

Occupational Safety and Health

This chapter aims to highlight and evaluate sources of information of use to researchers and practitioners working in the area of occupational safety and health. It does not intend to cover the theory of the topic in depth but rather to provide pointers to sources of further information for those already familiar with the subject.

1. Overview

The International Labour Organization Convention on Occupational Health Services (1985), (<http://www.ilo.org/public/english/protection/safework/cis/oshworld/ilostd/c161.htm>), provides a useful definition to introduce this chapter. It advises that occupational health services should aim to prevent the occurrence of work-related ill health and should provide guidance related to:

1. "the requirements for establishing and maintaining a safe and healthy working environment which will facilitate optimal physical and mental health in relation to work.
2. the adaptation of work to the capabilities of the workers in the light of their state of physical and mental health"

The Health and Safety Executive have also produced two useful publications which offer advice in these areas:

- *Successful health and safety management. HSG 65. 2nd ed. 2000. Sudbury: HSE.*
- *Reducing error and influencing behaviour. HSG 48. 2nd ed. 2000. Sudbury: HSE.*

The approach recommended in HSG 65 is covered in the British Standard BS 8800:1996, Guide to occupational health and safety management systems. This standard extends the definition to cover all aspects of health and safety relevant to an organization. It "seeks to improve the occupational health and safety performance of organizations by providing guidance on how the management of OH&S may be integrated with the management of other aspects of business performance, in order to:

- minimize risk to employees and others;
- improve business performance; and
- assist organizations to establish a responsible image within the marketplace."

HSG 48 (page 11) highlights three key elements within the working environment and gives examples of problem areas which should be addressed in order to minimise the incidence of ill health. These are reproduced below:

- Job factors
 - illogical design of equipment and instruments
 - constant disturbances and interruptions
 - missing or unclear instructions
 - poorly maintained equipment
 - high workload
 - noisy and unpleasant working conditions
- Individual factors
 - low skill and competence levels
 - tired staff
 - bored or disheartened staff
 - individual medical problems
- Organisation and management factors
 - poor work planning, leading to high work pressure
 - lack of safety systems and barriers
 - inadequate responses to previous incidents
 - management based on one-way communications
 - deficient co-ordination and responsibilities
 - poor management of health and safety
 - poor health and safety culture

Health and Safety Executive statistics based on self-reported work-related ill health, (<http://www.hse.gov.uk/statistics/overall/hssh0102.pdf>), indicate that whilst musculoskeletal disorders remain the most common problem, the prevalence of this is lower than a decade ago. However, stress related conditions are now the second most common complaint and the prevalence rate is around double the rate recorded in 1990. Stress related conditions also appear to contribute largely to the increase in working days lost from 18 million days in 1995 to 32.9 million days in 2001/2002. Other common occupationally related illnesses include respiratory problems, noise induced hearing loss, and headaches or eye strain.

The effect of some examples of work related ill health may only be seen many years later. Typical examples are the onset of deafness with age and also the cases of asbestosis arising from the common use of asbestos in the 1960s/70s. Due to the latency of such diseases, the full implications are not seen until several decades have passed (<http://www.hse.gov.uk/campaigns/asbestos/index.htm>). In response to these issues, legislation and codes of practice have been developed to protect workers against health hazards arising from their working conditions.

The Treaty of Rome (which first established the European Economic Community in 1957, and which the UK signed in 1972) did not initially include extensive provision for the safety and social aspects of work. However, a five-year plan was proposed in 1978 which led to the establishment of an ongoing series of EC Directives. These concentrated at first on protection against the risks of exposure to chemical, physical and biological agents at work, (http://www.europarl.eu.int/factsheets/4_8_1_en.htm). Safety at work was not fully addressed until the Treaty of Rome was modified by the Single European Act in 1986 and Article 138 (118a) was introduced to create standards to govern the working environment of employees (http://www.europarl.eu.int/factsheets/4_8_5_en.htm). Prior to this, health and safety had been subject to independently developed national requirements which resulted in varied approaches and standards across the European Union.

The directives developed under Article 138 specify minimum requirements concerning health and safety at work and the aim is to ensure that employees can expect the same minimum standards to apply throughout the European Community.

In addition to the EC Directives, a set of six regulations were introduced into UK legislation in January 1993:

- the Management of Health and Safety at Work Regulations 1992 (replaced by the Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242))
- the Provision and Use of Work Equipment Regulations 1992 (PUWER) (replaced by the Provision and Use of Work Equipment Regulations 1998 (SI 1998 No. 2306))
- the Workplace (Health, Safety and Welfare) Regulations 1992 (SI 1992 No. 3004)
- the Personal Protective equipment at Work Regulations 1992 (SI 1992 No. 2966)
- the Manual Handling Operations Regulations 1992 (SI 1992 No. 2793)
- the Health and Safety (Display Screen Equipment) Regulations 1992 (SI 1992 No. 2792)

The Management of Health and Safety at Work Regulations introduced risk management into the legislation, and although it is not possible to eliminate all elements of risk from a workplace environment, it is essential to attempt to identify potential hazards and to minimise their effect.

The EC also continues to introduce additional measures. The European Agency for Health and Safety at work was established in 1994, and from 1996 - 2000 the Commission adopted a Community Programme on Health and Safety at Work in order to improve the implementation of health and safety guidelines.

2. Legislation

In the UK adherence to health and safety regulations is enforced by the Health and Safety Executive (HSE). The HSE acts on the recommendations of the Health and Safety Commission (HSC) who are the official body responsible for the regulations relating to health and safety arising from work activities. Much of the legislation is enabled by the Health and Safety at Work Act 1974, by the directives of the European Union and by other initiatives already outlined in Section 1.

Further information on the relevant legislation is available from the following sources.

2.1 UK legislation

HMSO (Her Majesty's Stationery Office), (<http://www.legislation.hmso.gov.uk>)

This web site includes the full text of all legislation enacted by the UK Parliament covering Statutory Instruments (SI) from 1987, Public Acts from 1988 and Local Acts from 1991. These can be browsed by year which is the easiest way to navigate to a known act. Alternatively the site can be searched by keyword.

Regular use of the site will aid with current awareness for example a search for health and safety shows the Health and Safety (Miscellaneous Amendments) Regulations 2002 which came into force on 17th September 2002 and which details changes to the following:

- Amendment of the Health and Safety (First-Aid) Regulations 1981
- Amendment of the Health and Safety (Display Screen Equipment) Regulations 1992
- Amendment of the Manual Handling Operations Regulations 1992
- Amendment of the Workplace (Health, Safety and Welfare) Regulations 1992
- Amendment of the Provision and Use of Work Equipment Regulations 1998

Relevant acts which can be seen in full text include:

- The Working Time (Amendment) Regulations 2002 (SI 2002 No. 3128)
- The Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No. 2677)
- The Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242)
- The Disability Discrimination Act 1995
- The Health and Safety (Display Screen Equipment) Regulations 1992 (SI 1992 No. 2792)

Print and Braille copies of these and older acts (such as the Health and Safety (First Aid) Regulations 1981, the Health and Safety at Work Act 1974, and the Factories Act 1961) are available from The Stationery Office Ltd. Order online via the TSO Online Bookshop, by e-mail: customer.services@tso.co.uk, or by post to: TSO, PO Box 29, Norwich, NR3 1GN, tel. order line 0870 600 5522 or fax order line 0870 600 5533.

The Health and Safety at Work Act 1974 is reproduced online at <http://www.healthandsafety.co.uk/haswa.htm> by Professional Health and Safety Consultants Ltd [Accessed 22.03.03]

The First Aid Regulations are summarised at <http://www.hse.gov.uk/firstaid/legislation.htm> [Accessed 22.03.03]

Prior to passing legislation, the Health and Safety Commission submits drafts for public consultation. These are referred to as HSC Consultative Documents and can be seen at <http://www.hse.gov.uk/consult>.

2.2 European legislation

The portal to European Union Law, EUR-Lex can be viewed online at <http://europa.eu.int/eur-lex/en> [accessed 22.03.03]. The site can be searched or alternatively browsed by an alphabetical index or by the analytical structure. The section giving EC Directives on Safety at Work is seen at http://europa.eu.int/eur-lex/en/lif/reg/en_register_05202010.html

2.3 USA legislation

Information on USA laws and regulations are available from the US Department of Labor Occupational Safety and Health Administration (<http://www.osha.gov>). The relevant act is the Occupational Safety and Health Act of 1970 (Amended 1998) which is available in full text from this site.

Books on legislation

BARRETT, B. and HOWELLS, R., 2000. *Occupational health and safety law: text and materials*. 2nd ed. London: Cavendish.

BARRETT, B. and HOWELLS, R., 1997. *Occupational health and safety law*. 3rd ed. London: M & E Pitman.

BRADLEY, K., 2001. *The Health and Safety at Work Act 1974 explained*. London: Stationery Office.

Croner's A-Z essentials: health and safety, 2001. Kingston-upon-Thames: Croner Publications.

Croner's health and safety at work, 2002. Kingston-upon-Thames: Croner Publications.

CHANDLER, P., 1999. *An A-Z of health and safety law: a complete reference source for managers*. 3rd ed. London: Kogan Page.

DAY, R. and ROWLAND, E., 2003. *Health, safety and environment legislation: a pocket guide*. Cambridge: Royal Society of Chemistry.

DUNCAN, M. and CAHILL, F., 2003. *Health & safety at work essentials*. 2nd ed. London: Law Pack.

KLOSS, D. M., 2002. *Occupational health law*. 4th ed. Oxford: Blackwell Science. [5th ed. expected 2004]

Management of Health and Safety at Work regulations 1999 Approved Code of Practice and guidance. 2nd ed. 2000. London: HSE.

RIDLEY, J., CHANNING, J., (eds.), 1999. *Safety at work*. 5th ed. Oxford: Butterworth-Heinemann. [Some chapters on legal aspects]

STRANKS, J. W., 2001. *Health and safety law*. 4th ed. Harlow: Pearson Professional Education.

Tolley's health and safety at work handbook 2003. Croydon: Tolley.

In addition, the following online resource provides a useful summary:

MACGREGOR, PETER. *A general introduction to health and safety legislation* [online]. Produced by the Ranworth Association on behalf of the Institute for Independent Business (<http://www.iib.org.uk/hands.htm>) [accessed 22 March 2002. Publication date not available].

For USA law see:

BYRUM, L. L., 2001. *Occupational safety and health law handbook*. Rockville: Government Institutes.

3. Organisations

European Agency for Safety and Health at Work, (<http://europe.osha.eu.int>)

The European Agency for Safety and Health at Work was established to co-ordinate OSH related issues across Europe. This comprehensive site provides access to legislation, examples of good practice, research, statistics, publications, discussion fora and much more.

Health and Safety Executive, (<http://www.hse.gov.uk>)

The HSE web site includes links to research, statistics and full-text publications in the field of occupational health. Lists of HSE publications are available at <http://www.hsebooks.co.uk>.

International Labour Organisation (<http://www.ilo.org/public/english>)

The International Labour Organization is a United Nations agency founded in 1919 to protect human rights. It produces standards covering the entire spectrum of work related issues and also provides technical advice on training and rehabilitation. It also produces the journal "World of Work".

National Examination Board in Occupational Safety and Health (NEBOSH),

(<http://www.nebosh.org.uk>)

NEBOSH is the QCA (Qualifications and Curriculum Authority) approved body offering a General Certificate in health and safety at work. Courses are offered throughout the UK and overseas.

Supporting texts are:

HUGHES, P., 2003. *Introduction to health and safety at work: the handbook for the NEBOSH national general certificate*. Oxford: Butterworth-Heinemann.

RIDLEY, J., 2001. *Health and safety - in brief*. 2nd ed. Oxford: Butterworth-Heinemann.

National Institute for Occupational Safety and Health (NIOSH),

(<http://www.cdc.gov/niosh/homepage.html>)

NIOSH is the American federal agency responsible for conducting research and making recommendations for the prevention of work-related disease and injury. The web site includes details of the activities of the Institute and a searchable catalogue of their current publications. Topic sub-headings include: Chemical safety, Respirators, Traumatic injuries, Musculoskeletal disorders, Health care workers, Agriculture, Construction, Mining safety and health research, All occupational safety and health topics.

National Radiological Protection Board, (<http://www.nrpb.org>)

The NRPB is a source of information and advice on radiation matters. This covers ionising and non-ionising radiation and includes radioactive sources, lasers, electrical and magnetic fields, ultra-violet radiation (including exposure to UV in sunshine and protective clothing), microwaves etc.

Others...

A very large number of national and international organisations are listed within the Health and Safety section of the Steelynx web pages at <http://www.steelynx.net>

4. Professional societies

4.1 UK

These can be found by doing a general web search or by using publications such as:

Directory of British associations & associations in Ireland, 2002. Beckenham: CBD Research.

The information provided about each society summarises some of the activities undertaken and is not necessarily comprehensive. Further information can be found by visiting the relevant website.

Association of Occupational Health Nurse Practitioners, (<http://www.aohnp.co.uk>)

This UK professional organisation was founded to support the interests of occupational health nurse practitioners. It operates on a voluntary basis and is managed by an elected Board, supported by Regional directors and working parties. The Regional directors aim to support the occupational health needs of members operating within their region.

The Ergonomics Society, (<http://www.ergonomics.org.uk>)

The Ergonomics Society is a UK based professional society for all those specialising in ergonomics. It offers a range of membership grades, and its activities include running an annual conference.

The Faculty of Occupational Medicine of the Royal College of Physicians,

(<http://www.facocced.ac.uk>)

Faculty members are qualified professionals operating in the field of occupational medicine. Full members (MFOM) will be registered medical practitioners specialising in occupational medicine. Those who have made outstanding contributions to the field may be considered for Fellowship. An Associate grade of membership also exists at the entry level. In addition to managing and promoting professional qualifications, the Faculty is also able to advise on policy issues and codes of practice relevant to all aspects of occupational medicine.

Institution of Occupational Safety and Health (IOSH), (<http://www.iosh.co.uk>)

IOSH is the professional body for safety and health practitioners in the UK. Corporate membership indicates a level of competence and experience in the field. IOSH members assist the government in producing draft legislation, codes of practice and guidance notes and sit on national and international committees. The Institution publishes the biannual journal "Policy and practice in health and safety", and also the magazine "Safety and health practitioner" which is distributed free to members.

Society of Occupational Health Nursing, (<http://www.rcn.org.uk>)

The Society of Occupational Health Nursing is a special interest group of the Royal College of Nursing and the website is accessible to members from the RCN site. It provides a discussion forum for matters of mutual interest and also arranges an annual conference.

Society of Occupational Medicine, (<http://www.som.org.uk>)

The Society of Occupational Medicine provides a forum for discussion on topics of interest within occupational medicine such as the health of people at work and the prevention of work related injuries and disease. It provides newsletters and information on recent legislation, and offers opinion on consultative documents to government departments and to other professional societies.

4.2 USA

American Association of Occupational Health Nurses (AAOHN), (<http://www.aaohn.org>)

AAOHN is the American association for occupational and environmental health professionals and provides professional services for those concerned with health and safety in the workplace. It established an accreditation body, the American Board for Occupational Health Nurses, to provide a system of professional qualification.

American Board for Occupational Health Nurses, Inc.(ABOHN), (<http://www.abohn.org>)

The ABOHN is an independent certification board which implements and conducts a certification program for qualified occupational health nurses in the USA. It uses the standards of practice established by the AAOHN to set the criteria and standards for certification.

American Society of Safety Engineers, (<http://www.asse.org>)

ASSE is America's professional safety organisation. It provides training and professional services to its members, assists with the preparation of national and international standards, and arranges annual professional development conferences such as "Safety 2003: Advancing the EH&S Profession" (June 22-25 in Denver, Colorado).

5. Research Institutes

Some of the following research institutes were located using the following:

EDWARDS, C. M., 2000. *Centres, bureaux and research institutes the directory of UK concentrations of effort, information and expertise*. Beckenham: CBD.

Links to many more institutes and to information on current research programmes and funding are available from the European Agency for Safety and Health at Work, (<http://europe.osha.eu.int/research>) [accessed 2 April 2003].

British Occupational Health Research Foundation (BOHRF), (<http://www.bohrf.org.uk>)

BOHRF provides funding for occupational health research. The website provides details of existing projects and guidelines for applying for funding.

Centre for Occupational and Environmental Health (COEH), (<http://www.coeh.man.ac.uk>)

This centre is a well established academic teaching and research unit based at the University of Manchester. It offers postgraduate training leading to professional qualifications, and has particular strengths in the incidence of diseases related to work or the environment.

Ergonomics and Safety Research Institute (<http://www.lboro.ac.uk/research/esri>)

The Ergonomics and Safety Research Institute (ESRI) at Loughborough has been formed from the Research Institute for Consumer Ergonomics (RICE) and the Human Sciences Advanced Technology Research Institute (HUSAT). It is part of the Research School in Ergonomics and Human Factors at Loughborough University and comprises three research centres: Human Focused Design Centre; Transport Technology Ergonomics Centre; and Vehicle Safety Research Centre.

European Occupational Health and Safety Law Research Centre,

(<http://www.research.salford.ac.uk/eohslrc>)

Based at the University of Salford, the European Occupational Health and Safety Law Research Centre is one of the leading European research centres concentrating on occupational health and safety law. It is involved with research programmes with the International Labour Organisation, the European Commission, the European Environment Agency, the Department of the Environment, Food and Rural Affairs and the Health and Safety Executive.

Health and Safety Ergonomics Unit, (<http://www.lboro.ac.uk/departments/hu/groups/hseu>)

The Health and Safety Ergonomics Unit based at Loughborough University undertakes research into the human factors aspects of health and safety. Areas of interest include tool design, job evaluation, risk assessment, the avoidance of accidents and strategies for health and safety management. It is

one of a number of research groups within the Department of Human Sciences. This department also has links with the Ergonomics and Safety Research Institute mentioned previously. Further details can be seen at <http://www.lboro.ac.uk/departments/hu/groups/groups.html>

Health and Safety Laboratory, (<http://www.hsl.gov.uk>)

The HSL is an Agency of the Health and Safety Executive providing research and investigative support to the HSE and to other Government Departments. The HSL also undertakes research for private organisations from two sites: one at Sheffield and the other at Buxton, Derbyshire. The Sheffield site has laboratories for biomedical, occupational hygiene and environmental measurements, and also undertakes engineering, risk assessment, ergonomics and behavioural studies. The site at Buxton concentrates on fire and explosion safety.

Institute for Occupational Ergonomics (<http://www.virart.nottingham.ac.uk/ioe>)

The Institute for Occupational Ergonomics is a research and consultancy group based at the University of Nottingham. It specialises in a range of fields related to the ergonomic aspects of work, including engineering, health sciences and psychology. The IOE collaborates closely with two other research groups at the University of Nottingham: the Product Safety and Testing Group (PSTG) and the Virtual Reality Applications Research Team (VIRART). There is special interest in the human factors associated with rail transport and with seating research.

Institute of Occupational Health, (<http://www.bham.ac.uk/IOH>)

This academic institute based at the University of Birmingham is engaged in research in the areas of occupational medicine, epidemiology, toxicology, industrial hygiene and other topics related to the control of health hazards in the workplace. It also offers consultancy and training facilities and has international influence through its activities with the World Health Organisation. The website provides access to "UK and Worldwide Occupational Health and Safety News" which is particularly useful for maintaining an awareness of recent developments in the field.

Institute of Occupational Medicine, (<http://www.iom-world.org>)

This is a major independent UK research centre based in Edinburgh and offering training and consultancy in occupational and environmental health, hygiene and safety.

Institute of Work, Health and Organisations (I-WHO), (<http://www.nottingham.ac.uk/iwho>)

I-WHO is a postgraduate research centre within the Faculty of Law and Social Science at the University of Nottingham. It specialises in the organisational psychology associated with occupational, environmental and public health. The Institute incorporates the Centre for Organizational Health and Development, which is a World Health Organization Collaborating Centre in Occupational Health. The Institute is also a Topic Centre for Stress at Work for the European Agency of Safety and Health at Work.

Robens Centre for Occupational Health Safety and Hygiene, (<http://www.eihms.surrey.ac.uk/rohshome.htm>)

The Robens Centre for Occupational Health and Safety offers training, research and consultancy services within the European Institute of Health and Medical Sciences (EIHMS) at the University of Surrey. It provides courses in health and safety training, and also training programmes for occupational health professionals. The Robens Centre for Health Ergonomics (<http://www.eihms.surrey.ac.uk/robens/erg/tcmsd.htm>) is also involved in research into work related upper limb disorders and is a European Union Topic Centre for Musculoskeletal Disorders.

6. Reports

Environment Health and Safety Reports, (oshweb.me.tut.fi)

Environment Health and Safety Reports produced by a large number of national and international commercial companies can be seen in full text via the EHS Reports link on the OSHWEB site [accessed 2 April 2003]. However, a number of the links appeared to be unreliable.

Health and Safety Executive reports, (<http://www.hse.gov.uk/research/publish.htm>)

HSE reports are freely available over the Internet. These are detailed on the website as follows:

- Mainstream Research News - quarterly newsletter for HSE's mainstream research programme
- Offshore Research Focus - quarterly newsletter for offshore research topics
- Health Research Abstracts - describes projects in HSE's occupational health research programme

- Research Reports (RR) - HSE's new single series for research reports, encompassing reports which would previously have been published as Contract Research Reports, Offshore Safety Reports or HSL Reports.
- Contract Research Reports (CRR) - reports produced as Contract Research Reports prior to the introduction of the Research Report Series
- Health and Safety Laboratory Reports (HSL) – HSL reports preceding the Research Report Series
- Offshore Safety Reports - reports preceding the Research Report Series
- Strategic Research Projects Handbook - provides summary details on the R&D projects currently underway or recently completed.

The link to Press releases from the main HSE website (<http://www.hse.gov.uk>) is particularly useful for keeping up-to-date with events and for reports on recent prosecutions.

Useful publications include:

COMMISSION OF THE EUROPEAN COMMUNITIES, 1995. *Health and safety at work Community programme 1996-2000 European Commission*. Luxembourg: OOPEC.

COMMISSION OF THE EUROPEAN COMMUNITIES, 1999. *Health and safety at work in Europe: where next?* Luxembourg: OOPEC.

COMMITTEE OF THE REGIONS, 2002. *Opinion of the Committee of the Regions of 3 July 2002 on the communication from the Commission "Adapting to change in work and society--a new Community strategy on health and safety at work 2002-2006" (COM(2002) 118 final and the proposal for a Council recommendation concerning the application of legislation governing health and safety at work to self-employed workers COM(2002) 166 final - 2002/0079 (CNS))*. Luxembourg: OOPEC.

EUROPEAN AGENCY FOR SAFETY AND HEALTH AT WORK, 2000. *Future occupational safety and health research needs and priorities in the member states of the European Union European Agency for Safety and Health at Work*. Luxembourg: OOPEC.

EUROPEAN AGENCY FOR SAFETY AND HEALTH AT WORK, 2001. *The state of occupational safety and health (OSH) in the EFTA countries European Agency for Safety and Health at Work*. Luxembourg: OOPEC.

7. Conferences

A good place to look for forthcoming conferences is the "What's new" section of the hsedirect site at http://baldwin.butterworths.co.uk/search/content/whatsnew_index.htm [accessed 2 April 2003] or on the Institute of Occupational Health site at <http://www.bham.ac.uk/IOH/conf.htm> [accessed 26th July 2003]. In addition, many of the organisations and professional societies mentioned previously will advertise conferences on their pages, see for example the events calendar at IOSH, (<http://www.iosh.co.uk>) [accessed 2 April 2003].

The following conferences are amongst those held on an annual basis:

- American Occupational Health Conference, (<http://www.aaohn.org>)
- Ergonomics Society Annual Conference, (<http://www.ergonomics.org.uk/events.htm>)
- Human Factors and Ergonomics Society Annual Meetings, (hfes.org)
- IOSH Annual Conference and Exhibition, (<http://www.iosh.co.uk>)
- RCN Society of Occupational Health Nursing Annual Conference, (<http://www.rcn.org.uk/events>)
- Safety and Health at Work Congress, (<http://www.safety-health-expo.co.uk>)

8. Journals

Although now a little out of date, the following publication produced by the Occupational Safety and Health Information Group (disbanded in 1999) is a useful source of reference for identifying relevant journal titles. The holdings information provided should be checked from more recent sources.

OCCUPATIONAL SAFETY AND HEALTH INFORMATION GROUP, 1993. *Health and safety journals: what's where*. Cambridge: Occupational Safety and Health Information Group.

Titles worth highlighting include:

AAOHN journal: official journal of the American Association of Occupational Health Nurses. Atlanta, Ga: Published by SLACK Inc. for the AAOHN.

Accident analysis and prevention. Oxford, New York: Pergamon Press.

Applied ergonomics. Guildford: IPC Science and Technology Press.

Publications of the *European Agency for Safety and Health at Work*. Luxembourg : Office for Official Publications of the European Communities.

Forum
Magazine
News

Health and safety bulletin. London: Industrial Relations Services, Eclipse Group.

Health & safety at work. Croydon: Maclaren Publishers, Ltd.

The Journal of the Society of Occupational Medicine. Edinburgh: E. & S. Livingstone.

Journal of occupational and organizational psychology. London: British Psychological Society.

Occupational ergonomics. Netherlands: IOS Press.

Occupational hazards. Cleveland: Penton Publishing.

Occupational health. London: Reed Business Information Ltd.

Occupational health & safety. Edmonton: Occupational Health & Safety Division.

Occupational health review. UK: IRS

Occupational medicine. Oxford: Oxford University Press.

OSH World: an electronic journal published by Sheila Pantry Associates Ltd, which continues Health and Safety World, (<http://www.oshworld.com>).

Process safety progress: a publication of the American Institute of Chemical Engineers. New York: American Institute of Chemical Engineers

Safety and health practitioner. Wigston: IOSH. (Published by IOSH and free to members.)

Safety science. New York: Elsevier.

9. Data

Researchers will need data to inform design decisions and to show trends in incidences of work related injuries and diseases. There are many authoritative sources providing this. There is anthropometric data available to advise ergonomic design, and additionally there is scientific data available to advise on the chemical properties of materials which may be hazardous to health. The following sections list sources providing good examples from these categories.

For those not familiar with statistics and data analysis, the following is a useful introductory text which uses examples relevant to occupational safety and health:

JANICAK, C. A., 2000. *Applied statistics in occupational safety and health*. Rockville: Government Institutes.

9.1 UK statistics

UK Government statistics covering all aspects of life are available from <http://www.statistics.gov.uk>. It is possible to do a keyword search or to browse by themes. Data relating to health and safety at work is within the Health section of Health and Care. Another relevant topic, Employment and Work, is contained within Labour Market.

HSE statistics, (<http://www.hse.gov.uk/hsestats.htm>)

The Health and Safety Executive provide authoritative data and statistics relating to workplace illnesses and injuries in the UK. Some data is available as an Excel spreadsheet. Other data is available within a pdf file or is presented in the form of a report.

Data covered includes:

- A summary of occupational health and safety statistics for Great Britain
- Estimated costs arising from work related ill health in Great Britain.
- Statistics by causes or kinds of disease.
- Statistics by causes and kinds of injury.
- Information on incidents which have a high potential to cause death or serious injury
- Information concerning reported incidents relating to the supply and use of flammable gas.
- Information relating to notices issued by all enforcing authorities.
- Statistics by industry or occupation, including statistics for the local authority enforced sectors.
- Statistics by country or region.
- Statistics by other categories e.g. 'gender', 'age' and 'part time working'.

9.2 European statistics

European Health and Safety Database (HASTE), (<http://www.occuphealth.fi/e/eu/haste>)

This site, which is hosted by the Finnish Institute of Occupational Health, does not provide access to actual data but refers to many European organisations which are collating data. The names and addresses of the organisations are given, together with details of the statistical publications available and a summary of the type of data that is collected. Organisations are listed from Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden and the UK.

Publications include:

EUROPEAN COMMISSION, 2002. *European statistics on accidents at work (ESAW) methodology*. Luxembourg: OOPEC.

NOSSENT, S., DE GROOT, B., and VERBOON, F., 1996. *European working environment in figures: availability and quality of occupational health and safety data in sixteen European countries*. Luxembourg: OOPEC.

9.3 USA statistics

Data on safety and health conditions in America is collected by the Bureau of Labor Statistics (BLS). Detailed statistics are available from stats.bls.gov/data/home.htm. Details can be obtained of the most frequently requested data or customised reports can be generated. Sub-headings include:

- Employment and unemployment
- Prices and living conditions
- Compensation and working conditions (the most relevant section for this topic)
- Productivity and technology (this section contains a link to foreign labour statistics and includes some data relating to labour statistics from Australia, Canada, Japan, Korea, Switzerland and Taiwan in addition to the European countries already mentioned)
- Regional resources

9.4 Anthropometric data

Data from recent studies carried out by the Institute for Occupational Ergonomics at the University of Nottingham are published in the following texts:

NORRIS, B.J. and WILSON, J., 1995. *Childata: the handbook of child measurements and capabilities: data for design safety*. London: Consumer Safety Unit, Dept. of Trade and Industry.

PEEBLES, L. and NORRIS, B.J., 1998. *Adultdata: the handbook of adult anthropometric and strength measurements: data for design safety*. London: Dept. of Trade and Industry.

PEEBLES, L. and NORRIS, B.J., 2000. *Strength data for design safety - Phase 1*. URN 00/1070. London: Dept. of Trade and Industry.

PEEBLES, L., REID, A. and NORRIS, B.J., 2000. *Strength data for design safety - Phase 2*. URN 01/1433. London: Dept. of Trade and Industry.

SMITH, S., NORRIS, B.J., and PEEBLES, L., 2000. *Older adultdata: the handbook of measurements and capabilities of the older adult: data for design and safety*. London: Dept. of Trade and Industry.

A web search will result in a number of sites offering anthropometric data for adults, but the Anthrokids website at ovrt.nist.gov/projects/anthrokids claims to be the only public domain online database of child anthropometric data. It is presenting data collected in 1975 and 1977 by the Consumer Product Safety Commission (<http://www.cpsc.gov>), and is the result of a joint project between the CPSC and the National Institute of Standards and Technology (<http://www.nist.gov>).

A major resource is the PeopleSize computer package produced by Open Ergonomics Ltd. (<http://www.openerg.com/psz.htm>) which "gives data on human sizes through a visual interface". It is possible to select nationality, age group and percentile value and then to click on patterns to ascertain physical dimensions. At the time of viewing (30.06.03), the basic package is priced at £149 + VAT.

9.5 Data on hazards

International Chemical Safety Cards (ICSCs),

(<http://www.ilo.org/public/english/protection/safework/cis/products/icsc/index.htm>)

Data for over 1300 chemicals can be searched by name, ISCS number or CAS number. The data given includes physical properties, molecular formulae and details of the hazards associated with the chemical including risk prevention and first aid and rescue procedures.

International hazard datasheets on occupations,

(<http://www.ilo.org/public/english/protection/safework/cis/products/hdo/htmold/idhindex.htm>)

This site provides lists in English, Russian and Spanish of the types of hazards to which workers in a number of occupations may be exposed during their normal work.

The Physical and Theoretical Chemistry Laboratory at Oxford University,

(<http://ptcl.chem.ox.ac.uk/MSDS>)

Under the heading "Chemical and Other Safety Information", this site provides links to information on a whole range of chemicals which may be encountered in the home or in industry. There is also a link to material safety data sheets providing safety data for many thousands of substances.

Where to find Material Safety Data Sheets on the Internet, (<http://www.ilip.com/msds>)

This site provides links to many freely available MSDS resources on the Internet. It also provides access to many other useful pages including a Frequently Asked Questions page, links to OSHA regulations, a glossary of related terms, software, and a forum for discussion.

10. Standards

To see the full text of official standards it will usually be necessary to purchase them from the publishing body. Catalogues are available in many public libraries.

A catalogue of British Standards can be searched at bsonline.techindex.co.uk [accessed 27 April 2003]. Subscribers to the service are able to have unlimited online access to the full text of British Standards. However, it is possible search the bibliographic information freely and also to register for free access to summaries with the option to purchase printed copies of any documents of interest. A relevant example is the previously mentioned BS 8800:1996, Guide to occupational health and safety management systems.

Note that if the BSI has adopted a standard produced by another body or if there is a direct equivalence between the standards, then this will be indicated in the search results. From this site there is also a links page which offers access to other standards bodies including ISO, the International Organisation for Standards. The ISO catalogue may be searched at <http://www.iso.ch/iso/en/CatalogueListPage.CatalogueList> [accessed 27 April 2003].

Subscribers to the Occupational Health and Safety Information Service (OHSIS) (<http://www.tionestop.com/tionestop/where/ohsis.htm>) have full text access to a subset of the British Standards relating to health and safety. In addition the service provides access to key health and safety legislation and guidance material from the HSE and ROSPA, (<http://www.rospa.org.uk>).

International Labour Standards including ILO Conventions and Recommendations can be searched through the ILOLEX service at <http://www.ilo.org/ilolex> [accessed 27 April 2003].

11. Case studies

Case studies are useful for educational purposes, to achieve the benefit of hindsight and they provide interesting background reading. As an example, to discover the connection between swimming pools and processing salad vegetable, look at the relevant case study within the Work Environment section of the HSL case studies listed below.

Health and Safety Laboratory Case Studies, (http://www.hsl.gov.uk/services/case_main.htm)

An interesting collection of case studies grouped under the headings:

- Fire, Explosion and Process Safety
- Engineering Control
- Work Environment
- Occupational and Environmental Health
- Behavioural and Social Science
- Risk Assessment

ErgoWeb

<http://www.ergoweb.com/resources/casestudies>

Examples of problems experienced and the solutions adopted are listed from a diverse range of manufacturing situations.

There are also a number of publications available which provide guidance and examples of good practice:

AKASS, R., 1994. *Essential health and safety for managers: a guide to good practice in the European Union*. Aldershot: Gower.

EUROPEAN AGENCY FOR SAFETY AND HEALTH AT WORK, 2001. *Occupational safety and health and employability: programmes, practices and experiences*. Luxembourg: OOPCE.

HEALTH AND SAFETY EXECUTIVE, 2001. *A pain in your workplace? Ergonomic problems and solutions*. Sudbury: HSE Books.

12. Abstracts and indexes

As the previous paragraphs will have indicated, there is a wealth of freely accessible, good quality information on occupational safety and health available over the Internet. However, for a comprehensive search of the literature, it is necessary to use abstracting and indexing services to search for articles published within learned journals. Unfortunately, many of the following services are only available by subscription, although some libraries may hold printed copies which can be viewed by visitors. Note also that PubMed is freely available.

AMED (Allied and Complementary Medicine)

Subscription required. Further details can be found via <http://www.ovid.com>.

AMED indexes approximately 500 journals including those in the areas of occupational therapy and rehabilitation.

CINAHL: (Cumulative Index to Nursing and Allied Health Literature). (<http://www.cinahl.com>)

Subscription required.

This service indexes over 500 journals and also books, nursing dissertations, conference proceedings and standards of professional practice. Relevant topics covered include occupational therapy and health education.

Ergonomics Abstracts, (<http://www.catchword.com/ergonomics>)

Subscription required but the publishers offer 24 hour free trials of Ergonomics Abstracts Online [April 2003]

The abstracts cover all aspects of ergonomics and human factors from 1969 to present.

Medline

Available online from a range of database providers. (See also PubMed)

Medline is compiled by the National Library of Medicine in America and is one of the most important medical databases. It provides access to approximately 3,700 medical journals, as well as some books and conference proceedings.

OSH-ROM, (<http://www.healthandsafety-centre.net/minisites/silverplatter.html>)

Subscription required.

This service allows the cross-searching of six bibliographic databases containing international occupational health and safety information with over 1.5 million citations from over 5000 journals and 100,000 monographs and technical reports.

PubMed, (<http://www.pubmed.gov>)

PubMed is the publicly available version of Medline provided by the National Library of Medicine. It is possible to search by author, journal title, MeSH heading or to use the single citation matcher to retrieve a specific paper.

13. Encyclopaedias, reference books and other key texts

(Note that further texts are listed in the subject specific paragraphs within Section 17)

Encyclopaedias

KARWOWSKI, W., ed., 2001. *International encyclopedia of ergonomics and human factors*. London: Taylor and Francis.

This encyclopaedia is published in three volumes with entries arranged alphabetically. Subjects covered include: general ergonomics; human characteristics; performance related factors; information presentation and communication; display and control design; workplace and equipment design; environment, system characteristics; work design and organisation; health and safety; social and economic impact of the system, and methods and techniques.

The following three volumes update the Occupational Ergonomics Handbook produced by CRC Press in 1998.

KARWOWSKI, W. and MARRAS, W. S., 2003. *Occupational ergonomics engineering and administrative controls*. Boca Raton, FL: CRC Press.

KARWOWSKI, W. and MARRAS, W. S., 2003. *Occupational ergonomics principles of work design*. Boca Raton, FL: CRC Press.

KARWOWSKI, W. and MARRAS, W. S., 2003. *Occupational ergonomics design and management of work systems*. Boca Raton, FL: CRC Press.

STELLMAN, J. M., ed., 1998. *Encyclopaedia of occupational health and safety*. 4th ed., Geneva: International Labour Office.

The above encyclopaedia is extremely comprehensive and has been authored and edited by a panel of international experts. It is available either in print or as a CD. The print version is published in four volumes:

- Volume 1 covers health issues including health education, ethical issues, and occupational health and safety studies.
- Volume 2 concentrates on hazards such as air quality, noise, radiation and biological hazards. It also covers psychosocial factors such as stress and interpersonal issues.
- Volume 3 covers aspects specific to particular industries such as chemicals, agriculture, mining, metal production, textiles, transport, construction, and the power industries.
- Volume 4 comprises industry guides and chemical data.

Key texts

BHATTACHARYA, A. and MCGLOTHLIN, J. D., 1996. *Occupational ergonomics theory and applications*. New York: Marcel Dekker.

FRIEND, M. A. and KOHN, J. P., 2003. *Fundamentals of occupational safety and health*. 3rd ed. Rockville: Government Institutes. [aimed at American readers]

HEALTH AND SAFETY EXECUTIVE, 1994. *Essentials of health and safety at work*. Sudbury: HSE Books.

PANTRY, S., 1995. *Occupational health*. London: Chapman and Hall.

RIDLEY, J., CHANNING, J., eds, 1999. *Safety at work*. Oxford: Butterworth-Heinemann.

SELWYN, N., 2001. *Guide to health and safety at work*. Kingston-upon-Thames: Croner Publications.

STRANKS, J. W., 2001. *A manager's guide to health & safety at work*. London: Kogan Page.

STRANKS, J. W., 2000. *One stop health and safety*. London: ICSA.

Glossaries and dictionaries

INTERNATIONAL OCCUPATIONAL SAFETY AND HEALTH INFORMATION CENTRE and INTERNATIONAL LABOUR OFFICE, 1993. *Occupational safety and health glossary words and expressions used in safety and health at work : English, Francais, Deutsch, Espanol, Russkiei International Occupational Safety and Health Information Centre, International Labour Office*. Geneva: International Labour Office.

KOREN, H., 1996. *Illustrated dictionary of environmental health and occupational safety*. Boca Raton: Lewis Publishers.

STRANKS, J. W., 2002. *Health and safety at work key terms*. Oxford: Butterworth-Heinemann.

Bibliographies and further sources of information

COMMISSION OF THE EUROPEAN COMMUNITIES, 1999. *Health and safety at work reference texts*. Luxembourg: OOPEC. [lists relevant EC directives]

PANTRY, S., 1997. *Health and safety: a guide to sources of information*. Birmingham: Royal Society for the Prevention of Accidents.

14. Online full-text resources

Barbour Index, (<http://www.barbour-index.co.uk>)

The Barbour Index includes health and safety information services covering the areas of occupational health and safety, environmental health, food safety, trading standards and environmental protection. However this is a commercial service and there are charges associated with it.

Croner, (<http://www.croner.cch.co.uk>)

The Croner web site includes a health and safety channel and a free news service. Croner customers can view subscriptions online from a range of information zones:

- Fire Safety
- Hazards and Work Activities
- Law and Official Guidance
- Manufacturing
- Risk Assessment
- Substances and Dangerous Goods
- Training

Croner also handles subscriptions to OSH Plus, a database containing the full text of many HSE and HSC documents.

Department of Health Publications: White and Green papers,

(<http://www.doh.gov.uk/publications/wgpaper.html>)

This site give full text access to Department of Health White and Green papers wherever possible and also links to other DOH publications.

HMSO, (<http://www.legislation.hmso.gov.uk>)

Full text of UK legislation is freely available
(See Section 2. Legislation)

HSC Consultative Documents, (<http://www.hse.gov.uk/consult>)

This site provides access to the full text of consultative documents and in some cases also offers the opportunity to take part in public consultations online.

Health, Environment and Work: Educational resources,

(<http://www.agius.com/hew/resource/index.htm>)

These full text resources have been made freely available by Prof. Raymond Agius, Professor of Occupational and Environmental Medicine and Director of the Centre for Occupational and Environmental Health at the University of Manchester Medical School. Other pages on the website are also worth a visit.

Health and Safety homepages, (<http://www.healthandsafety.co.uk>)

These pages are provided by Professional Health and Safety Consultants Ltd. and offer links to their consultancy services, but in addition there is access through the Information Library to many useful full text guidance leaflets.

OSHA Technical Manual, (http://www.osha-slc.gov/dts/osta/otm/otm_toc.html)

The Technical Manual of the American Occupational Health and Safety Administration is freely available.

Occupational Health and Safety Information Service (OHSIS),

(<http://www.tionestop.com/tionestop/where/ohsis.htm>)

A subscription is required for full text access but the index is freely searchable. The service provides a full-text collection of key health and safety, fire safety, and environmental health guidance material. It also includes UK legislation, standards and guidelines.

15. Web Gateways

This chapter has already highlighted the wealth of information that is freely available on the Internet. However locating that information can be a very time consuming exercise. Doing a general search on one of the web search engines such as Google (<http://www.google.co.uk>) will result in a large number of hits which then need careful evaluation in order to assess their validity and the quality of information they contain. The following web gateways provide access to sites which have been categorised by subject for easier and more relevant searching. In addition, many of them have been vetted by subject specialists before being added to the gateways, thus giving them some authenticity. The RDN Virtual Training Suite packages detailed towards the end of the list are online tutorials designed to guide researchers through the variety of online resources available.

BIOME, (biome.ac.uk)

BIOME forms part of the Resource Discovery Network which has been created through the collaboration of a number of UK educational and research organisations. It provides a searchable catalogue of quality Internet sites and resources in the areas of health and life sciences.

CCOHS: Canadian Centre for Occupational Health and Safety. (<http://www.ccohs.ca/resources>)

The Resources section of the CCOHS website provides access to a directory of Internet sites on health and safety, links to discussion groups, and also an alerting service relating to Canadian policy.

EEVL: the internet guide to engineering, mathematics and computing, (<http://www.eevl.ac.uk>)

Like BIOME, EEVL is a hub within the Resource Discovery Network. It is the primary gateway to quality assured engineering sites, and will therefore be mentioned elsewhere in this book. However, it is worth highlighting in this chapter that, in addition to the searching capability, there is also the option to browse for sites relevant to Occupational Safety and Health. From the home page, select the Engineering subject area followed by Occupational Safety and Health. You can then browse over 220 sites which have been selected for inclusion by subject experts.

Ergoworld, (<http://www.interface-analysis.com/ergoworld>)

This site produced by a Californian consultancy company, provides information on ergonomics (office ergonomics, industrial ergonomics, injury prevention/treatment) and human factors (HCI/usability, air & ground HF, product design). It also includes information on products, jobs, consultants/organisations, university programmes and industry events, but these are largely USA based.

Google Occupational Health and Safety

[http://directory.google.com/Top/Health/Occupational Health and Safety](http://directory.google.com/Top/Health/Occupational_Health_and_Safety)

This is the Occupational Health and Safety section of the Google directory. These sites have not all been quality checked.

Occupational and Environmental Health website

<http://www.agius.com/hew/links>

This is another reference to the pages provided by Prof. Raymond Agius, Professor of Occupational and Environmental Medicine and Director of the Centre for Occupational and Environmental Health at the University of Manchester Medical School. These pages offer a directory of sites in occupational and environmental health.

OHNet

<http://www.occupational-health.net>

To make best use of this site it is necessary to register. There are news alerts, guidance on regulations, and information about forthcoming courses and seminars.

Osh.Net: Gateway for Safety and Health Information Resources, (<http://www.osh.net>)

Osh.Net is managed by a team of licensed occupational health and safety experts and provides links to organisations, information resources and the latest information on standards and regulations. There is also a bulletin board providing a forum for discussion.

OSHWEB, (<http://oshweb.me.tut.fi>)

OSHWEB is an index of occupational safety and health resources on the Internet developed by the Institute of Occupational Safety Engineering at Tampere University of Technology, Finland. The resources are sorted in subject hierarchies.

Our Healthier Nation, (<http://www.ohn.gov.uk>)

Our Healthier Nation is the government-wide health strategy for England which was published in July 1999. The OHN Website provides links to public health information, to NHS sites, and to health related work across government sites. It aims to help professionals who are working to improve health and reduce health inequalities.

RDN Virtual Training Suite, (<http://www.vts.rdn.ac.uk>)

This page contains links to a number of online tutorials prepared within the Resource Discovery Network (also see BIOME). The tutorials offer advice in techniques for searching for quality information on the internet and highlight some of the key sites in each subject area. Within the Internet for Further Education listing, there is a Health and Safety at Work tutorial aimed at students within further education. There is also a tutorial aimed at higher education called Internet for Health and Safety. This is listed within the EEVL titles. (See earlier for more information about EEVL.)

WWWVL: Public health: Occupational Health and Safety, (<http://www.ldb.org/vl/top/top-ohs.htm>)

The WWW Virtual Library provides a subject hierarchy of Internet sites. This address points to the Occupational Health and Safety section within Public Health.

Yahoo! Public Health and Safety, ([http://dir.yahoo.com/Health/Public Health and Safety](http://dir.yahoo.com/Health/Public_Health_and_Safety))

Yahoo is a directory which orders web sites by subject category. This is the Public Health and Safety section of the directory.

16. Mailing lists and newsgroups

Mailing lists provide a means of generating email discussions between people interested in similar topics. Emails are sent to everyone on the list and it is possible to reply to the whole list or to specific individuals. In the UK, the JISCMail service maintains many publicly available lists. More information about the lists is available from <http://www.jiscmail.ac.uk>. Relevant examples include:

- ECOHSE@jiscmail.ac.uk (European Centre for Occupational Health, Safety and the Environment)
- ergonomics@jiscmail.ac.uk
- occ-health@jiscmail.ac.uk
- occenvmed@jiscmail.ac.uk

With newsgroups, messages are posted to a bulletin board which has to be checked rather than arriving in personal email boxes. A useful list of newsgroups is available from the Google Groups website (groups.google.co.uk). The most relevant group is [sci.med.occupational](http://groups.google.co.uk).

Relevant discussion lists offered by other organisations include:

- Osh.Net Bulletin Board linked from <http://www.osh.net>
- Vermont SIRI Archives of the Major Occupational Safety and Health Mailgroups, (<http://www.hazard.com/mail>)

Related sites include those where it is possible to post a question to an expert. Examples include:

- AllExperts.com: the Occupational (OHSA) and Environmental Hazard section, (<http://www.allexperts.com/getExpert.asp?Category=1417>)
- OSH Answers, (<http://www.ccohs.ca/oshanswers>)

17. Subject specific resources

The resources discussed so far in this chapter have been general resources in the areas of occupational safety and health. However there are many additional resources which are appropriate for particular aspects within these areas. Some worthy of mention are listed in the following sections.

17.1 Safety and risk management

ADAMS, J., 1995. *Risk*. London: UCL Press.

ANDREWS, J. D. and MOSS, T. R., 2002. *Reliability and risk assessment*. London: Professional Engineering Publishing.

BATEMAN, M., 2002. *Tolley's practical risk assessment handbook*. 3rd ed. London: Butterworths Tolley.

DHILLON, B. S., 2003. *Engineering safety: fundamentals, techniques and applications*. New York: Marcel Dekker. [American text].

Engineers and risk issues: code of professional practice. 1993. London: Engineering Council.

GERTMAN, D. I. and BLACKMAN, H. S., 1993. *Human reliability and safety analysis data handbook*. Chichester: Wiley.

HARMS-RINGDAHL, L., 2001. *Safety analysis: principles and practice in occupational safety*. London: Taylor and Francis.

KLETZ, T. A., 2000. *An engineer's view of human error*. 3rd ed. Rugby: Institution of Chemical Engineers.

KLETZ, T. A., 2000. *Learning from accidents*. 3rd ed. Oxford: Gulf Professional.

REEVE, P., 2001. *Practical risk assessment*. London: Engineering Employers' Federation.

SADHRA, S. S., 1999. *Occupational health: risk assessment and management*. Oxford: Blackwell Science.

WONG, W., 2002. *How did that happen? Engineering safety and reliability*. London: Professional Engineering Publishing.

Journals

This is a selection of the titles available:

Accident analysis and prevention. Oxford, New York: Pergamon Press.

International journal of reliability and safety. Olney: Inderscience. [First issue due 2004]

International journal of risk assessment and management. Olney: Inderscience.

Journal of occupational accidents. Amsterdam: Elsevier.

Journal of hazardous materials. Amsterdam: Elsevier.

Journal of safety research. Amsterdam: Elsevier.

Policy and practice in health and safety. Wigston: IOSH. [continuation of IOSH Journal]

Safety science. Amsterdam: Elsevier.

Safety management. Waterford. Aspen Publishers.

Website

British Safety Council, (ww2.britishsafetycouncil.org)

The British Safety Council's mission is "to promote health, safety and environmental best practice for the benefit of society and the increase of productivity". The website includes details of a wide range of sources of health and safety information and also to training courses.

17.2 Human factors

Ergonomics

ALEXANDER, D., RABOURN, R., eds, 2001. *Applied ergonomics*. London: Taylor and Francis.

BHATTACHARYA, A., MCGLOTHLIN, J. D., eds, 1996. *Occupational ergonomics theory and applications*. New York: Marcel Dekker.

BRIDGER, R. S., 2003. *Introduction to ergonomics*. 2nd ed. London: Taylor and Francis.

CORLETT, E.N. and CLARK, T.S., 1995, *The ergonomics of workspaces and machines : a design manual*. 2nd ed. London : Taylor and Francis.

DUL, J. and WEERDMEEESTER, B. A., 2001. *Ergonomics for beginners: a quick reference guide*. 2nd ed. London: Taylor and Francis.

ERGONOMICS SOCIETY, 2002. *Contemporary ergonomics*. London: Taylor and Francis. [a series of annual congresses].

FRASER, T. M., 1996. *Introduction to industrial ergonomics a textbook for students and managers*. Toronto: Wall and Emerson.

HANCOCK, P. A., ed., 1999. *Human performance and ergonomics*. San Diego, CA: Academic Press.

HARRIS, D., ed., 2001. *Engineering psychology and cognitive ergonomics*. Aldershot: Ashgate.

HELANDER, M., 1995. *A guide to the ergonomics of manufacturing*. London: Taylor and Francis.

KARWOWSKI, W., ed. 2001. *International encyclopedia of ergonomics and human factors*. London: Taylor and Francis.

KIRWAN, B., 1994. *A guide to practical human reliability assessment*. London: Taylor and Francis.

KRAGT, H., ed., 1995. *Enhancing industrial performance experiences of integrating the human factor*. London: Taylor and Francis.

KROEMER, K. H. E. and GRANDJEAN, E., 1997. *Fitting the task to the human: a textbook of occupational ergonomics*. 5th ed. London: Taylor and Francis.

KROEMER, K. H. E. and KROEMER, A. D., 2001. *Office ergonomics*. London: Taylor and Francis.

MEISTER, D. and ENDERWICK, T. P., 2002. *Human factors in system design, development, and testing*. Mahwah, NJ: L. Erlbaum.

NORMAN, D. A., 2000. *The design of everyday things*. London: MIT Press.

NORRIS, B. J. and WILSON, J. R., 1997. *Designing safety into products: making ergonomics evaluation a part of the design process*. Nottingham: University of Nottingham, Institute for Occupational Ergonomics.

NOYES, J. M., 2001. *Designing for humans*. Hove: Psychology Press.

OBORNE, D. J., 1995. *Ergonomics at work human factors in design and development*. Chichester: Wiley.

PHEASANT, S., 1996. *Bodyspace: anthropometry, ergonomics and the design of work*. 2nd ed. London: Taylor and Francis.

PHILLIPS, C. A., 2000. *Human factors engineering*. New York: Wiley.

SALVENDY, G., ed., 1997. *Handbook of human factors and ergonomics*. New York: Wiley.

STANTON, N., et al, eds, 2003. *Handbook of human factors and ergonomics methods*. London: Taylor and Francis.

STANTON, N. and YOUNG, M. S., 1999. *A guide to methodology in ergonomics designing for human use*. New York: Taylor and Francis.

TAYYARI, F. and SMITH, J. L., 1997. *Occupational ergonomics principles and applications*. London: Chapman and Hall.

VIOLANTE, F., KILBOM, A., ARMSTRONG, T., eds., 2000. *Occupational ergonomics: work related musculoskeletal disorders of the upper limb and back*. London: Taylor and Francis.

WICKENS, C. D., GORDON, S. E., and LIU, Y., 1998. *An introduction to human factors engineering*. New York: Longman.

WILSON, J. R., CORLETT, N., eds., 1995. *Evaluation of human work: a practical ergonomics methodology*. 2nd ed. London: Taylor and Francis.

Environment

BOYCE, P. R., 2003. *Human factors in lighting*. 2nd ed. London: Taylor and Francis.

COLLINS, L. and SCHNEID, T. D., 2001. *Physical hazards of the workplace*. London: Lewis Publishers.

FAHY, F.J. and WALKER, J. G., 1998. *Fundamentals of noise and vibration*. London: Spon.

HEALTH AND SAFETY EXECUTIVE ,1997. *Lighting at work*. 2nd ed. Sudbury: HSE Books.

Legislation for noise and vibration, 2000. Bury St. Edmonds: Professional Engineering Publishing.

MANSFIELD, N., 2003. *Human response to vibration*. London: Taylor and Francis.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, 2001. *Handbook for industrial noise control*. Toronto: Books for Business.

PARSONS, K. C., 2002. *Human thermal environments: the effect of hot, moderate and cold environments on human health, comfort and performance*. 2nd ed. London: Taylor and Francis.

TREGENZA, P. and LOE, D., 1998. *The design of lighting*. London: E & F Spon.

VICENTE, K. J., 1999. *Cognitive work analysis toward safe, productive, and healthy computer-based work*. Mahwah, NJ: Lawrence Erlbaum Associates.

WREFORD, B. M., 1991. *Environmental assessment of the workplace*. Harrow: Scutari Projects for the Royal College of Nursing.

Stress

COX, T., GRIFFITHS, A., and RIAL-GONZALEZ, E., 2000. *Research on work-related stress*. Luxembourg: OOPEC.

COX, T., 2000. *Organisational interventions for work stress a risk management approach*. Sudbury: HSE Books. [Prepared by: Institute of Work, Health and Organisations, University of Nottingham Business School for the Health and Safety Executive].

CRANDALL, R., PERREWE, P. L., eds., 2003. *Occupational stress: a handbook*. 2nd ed. London: Taylor and Francis.

EUROPEAN AGENCY FOR SAFETY AND HEALTH AT WORK, 2002. *How to tackle psychosocial issues and reduce work-related stress*. Luxembourg: OOOPEC.

EUROPEAN AGENCY FOR SAFETY AND HEALTH AT WORK, 2002. *Practical advice for workers on tackling work-related stress and its causes*. Luxembourg: OOOPEC.

EUROPEAN AGENCY FOR SAFETY AND HEALTH AT WORK, 2002. *Work-related stress*. Luxembourg: OOOPEC.

HEALTH AND SAFETY EXECUTIVE, 1995. *Stress at work a guide for employers*. Sudbury: HSE Books.

SMITH, A. et al, 2000. *The scale of occupational stress: the Bristol Stress and Health at Work Study*. Sudbury: HSE.

Journals

Ergonomics: the official journal of the Ergonomics Society and the International Ergonomics Association. London: Taylor and Francis.

International journal of industrial ergonomics. Amsterdam: Elsevier

Journal of occupational and organizational psychology. Leicester: British Psychological Society.

Journal of occupational psychology. Leicester: British Psychological Society.

Occupational ergonomics. Amsterdam: IOS Press.

Occupational hazards. Cleveland, OH: Penton Publishing.

Work and stress. London: Taylor and Francis.

17.3 Fire

Building regulations and fire safety: procedural guidance. 2001. London: Stationery Office.

The Building Regulations 2000, approved document B: fire safety. Amendments 2002 to approved document B., 2002. London: Stationery Office.

BURCHETT, R., 2001. *An introduction to fire safety for managers*. Leeds: H. and H. Scientific Consultants Ltd.

DAILEY, W., 2000. *A guide to fire safety management*. Leicester: Perpetuity Press.

Fire safety: an employer's guide. 1999. London: Stationery Office.

Knight's guide to fire safety regulations. Issue 39, 2003. London: Butterworth Tolley.

MARCHANT, 2001. *Design for fire safety*. Oxford: Butterworth-Heinemann.

MCMAHON, M., 2001. *Fire safety*. London: Sweet and Maxwell.

MILLER, R. and COULES, K., 2003. *Tolley's fire safety management handbook*. 2nd ed. London: Tolley.

THOMSON, N., 2001. *Fire hazards in industry*. Oxford: Butterworth-Heinemann.

Journals

Fire and materials. Chichester: Wiley.

Fire Safety Engineering. London: CMP Europe.

Fire Safety Journal. Amsterdam: Elsevier.

Fire Technology. London: Kluwer.

Websites

Fire Net, (<http://www.fire.org.uk>)

A website for working fire fighters. Included information for the public and fire safety advice.

Fire Research, (<http://www.fire.nist.gov>)

The website of the Building and Fire Research Laboratory at NIST (National Institute of Standards and Technology). Provides links to software, data and publications.

Fire Safety Engineering Group at the University of Greenwich, (fseg.gre.ac.uk)

Details the research work of the group with links to publications.

National Fire Protection Association (USA), (<http://www.nfpa.org>)

Links to an online catalogue of publications, news alerts, reports and opportunities for professional development.

17.4 Chemicals

Chemical hazards can be evaluated with the assistance of datasheets. Further guidance is available online through COSHH Essentials, (<http://www.coshh-essentials.org.uk>) which helps companies to assess the risks from chemicals and to apply appropriate controls. The Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No. 2677) sets out characteristic properties of substances harmful to health:

- Very toxic: involves extremely serious acute or chronic health risk or death
- Toxic: involves serious acute or chronic health risk or death
- Harmful: involved limited health risks
- Corrosive: destroys living tissue on contact
- Irritant: Non-corrosive, but with immediate prolonged or repeated contact with tissues can cause inflammation
- Carcinogenic: may induce cancer or increase its incidence
- Teratogenic: may involve a risk of non-hereditary birth defects in offspring
- Mutagenic: may involve risk of hereditary genetic defects

Information on the toxicity of chemicals can be derived from a variety of sources:

- Labels on containers
- Manufacturers' or suppliers' data sheets as required by Section 6 of the HASAW Act 1974
- Trade journals
- Technical literature as follows

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CARSON, P. and MUMFORD, C., 2002. *Hazardous chemicals handbook*. 2nd ed. Oxford: Butterworth-Heinemann.

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EISLER, R., 2000. *Handbook of chemical risk assessment: health hazards to humans, plants, and animals*. London: Lewis. [3 vol reference work concerning the effects of chemicals entering the environment].

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Health and safety: the control of major accident hazards regulations 1999. (SI 1999: 743). London: Stationery Office.

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KLETZ, T. A., 1998. *Process plants: a handbook for inherently safer design*. Philadelphia PA: Taylor and Francis.

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LEWIS, R. J., 2000. *Rapid guide to hazardous chemicals in the workplace*. 4th ed. Chichester: Wiley.

LEWIS, R. J. Sr., 2000. *Sax's dangerous properties of industrial materials*. 10th ed. Chichester: Wiley.

LEWIS, R. J. Sr., 2002. *Hazardous chemicals desk reference*. 5th ed. New York: Wiley-Interscience.

MEYER, E., 1998. *Chemistry of hazardous materials*. 3rd ed. Harlow: Pearson Professional Education.

PYBUS, R., 2000. *Croner's guide to COSHH*. Kingston-upon-Thames: Croner.

URBEN, P. G. and PITT, M. J., 1999. *Bretherick's handbook of reactive chemical hazards*. 6th ed. Oxford: Butterworth-Heinemann.

Journals

Chemical hazards in industry. Royal Society of Chemistry. [the subscription includes access to a corresponding online web database]

Journal of loss prevention in the process industries. Amsterdam: Elsevier.

Loss prevention bulletin. Rugby: Institution of Chemical Engineers.

Process safety progress. New York: American Institute of Chemical Engineers.

Website

European Process Safety Centre, (<http://www.epsc.org>)

The EPSC undertakes research in process safety and their web pages link to their reports and other sources of information.

17.5 Construction industry

BARNARD, M. J., 1999. *Tolley's construction health and safety*. London: Tolley Publishing Co.

BIELBY, S. C. and READ, J. A., 2001. *Site safety handbook*. 3rd ed. London: Construction Industry Research and Information Association.

COBLE, R. J., HAUPT, T. C., and HINZE, J., eds, 2000. *The management of construction safety and health*. Rotterdam: Balkema.

COBLE, R. J., 2001. *Construction safety and health management*. Welwyn Garden City: Pearson Higher Education.

DAVIES, V. J. and TOMASIN, K., 1996. *Construction safety handbook*. 2nd ed. London: Thomas Telford.

EUROPEAN AGENCY FOR SAFETY AND HEALTH AT WORK, 2003. *Accident prevention in the construction sector*. Luxembourg: OOEPEC.

GOETSCH, D. L., 2002. *Construction safety and health*. Upper Saddle River, NJ: Prentice Hall.

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PEYTON, R. X. and RUBIO, T. C., 1991. *Construction safety practices and principles*. Florence, KY: Van Nostrand Reinhold.

Rethinking construction 2002. London: Rethinking Construction Ltd. Available from: http://www.rethinkingconstruction.org/rc/publications/reports/Rethinking_Construction_2002.pdf [accessed 9 July 2003]

Websites

Construction confederation, (<http://www.thecc.org.uk>)

Selecting "About us" from the home page of this website explains the benefits of being a member of the organisation. Benefits include the availability of help and advice on health and safety issues. Additionally, non-members can browse some interesting case studies and can access the "Links" page which provides access to a range of construction related organisations and publications.

European Construction Institute, (<http://www.eci-online.org>)

This site has a Member's area and a Visitor's area. The Visitor's area contains information about their latest initiatives, and a Knowledge Bank with details of ECI publications. The Member's area includes details of the work of the Institute and task force reports.

Working well together, (<http://wwt.uk.com>)

"Working well together" is a health and safety campaign for the construction industry which has been developed by the Health and Safety Commission's Construction Industry Advisory Committee, (<http://www.hse.gov.uk/aboutus/hsc/iacs/coniac>). Registration is required to access many areas of the site including access to advice and guidance, examples of good practice, and health and safety statistics.

ukconstruction.com, (<http://www.ukconstruction.com>)

This site includes a health and safety channel.

17.6 Electrical industry

BRITISH STANDARDS INSTITUTION, 1998. BS IEC 61508-3:1998. *Functional safety of electrical equipment*. London: British Standards Institution.

BRITISH STANDARDS INSTITUTION, 2001, BS 7671:2001. *IEE wiring regulations*. 16th ed. London: IEE.

CADICK, J., 1999. *Electrical safety handbook*. 2nd ed. Maidenhead: McGraw-Hill.

CLAPP, A. L., 2001. *National electrical safety code handbook*. 5th ed. Piscataway NJ: IEEE Standards Press. [relates to USA standards].

GROHMANN, S., 2000. *Checking electrical safety measures*. New Delhi: Narosa Publishing House.

HEALTH AND SAFETY EXECUTIVE, 2002. *Your guide to the essentials of electrical safety*. [compact disc audio]. Sudbury: HSE.

KOVACIC, T. M., 2002. *An illustrated guide to electrical safety*. 5th ed. Chicago: American Society of Safety Engineers.

MARKS, T. E., 2002. *Handbook on BS 7671: the IEE wiring regulations*. 6th rev. ed. Nottingham: Radikal Phase.

MARNE, D. J., 2002. *McGraw-Hill's National Electrical Safety Code (NESC) Handbook*. Maidenhead: McGraw-Hill. [relates to USA regulations].

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SMITH, K. O. and MADDEN, J. M., 2002. *Electrical safety and the law: a guide to compliance*. 4th ed. Oxford: Blackwell Science.

WIGGINS, J. H., 2001. *Managing electrical safety*. Rockville: ABS Consulting.

17.7 Occupational health and medicine

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BAMFORD, M., ed., 2003. *Work and health: an introduction to occupational health care*. London: Chapman and Hall.

BAXTER, P. J. et al, 2000. *Hunter's diseases of occupations*. 9th ed. London: Arnold.

GEE, D. et al, 1997. *Workplace health*. London: Health Education Authority.

HARRINGTON, J. M., et al, 1998. *Occupational health*. 4th ed. Oxford: Blackwell Science.

HARRIS, J. S., 1999. *Quick reference to the occupational medicine practice guidelines: evaluation and management of common health problems and functional recovery in workers*. Beverly Farms, MA: OEM Press.

HAWKINS, L., 2002. *Tolley's guide to managing employee health*. London: Tolley.

KOH, D., SENG, C. K., eds., 2001. *Textbook of occupational medicine practice*. 2nd ed. Singapore: World Scientific Publishing.

LEE, Y.-W., 2002. *Recording and notification of occupational accidents and diseases and ILO list of occupational diseases*. Geneva: ILO.

LEVY, B. S., 2000. *Occupational health*. 4th ed. Philadelphia: Lippincott, Williams and Wilkins.

McCUNNEY, R. J., 2002. *A practical approach to occupational and environmental medicine*. 3rd ed. Philadelphia: Lippincott, Williams and Wilkins.

SEATON, A. et al, 1994. *Practical occupational medicine*. London: Arnold.

SNASHALL, D. and PATEL, D., 2003. *ABC of work related disorders*. 2nd ed. London: BMJ.

STANSFELD, S. A. and HEAD, J., 2000. *Work-related factors and ill health: the Whitehall II study*. Sudbury: HSE Books.

WALD, P. H., 2002. *Physical and biological hazards of the workplace*. 2nd ed. Chichester: Wiley.

WILKINSON, C., 1997. *Managing health at work: a guide for managers and workplace health specialists*. London: Spon.

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(in addition to those already listed in Section 8)

Journal of occupational and environmental medicine. Philadelphia: Lippincott, Williams and Wilkins.

Journal of occupational rehabilitation. London: Kluwer.

Occupational and environmental medicine. London: BMJ.