

Traffic Officer Service – Specialist Human Behaviour Evaluation of Single Crewing Deployment

Feasibility Report - Appendices

Submitted to:



Date - 22/12/11 / Ref No – OD/006
Project Sponsor – Alan Apps

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REFERENCE MATERIAL CD

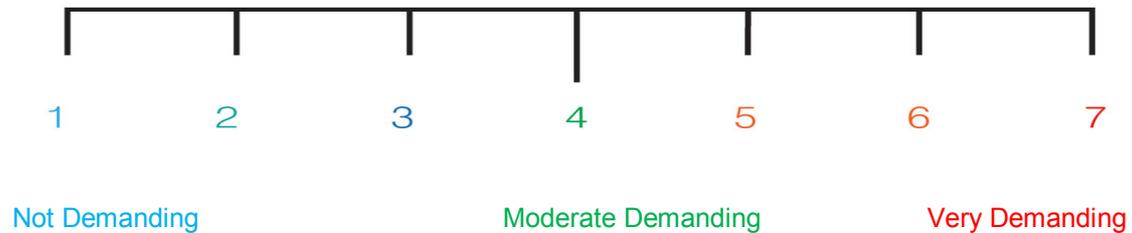
APPENDIX A TEST QUESTIONNAIRES

A1 WORKLOAD SCALES

The following scales relate to task demands. You will be asked to complete these scales every hour. When asked to do so, please rate how demanding you feel the past hour has been.

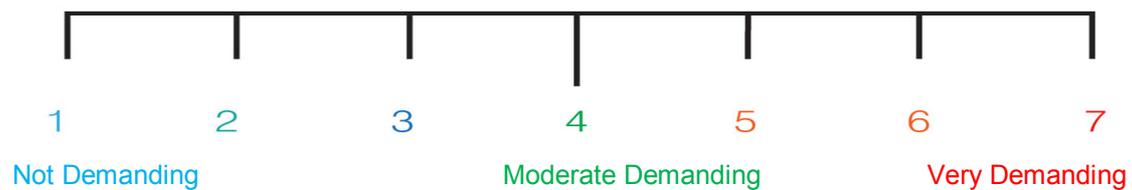
Mental Demand

How mentally demanding were the tasks?



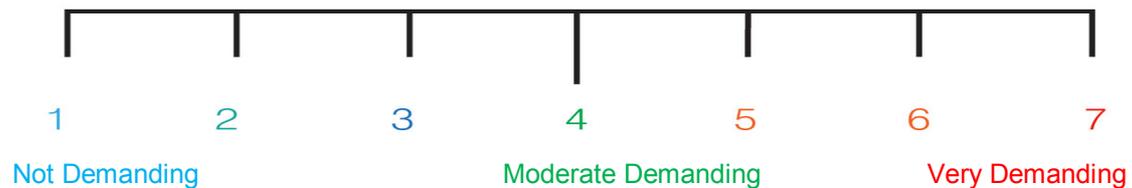
Physical Demand

How physically demanding were the tasks?



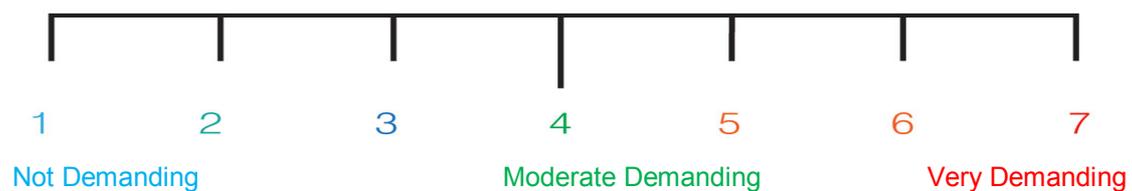
Temporal Demand

How hurried or rushed was the pace of the tasks?



Frustration

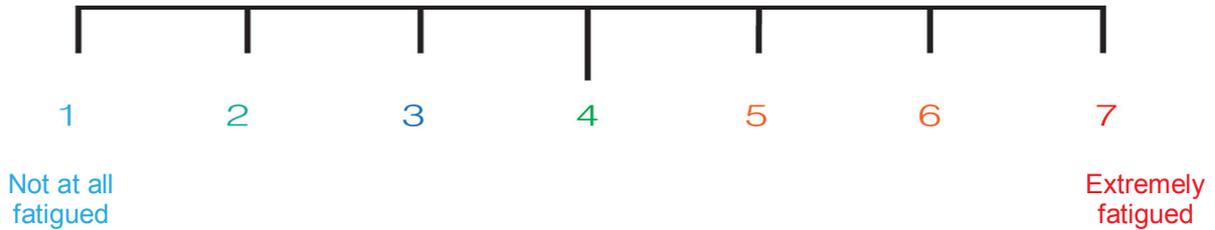
How frustrated, discouraged, irritated, stressed have you been?



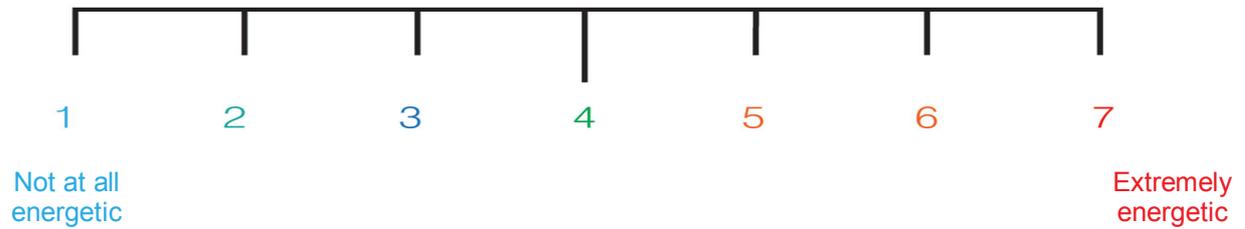
A2 FATIGUE SCALES

The following scales relate to how energetic you are feeling. The following scales relate to physical feelings. You will be asked to complete these scales every hour. When asked to do so, please rate how you currently feel.

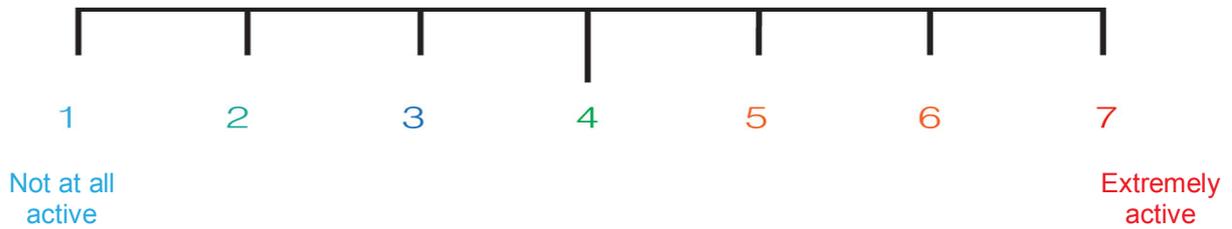
Fatigue



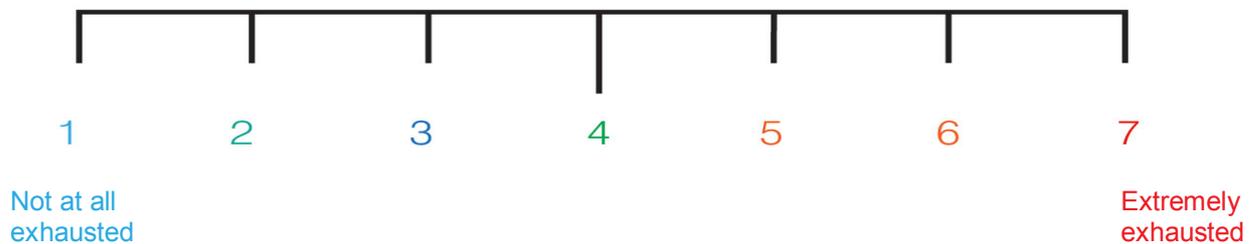
Energy



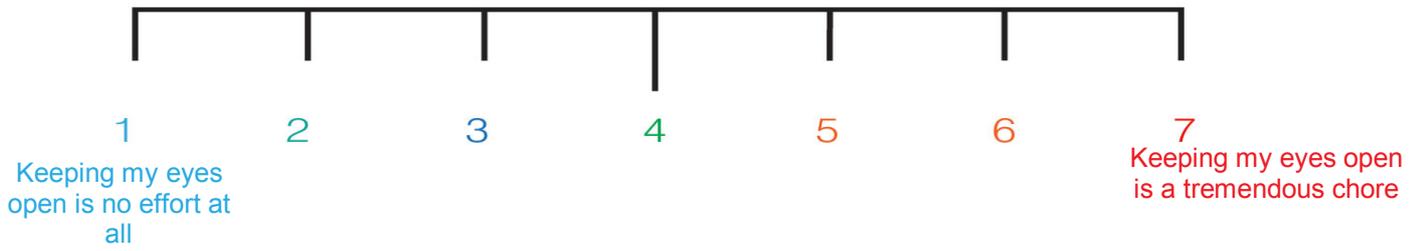
Active



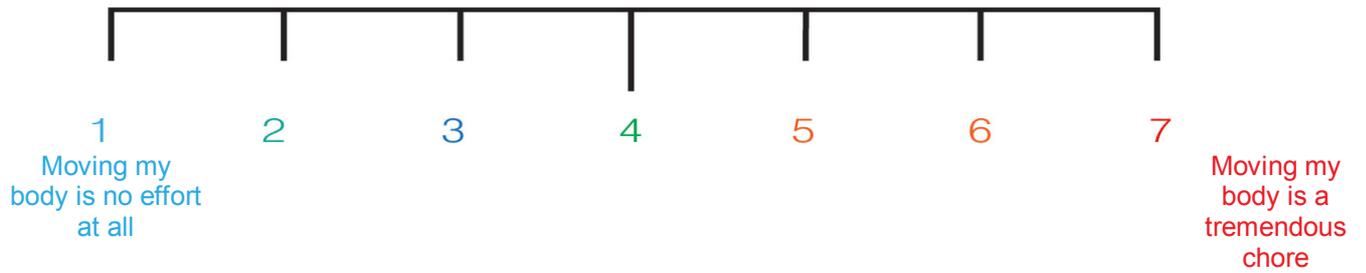
Exhaustion



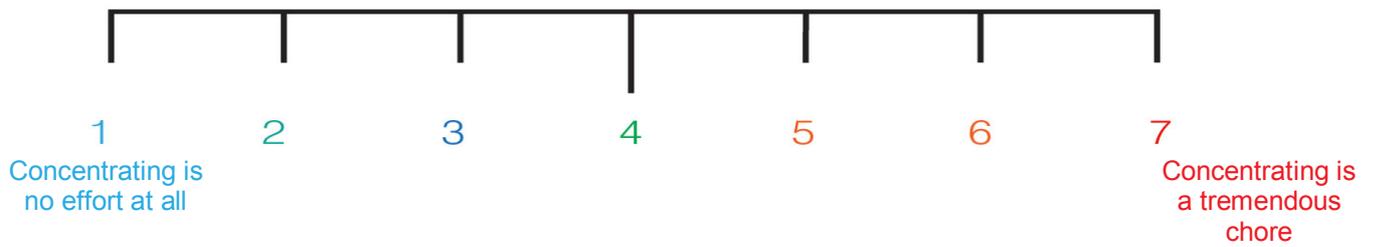
Eyes Open



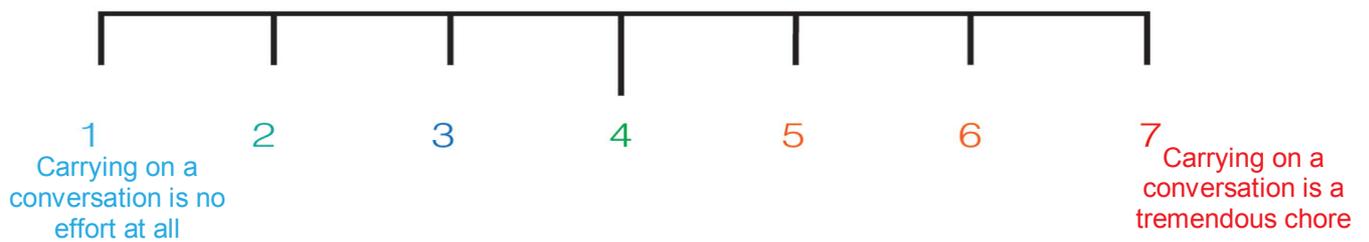
Body Movement



Concentration



Conversation



Eyes Closed



I have absolutely no desire to close my eyes

I have a tremendous desire to close my eyes

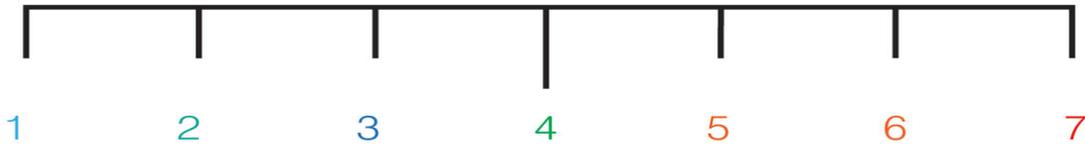
Lie Down



I have absolutely no desire to lie down

I have a tremendous desire to lie down

Efficiency



I am not being efficient at all

I am being extremely efficient

Mood Scale (BMIS)**Time:**

When asked to do so, please circle the response on the scale below that indicates how well each adjective or phrase describes your present mood:

1 = Definitely do not feel	2 = Do not feel	3 = Slightly feel	4 = Definitely feel						
Lively	1	2	3	4	Drowsy	1	2	3	4
Happy	1	2	3	4	Grouchy	1	2	3	4
Sad	1	2	3	4	Alert	1	2	3	4
Tired	1	2	3	4	Nervous	1	2	3	4
Caring	1	2	3	4	Calm	1	2	3	4
Content	1	2	3	4	Loving	1	2	3	4
Gloomy	1	2	3	4	Fed Up	1	2	3	4
Jittery	1	2	3	4	Active	1	2	3	4

If you feel like you would like to add any additional information to provide further information about the above answers, please do so below:

Stanford Sleepiness Scale

Time:

The following scale relates to sleepiness. When asked to do so, please choose one of the statements shown below which best describes how you currently feel.

Degree of Sleepiness	Rating
Feeling active, vital, alert, or wide awake	1
Functioning at high levels, but not at peak; able to concentrate	2
Awake, but relaxed; responsive but not fully alert	3
Somewhat foggy, let down	4
Foggy; losing interest in remaining awake; slowed down	5
Sleepy, woozy, fighting sleep; prefer to lie down	6
No longer fighting sleep, sleep onset soon; having dream-like thoughts	7
Asleep	X

SME Assessment of Incident Driving Performance

Driving Performance		Significantly below	Expected level of performance	Significantly above
	Joining the Main carriageway			
	Entering/exiting the Hard Shoulder			
	Accelerators			
	Brake			
	Steering			
	Reversing			
	Mirrors			
	Signals			
	Manoeuvring			
	Clearance of obstructions (if applicable)			
Response to network signs/signals (if applicable)				

	Use of Speed	
	Following distance	
	Positioning	
	Progress	
	Judgement	
	Awareness/planning	
	Correct use of light controls/VMS	
	Compliance to operational guidelines	

Overall Driving Performance

Overall Performance	Safe	<p>Very unsafe Expected Level Very Safe</p>
	Efficient (made good progress¹)	<p>Very Inefficient Expected Level Very Efficient</p>

¹ Progress – Driving at an appropriate speed for the road and traffic conditions. Example scenarios are not holding up traffic, no hesitation, unnecessary stopping, not proceeding when safe to do so.

SME Assessment of Incident Task Performance

		Significantly below	Expected level of performance	Significantly above average
Individual performance	Correct use of light controls/VMS			
	Time			
	Customer Service			
	Clearance of obstructions (if applicable)			
	Result			
	Thought process			
	DRA			
	Safety			
	Compliance to operational guidelines			
	Performance			

Overall Task Performance

Overall Performance	Safe	Very unsafe	Expected Level	Very Safe
	Efficient	Very Inefficient	Expected Level	Very Efficient

SME Assessment of RRB's

	Yes	No
Block commander / inner vehicle?		
Number of lanes in carriageway (exc H/S)?		
Were two vehicles needed for the block?		
Did Patrol have to stop the traffic prior to incident?		
RCC informed of location by TO?		
Was a separate Talk Group asked for?		
Were signs and signals requested?		
Was car radio changed to allocate separate airwave Talk Group?		
RCC informed that a rolling road block is about to commence?		
Was VMP pre-set to "Don't Pass"		
Activate appropriate emergency lighting?		
Activate VMP to illuminate 'Don't Pass'?		
Was mobile phone required?		
Did RRB start from hard shoulder?		
Did vehicle breach the block? -If vehicle passed block was RCC told?		
Were front amber's used to notify presence to other responders?		

APPENDIX B HSE LONE WORKER GUIDANCE

Working alone

Health and safety guidance on the risks of lone working



This is a web-friendly version of leaflet INDG73(rev2), published 09/09.

Introduction

This leaflet provides advice and guidance on how to keep lone workers healthy and safe. It is aimed at anyone who employs or engages lone workers, and may help self-employed people who work alone themselves.

Following the advice and guidance in the leaflet is not compulsory, but it should help dutyholders decide what they need to do to comply with their legal duties towards lone workers under:

- the Health and Safety at Work etc Act 1974; and
- the Management of Health and Safety at Work Regulations 1999.

Is it legal to work alone and is it safe?

The Health and Safety Executive (HSE) is frequently asked these questions. Working alone is not in itself against the law, and it will often be safe to do so. However, the law requires employers and others to think about and deal with any health and safety risks before people should be allowed to work alone.

Employers have responsibility for the health, safety and welfare at work of all of their employees. They are also responsible for the health and safety of those affected by work activities, for example any self-employed people they engage and visitors such as contractors.

These responsibilities **cannot be transferred** to any other person, including those people who work alone. It is the **employer's duty** to assess risks to lone workers and take steps to avoid or control risks where necessary.

Employees have responsibilities to take reasonable care of themselves and other people affected by their work activities and to co-operate with their employers in meeting their legal obligations.

Who are lone workers and what jobs do they do?

Lone workers are those who work by themselves without close or direct supervision. They may be found in a wide range of situations, and some examples are provided below.

People in fixed establishments

- People working alone in premises, eg in small workshops, petrol stations, kiosks or shops
- People who work from home
- People working separately from others, eg in factories, warehouses, some research and training establishments, leisure centres or fairgrounds
- People working outside normal hours, eg cleaners and security, production, maintenance or repair staff

Mobile workers working away from their fixed base

- Workers involved in construction, plant installation, maintenance and cleaning work, electrical repairs, lift repairs, painting and decorating or vehicle recovery
- Agricultural and forestry workers
- Service workers, eg rent collectors, postal staff, social workers, home helps, doctors, district nurses, pest control workers, drivers, engineers, architects, estate agents, sales representatives and similar professionals visiting domestic and commercial premises

How do we assess and control the risks?

Employers need to investigate the potential hazards faced by lone workers and assess the risks involved both to the lone worker and to any person who may be affected by their work. Employers should ensure that measures are in place to control or avoid such risks.

What should employers do?

Employers of lone workers should:

- **involve** staff or their representatives when undertaking the required risk assessment process;
- take steps to **check control measures** are in place (examples of control measures include instruction, training, supervision and issuing protective equipment);
- **review** risk assessments annually or, as few workplaces stay the same, when there has been a significant change in working practice;
- when a risk assessment shows it is not possible for the work to be conducted safely by a lone worker, address that risk by, for example, making arrangements to **provide help or back-up**; and
- where a lone worker is working at another employer's workplace, that employer should **inform the lone worker's employer** of any risks and the required control measures.

Risk assessment should help employers decide on the right level of supervision. There are some high-risk activities where at least one other person may need to be present. Examples include:

- working in a high-risk confined space, where a supervisor may need to be present, along with someone dedicated to the rescue role;
- people working at or near exposed live electricity conductors;
- other electrical work where at least two people are sometimes required.

Examples of risk assessments can be viewed on the HSE website at:
www.hse.gov.uk/risk/casestudies.

Employers who have five or more employees must record the significant findings of all risk assessments.

Employers also need to be aware of any specific law on lone working applying in their industry. Examples include supervision in diving operations, vehicles carrying explosives and fumigation work.

Sources of further information are listed at the end of the leaflet.

What about consulting employees?

Employers are required to consult their workforce on health and safety matters. It is important to talk to employees and their safety representatives, as they can be a valuable source of information and advice.

Effective consultation will also help to ensure that all relevant hazards are identified, and appropriate and proportionate control measures are chosen.

Research has shown that workplaces in which effective consultation takes place are safer and healthier as a result.

Joint working to solve problems and address legal duties has the added benefit of increasing employees' commitment to implementing decisions or actions. They have ownership of the process because they have been actively involved in making those decisions.

Which particular problems affect lone workers?

Establishing a healthy and safe working environment for lone workers can be different to organising the health and safety of other employees. Employers need to know the law and standards that apply to their work activities, and then assess whether they can meet those legal obligations for people working alone.

Lone workers face particular problems. Some of the issues that need special attention when planning safe working arrangements are set out in the following pages.

Can the risks of the job be adequately controlled by one person?

Lone workers should not be put at more risk than other employees. In order to achieve this, extra risk control measures may be necessary.

Precautions should take account of normal work and foreseeable emergencies, eg fire, equipment failure, illness and accidents. Employers should identify situations where people work alone and ask questions such as:

- Does the workplace present a special risk to the lone worker?
- Is there a safe way in and out for one person?

- Can any necessary temporary access equipment, such as portable ladders or trestles, be safely handled by one person?
- Can all the machinery and goods involved in the workplace be safely handled by one person?
- Are there any chemicals or hazardous substances being used that may pose a risk to the worker?
- Does the work involve lifting objects too large for one person?
- Is more than one person needed to operate essential controls for the safe running of equipment or workplace transport?
- Is there a risk of violence?
- Are young, pregnant or disabled workers particularly at risk if they work alone?
- Are there any other reasons why the individual (for example a trainee) may be more vulnerable than others?
- If the lone worker's first language is not English, are suitable arrangements in place to ensure clear communication, especially in an emergency?

If a person has a medical condition, are they able to work alone?

Employers need to check that lone workers have no medical conditions that may make them unsuitable for working alone. Seek medical advice if necessary. Consider both routine work and foreseeable emergencies that may impose additional physical and mental burdens on an individual.

Why is training particularly important for lone workers?

This is particularly important where there is limited supervision to control, guide and help in situations of uncertainty. Training may be critical to avoid people panicking in unusual situations.

Lone workers need to be sufficiently experienced and fully understand the risks and precautions. Employers should set the limits to what can and cannot be done while working alone. They should ensure employees are competent to deal with circumstances that are new, unusual or beyond the scope of training, for example when to stop work and seek advice from a supervisor or how to handle aggression.

How will the person be supervised?

Although lone workers cannot be subject to constant supervision, it is still an employer's duty to ensure they are healthy and safe at work. Supervision can help to ensure that employees understand the risks associated with their work and that the necessary health and safety precautions are carried out.

Supervisors can also provide guidance in situations where there is uncertainty. Supervision of health and safety can often be carried out when checking the progress and quality of the work. This may take the form of periodic site visits combined with discussions in which health and safety issues are raised.

The extent of supervision required depends on the risks involved and the ability of the lone worker to identify and handle health and safety issues. Employees new to a job, undergoing training, doing a job that presents special risks, or dealing with new situations may need to be accompanied at first.

The level of supervision required is a management decision, which should be based on the findings of a risk assessment: the higher the risk, the greater the level of

supervision required. It should not be left to individuals to decide whether they require assistance.

Procedures must be put in place to monitor lone workers to help keep them healthy and safe. These may include:

- supervisors periodically visiting and observing people working alone;
- regular contact between the lone worker and supervisor, using either mobile phones, telephones, radios or e-mail, bearing in mind the worker's understanding of English;
- automatic warning devices which operate if specific signals are not received periodically from the lone worker, eg staff security systems;
- other devices designed to raise the alarm in an emergency, these can be operated manually or automatically by the absence of activity;
- checks to ensure a lone worker has returned to their base or home once their task is completed.

What happens if a person becomes ill, has an accident, or there is an emergency?

Lone workers should be capable of responding correctly to emergencies. Risk assessment should identify foreseeable events. Emergency procedures should be established and employees trained in them.

Information regarding a premises' emergency procedures and danger areas should be given to lone workers. They should have access to adequate first-aid facilities, and mobile workers should carry a first-aid kit suitable for treating minor injuries. Occasionally, risk assessment may indicate that lone workers need first aid-training.

What about employers' liability insurance?

Under the Employers' Liability (Compulsory Insurance) Act 1969 (ELCI), most employers are required by law to insure their employees against workplace injury or disease. Lone workers must be included in their employer's ELCI cover.

Where can I find out more?

Management of health and safety at work. Management of Health and Safety at Work Regulations 1999. Approved Code of Practice and guidance L21 (Second edition) HSE Books 2000 ISBN 978 0 7176 2488 1

Successful health and safety management HSG65 (Second edition) HSE Books 1997 ISBN 978 0 7176 1276 5

Five steps to risk assessment Leaflet INDG163(rev2) HSE Books 2006 (single copy free or priced packs of 10 ISBN 978 0 7176 6189 3) www.hse.gov.uk/pubns/indg163.pdf

Employers' Liability (Compulsory) Insurance Act 1969: A guide for employers Leaflet HSE40(rev3) HSE Books 2008 (single copy free or priced packs of 10 ISBN 0 978 0 7176 6331 6) www.hse.gov.uk/pubns/hse40.pdf

Consulting workers on health and safety: Safety Representatives and Safety Committees Regulations 1977 (as amended) and Health and Safety (Consultation with Employees) Regulations 1996 (as amended) L146 HSE Books 2008
ISBN 978 0 7176 6311 8

Involving your workforce in health and safety: Good practice for all workplaces
HSG263 HSE Books 2008 ISBN 978 0 7176 6227 2

Involving your workers in health and safety: A guide for small businesses WEB35
HSE 2008 www.hse.gov.uk/pubns/web35.pdf

Consulting employees on health and safety: A brief guide to the law INDG232(rev1)
HSE Books 2008 (single copy free or priced packs of 15 ISBN 978 0 7176 6312 5)
www.hse.gov.uk/pubns/indg232.pdf

*Manual handling. Manual Handling Operations Regulations 1992 (as amended).
Guidance on Regulations* L23 (Third edition) HSE Books 2004
ISBN 978 0 7176 2823 0

Violence at work: A guide for employers Leaflet INDG69(rev) HSE Books 1996
(single copy free or priced packs of 10 ISBN 978 0 7176 1271 0)
www.hse.gov.uk/pubns/indg69.pdf

Managing work-related violence in licensed and retail premises Leaflet INDG423
HSE Books 2008 (single copy free or priced packs of 10 ISBN 978 0 7176 6234 0)
www.hse.gov.uk/pubns/indg423.pdf

Tackling stress: The Management Standards approach Leaflet INDG406 HSE
Books 2005 (single copy free or priced packs of 10 ISBN 978 0 7176 6140 4)
www.hse.gov.uk/pubns/indg406.pdf

*Employing workers from overseas: Guidance for employers in agriculture and food
processing* Leaflet INDG414 HSE Books 2007 (single copy free or priced packs
of 15 ISBN 978 0 7176 6258 6) www.hse.gov.uk/pubns/indg414.pdf

*Working with substances hazardous to health: What you need to know about
COSHH* Leaflet INDG136(rev4) HSE Books 2009 (single copy free or priced packs
of 10 ISBN 978 0 7176 6363 7) www.hse.gov.uk/pubns/indg136.pdf

Memorandum of guidance on the Electricity at Work Regulations 1989 HSR25
(Second edition) HSE Books 2007 ISBN 978 0 7176 6228 9

*Safe work in confined spaces. Confined Spaces Regulations 1997. Approved Code
of Practice, Regulations and guidance* L101 HSE Books 2009
ISBN 978 0 7176 6233 3

Further advice

Additional information is available from your trade association or employers' organisation, trade unions and some charities, eg the Suzy Lamplugh Trust.

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

This leaflet is available in priced packs of 15 from HSE Books, ISBN 978 0 7176 6371 2. Single copies are free and a web version can be found at www.hse.gov.uk/pubns/indg73.pdf.

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REFERENCE MATERIAL INCLUDED WITHIN CD

Reference	Item	Date Produced
1.0	Mind Maps	
1.1	Pre Samlesbury Mind Map	April 2010
1.2	End of POP2 Commission Mind Map	April 2010
2.0	Previous Work	
2.1	Atkins Business Case	December 2009
2.2	Atkins Single Crew Test Report	December 2009
2.3	Halcrow – Review of Crewing Levels Report	August 2008
3.0	Feasibility Report	
3.1	Test A - Final Feasibility Report	March 2011
3.2	Test A - Final Feasibility Report - Appendices	March 2011
3.3	Test B - Final Feasibility Report	December 2011
3.4	Test B - Final Feasibility Report – Appendices	December 2011
4.0	Pilots and Trials Approval	
4.1	Test A PT1 Approval Form	May 2010
4.2	Test B PT1 Approval Form	September 2011
5.0	Test Design Development	
5.1	Test A - Test Design Methodology	March 2010
5.2	Test A - Test Design Report	October 2010
5.3	Test A - Post Live Network Test Roster	March 2011
5.4	Test A - Pre – Test Briefing Sessions	December 2010
5.5	Test B – Test Design Report	September 2011
5.6	Test B – Post Live Network Test Roster	September 2011
5.7	Test B – Pre-Test Briefing Sessions	September 2011
6.0	Independent Design Check	
6.1	Test A - Check Team Register	June 2010
6.2	Test A - Check Team Comments	
6.3	Test B – Check Team Comments	September 2011
7.0	Procedures Review	
7.1	Test A - Procedures Review Report	October 2010
7.2	Test B – Procedures Review Report	September 2011
8.0	Risk	
8.1	Test A - Operational Risk Assessment	September 2010
8.2	Risk Management Plan	November 2009

Reference	Item	Date Produced
8.3	Test B – Operational Risk Assessment	September 2011
9.0	Training Needs Assessment	
9.1	Test A - Training Needs Assessment Report	October 2010
9.2	Test B – Training Needs Assessment Report	September 2011
10.0	Formal Union Consultation	
10.1	Test A - Union Consultation Submission	October 2010
10.2	Test A - Union Consultation Response	November 2010
10.3	Test B – Union Consultation Response	September 2011
11.0	Miscellaneous	
11.1	Raw Test Data	March 2011
11.2	HA Incident Data 2006-2011	March 2011

REFERENCE MATERIAL CD

