

Fifth Edition



# Introduction to **HEALTH AND SAFETY IN CONSTRUCTION**

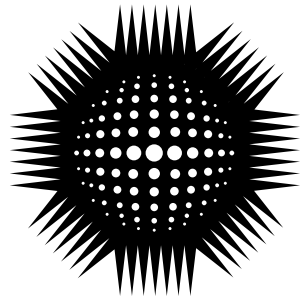
**Phil Hughes MBE  
and Ed Ferrett**

for the **NEBOSH** National Certificate in Construction  
Health and Safety



ROUTLEDGE

# **Introduction to Health and Safety in Construction**



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Fifth Edition

# Introduction to Health and Safety in Construction

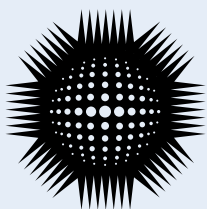
For the NEBOSH  
National Certificate in Construction Health and  
Safety

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# Preface to the fifth edition

The *Introduction to Health and Safety in Construction* has quickly established itself as the standard text for students taking the NEBOSH National Certificate in Construction Health and Safety, and for those taking other courses in building or construction. It is also of great value to those working in the construction industry at all levels – particularly construction site managers and foremen. As it has become a significant work of reference for managers with health and safety responsibilities, it is a matter of prime importance that it should be kept up to date, as far as is possible, with new legislation and recent developments.

There has been concern over a number of years at the poor record of health and safety in the construction industry. The legal health and safety requirements for all places of work are numerous and complex; it is the intention of the authors to offer an introduction to the subject for all those who have the maintenance of good health and safety standards as part of their employment duties or those who are considering the possibility of a career as a health and safety professional. Health and safety is well recognised as an important component of the activities of any organisation, not only because of the importance of protecting people from harm but also because of the growth in the direct and indirect costs of accidents. These costs have increased higher than the rate of retail price inflation by a considerable amount in the last few years as the number of civil claims and awards have risen each year. It is very important that basic health and safety legal requirements are clearly understood by all organisations, whether public or private, large or small. A good health and safety performance is normally only achieved when health and safety is effectively managed so that significant risks are identified and reduced by adopting appropriate high quality control measures.

The NEBOSH National Certificate in Construction Health and Safety is established as a leading health and safety qualification for the construction industry, with over 15,000 successful candidates. It is designed for supervisors and managers within the construction industry and to provide a sound breadth of underpinning knowledge that enables them to discharge more effectively their duties with respect

to health and safety in construction activities. Many larger construction organisations choose the NEBOSH National Construction Certificate as a key part of their supervisors' or management development programme. By ensuring that line managers have a sound understanding of the principles of risk management they build an effective safety culture in the company. Smaller construction organisations often choose the NEBOSH National Construction Certificate as the appropriate qualification for the manager taking the lead on health and safety issues.

The course is divided into three distinct units, each of which is assessed separately. The three units are: NGC1 – Management of health and safety, NCC1 – Managing and controlling hazards in construction activities and NCC2 – Construction health and safety practical application. This development offers the opportunity for additional and more flexible course formats and students may now study parallel courses (in, say, general health and safety and fire) without repeating the management unit. Students who decide to take individual units will, on passing, receive a Unit Certificate. However, it has necessitated the need for an additional chapter (Chapter 7) on construction law and management to deal with those construction topics that were in the original management syllabus.

This fifth edition has been produced to include all the recent syllabus changes and to update the health and safety legislation contained within it, with particular regard to the following changes in legislation:

- ▶ The Enterprise and Regulatory Reform Act 2013 (Section 69)
- ▶ The Health and Safety at Work etc. Act 1974 (Civil Liability) (Exceptions) Regulations 2013
- ▶ The Report of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR)
- ▶ The Control of Asbestos Regulations 2012
- ▶ Classification, Labelling and Packaging of Substances and Mixtures Regulation (European) adopting into EU UN Globally Harmonised System of Classification and Labelling of Chemicals (GHS);
- ▶ Construction (Design and Management) (CDM) Regulations 2015
- ▶ The revocation of The Notification of Conventional Tower Cranes Regulations 2010

- ▶ The revocation of The Construction (Head Protection) Regulations 1969
- ▶ The revocation of The Site Waste Management Plans Regulations 2008.

Other changes made by the Health and Safety Executive (HSE) have also been reflected in this edition. These include:

- ▶ Fees for intervention
- ▶ The withdrawal of the Approved Code of Practice (L21) for the Management of Health and Safety at Work Regulations
- ▶ The revised health and safety management system outlined in HSG65 – Managing for health and safety.

The publication of the amended HSG65 – Managing for health and safety, recommends a new model for health and safety management based on the ‘Plan, Do, Check, Act’ principle replacing the ‘Policy, Organising, Planning, Measuring performance, Auditing and Review (POPMAR)’ model. This has produced a significant change to NGC1 – the management unit. This change produced a very large Do element which we have split into two chapters – Do1 that covers ‘organising’ and Do2 that covers ‘risk assessment and controls’ resulting in an extra chapter in this edition. The other major change to NGC1 is the Construction (Design and Management) (CDM) Regulations 2015.

In a similar way, the hazards unit NCC1 syllabus has been amended to reflect changes to the Construction (Design and Management) (CDM) Regulations 2015 and other relevant revoked legislation. The tutor references for all elements have been updated.

Since the first edition of this book was published, NEBOSH has allowed us to use past NEBOSH examination questions at the end of each chapter. Over the last few years, it has become evident that a small number of candidates have memorised these questions and the contents of the accompanying examiner reports. As a result of this problem, NEBOSH has withdrawn permission to use past examination questions and changed the format of examiner reports. We have, therefore, included our own questions at the end of each chapter using the NEBOSH format. Candidates that can successfully answer these questions unaided should have no problems in the examinations.

NEBOSH is anxious to dispel the myths surrounding their examinations and have provided training courses for course providers to introduce changes to the syllabuses and to answer any queries so that their students get the best possible preparation for the assessment tasks. The NEBOSH website is also a very useful channel of communication with course providers and students.

As mentioned in previous editions, it is the policy of NEBOSH to examine new relevant legislation 6 months

after its introduction whether it is specifically mentioned in the syllabus document or not.

This book has been written specifically for students who are studying for the NEBOSH National Certificate in Construction Safety and Health but will also be useful for those studying a variety of building and construction courses, such as the Higher National Certificate and Diploma. It was felt appropriate to produce a textbook which mirrored the Construction Certificate syllabus in its revised unitised form and in a single volume to the required breadth and depth. The syllabus, which follows the general pattern for health and safety management set by the Health and Safety Executive in their guidance HSG65, is risk and management based so it does not start from the assumption that health and safety is best managed by looking first at the causes of failures. Fortunately, failures such as accidents and ill-health are relatively rare and random events in most workplaces.

The book is also intended as a useful reference guide for managers and directors with health and safety responsibilities and for safety representatives. Chapter 19 summarises all the most commonly used Acts and Regulations. It was written to provide an easily accessible reference source for students during and after the course and many others in industry and commerce such as managers, supervisors and safety representatives.

Finally, since one of the objectives of the book is to provide a handbook for the use of any person who has health and safety as part of their responsibilities, we thought that it would be helpful to add a few useful topics which are outside the syllabus. These include fast-track settlement of compensation claims following the Woolfe reforms (Chapter 5) and demolition using explosives (Chapter 18). We have also added a chapter on the international and environmental aspects of construction health and safety that are not included in the NCC syllabus. This will be useful for those who need to travel and work overseas.

We hope that you find this new edition to be useful.

**Phil Hughes**  
**Ed Ferrett**

# Acknowledgements

Throughout the book, definitions used by the relevant legislation and the Health and Safety Executive and advice published in Approved Codes of Practice or various Health and Safety Commission/Executive publications have been utilised. Most of the references produced at the end of each Act or Regulation summary in Chapter 19 are drawn from the HSE Books range of publications.

The authors' grateful thanks go to Liz Hughes and Jill Ferrett for proof reading and patience and their administrative help during the preparation of this edition. The authors are particularly grateful to Liz for the excellent study guide that she has written for all NEBOSH students, which is included at the end of this book, for the section on report writing in Chapter 5 and the sections on home safety and cycle safety in Chapter 20. Liz gained an honours degree in psychology at the University of Warwick, later going on to complete a Master's degree at the same university. She taught psychology in further and higher education, where most of her students were either returning to education after a gap of many years, or were taking a course to augment their existing professional skills. She went

on to qualify as a social worker specialising in mental health, and later moved into the voluntary sector where she managed development for a number of years. Liz then helped to set up and manage training for the National Schizophrenia Fellowship (now called Rethink) in the Midlands.

We would also like to acknowledge the additional contribution made by Jill Ferrett for the help that she gave during the research for the book and with some of the word processing. Given her background in economics and higher education, her advice on certain legal and economic issues has been particularly valuable.

We would like to thank Teresa Budworth, the Chief Executive of NEBOSH, for her support during this fifth edition and various NEBOSH and HSE staff for their generous help and advice. Finally we would like to thank Stephen Vickers, the immediate past Chief Executive of NEBOSH for his encouragement at the beginning of the project and Sadé Lee and all the production team at Routledge who have worked hard to translate our dream into reality.

# About the authors



**Phil Hughes** MBE is a well-known UK safety professional with over 40 years worldwide experience as Head of Environment, Health and Safety at two large multinationals: Courtaulds and Fisons. Phil started work in health and safety in the Factory Inspectorate at the Derby District UK in 1969 and moved to Courtaulds

in 1974. He joined IOSH in that year and became Chairman of the Midland Branch, then National Treasurer and was President in 1990–1991. Phil was very active on the NEBOSH Board for over 10 years and served as Chairman from 1995 to 2001. He was also a Professional Member of the American Society of Safety Engineers for many years and has lectured widely throughout the world. Phil received the RoSPA Distinguished Service Award in May 2001 and was a Director and Trustee of RoSPA from 2003 to 2010. He received an MBE in the New Year Honours List 2005 for services to Health and Safety. Phil is a Chartered Fellow of IOSH.



**Ed Ferrett** is an experienced health and safety consultant who has practised for over 25 years. With a PhD and an honours degree in Mechanical Engineering from Nottingham University, Ed spent 30 years in Higher and Further education, retiring as the Head of

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Ed was a member of the NEBOSH Board from 1995 until 2010 and Vice Chair from 1999 to 2008. He has delivered many health and safety courses and has been a lecturer in NEBOSH courses for various course providers. He has been an External Examiner for an MSc course and BSc course in Health and Safety at two UK Universities, a Reporting Inspector for Independent Further and Higher Education with the British Accreditation Council and a NEBOSH Ambassador. Ed is a Chartered Engineer and a Chartered Member of IOSH.



# How to use this book and what it covers

*Introduction to Health and Safety in Construction Fifth Edition* is basically designed to:

1. cover the syllabus of the NEBOSH National Certificate 2015 editions in Construction Health and Safety (NGC1, NCC1 and NCC2);
2. go beyond the NEBOSH syllabus in covering some construction, environmental, home safety and international aspects;
3. provide a good basis in OSH for students who wish to progress to the NEBOSH Diploma or a University first or second degree;
4. provide a text which more than covers the IOSH Managing Safely syllabus or other similar awards;
5. give summaries of UK OSH legislation relevant to the NGC1 and NCC1;
6. help students study, revise and sit the examinations;
7. provide brief guidance to students who carry out the practical assessment;
8. provide brief guidance for searching the internet;
9. supply a range of significant OSH websites;
10. provide a good updated reference text for

managers with OSH responsibilities and OSH practitioners in industry and commerce;

11. provide numerous templates for typical fire and safety forms.

We expect the book to be used as a basis for training, and as further reference when students are back in their own workplaces. We believe that all questions can be answered from the material in the book but we would also urge students to study some of the documents given as reference sources at the end of each chapter. It would be helpful to visit some of the websites where further detailed guidance is available. The websites featured in the text were found to be correct at the time of writing in April 2015.

There is a companion website (<http://www.routledge.com/cw/hughes/>) where animated versions of the workplace inspection exercises in Chapter 5 can be accessed. They show the hazards and then a corrected version appropriately labelled. Copies of the forms in Chapter 23 can be found in Word; many of the illustrations are also available for downloading and use in training materials; and there is a range of multiple answer quizzes for revision purposes.



Poor



Corrected

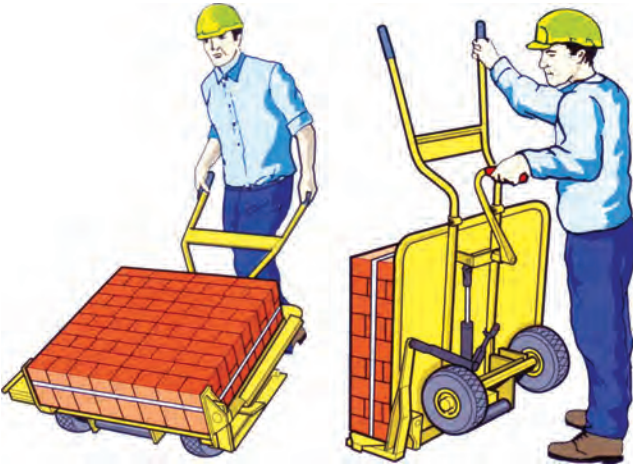


Poor



Corrected

Animated inspection exercises




Usable images




Figure X1 shows an overview of occupational health and safety and how it fits with the NEBOSH National Certificate in Construction Health and Safety syllabus. For more detail see the NEBOSH syllabus guide at [www.nebosh.org.uk](http://www.nebosh.org.uk)

The extra chapters in Figure X2 are designed to help the student understand UK OSH legislation. There is information on how to study, the standard for NEBOSH answers, how to research the internet and essential websites for OSH information, plus a range of form templates which can be freely used by readers.





# First Aid Treatment and Accident Record



Date: \_\_\_\_\_ FIRST AIDER AND/OR INJURED PERSON No: \_\_\_\_\_

Part A: FIRST AID TREATMENT/EXAMINATION RECORD

**1. About the person who was seen/treated**

Name \_\_\_\_\_ Address \_\_\_\_\_ Postcode \_\_\_\_\_

Occupation \_\_\_\_\_ Employer \_\_\_\_\_

**2. About you, the person filling in this record**

If the incident DID NOT happen to you fill in your name, address and occupation

Name \_\_\_\_\_ Address \_\_\_\_\_ Postcode \_\_\_\_\_

Occupation \_\_\_\_\_

**3. Treatment given (if any)**

please provide details \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Part B: INCIDENT AND INJURY DETAILS (if believed to be a work related incident complete the following)

**4. Details of incident**

Say when it happened: Date \_\_\_\_/\_\_\_\_/\_\_\_\_ Time \_\_\_\_\_

Say where it happened. State which room or area \_\_\_\_\_

Say how the incident happened - give the cause if you can \_\_\_\_\_

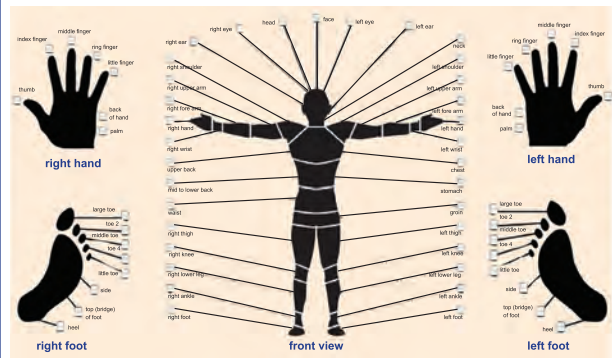
If the person who had the incident suffered an injury, say what it was \_\_\_\_\_

Please sign the record and date it

Signature \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

**5. Further details of injury (if any)**

<input type="checkbox"/> Amputation	<input type="checkbox"/> Burn - Heat	<input type="checkbox"/> Electric shock	<input type="checkbox"/> Puncture
<input type="checkbox"/> Break/Fracture	<input type="checkbox"/> Concussion/headache	<input type="checkbox"/> Foreign body	<input type="checkbox"/> Scald
<input type="checkbox"/> Bruises (contusions)	<input type="checkbox"/> Crush	<input type="checkbox"/> Graze	<input type="checkbox"/> Splinters and blisters
<input type="checkbox"/> Burn - Chemical	<input type="checkbox"/> Cuts (laceration)	<input type="checkbox"/> Multiple Injury	<input type="checkbox"/> Sprain
			<input type="checkbox"/> Strain



**6. For the Person Involved in the Incident Only**

By ticking this box I give consent to my employer and Best Practice (if not employer) to disclose my personal information and details of the incident which appear on this form to safety representatives and representatives of employee safety for them to carry out health and safety functions given to them by law.

Signature \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

FIRST AIDER PLEASE IMMEDIATELY INFORM RELEVANT TEAM LEADER/LINE MANAGER AFTER FIRST AID TREATMENT IS COMPLETED

**7. BP Co Team Leader/Line manager Information - Please complete immediately and inform your line manager**

name of person notified \_\_\_\_\_ date \_\_\_\_\_

Was a risk assessment carried out? YES/NO \_\_\_\_\_ If yes who did it? \_\_\_\_\_

If no, why not? \_\_\_\_\_

Was correct protective clothing worn? YES/NO \_\_\_\_\_

Why did the incident occur? What was its cause? \_\_\_\_\_

What action has been taken to prevent a recurrence? \_\_\_\_\_

**Type of incident:** First Aid Injury  \*HSE Reportable - 7 days  Other (give details)   
 \*Must also notify Factory Manager/Health & Safety Manager immediately \*Hospital Visit  \*HSE Specified Serious Injury   
 \*Lost time injury

**Level of Investigation required (tick box)** NONE  MINIMAL  LOW  MEDIUM  HIGH

Above must be completed within 24 hours of incident

8. BP Co Management Review - by Line Manager & Health and Safety Manager or Deputy

**Comments**

Name \_\_\_\_\_ Signed \_\_\_\_\_ Date \_\_\_\_\_

**Type of Incident is correct**  **Level of Investigation is correct**

Name \_\_\_\_\_ Signed \_\_\_\_\_ Date \_\_\_\_\_

9. H&S Management System Entry - ONLY FOLLOWING COMPLETION OF 1-8 ABOVE

Entry by \_\_\_\_\_ Number \_\_\_\_\_

Action Allocated to \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Forms in Word that can be downloaded for use at work (see Chapter 23 for full set)

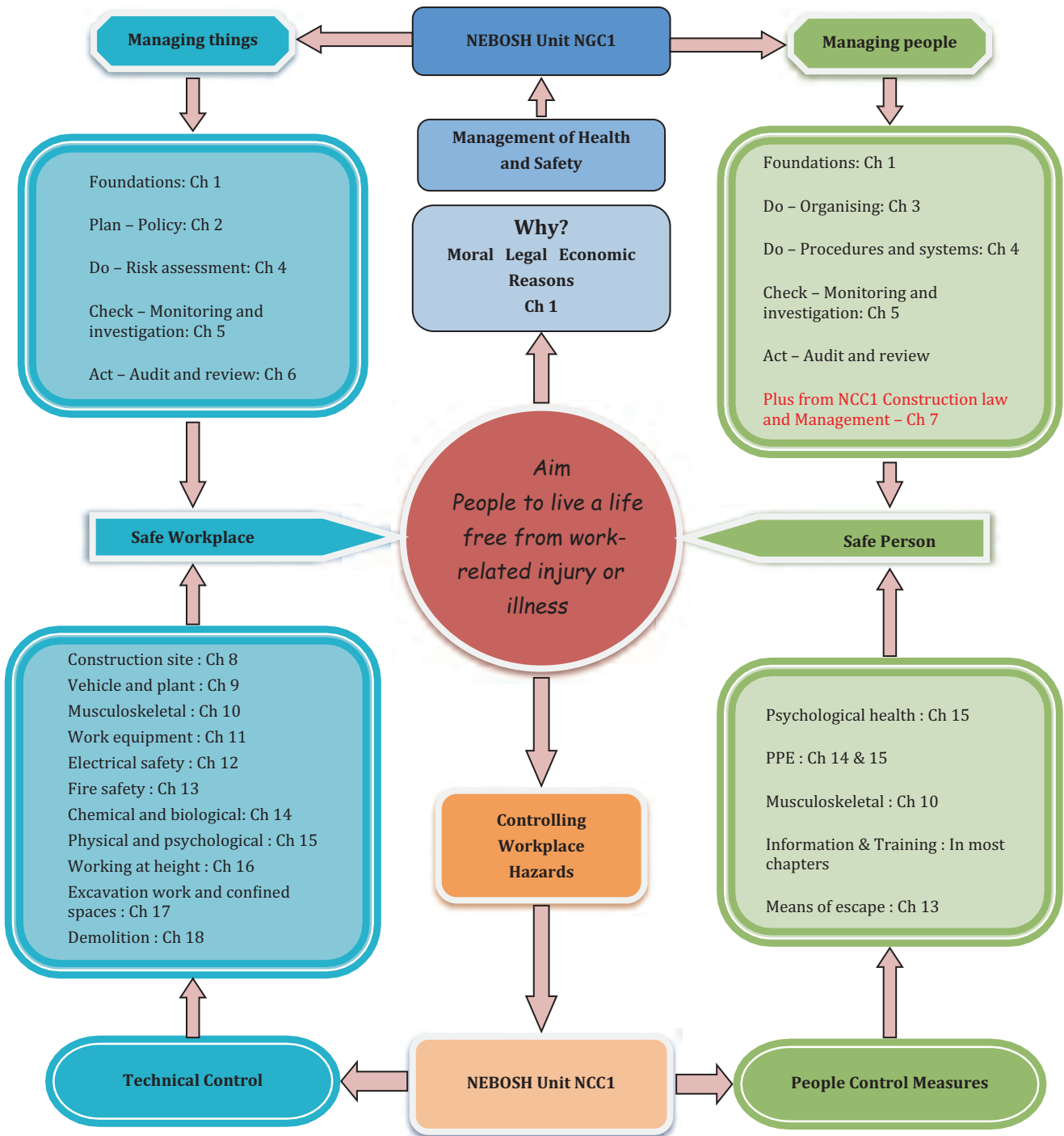


Figure X1 Health and safety overview and link to NEBOSH NGC1 and NCC1 syllabus

Table X.1 Syllabus for the NEBOSH NGC1 and NCC1&2			
Element No	Chapter	Title	Recommended Study Hours
<b>Unit NGC1 : Management of health and safety</b>			
1	1	Foundations in health & safety	7
2	2	Health and safety management systems – Plan	3
3	3	Health and safety management systems – Organising – Do 1	7
3	4	Health and safety management systems – Risk assessment and controls – Do 2	10
4	5	Health and safety management systems – Monitoring investigation and recording – Check	5
5	6	Health and safety management systems – Audit and review – Act	4
<b>Minimum total tuition time for Unit NGC1</b>			<b>36</b>
<b>Recommended private study time for NGC1</b>			<b>23</b>
<b>Unit NCC1 : Managing and controlling hazards in construction activities</b>			
1	7	Construction law and management	5
2	8	Construction site hazards and controls	7
3	9	Vehicle and plant movement – hazards and control	5
4	10	Musculoskeletal hazards and control	7
5	11	Work equipment – hazards and risk control	6
6	12	Electrical safety	4
7	13	Fire safety	6
8	14	Chemical and biological health – hazards and risk control	8
9	15	Physical and psychological health – hazards and risk control	5
10	16	Working at height – hazards and risk control	7
11	17	Excavation work and confined spaces – hazards and risk control	5
12	18	Demolition and deconstruction hazards and risk control	3
<b>Minimum total tuition time for Unit NCC1</b>			<b>68</b>
<b>Recommended private study time for NCC1</b>			<b>29</b>
<b>Unit NCC2 : Construction health and safety practical application</b>			
1	21	Construction health and safety practical application	2
<b>Minimum unit tuition time</b>			<b>2</b>
<b>Recommended private study time</b>			<b>6</b>
<b>Minimum total tuition time</b>			<b>106</b>
<b>Recommended private study time</b>			<b>58</b>
<b>Total overall hours</b>			<b>164</b>

The NEBOSH NCC syllabus is divided into three units. Each of the first two units NGC1 and NCC1 is further divided into a number of elements

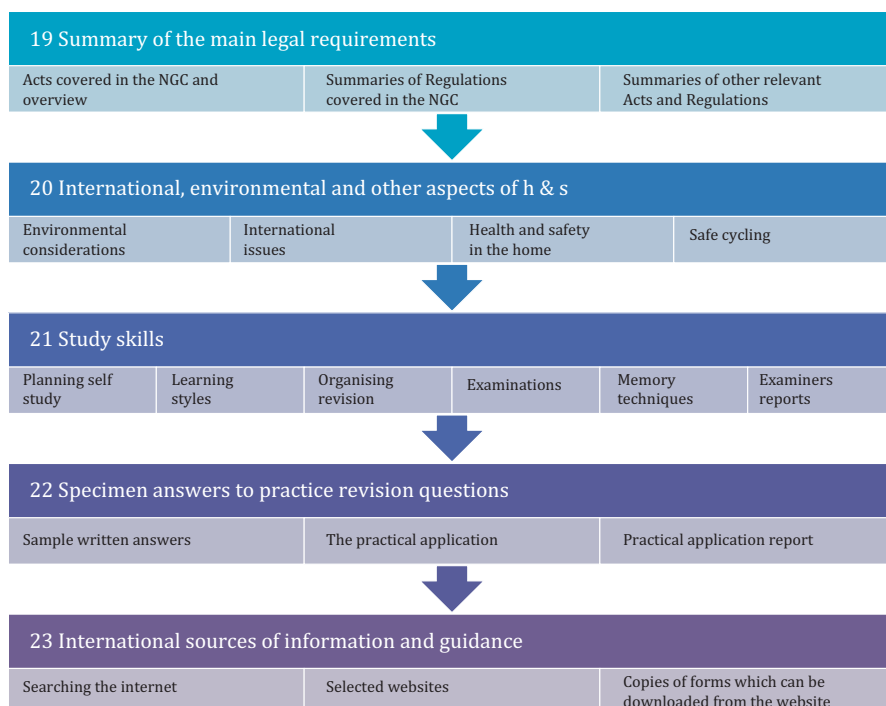


Figure X2 Chapters 19–23

# List of principal abbreviations

Most abbreviations are defined within the text. Abbreviations are not always used if it is not appropriate within the particular context of the sentence. The most commonly used ones are as follows:

ACGIH	American Conference of Governmental Industrial Hygienists	CEN	Comité Européen de Normalisation
ACL	Approved Carriage List	CENELEC	Comité Européen de Normalisation Électrotechnique
ACM	Asbestos Containing Material	CIB	Chartered Institute of Building
ACoP	Approved Code of Practice	CIRC	Centre International de Recherche sur le Cancer (France)
ADR	Accord dangereux routier (European agreement concerning the international carriage of dangerous goods by road)	CIS	International Occupational Safety and Health Information Centre
AFNOR	French Standards Association	CISDOC	International Labour Organisation database available on OSHROM
AFSSET	French Agency for Environmental and Occupational Health Safety	CISPR	Comité International Spécial des Perturbations Radioélectriques
AIB	Asbestos Insulation Board	CLAW	Control of Lead at Work Regulations
ALARP	As low as reasonably practicable	CLP	Classification Packaging and Labelling
AND	European provisions concerning the international carriage of dangerous goods by inland waterways	CNS	Comité de Normalisation de la Soudure (France)
ANSI	American National Standards Institute	CO	Carbon monoxide
ASCC	Australian Safety and Compensation Council	COMAH	Control of Major Accident Hazards Regulations (UK)
ASEAN	Association of Southeast Asian Nations	CONIAC	Construction Industry Advisory Committee
ASSE	American Society of Safety Engineers	COSHH	Control of Substances Hazardous to Health Regulations (UK)
ASTM	American Society for Testing and Materials (now ASTM International)	CPR	Cardiopulmonary resuscitation
ATSDR	Agency for Toxic Substances and Diseases Registry (USA)	CSA	Canadian Standards Association
ATEX	Atmosphere Explosive (used in the context of two European Directives, 94/9/EC and 1999/92/EC)	CTS	Carpal tunnel syndrome
BA	Breathing apparatus	CVD	Cardiovascular disease
BAT	Best available techniques	dB	Decibels
BEBOH	British Examining Board in Occupational Hygiene	DB	Dry bulb
BIOH	British Institute of Occupational Hygiene	dB(A)	Decibel (A-weighted)
BLR	Blue light radiation	dB(C)	Decibel (C-weighted)
BPM	Best practicable means	DSE	Display Screen Equipment
BRE	Building Research Establishment	DSEAR	Dangerous Substances and Explosive Atmospheres Regulations (UK)
BSI	British Standards Institution	E&W	England and Wales
CAR	Control of Asbestos Regulations (UK)	EA	Environment Agency
CAS	Chemical Abstracts Service (USA)	EAV	Exposure Action Value
CBI	Confederation of British Industry	EC	European Community
CD	Consultative document	EEF	Engineering Employers Federation
CDM	Construction (Design and Management) Regulations (UK)	ELV	Exposure Limit Value
		EMAS	Employment Medical Advisory Service
		EPA	Environmental Protection Act 1990 (UK)
		EU	European Union
		EU-OSH	European Agency for Safety and Health at Work
		FAO	Food and Agriculture Organisation of the United Nations

## List of principal abbreviations

FOPS	Falling-Object Protective Structure(s)	mg/m <sup>3</sup>	Milligrams per cubic metre
FPO	Fire Prevention Officer	MHOR	Manual Handling Operations Regulations (UK)
GATT	General Agreement on Tariffs and Trade	MHSW	Management of Health and Safety at Work Regulations (UK)
GHGB	Good Health is Good Business	MORR	Management of Occupational Road Risk
GHS	Globally Harmonised System of Classification and Labelling of Chemicals	MOT	Ministry of Transport (still used for vehicle tests in UK)
GTAW	Gas tungsten arc welding	MSD	Musculoskeletal disorder
HACCP	Hazard analysis critical control point	MSDS	Material Safety Data Sheet(s)
HAI	Hospital acquired infections	NEBOSH	National Examination Board in Occupational Safety and Health
HAM	Hand-held monitor	NIOSH	National Institute for Occupational Safety and Health (NIOSH), USA
HASAC	Health and Safety Advice Centre	NVQ	National Vocational Qualification
HAV	Hand-Arm Vibration	OECD	Organisation for Economic Cooperation and Development
HGV	Heavy Goods Vehicle	OEL	Occupational exposure limit
HOPE	Healthcare, Occupational and Primary for Employees	OES	Occupational exposure standard
HSCER	Health and Safety (Consultation with Employees) Regulations (UK)	OHS	Occupational Health Service
HSE	Health and Safety Executive	OHSAS	Occupational Health and Safety Assessment Series
HSG	Health and Safety Guidance Booklet	OHSLB	Occupational Health and Safety Lead Body
HSW Act	Health and Safety at Work etc. Act 1974 (UK)	OIAC	Oil Industry Advisory Committee
HWL	Healthy Working Lives	OSH	Occupational Safety and Health or Occupational Health and Safety
IAC	Industry Advisory Committee	OSHA	Occupational Safety and Health Administration (USA)
IChemE	Institution of Chemical Engineers	PPE	Personal Protective Equipment
IEA	International Ergonomics Association	ppm	Parts per million
IEC	International Electrotechnical Commission	PTFE	Polytetrafluoroethylene
IEE	Institution of Electrical Engineers	PUWER	Provision and Use of Work Equipment Regulations (UK)
IET	Institution of Engineering and Technology	PVC	Polyvinyl chloride
ILO	International Labour Organisation	RCD	Residual current device
INDG	Industry Guidance	REACH	Registration Evaluation and Authorisation and Restriction of Chemicals
IOH	Institution of Occupational Hygienists	RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (UK)
IOSH	Institution of Occupational Safety and Health	ROES	Representative(s) of Employee Safety
IPCS	International Programme on Chemical Safety	ROPS	Rollover Protective Structure(s)
IPMS	Institution of Professionals, Managers and Specialists	RoSPA	Royal Society for the Prevention of Accidents
IPPC	Integrated pollution prevention and control	RPE	Respiratory protective equipment
IPPR	Institute for Public Policy Research	RRFSO	Regulatory Reform Fire Safety Order (UK)
IPR	Integrated pollution regulation	RTA	Road traffic accident
IRM	Institute of Risk Management	SaHW	Safe and Healthy Working
IRSM	International Institute of Risk and Safety Management	SFAIRP	So far as is reasonably practicable
ISBN	International Standard Book Number(ing)	SMEs	Small and medium-sized enterprises
ISO	International Organisation for Standardisation	SPL	Sound Pressure Level
LD50	Lethal dose fifty	STEL	Short-term Exposure Limit
LDLo	Lethal dose low	SWL	Safe working load
LEA	Local Enterprise Agency	SWP	Safe working pressure
LEAL	Lower Exposure Action Level	TLV	Threshold limit value
LEL	Lower explosive limit	TUC	Trades Union Congress
Leq	Equivalent continuous sound level	TWA	Time-Weighted Average
Leq(8)hr	Equivalent continuous sound level (normalised to 8 hours)	UEAL	Upper Exposure Action Level
LEV	Local exhaust ventilation	UK	United Kingdom
LNG	Liquefied natural gas		
LOLER	Lifting Operations and Lifting Equipment Regulations (UK)		
LPG	Liquefied petroleum gas		
MEL	Maximum exposure limit		

ULD Upper Limb Disorder  
UNEP United Nations Environment Programme  
UNESCO United Nations Educational, Scientific and  
Cultural Organisation  
VAWR Vibration at Work Regulations (UK)  
WAHR Work at Height Regulations (UK)  
WBV Whole-Body Vibration  
WEL Workplace Exposure Limit

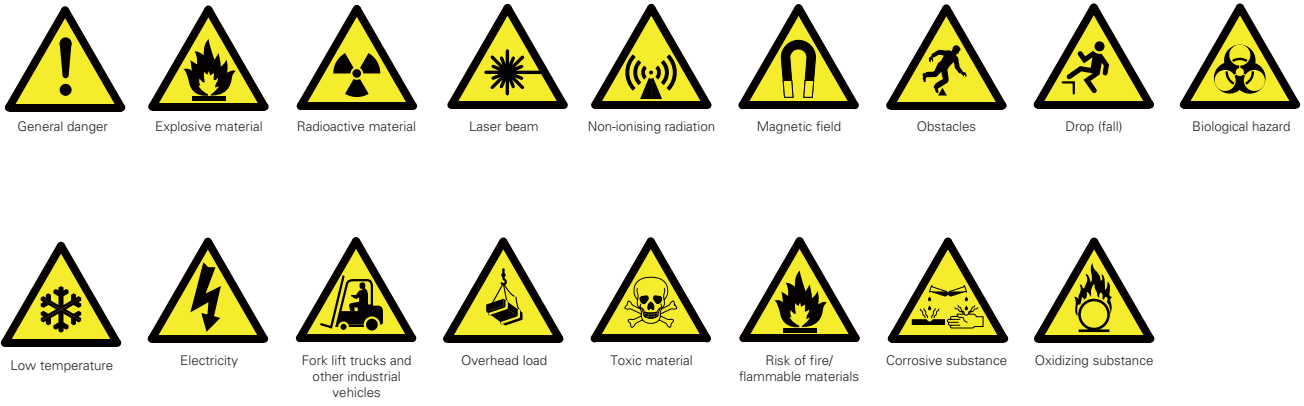
WHO World Health Organisation  
WRULD Work-related Upper Limb Disorder  
See ILO for more information on abbreviations and  
acronyms at: [http://www.ilo.org/legacy/english/  
protection/safework/cis/products/safetytm/acronym.htm](http://www.ilo.org/legacy/english/protection/safework/cis/products/safetytm/acronym.htm)

# Safety signs

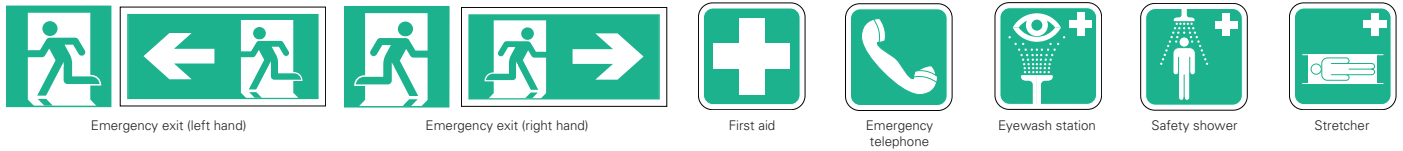
## PROHIBITION SIGNS



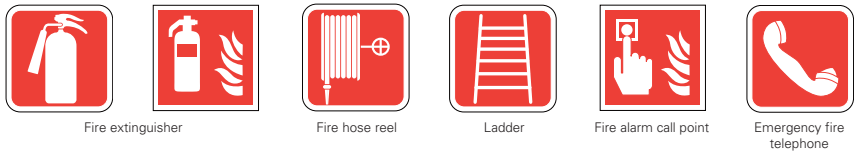
## WARNING SIGNS



## MEANS OF ESCAPE AND EMERGENCY EQUIPMENT (SAFE CONDITION) SIGNS



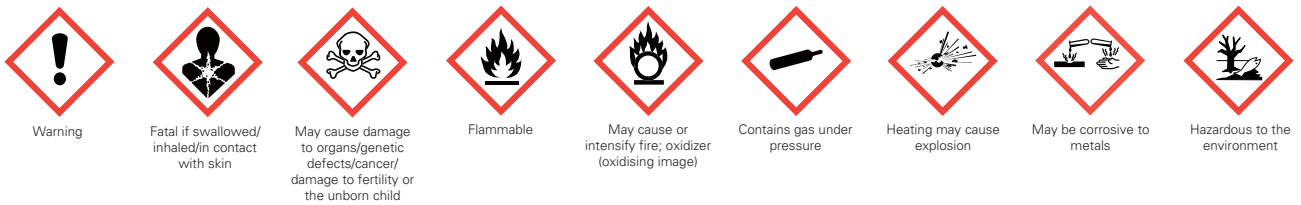
## FIRE SAFETY SIGNS



## MANDATORY ACTION SIGNS



## SIGNS FOR GLOBALLY HARMONISED SYSTEM (GHS) OF CLASSIFICATION AND LABELLING OF CHEMICALS





## HSE coded hand signals

### A. General signals

#### START

Both arms are extended horizontally with the palms facing forwards



#### STOP

End of movement the right arm points upwards with the palm facing forwards



#### END

Of the operation both hands are clasped at chest height



### B. Vertical movements

#### RAISE

The right arm points upwards with the palm facing forward and slowly makes a circle



#### LOWER

The right arm points downwards with the palm facing inwards and slowly makes a circle



#### VERTICAL DISTANCE

The hands indicate the relevant distance



### C. Horizontal movements

#### MOVE FORWARDS

Both arms are bent with the palms facing upwards, and the forearms make slow movements towards the body



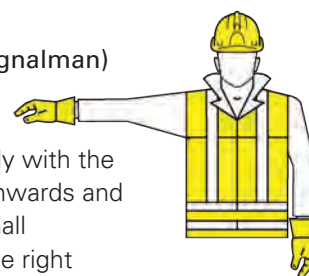
#### MOVE BACKWARDS

Both arms are bent with the palms facing downwards, and the forearms make slow movements away from the body



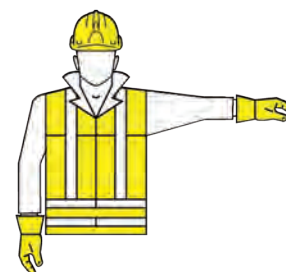
#### RIGHT (of the signalman)

The right arm is extended more or less horizontally with the palm facing downwards and slowly makes small movements to the right



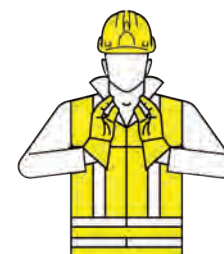
#### LEFT (of the signalman)

The left arm is extended more or less horizontally with the palm facing downwards and slowly makes small movements to the left



#### HORIZONTAL DISTANCE

The hands indicate the relevant distance



### D. Danger

#### DANGER

Emergency stop – both arms point upwards with the palms facing forwards



Artwork from [www.hse.gov.uk/pubns/priced/164.pdf](http://www.hse.gov.uk/pubns/priced/164.pdf)





# Foundations in health and safety

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- 1.2 Moral, legal and financial reasons for promoting good standards of health and safety ▶ 4**
- 1.3 The legal framework for the regulation of health and safety including sources and types of law ▶ 7**
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### This chapter covers the following NEBOSH learning objectives:

- 1 Outline the scope and nature of occupational health and safety
- 2 Explain the moral, legal and financial reasons for promoting good standards of health and safety in the workplace
- 3 Explain the legal framework for the regulation of health and safety including sources and types of law
- 4 Explain the scope, duties and offences of employers, managers, employees and others under the Health and Safety at Work etc. Act 1974
- 5 Explain the scope, duties and offences of employers, managers, employees and others under the Management of Health and Safety at Work Regulations
- 6 Outline the legal and organisational health and safety roles and responsibilities of clients and their contractors
- 7 Outline the principles of assessing and managing contractors

## 1.1 The scope and nature of occupational health and safety

### 1.1.1 Introduction

Occupational health and safety is relevant to all branches of industry, business and commerce including traditional industries, information technology companies, the National Health Service, care homes, schools, universities, leisure facilities and offices.

The purpose of this chapter is to introduce the foundations on which appropriate health and safety management systems may be built. Occupational health and safety affects all aspects of work. In a low hazard organisation, health and safety may be supervised by a single competent manager. In a high hazard manufacturing plant, many different specialists, such as engineers (electrical, mechanical and civil), lawyers, medical doctors and nurses, trainers, work planners and supervisors may be required to assist the professional health and safety practitioner in ensuring that there are satisfactory health and safety standards within the organisation.

Construction is the largest industry in the UK and accounts for 8% of its gross domestic product. It employs 10% of the working population and has an annual turnover of over £250 billion. The construction industry has a world reputation for the quality of its work but it remains one of the most dangerous in the UK. In 2004/05, the fatal injury rate (per 100,000 workers) was 3.4 while the industrial average was 0.8. In 2006/07, there was a 28% increase in fatalities in the industry, which accounted for 32% of all notifiable fatal injuries. In August 2010, the Health and Safety Executive (HSE) reported that in 2009, the industry saw an 11.5% drop in output (compared to 5% for the economy as a whole) followed by a slow return to growth over the last few years. However, the construction industry still represents 8.3% of the whole UK economy and there are over 300,000 construction enterprises employing in excess of 2.5m workers.

In an attempt to reduce the rate of fatal and major injury to its workers, the construction industry set itself a target to reduce these injuries significantly over a

five-year period and some progress has been made. The construction client who commissions the work is a very important agent in the drive for improved health and safety standards. The client should insist on evidence of a good health and safety record and performance of a contractor at the tendering stage, and ensure that health and safety standards are being met on site. He/she should also require that all the people working on the site are properly trained for their particular job.

There are many barriers to the achievement of good standards. The pressure of production or performance targets, financial constraints and the complexity of the organisation are typical examples of such obstacles. In difficult economic times, organisations need to reduce their costs and this often impacts on the management of health and safety such as the maintenance of complex machinery and the training of workers in safe systems of work. However, there are some powerful incentives for organisations to strive for high health and safety standards. These incentives are moral, legal and financial.

Corporate responsibility, a term used extensively in the 21st century world of work, covers a wide range of issues. It includes the effects that an organisation's business has on the environment, human rights and Third World poverty. Health and safety in the workplace is an important corporate responsibility issue.

Corporate responsibility has various definitions. However, broadly speaking, it covers the ways in which organisations manage their core business to add social, environmental and economic value in order to produce a positive, sustainable impact on both society and the business itself. Terms such as 'corporate social responsibility', 'socially responsible business' and 'corporate citizenship' all refer to this concept.

The Health and Safety Executive's (HSE) mission is to ensure that the risks to health and safety of workers are properly controlled. In terms of corporate responsibility, it is working to encourage organisations to:

- ▶ improve health and safety management systems to reduce injuries and ill-health;

- ▶ demonstrate the importance of health and safety issues at board level;
- ▶ report publicly on health and safety issues within their organisation, including their performance against targets.

The HSE believes that effective management of health and safety:

- ▶ is vital to employee well-being;
- ▶ has a role to play in enhancing the reputation of businesses and helping them achieve high-performance teams;
- ▶ is financially beneficial to business.

This chapter covers the legal responsibilities that exist between people who control premises and those who use them, and between contractors and those who hire them; and the duties of suppliers, manufacturers and designers of articles and substances for use at work.

The chapter also describes the legal responsibilities that exist between duty-holders under the Construction (Design and Management) Regulations (CDM) to ensure that health and safety is fully integrated into the management of any construction project and to encourage everyone involved with the project (the client, designer and principal contractor) to work together effectively.

### 1.1.2 Some basic definitions

Before a detailed discussion of health and safety issues can take place, some basic occupational health and safety definitions are required.

- ▶ **Health** – The protection of the bodies and minds of people from illness resulting from the materials, processes or procedures used in the workplace.
- ▶ **Safety** – The protection of people from physical injury. The borderline between health and safety is ill-defined and the two words are normally used together to indicate concern for the physical and mental well-being of the individual at the place of work.
- ▶ **Welfare** – The provision of facilities to maintain the health and well-being of individuals at the workplace. Welfare facilities include washing and sanitation arrangements, the provision of drinking water, heating, lighting, accommodation for clothing, seating (when required by the work activity or for rest), eating and rest rooms. First-aid arrangements are also considered as welfare facilities.
- ▶ **Occupational or work-related ill-health** – This is concerned with those illnesses or physical and mental disorders that are either caused or triggered by workplace activities. Such conditions may be induced by the particular work activity of the individual, or by activities of others in the workplace. The time interval between exposure and the onset of the illness may be short (e.g. asthma attacks) or long (e.g. deafness or cancer).



**Figure 1.1** At work in Southampton 2015 – site operated well into the night

- ▶ **Environmental protection** – These are the arrangements to cover those activities in the workplace which affect the environment (in the form of flora, fauna, water, air and soil) and, possibly, the health and safety of employees and others. Such activities include waste and effluent disposal and atmospheric pollution.
- ▶ **Accident** – This is defined by the Health and Safety Executive (HSE) as ‘any unplanned event that results in injury or ill-health of people, or damage or loss to property, plant, materials or the environment or a loss of a business opportunity’. Other authorities define an accident more narrowly by excluding events that do not involve injury or ill-health. This book will always use the HSE definition.
- ▶ **Near miss** – This is any incident that could have resulted in an accident. Knowledge of near misses is very important as research has shown that, approximately, for every 10 ‘near miss’ events at a particular location in the workplace, a minor accident will occur.
- ▶ **Dangerous occurrence** – This is a ‘near miss’ which could have led to serious injury or loss of life. Dangerous occurrences are defined in the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (often known as RIDDOR) and are always reportable to the enforcement authorities.

Examples include the collapse of a scaffold or a crane or the failure of any passenger-carrying equipment.

▶ **Hazard and risk –**

- ▷ A **hazard** is something with the *potential* to cause harm (this can include articles, substances, plant or machines, methods of working, the working environment and other aspects of work organisation). Hazards take many forms including, for example, chemicals, electricity and noise. A hazard can be ranked relative to other hazards or to a possible level of danger.
- ▷ A **risk** is the *likelihood* of potential harm from that hazard being realised. Risk (or strictly the level of risk) is also linked to the severity of its consequences. A risk can be reduced and the hazard controlled by good management.

It is very important to distinguish between a *hazard* and a *risk* – the two terms are often confused and activities such as construction work are frequently called high risk when they are high hazard. Although the hazard will continue to be high, the risks will be reduced as controls are implemented. The level of risk remaining when controls have been adopted is known as the **residual risk**. There should only be high residual risk where there is poor health and safety management and inadequate control measures.

**1.2 Moral, legal and financial reasons for promoting good standards of health and safety**

The first concern of most managers when they start work at a new organisation is to understand the implications of their new role and to form good relationships with other members of the team. Concerns about health and safety are often not a first or even second consideration. So why bother about health and safety?

There are three basic drivers for good health and safety management; these are moral, legal and financial reasons. The moral reasons are centred on the need to protect people from injury and disease while they are at work. The legal reasons are embodied in the criminal and civil law, and the financial reasons come as a consequence of infringements of health and safety law with the consequent fines, compensation payments, associated financial costs and even, in extreme cases, imprisonment. Each of these reasons will now be discussed in turn.

**1.2.1 Moral reasons**

The moral reasons are supported by the occupational accident and disease rates.

**Accidents**

Accidents at work can lead to serious injury and even death. Over recent years, between 130 and 190 workers have been fatally injured at their place of work and over 20,000 others suffered major injuries such as amputations, fractures and burns. Statistics are collected on all people who are injured at workplaces – not just employees – and over 350 members of the public each year have been fatally injured at places of work. Since 1995 suicides and trespassers on the railways have been included in the HSE figures – this has led to a significant increase in the overall fatality figures.

Table 1.1 shows a typical annual accident breakdown between employees, self-employed and members of the public. These figures give an indication of the scale of the problem even though the actual figures for any given year may be slightly higher or lower. The industries with the highest fatality and major accident rates (per 100,000 employees) are agriculture, construction, transport, waste and recycling and manufacturing and the most common causes are slipping or tripping (41%), and falls from a height (16%). A further large number of injuries to employees caused an absence from work of over seven days. Of these less serious injuries, the most common causes were handling, lifting or carrying (36%), and slipping or tripping (24%).

Accident statistics are published each year by the HSE and indicate that there is a need for health and safety awareness even in occupations which many would consider very low hazard, such as the health services and hotels. In fact over 70% of all deaths occur in the service sector and manufacturing is considerably safer than construction and agriculture. These latter two industries account for almost half of all fatal injuries to workers. Some of the most common causes of deaths and serious injuries in the agricultural sector include handling livestock and using tractors, quad bikes and chainsaws. Finally, a further significant proportion of work-related accidents occur while travelling on roads and not at the workplace.

These injury figures show that there is clearly a very strong moral case for improvement in health and safety performance.

**Table 1.1** Annual accidents for different groups of people

	<b>Fatalities</b>	<b>Major</b>
<b>Total</b>	520	46,000
Employees	130	20,000
Self-employed	40	1,000
Members of the public	350	25,000



## Disease

Work-related ill-health and occupational disease can lead to absence from work and, in some cases, to death. Such occurrences may also lead to costs to the State (the Industrial Injuries Scheme) and to individual employers (sick pay and, possibly, compensation payments). Each year thousands of people die from work-related diseases mainly due to past working conditions. The industry sectors having ill-health rates that consistently have been higher than the rate for all industries are health and social work, public administration and education.

**Table 1.2** Approximate proportions (%) of cases of work-related ill-health reported by General Practitioners in any year

Type of illness	Percentage
Musculoskeletal disorders	53
Mental ill-health (stress, anxiety)	36
Dermatitis and other skin disorders	5
Other diagnosis including infections	4
Respiratory disease	2
Hearing loss	0.1

Stress and musculoskeletal disorders are the largest causes of work-related ill-health. There are on average over 400,000 workers suffering from stress-related ill-health each year, of which 50% have suffered for one year or longer causing over 10 million working days lost each year. Over 400,000 workers suffer from musculoskeletal disorders (mainly back pain and upper limb disorders) and 60% of these people suffer for one year or longer causing over 7 million working days lost each year. Data from 300 General Practitioners (GPs) (Table 1.2) confirms that musculoskeletal disorders are the most common type of work-related illness, but mental ill-health (usually caused by stress) accounts for more working days lost (Table 1.4).

Occupational asthma is the UK's fastest growing workplace disease and affects between 1,500 and 3,000 people each year. Every year in the UK, 7,000 people are thought to contract occupational asthma that is either caused by their work or is made worse by it. In some cases people are left disabled and unable

to work. Other work-related respiratory diseases include chronic obstructive pulmonary disease (COPD), pneumoconiosis and silicosis. According to GPs, there are 8,500 new cases of work-related respiratory diseases each year.

Work-related cancer is another serious problem and results in 8,000 deaths and 13,500 new cases each year. The leading cause of these deaths is occupational exposure to asbestos which accounts for at least 4,500 deaths each year although this figure is expected to increase in the future. The most common forms of such cancers are lung cancer and mesothelioma.

Recent research has shown that one in five people who are on sickness leave from work for 6 weeks will stay off work and leave paid employment.

### 1.2.2 Legal reasons

The legal reasons concerning the employer's duty of care in criminal and civil law will be covered later in this chapter.

Some statistics on legal enforcement indicate the legal consequences resulting from breaches in health and safety law. There have been some very high compensation awards for health and safety cases in the Civil Courts and fines in excess of £100,000 in the Criminal Courts. Table 1.3 shows the typical number of enforcement notices served each year in Great Britain. Most notices are served in the manufacturing, construction and agricultural sectors. Local authorities serve 40% of all improvement notices and 20% of all prohibition notices. A small number of enforcement notices are also issued by the Office of Rail Regulation (ORR).

Table 1.3 also indicates the typical number of prosecutions by the HSE and local authorities each year. The HSE (together with the Procurator Fiscal in Scotland) present 80% of the prosecutions and the remainder are presented by Local Authority Environmental Health Officers. These prosecutions result in approximately £15 million in fines each year. Most of these prosecutions were for infringements of various Construction Regulations (including the Work at Height Regulations) and the Provision and Use of Work Equipment Regulations.

There are clear legal reasons for effective health and safety management systems.

**Table 1.3** Typical recent annual health and safety enforcement activity in Great Britain

	Improvement notices	Deferred prohibition	Immediate prohibition	Offences prosecuted
HSE	6,664	25	3,430	1,000
Local Authorities	2,412	24	1,235	200
Total	9,076	49	4,665	1,200

Note

\* Includes 42 prosecutions by the Procurator Fiscal in Scotland.

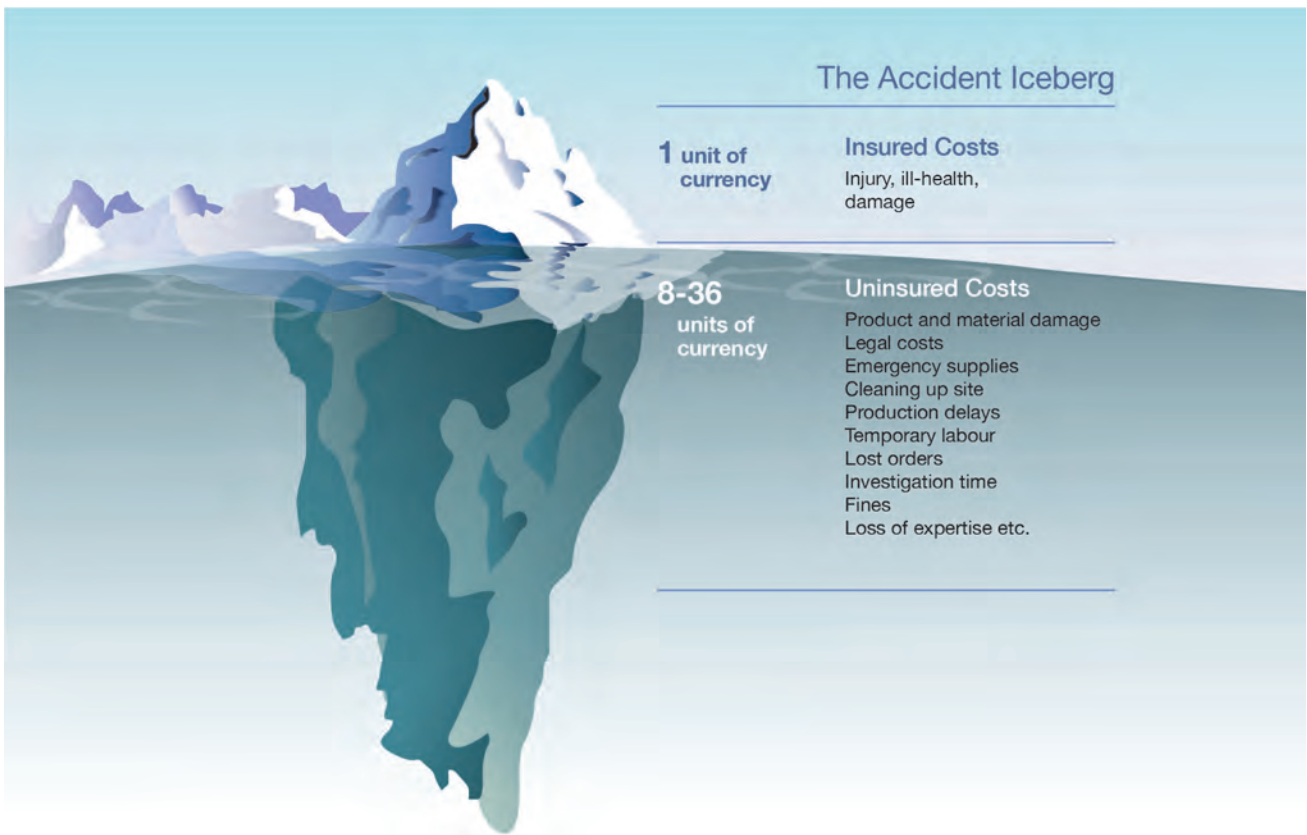


Figure 1.2 Insured and uninsured costs

### 1.2.3 Financial reasons

#### Costs of accidents

Any accident or incidence of ill-health will cause both direct and indirect costs and incur an insured and an uninsured cost. It is important that all of these costs are taken into account when the full cost of an accident is calculated. In a study undertaken by the HSE, it was shown that indirect costs or hidden costs could be 36 times greater than direct costs of an accident. In other words, the direct costs of an accident or disease represent the tip of the iceberg when compared to the overall costs (Figure 1.2). Annually over 27 million days are lost in the UK due to injuries and work-related ill-health and Table 1.4 shows the causes of these lost days. The total cost of illness and injury to UK industry has been estimated as £14 billion – 60% on ill-health and about 40% on injuries and fatalities.

There is clearly a strong moral, financial and legal case to do more to reduce this unacceptable level of injury and ill-health in the workplace

Table 1.4 Causes of working days lost in the UK

Cause	Percentage
Stress and anxiety	40
Musculoskeletal disorders	28
Injury	17
Other illnesses	15

Source: HSE.

### 1.2.4 Societal expectations of good standards of health and safety

Societal expectations are not static and tend to rise over time, particularly in a wealthy nation like the UK. For example, the standards of safety accepted in a motor car 50 years ago would be considered to be totally inadequate at the beginning of the 21st century. People expect safe, quiet, comfortable cars that do not break down and which retain their appearance for many thousands of miles. Industry should strive to deliver these same high standards for the health and safety of employees or service providers. The question is whether societal expectations are as great an influence on workplace safety standards as they are on product safety standards. Society can influence standards through:

- ▶ people only working for good employers. This is effective in times of low unemployment;
- ▶ national and local news media highlighting good and bad employment practices;
- ▶ schools teaching good standards of health and safety;
- ▶ the purchase of fashionable and desirable safety equipment, such as trendy crash helmets for mountain bikes;
- ▶ buying products only from responsible companies. The difficulty of defining what is responsible has been partly overcome through ethical investment criteria but this is possibly

not widely enough understood to be a major influence;

- ▶ watching TV and other programmes which improve safety knowledge and encourage safe behaviour from an early age.

### 1.2.5 The business case for health and safety

The business case for health and safety is centred on the potential costs of poor standards of health and safety. Fines in excess of £250,000 and even higher levels of compensation payments are not uncommon. As mentioned earlier, the costs may be direct or indirect and insured or uninsured. Some examples of these follow.

#### Direct costs

These are costs which are directly related to the accident and may be insured or uninsured.

Insured direct costs normally include:

- ▶ claims on employers and public liability insurance;
- ▶ damage to buildings, equipment or vehicles;
- ▶ any attributable production and/or general business loss;
- ▶ the absence of employees.

Uninsured direct costs include:

- ▶ fines resulting from prosecution by the enforcement authority;
- ▶ sick pay;
- ▶ some damage to product, equipment, vehicles or process not directly attributable to the accident (e.g. caused by replacement staff);
- ▶ increases in insurance premiums resulting from the accident;
- ▶ any compensation not covered by the insurance policy due to an excess agreed between the employer and the insurance company;
- ▶ legal representation following any compensation claim.

#### Indirect costs

These are costs which may not be directly attributable to the accident but may result from a series of accidents. Again these may be insured or uninsured.

Insured indirect costs include:

- ▶ a cumulative business loss;
- ▶ product or process liability claims;
- ▶ recruitment of replacement staff.

Uninsured indirect costs include:

- ▶ loss of goodwill and a poor corporate image;
- ▶ accident investigation time and any subsequent remedial action required;
- ▶ production delays;
- ▶ extra overtime payments;

- ▶ lost time for other employees, such as a first-aider, who tend to the needs of the injured person;
- ▶ the recruitment and training of replacement staff;
- ▶ additional administration time incurred;
- ▶ first-aid provision and training;
- ▶ lower employee morale possibly leading to reduced productivity.

Some of these items, such as business loss, may be uninsurable or too prohibitively expensive to insure. Therefore, insurance policies can never cover all of the costs of an accident or disease because either some items are not covered by the policy or the insurance excess is greater than the particular item cost.

### 1.2.6 Employers' Liability Compulsory Insurance

The Employers' Liability (Compulsory Insurance) Act makes it a legal requirement for all employers to have employers' liability insurance. This ensures that any employee, who successfully sues his/her employer following an accident, is assured of receiving compensation irrespective of the financial position of the employer.

For employers, the insurance covers the cost of legal fees and compensation in the event of a claim by a worker. Only very few businesses are not required to have employers' liability insurance.

There is a maximum penalty of up to £2,500 for every day without appropriate cover for employers who do not have such insurance. In addition, one or more copies of the current certificate must be displayed at each place of business and be 'reasonably protected' from being defaced or damaged. Recently, the rules requiring an employer to display the certificate have changed, so that the requirement will be satisfied if the certificate is made available in electronic format and is reasonably accessible to relevant employees.

## 1.3 The legal framework for the regulation of health and safety including sources and types of law

### 1.3.1 Sub-divisions of law

There are two sub-divisions of the law that apply to health and safety issues: criminal law and civil law.

#### Criminal law

Criminal law consists of rules of behaviour laid down by the Government or the State and, normally, enacted by Parliament through Acts of Parliament. These rules or Acts are imposed on the people for the protection of the people. Criminal law is enforced by several different Government Agencies who may prosecute individuals



and organisations for contravening criminal laws. It is important to note that, except for very rare cases, only these agencies are able to decide whether to prosecute an individual or not.

An individual or organisation who breaks criminal law is deemed to have committed an offence or crime and, if he/she is prosecuted, the court will determine whether he/she is guilty or not. If the individual is found guilty, the court could sentence him/her to a fine or imprisonment. Owing to this possible loss of liberty, the level of proof required by a Criminal Court is very high and is known as proof 'beyond reasonable doubt', which is as near certainty as possible. Although the prime object of a Criminal Court is the allocation of punishment, the court can award compensation to the victim or injured party. One example of criminal law is the Road Traffic Act, which is enforced by the police. However, the police are not the only criminal law enforcement agency. The Health and Safety at Work (HSW) etc. Act is another example of criminal law and this is enforced either by the HSE or Local Authority Environmental Health Officers (EHOs). Other agencies which enforce criminal law include the Fire Authority, the Environment Agency, Trading Standards and Customs and Excise.

There is one important difference between procedures for criminal cases in general and criminal cases involving health and safety. The prosecution in a criminal case has to prove the guilt of the accused beyond reasonable doubt. Although this obligation is not totally removed in health and safety cases, Section 40 of the HSW Act 1974 transferred, where there is a duty to do something 'so far as is reasonably practicable' or 'so far as is practicable' or to 'use the best practicable means', the onus of proof to the accused to show that there was no better way to discharge his/her duty under the Act. However, when this burden of proof is placed on the accused, they only need to satisfy the court on the balance of probabilities that what they are trying to prove has been done.

### Civil law

Civil law concerns disputes between individuals or individuals and companies. An individual sues another individual or company to address a civil wrong or tort (or delict in Scotland). The individual who brings the complaint to court is known as the claimant or plaintiff (pursuer in Scotland), and the individual or company who is being sued is known as the defendant (defender in Scotland).

The Civil Court is concerned with liability and the extent of that liability, rather than guilt or non-guilt. Therefore, the level of proof required is based on the 'balance of probability', which is a lower level of certainty than that of 'beyond reasonable doubt' as required by the Criminal Court. If a defendant is found to be liable, the court would normally order him/her to

pay compensation and possibly costs to the plaintiff. However, the lower the balance of probability, the lower the level of compensation awarded. In extreme cases, where the balance of probability is just over 50%, the plaintiff may 'win' the case but lose financially because costs may not be awarded and the level of compensation is low. The level of compensation may also be reduced through the defence of **contributory negligence**, which is discussed later under 1.3.6. For cases involving health and safety, civil disputes usually follow accidents or illnesses and concern negligence or a breach of statutory duty. The vast majority of cases are settled 'out of court'. Although actions are often between individuals, where the defendant is an employee who was acting in the course of his/her employment during the alleged incident, the defence of the action is transferred to his/her employer – this is known as **vicarious liability**. The civil action then becomes one between the individual and the employer.

### 1.3.2 The legal system in England and Wales

The description that follows applies to England and Wales (and with a few minor differences to Northern Ireland). Only the court functions concerning health and safety are mentioned. Figure 1.3 shows the court hierarchy in schematic form.

#### Criminal law

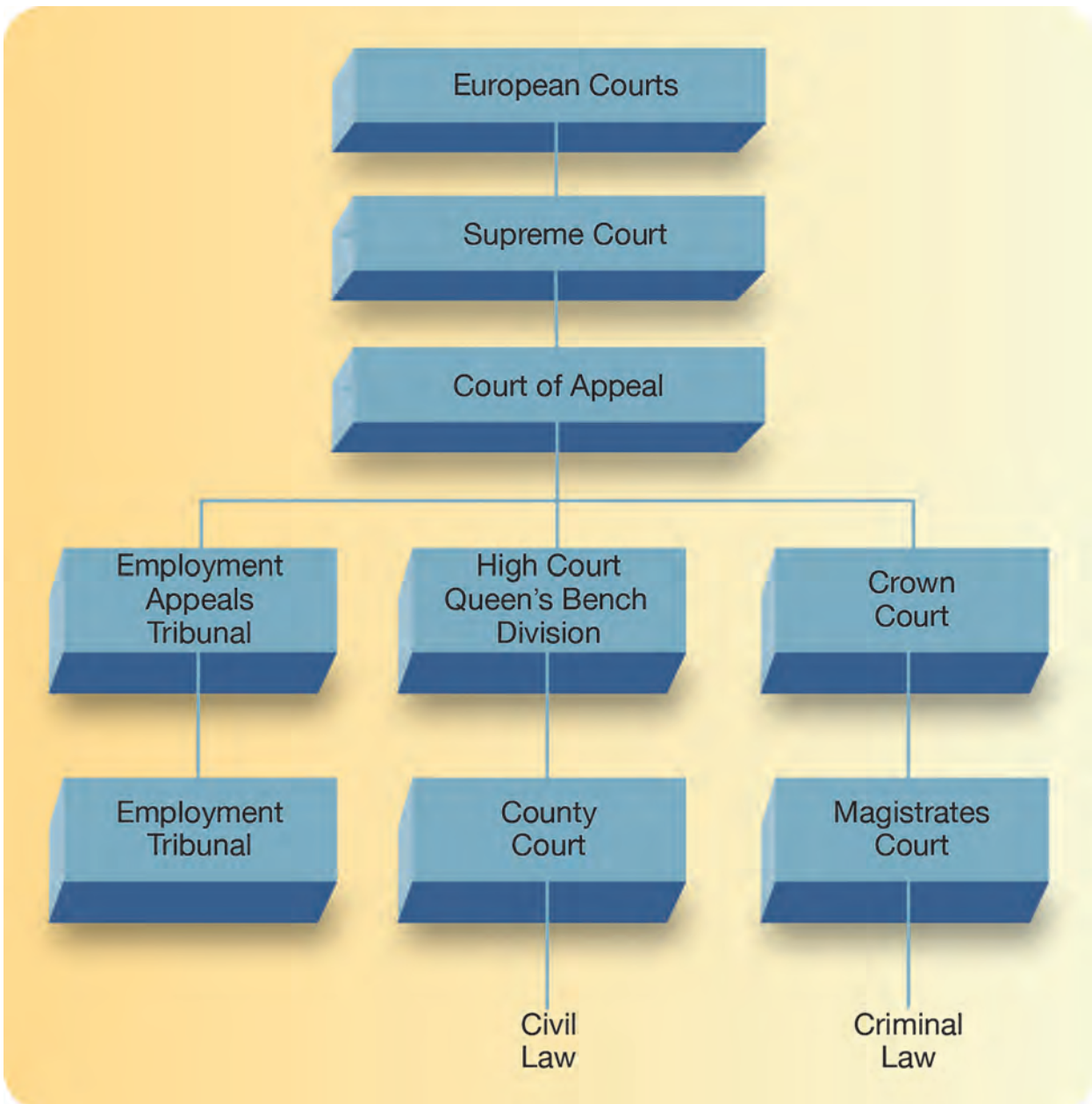
##### Magistrates Courts

Most criminal cases begin and end in the Magistrates Courts. Health and safety cases are brought before the court by enforcement officers (Health and Safety Executive or Local Authority Environmental Health Officers) and they are tried by a bench of three lay magistrates (known as Justices of the Peace) or a single district judge. The lay magistrates are members of the public, usually with little previous experience of the law, whereas the district judge is legally qualified.

Since March 2015, the Magistrates Court may impose an unlimited fine for health and safety offences. Magistrates are also able to imprison for up to 12 months. The vast majority of health and safety criminal cases are dealt with in the Magistrates Court. See Table 19.1 in Chapter 19 for details of penalties under the Health and Safety Offences Act 2008.

##### Crown Court

The Crown Court hears the more serious cases (indictable), which are passed to them from the Magistrates Court – normally because the sentences available to the magistrates are felt to be too lenient. Cases are heard by a judge and jury, although some cases are heard by a judge alone. The penalties available



**Figure 1.3** The court system in England and Wales for health and safety showing the principal courts

to the Crown Court are an unlimited fine and up to 2 years' imprisonment for breaches of enforcement notices. The Crown Court also hears appeals from the Magistrates Court.

Appeals from the Crown Court are made to the Court of Appeal (Criminal Division), who may then give leave to appeal to the most senior court in the country – the Supreme Court. The most senior judge at the Court of Appeal is the Lord Chief Justice.

In England and Wales, the **Crown Prosecution Service (CPS)** is the main prosecuting authority for criminal cases prepared by the police and other investigators. CPS prosecutors present cases in both the Magistrates' Courts and the higher courts. The head of the CPS is the Director of Public Prosecutions (DPP). In Northern Ireland, the main prosecuting authority is the **Public**

#### **Prosecution Service for Northern Ireland (PPSNI)**

and has a similar role to the CPS. Both organisations are independent of the police and decide whether a prosecution is to proceed to court. For health and safety offences, the CPS decides on manslaughter and corporate manslaughter cases (see 1.4).

#### **Civil law**

##### **County Court**

The lowest court in civil law is the County Court, which only deals with minor cases (for compensation claims of up to £50,000 if the High Court agrees). Cases are normally heard by a judge sitting alone. For personal injury claims of less than £5,000, a small claims court is also available.