade (11%)
- Give first aid courses (20%)
- Act as expert witness (29%)
- Advise at national level on laws, regulations (33%)
- Sit on standards committees for products, competence, safety management training (21%)
- Advise at a national level on safety campaigns (28%)

One can also look at knowledge management, related to keeping current in professional safety practice. With a few exceptions, safety professionals in other countries were engaged at similar rate in safety knowledge management as those practicing in the U.S. Nearly all practitioners read professional safety literature, attended courses or workshops, and exchanged experience through

local and national organizations. In general, U.S. practitioners had a little more exchange of experience at the international level and were slightly more likely to write for safety literature.

Comparison with Other Studies of U.S. Practice

There have been other studies of professional safety practice in the U.S. in addition to the survey reported here. Periodically, BCSP conducts major studies of what safety professionals do in practice in order to defend the contents of examinations leading to the Certified Safety Professional (CSP) certification. An important difference in these studies compared to the survey reported here is that the BCSP studies go beyond the tasks of practice. The BCSP studies identify the knowledge and skills required to be able to perform the tasks of practice. The knowledge becomes the main focus of the certification examinations. Reports of the studies of 2000 and recently completed studies in 2007 are available on the BCSP web site.

It is difficult to make a quantitative comparison between the BCSP job analysis studies for the examination leading to the CSP certification and the survey analysis results reported here. However, one can make some general comparisons.

The tasks compiled by Hale in his analysis of international professional safety practice are subsumed by the tasks described in the most recent job analysis reports commissioned by BCSP for the Safety Fundamentals and Comprehensive Practice examinations. Overall, the BCSP studies show that the knowledge and skills necessary for professional safety practice as a CSP incorporate the specific tasks identified by Hale.

The BCSP studies identified four top-level domains of practice for the Safety Fundamentals examination and three for the Comprehensive Practice examination. The domains are listed below. The studies also identified tasks within each domain and the associated knowledge and skills necessary to perform the tasks.

Safety Fundamentals Examination

- Recognizing Safety, Health, and Environmental Hazards (35.4%)
- Measuring, Evaluating, and Controlling Safety, Health and Environmental Hazards (30.9%)
- Safety, Health, and Environmental Training and Management (20.6%)
- Business Principles, Practices, and Metrics in Safety, Health, and Environmental Practice (13.1)

Comprehensive Practice Examination

- Collecting Safety, Health, Environmental and Security Risk Information (28.6%)
- Assessing Safety, Health Environmental, and Security Risk (36.6%)
- Managing Safety, Health, Environmental, and Security Risk (34.8%)

The percentages listed with each domain indicate the proportions of the examinations devoted to each domain. These percentages are based on ratings on three scales by job analysis survey respondents: 1) the frequency of tasks and knowledge use in professional safety practice, 2) the

importance of the tasks and knowledge in practice, and 3) the criticality in terms of the consequences of non-performance of tasks.

The formal technical reports found on the BCSP web site for these studies describe the methods, analysis and resulting tasks, knowledge and skills for professional safety practice.

Conclusions

Like many other studies of professional safety practice, this study confirms that professional safety practice involves a wide range of tasks. It appears that U.S. practice may be somewhat broader than practice in some other countries.

This study shows that there are many similarities between professional safety practice in the U.S. and other countries. The recognition, evaluation and control of hazards and the management of safety for an employer have many similarities across borders. There are also some differences, such as those related to regulatory schemes, insurance incentives, and other factors affecting safety importance and performance for employers and employees.

Overall, this series of studies has established that professional safety practice in various countries has many common elements and may not be as diverse as one might think.

This study is one measure of what constitutes professional safety practice. Because practice is not static and continues to change, the study may not reflect fully some of the more recent trends, such as

- A growing emphasis on safety through design.
- A growing role in the business basis for safety performance.
- A continuing convergence of safety, industrial/occupational hygiene, environmental, ergonomics, fire protection and other specialized areas into one broad function for most practitioners.

This survey does not address the knowledge required for professional safety practice. For Certified Safety Professionals, a more comprehensive study of U.S. professional safety practice is that conducted by BCSP to define the examination contents for the CSP examinations. It extends to the knowledge and skills needed to perform the tasks of practice.

Bibliography

The following references appear on the website of the European Network of Safety and Health Practitioner Organizations: www.enshpo.org, searching under "- Initiatives - Role and Tasks of OSH Practitioners" and then

"- Questionnaires and Instructions"

- UK Questionnaire
- Instructions for Setting Up Study

"- Survey Reports and Papers"

- Dresden 2004 Comparative Study (Hale, A.R and Guldenmund, F. G., Role and tasks of safety professionals: some results from an international survey.
- Dresden 2004 Survey Paper
- Australia 2006
- 2006 Appendix (Australia)

Borys, D., Else, D., Pryor, P. & Sawyer, N. (2006). Profile of an OHS professional in Australia in 2005. *Journal of Occupational Health and Safety Australia/New Zealand*, 22(2), 175-192.

The following references are found on the BCSP web site: www.bcsp.org:

BCSP Technical Report 2001-1, *Job Analysis Study for Certified Safety Professional Examinations*, Board of Certified Safety Professionals, Savoy, IL, February 2001.

BCSP Technical Report 2008-1, *Role Delineation and Content Analysis for the Safety Fundamentals Examination*, Board of Certified Safety Professionals, Savoy, IL, January 2008.

BCSP Technical Report 2008-2, *Role Delineation and Content Analysis for the Comprehensive Practice Examination*, Board of Certified Safety Professionals, Savoy, IL, January 2008.

APPENDIX A. Percent of respondents by country selecting TASKS, HAZARDS and CONTACTS (non-US data taken from ENSHPO Website – Survey reports and papers – 2006 Appendix)

TASKS OF PRACTICE

	Tasks	Austria	Australia	Finland	Germany	Italy	Netherlands	Norway	Poland	Portugal	Singapore	Switzerland	UK	U.S.
I	**Problem identification and analysis**													
B1	Investigate & evaluate workplace or plant risks	100	96	92	98	97	91	88	92	90	96	94	98	97
B2	Perform job safety analyses	95	88	64	81	96	66	58	95	83	87	81	82	88
B3	Involved, as a member of a design team, in integrating safety in the design of plant, processes, buildings, etc.	67	62	56	77	70	59	46	51	73	51	76	67	78
B4	Review a design, based on safety criteria, as someone external to the design team	49	64	39	47	63	68	64	45	70	52	59	68	82
B5	Carry out risk analysis of projects, designs or activities	63	85	40	57	61	82	70	30	80	74	75	85	90
II	**Developing and implementing of solutions**													
B6	Develop company policy for sustainable processes or products	48	71	57	60	42	64	44	49	67	69	68	74	75
B7	Develop company environmental policy	34	35	52	46	44	46	40	31	33	63	51	44	41
B8	Prepare company policy related to safety of machines, processes or workplaces	68	80	68	72	64	75	54	61	70	74	72	91	80
B9	Specify safety measures for machines, processes or workplaces	90	86	75	92	83	83	68	81	83	82	89	92	87
B10	Develop/improve procedures for the safe use and maintenance of machines, processes or workplaces	84	87	70	84	85	81	67	76	80	82	76	92	87
B11	Give instruction on the safe use and maintenance of machines, processes or workplaces	90	80	77	91	86	83	60	75	87	80	78	83	84
B12	Check compliance with safety procedures for machines, processes or workplaces	88	89	67	89	83	80	68	93	83	89	80	94	91
B13	Prepare company policy relating to dangerous materials	68	76	60	77	53	79	46	49	60	72	59	80	72
B14	Specify safety measures for dangerous materials	84	82	43	90	67	77	48	54	63	82	73	80	81
B15	Design/improve the safety procedures for the use and the storage of dangerous materials	83	74	56	84	67	73	50	55	70	82	65	78	79
B16	Check compliance with safety procedures for dangerous materials	79	83	64	84	68	75	57	57	70	87	71	84	86
B17	Preparation company policy for PPE	86	74	69	85	80	85	49	82	87	81	80	84	78

	Tasks	Austria	Australia	Finland	Germany	Italy	Netherlands	Norway	Poland	Portugal	Singapore	Switzerland	UK	U.S.
B18	Specify which PPE to purchase	87	69	57	91	85	70	41	93	87	78	77	73	75
B19	Design/improve procedures for the use and maintenance of PPE	80	73	62	77	80	76	48	84	87	77	71	78	79
B20	Monitor the correct use of PPE	93	73	62	92	76	71	53	85	90	89	80	83	84
B21	Develop the company safety management system	64	83	62	69	72	75	58	40	70	77	75	93	77
B22	Design performance indicators for the safety management system	47	76	41	46	38	59	37	35	73	73	62	85	79
B23	Monitor the functioning of the safety management system	54	86	48	51	44	72	59	38	63	85	72	94	86
B24	Propose improvements to the safety management system or parts of it	64	93	64	56	48	76	66	43	67	83	82	97	91
B25	Prepare company policy on safety culture	64	66	74	58	72	76	52	40	57	66	74	79	72
B26	Assess the safety culture	65	73	69	61	68	80	57	46	63	72	83	84	87
B27	Propose improvements to the safety culture	76	80	76	66	76	81	69	54	73	73	88	88	88
B28	Lead or advise on organizational change to achieve improvement in safety performance	91	83	50	92	79	72	70	67	73	78	85	88	86
B29	Check whether company policy or procedures conforms to legal rules and regulations	83	92	81	83	87	91	77	66	77	90	80	97	90
B30	Prepare permits to work for dangerous work	57	32	26	55	24	17	22	39	50	63	38	41	47
B31	Check compliance with permits to work	54	52	35	60	27	40	27	59	53	80	43	67	67
B32	Member of the team for planning large scale maintenance or modifications	56	37	38	53	24	21	27	44	30	45	50	43	54
B33	Assessing the plan for large scale maintenance and modifications	57	40	41	53	29	31	28	48	33	48	54	47	60
III	**Training, information & communication**													
B34	Design a safety campaign	70	70	53	68	61	60	55	66	67	81	81	78	74
B35	Implement a safety campaign	68	71	53	69	62	54	54	64	67	80	80	76	71
B36	Inform/discuss with safety representatives/committee about possible risks and safety measurements	91	93	88	97	87	76	77	84	83	92	88	90	93
B37	Inform/discuss with employees about possible risks and safety measurements	99	94	90	99	91	91	80	95	80	94	90	95	92
B38	Inform/discuss with first line supervisors about possible risks and safety measurements	97	95	84	96	91	80	82	95	87	91	89	96	94
B39	Inform/discuss with line managers about possible risks and safety measurements	95	95	77	94	94	94	83	95	87	94	93	98	94
B40	Inform/discuss with top management about possible risks and safety measurements	97	95	76	94	90	91	78	94	87	92	88	98	94

	Tasks	Austria	Australia	Finland	Germany	Italy	Netherlands	Norway	Poland	Portugal	Singapore	Switzerland	UK	U.S.
B41	Publish information about safety in a company newsletter or other internal communication medium	73	68	59	79	78	69	56	41	64	77	74	77	70
B42	Involved in the selection of new employees	18	56	28	32	20	24	37	29	27	45	33	45	67
B43	Prepare company policy relating to safety training	64	72	58	63	63	70	53	86	60	68	74	82	73
B44	Design safety training programmes, or workshops	62	84	61	61	87	79	54	84	73	79	82	91	87
B45	Give safety training programmes, courses or workshops	67	87	57	70	87	85	66	94	83	90	89	93	90
B46	Keep records of employees safety training	69	55	40	73	74	22	37	84	50	61	63	47	57
IV	**Inspection and research**													
B47	Investigate accidents or incidents	93	86	70	96	79	89	66	97	73	84	84	93	91
B48	Investigate environmental incidents	42	41	35	55	51	43	45	61	27	63	42	45	52
B49	Keep statistics about accidents and incidents	77	67	58	87	67	67	55	95	63	78	67	72	74
B50	Keep statistics about sickness absence	30	21	29	49	20	15	26	26	17	39	36	24	24
B51	Make recommendations for improvement arising out of investigations	78	86	78	84	69	88	70	62	73	84	81	94	93
B52	Conduct workplace inspections of physical prevention measures	73	88	60	95	64	86	63	95	80	94	88	93	92
B53	Conduct workplace audits of safe behaviour	69	76	65	79	68	80	51	77	70	80	82	80	86
B54	Conduct audits of the safety management system	45	87	48	57	38	75	53	40	60	82	73	92	88
V	**Emergency procedures and settlement of damage**													
B55	Prepare company policy on emergency procedures, intervention and first aid	82	72	61	84	79	70	49	73	63	73	73	81	69
B56	Prepare company policy on insurance and compensation	23	32	20	62	19	21	11	31	27	22	26	23	29
B57	Design/improve emergency procedures	84	72	60	82	87	66	57	65	70	84	76	82	76
B58	Organize practice of emergency procedures	74	50	40	67	74	54	47	39	50	80	56	55	63
B59	Manage a company fire fighting team	9	17	9	8	50	11	25	9	43	54	13	11	13
B60	Be a member of the company fire fighting team	8	14	6	7	32	9	27	16	17	50	16	8	11
B61	Give first aid courses	55	10	34	55	29	5	20	34	43	25	42	7	20
B62	Advise employer or employee about damage or injury claims	32	57	33	45	23	28	18	77	37	41	19	69	61
B63	Act as expert witness in legal cases or claims	16	28	10	13	36	21	10	19	13	17	15	25	29
VI	**Regulatory tasks**													
B64	Involved with making national/regional or industry wide safety laws and rules	19	30	19	22	14	22	23	16	33	27	33	28	33

	Tasks	Austria	Australia	Finland	Germany	Italy	Netherlands	Norway	Poland	Portugal	Singapore	Switzerland	UK	U.S.
B65	Be a member of a standards committee for product safety	4	11	2	4	4	5	5	2	13	17	7	9	15
B66	Be a member of a standards committee for safety competence or skills	5	14	3	6	5	7	9	6	20	26	8	19	22
B67	Be a member of a standards committee for safety management systems	3	17	1	4	2	10	8	7	23	29	8	21	24
B68	Take part in designing guidance or standards for safety courses or training at national or industry level	9	22	14	8	12	15	16	13	67	24	18	32	27
B69	Take part in the design and implementation of safety campaigns at national or industry level	8	22	18	8	8	10	15	6	53	22	22	26	-
B70	Advise on insurance premiums for a workplace or company	6	22	13	21	5	3	6	17	13	8	12	11	24
B71	Advise on damage claims	8	24	14	23	6	16	8	13	33	10	9	32	33
B72	Answer questions from the public about safety	25	41	19	36	58	25	42	70	23	22	42	47	41
VII	**Knowledge management**													
B73	Read professional safety literature	99	100	96	100	100	100	96	100	93	94	100	100	99
B74	Attend courses or workshops about safety subjects	99	98	89	99	100	97	94	94	87	96	99	99	98
B75	Exchange knowledge and practical experiences with colleagues at local or national level	96	96	62	97	94	97	92	84	93	94	97	98	97
B76	Exchange knowledge and practical experience with colleagues at international level	47	40	21	28	31	39	51	9	73	65	49	41	57
B77	Publish on safety in the professional or scientific literature	12	25	11	15	15	20	25	5	47	30	28	23	30
B78	Document the safety management system	47	74	30	43	30	55	45	32	57	72	58	78	68
VIII	**Management & Financial**													
B79	Manage other safety or working conditions professionals	31	47	28	42	48	37	46	31	40	41	46	58	63
B80	Prepare (parts of) an annual plan for safety	61	71	80	64	68	77	64	72	47	73	72	80	80
B81	Prepare (parts of) an annual report on safety	67	64	48	72	60	75	63	82	73	70	71	77	77
B82	Advise on/make the budget for safety	38	45	45	44	43	44	47	45	57	58	59	51	66
B83	Carry out cost-benefit analyses of safety measures or policies	38	47	20	36	33	41	41	43	50	43	54	50	62

HAZARDS

	Hazard	Austria	Australia	Finland	Germany	Italy	Netherlands	Norway	Poland	Portugal	Singapore	Switzerland	UK	U.S.
C1	Lighting	94	79	74	94	77	78	52	89	76	70	78	89	85
C2	Cold or heat	92	78	82	91	80	78	56	69	60	48	80	90	86
C3	Noise	93	86	76	97	85	89	61	91	67	85	86	90	90
C4	Vibration	63	65	47	79	57	69	42	50	37	52	56	71	75
C5	Toxic and carcinogenic substances	63	75	54	90	66	82	50	56	50	71	76	83	86
C6	Biological risks	32	66	35	86	50	61	23	19	23	37	44	67	75
C7	Other occupational disease	55	70	52	77	51	57	47	39	50	61	73	76	81
C8	Ionising radiation	29	40	19	78	33	47	20	22	30	39	42	42	56
C9	Non-ionising radiation	28	45	19	78	51	52	20	30	37	46	50	53	64
C10	Fire	83	77	61	87	92	86	76	45	80	81	77	91	87
C11	Explosion	63	60	28	83	56	77	58	33	67	70	69	62	79
C12	Electricity	89	83	60	90	85	86	60	76	77	79	80	92	89
C13	Machinery and installations	92	84	71	97	88	91	68	86	77	77	90	91	89
C14	Vehicles	82	83	61	89	73	75	56	75	50	66	75	90	84
C15	Human errors	94	89	79	96	79	91	78	74	70	83	90	94	93
C16	Subsidence and Collapses	40	37	22	39	32	38	30	83	30	43	41	41	61
C17	Falls	91	87	60	95	82	89	62	52	73	81	86	95	90
C18	Lifting	95	93	75	96	87	85	63	83	73	87	92	96	91
C19	Working posture	96	92	86	93	91	85	61	73	83	81	92	94	88
C20	Other physical workload	84	89	77	85	64	82	58	67	73	76	80	88	88
C21	VDUs	96	85	79	95	90	81	45	79	70	56	85	94	85
C22	Mental workload/Stress	76	82	86	76	58	58	61	44	57	41	72	80	69
C23	Bullying and harassment	44	68	66	57	14	41	43	2	7	21	44	48	45
C24	Violence against employees	24	59	35	64	11	37	25	9	7	21	33	58	50
C25	Alcohol or drugs	59	69	61	69	23	37	34	24	33	30	56	58	57

	Hazard	Austria	Australia	Finland	Germany	Italy	Netherlands	Norway	Poland	Portugal	Singapore	Switzerland	UK	U.S.
C26	Environmental pollution	48	49	31	72	64	56	51	39	33	75	59	51	57
C27	Sustainability of production or products	42	26	37	62	25	39	17	45	23	23	40	29	37
C28	Product liability	25	25	32	52	17	50	21	19	27	22	38	25	35
C29	Road/transport safety	65	63	54	87	38	45	44	59	37	63	65	79	65
C30	Accidents to patients, passengers, students or other clients	39	59	38	56	25	43	29	20	20	41	38	66	49
C31	External safety	48	61	54	36	46	61	36	18	27	54	46	71	63

CONTACTS

	Contact	Austria	Australia	Finland	Germany	Italy	Netherlands	Norway	Poland	Portugal	Singapore	Switzerland	UK	U.S.
D1	Occupational hygienist	28	69	40	31	50	83	51	59	33	46	54	59	91
D2	Occupational physician	99	65	89	98	91	85	67	92	77	48	60	69	81
D3	Ergonomist	41	73	59	32	26	64	52	16	20	29	50	46	75
D4	Work & organization psychologist	33	44	33	24	15	38	25	16	17	14	35	20	30
D5	Other medical specialists	31	60	68	59	34	28	32	53	17	45	68	49	59
D6	Visitors	68	86	75	74	64	73	67	78	63	80	69	88	80
D7	Employees	97	98	95	99	98	97	88	98	83	97	93	98	96
D8	Line management	84	98	94	90	98	99	93	95	87	95	90	99	96
D9	Top management	98	98	88	97	92	96	90	95	87	93	90	99	96
D10	Works council or equivalent	95	59	64	93	77	86	77	88	50	46	75	78	64
D11	Quality department	71	61	53	74	73	72	66	60	60	64	74	61	65
D12	Technical/maintenance service	95	87	77	93	94	90	80	87	83	85	85	88	85
D13	Personnel department	89	88	77	91	84	86	73	97	77	83	87	91	88
D14	Financial division	59	74	66	65	79	62	63	79	47	64	70	75	72
D15	Lawyer	57	66	39	56	69	52	40	78	37	32	47	68	78
D16	Designer	19	55	59	82	82	60	28	35	53	29	75	66	64
D17	Company planner	27	45	22	42	59	48	27	38	47	33	41	51	59
D18	Environmental expert	58	54	57	71	67	70	54	70	37	57	58	63	74
D19	Policy maker in Ministry	15	26	26	47	29	34	75	14	33	40	75	21	-
D20	Policy maker or planner in local authority	32	26	34	55	79	37	72	18	30	36	54	36	63
D21	Government inspector (national, local)	96	84	81	95	89	61	88	93	60	73	84	82	76
D22	Working conditions service*	37	-	57	23	46	87	72	50	53	73	-	-	75
D23	Standards body	32	40	19	15	29	35	32	10	57	52	24	39	51
D24	Certification body	39	51	32	40	50	66	45	23	53	63	47	45	60
D25	Industry federation	32	48	-	42	63	65	58	13	53	44	37	52	44

	Contact	Austria	Australia	Finland	Germany	Italy	Netherlands	Norway	Poland	Portugal	Singapore	Switzerland	UK	U.S.
D26	Professional association	46	83	60	63	65	76	55	28	47	72	47	90	88
D27	Employers' federation	28	45	45	24	55	26	39	6	47	28	24	43	32
D28	Trade-union official (local or national)	43	65	68	34	55	21	66	22	27	26	30	68	40
D29	Insurer	26	53	61	49	33	33	40	26	30	28	48	67	59
D30	Inspector (social) insurer*	13	-	27	85	39	14	27	77	23	26	96	27	37
D31	Safety officers of other organizations	45	95	57	93	77	93	82	77	63	89	84	95	87
D32	Safety Committee or safety representative*	45	95	95	97	88	86	87	80	67	94	58	92	88
D33	External safety consultant	46	84	54	40	83	50	68	25	43	76	62	77	81
D34	Educational establishment	62	72	62	72	35	42	70	52	47	44	64	74	64
D35	People living around the company	35	29	36	29	27	23	32	26	27	39	30	46	38
D36	Local fire service	73	45	65	69	76	51	56	63	53	64	50	72	61