

**GUIDANCE NOTES ON
THE USE OF
DISPLAY SCREEN
EQUIPMENT**

**The Highland Council, Corporate Services,
*Health and Safety Team***

CONTENTS

	<u>PAGE</u>
1 Introduction	2
2 Legal requirements	2
3 Identification of Users of Display Screen Equipment	3
4 Arrangements for eye and eyesight testing	3
5 Assessment of DSE Workstations	6
6 Daily work routine of users	7
7 Training	8
8 Record keeping	9
9 Monitoring and review	9

APPENDIX 1 - Form for recording details of users

APPENDIX 2 - Eyesight or vision screening request form

APPENDIX 3 - Eye and eyesight test form

APPENDIX 4 - Record of eye and eyesight tests

APPENDIX 5 - Workstation Self-assessment checklist

APPENDIX 6 - Workstation Assessment form

APPENDIX 7 - Schedule to the DSE Regs - Minimum requirements for Workstations

APPENDIX 8 - DSE - Possible effects on health

1 Introduction

- 1.1 This guidance outlines the procedures to be adopted to ensure the health and safety of persons who work with Display Screen Equipment (DSE). It also indicates the arrangements the Council has made to comply with legal requirements contained in the Health and Safety (Display Screen Equipment) Regs 1992.
- 1.2 DSE operators sit for long periods with their attention focused on the screen and their hands operating the keyboard or mouse. Such constrained posture can result in tired eyes, aches and pains, musculo-skeletal problems, stress and fatigue. Problems associated with DSE work are usually preventable by applying ergonomic principles to the design, selection and installation of DSE equipment, the design of the workstation and the organisation of the task.
- 1.3 The guidance contains provision for assessment of health risks and workstation layout. Arrangements for eye sight testing, work breaks and training are also outlined.

2 Legal Requirements

- 2.1 The Health and Safety at Work etc Act 1974, Section 2, requires an employer to ensure that any work equipment provided be safe and without risks to health. It also requires that equipment be maintained and that safe systems of work be established.
- 2.2 The Health and Safety (Display Screen Equipment) Regs 1992, further expand the above duties with specific reference to DSE. They require the employer to carry out an analysis of workstations for the purpose of assessing risks, in particular the risks of musculo-skeletal discomfort, visual disturbance and mental stress. Risks must be remedied, so far as is reasonably practicable, as soon as possible.
- 2.3 Workstations created after 1 January 1993 must meet the technical requirements listed in the schedule to these Regulations; pre-existing workstations that have not been substantially modified must conform by 31 December 1996.
- 2.4 The work routine of employees must be organised so as to break up periods of continuous display screen equipment (DSE) work. The net effect must be to reduce total screen work. Persons falling within the definition of a “user” are entitled to eye and eyesight test and to corrective appliances where specifically necessary for DSE work.
- 2.5 Training must be given before a person begins to work on DSE and whenever the task significantly changes or the workstation is substantially modified. Employees and others must be given adequate information about health and safety at the workstation so as to enable the safe use of DSE.

3 Identification of “Users” of Display Screen Equipment

- 3.1 The Display Screen Equipment Regulations (DSE) only apply to persons defined within the Regulations as “Users” of such equipment. Not everyone who works with display screen equipment will fall within the definition.
- 3.2 A user is someone who **USES DISPLAY SCREEN EQUIPMENT MORE OR LESS CONTINUOUSLY ON MOST DAYS, OR** when most or all of the following apply:-
- a) They normally use DSE for continuous spells of an hour or more at a time and use it this way more or less daily.
 - b) They have to transfer information quickly to or from the screen.
 - c) They need to apply high levels of attention or concentration.
 - d) They are highly dependent on DSE to do their job.
 - e) They have little choice about using the equipment.
 - f) They need special training or skills to use the equipment.
- 3.3 It is important therefore that managers identify and record details of all display screen equipment users in workplaces for which they are responsible. A suggested form for recording this information is attached in Appendix 1.
- 3.4 The list of “users” should be reviewed at least once a year or wherever there is a change which may reduce or increase the amount of time that a person spends working with display screen equipment.

4 Arrangements for Eye and Eyesight Testing and Vision Screening

- 4.1 **Entitlement to Eye tests/glasses**
- 4.2 Users, and those about to become users, can request an eye and eyesight test that the employer has to pay for. This is to establish whether they have any vision defect, which with their normal spectacles (if worn), prevents them using DSE within the specified limits of adjustment.

- 4.3 There is no requirement to offer eye and eyesight tests to job applicants. However, once appointed to a post involving DSE use the new recruit should be made aware of the arrangements for eye and eyesight testing. If the person requests an eye test as a result of the information given then this should be arranged, wherever possible prior to commencing work as a display screen equipment user.
- 4.4 Users are entitled to further tests at regular intervals after the first test, and in between if they are having visual difficulties which may reasonably be considered to be caused by their DSE work.
- 4.5 Users may opt for vision screening (see Appendix 2) which is a means of identifying individuals with defective vision who need a full sight test. These tests are not designed to screen for eye defects, such as injury or disease, that may not at first affect vision.
- 4.6 Where the user opts for vision screening to check the need for a full sight test this can be arranged with the Occupational Health Adviser. The screening instrument used is capable of testing vision at the distances appropriate to the users' VDU work, including the intermediate distance at which screens are viewed (normally 50 - 60 cm).
- 4.7 Other vision properties identified by vision screening include:-
- a) visual acuity including short and long sightedness
 - b) colour perception - the ability to recognise colours
 - c) stereo depth perception or binocular vision
 - d) asthenopia or visual strain.
- 4.8 Where test results indicate that vision is defective at the relevant distances, the user will be informed and referred to an Optician for a full sight test.
- 4.9 **Eye Test Frequency**
- 4.10 Employees who are DSE 'users' are entitled, but not obliged, to undergo an appropriate eye and eyesight test. The entitlement arises:-
- a) upon appointment to a job where the person will be deemed a 'user' under the new DSE Regulations, whether as a new recruit or an existing employee who has a change of job or workload.
 - b) then at regular intervals, normally in line with the recommendations of the practitioner (Optician or Occupational Health Adviser), that carried out the previous test.
 - c) and at any time where the employee has reason to believe that visual difficulties have arisen in the use of DSE.

4.11 Provision of Glasses to Users

- 4.12 Where glasses are prescribed *specifically* for work with DSE, (ie where if the person was not a DSE user, they would not require the particular lenses prescribed), the employer must pay for them. Glasses required for any other purpose are not the employers' responsibility.
- 4.13 The obligation in respect of DSE use is simply to provide means to correct a defect of sight, so as to enable the screen to be used. It does not extend to the supply of tinted lenses. The employer has to pay only the basic cost of suitable corrective lenses and standard frames.
- 4.14 An employee who wishes to purchase more up-market glasses will have to fund any extra amount personally.

4.15 Eye Testing Arrangements

- 4.16 When a DSE user requests an eyesight test Form Eye 2 (see Appendix 3) must be completed by the employee and line manager. The employee then takes this form to an optician.

Highland Council allows employees to visit an Optician of their own choice. The following information may be useful to Services when making arrangements for employees who request eye tests.

- 4.17 In Schools, the Head Teacher should ensure that a copy of the form Eye 2 is forwarded to the Education Manager for the Area concerned.
- 4.18 Staff should be encouraged to attend an optician as near their work as possible unless there are good reasons why they choose not to. It is reasonable to expect employees to travel long distances to an optician in their own time when a local optician is not chosen.
- 4.19 All opticians in the Highland Council area with the exception of Boots Opticians and Vision Express in Inverness will accept the completed proforma (Appendix 3), as authority for payment of eye tests.
- 4.20 On completion of the eye test the optician will fill in the reverse of the proforma and invoice the Service for payment of the eye test.
- 4.21 In the event of corrective lenses or glasses being required by the employee, specifically for DSE work, then an invoice will be sent for the total amount that Highland Council is liable for, ie cost of eye test plus cost of corrective spectacles for DSE work.
- 4.22 If however employees choose spectacles to correct eye or vision defects for purposes which **INCLUDE** display screen work, but go wider than that, Highland Council will contribute a maximum of £50 toward the total cost of the spectacles, and in addition, the cost of the eye test. The balance will be paid by the employee when collecting the spectacles. This £50 figure relates to the "basic" cost of lenses and frames. (ie the lowest figure that local opticians have indicated that they can supply at).

- 4.23 In order that monitoring the costs and results of opticians' eye tests can be carried out throughout the Highland Council, copies of all invoices concerning eyesight testing and supply of spectacles should be sent to the Highland Council Health & Safety team by each Service.
- 4.24 It is essential that Services maintain **comprehensive records** with detail of users' requests for eye tests, if they attended an optician or undertook vision screening, whether or not any corrective lenses were prescribed and when it is recommended they are re-tested. A suggested form for recording this information is attached in Appendix 4.

5 Assessment of Display Screen Equipment Workstations

5.1 Assessors

- 5.2 Service Directors and Area Service Managers should ensure that sufficient numbers of staff are identified and trained to act as assessors of DSE workstations.
- 5.3 It is recommended that assessors be familiar with the day to day use of DSE, (ie administrative or clerical background).
- 5.4 Suitable training will be provided to ensure that assessors are:-
- a) Familiar with the requirements of the regulations
 - b) Competent to carry out assessments to a uniform standard. (See Section 7 - Training).

5.5 Assessments

- 5.6 Persons identified as users must be trained in the correct use of DSE and the arrangements of workstation components to facilitate good posture etc (See Section 7 - Training).
- 5.7 An initial indication of the extent of problems associated with DSE workstations can then be obtained by the use of self-assessment forms (See Appendix 5).
- 5.8 Self-assessment checklists should be issued to all DSE users and the completed forms should be returned to the Service assessor.
- 5.9 The information gathered from the self-assessment forms should enable assessors to prioritise follow-up work station assessments. Assessors should use copies of the forms in Appendix 5, when carrying out the assessments. These assessments together with information from self-assessment forms should identify areas where remedial action is required.

- 5.10 Management should ensure that the hazards and risks identified are eliminated or reduced sufficiently. This should be done in consultation with the employee to ensure that the workstation meets the needs of the individual user.
- 5.11 Service Directors, Area Managers, and Area Service Managers should ensure that further assessments are carried out by competent assessors on the workstation where there is, for example:-
- a) a major change to software used
 - b) a major change to the hardware
 - c) a major change in workstation furniture
 - d) a substantial increase in the amount of time required to be spent using DSE
 - e) a substantial change in other task requirements, (eg more speed or accuracy)
 - f) if the workstation is relocated
 - g) if the lighting is significantly modified
- 5.12 Defined users should be encouraged to report any problems associated with the use of the DSE, or the workstation or working environment, to their line manager.
- 5.13 The Schedule to the DSE Regulations sets out the minimum requirements for workstations (See Appendix 7).

6 Daily Work Routine of DSE Users

- 6.1 Wherever possible jobs at display screens should be designed to consist of a mix of screen based and non-screen based work to prevent fatigue and to vary visual and mental demands.
- 6.2 Where the job unavoidably contains spells of intensive display screen work (whether using the keyboard or input device, reading the screen, or a mixture of the two), these should be broken up by periods of non-intensive, non-display screen work.
- 6.3 There is no prescribed frequency or duration of breaks from DSE work. Wherever possible, employees will be given the discretion to decide the timing and extent of off-screen tasks. In general, short frequent breaks are more satisfactory than occasional longer breaks: eg a 5 - 10 minute break after 50 - 60 minutes continuous screen work is likely to be better than a 15 minute break every 2 hours.
- 6.4 Breaks should be taken before the onset of fatigue, not in order to recuperate. Employees who believe that their workload at a Display screen does not permit adequate breaks should bring this to the attention of management.

7 *Training*

7.1 Training shall be provided to all defined users and managers, at periodic intervals and shall be aimed at reducing or minimising physical (musculoskeletal) problems, visual fatigue and mental stress and shall cover the following inter-related aspects.

- a) The user's role in correct and timely detection and recognition of hazards and risks. This shall cover both the absence of desirable features (chair comfort) and the presence of undesirable ones (screen reflections and glare) together with information on health risks and how problems may be manifested.
- b) A simple explanation of the causes of risk and the mechanisms by which harm may be brought about, for example poor posture leading to static loading on the musculoskeletal system and eventual fatigue and pain.
- c) User initiated actions and procedures which will bring risks under control and to acceptable levels. Training shall cover the following:
 - i) the desirability of comfortable posture and the importance of postural change;
 - ii) the use of adjustment mechanisms on equipment, particularly furniture, so that stress and fatigue can be minimised;
 - iii) the use and arrangement of workstation components to facilitate good posture, prevent over-reaching and avoid glare and reflections on the screen;
 - iv) the need for regular cleaning (or inspection) of screens and other equipment for maintenance;
 - v) the need to take advantage of breaks and changes of activity
- d) Organisational arrangements by which symptoms or problems with the workstation can be communicated to management.
- e) Information on the DSE Regulations, particularly as regards eyesight, rest pauses and possible health effects.
- f) the user's contribution to assessments.

7.2 It shall be the responsibility of Service Directors, Area Managers and Area Service Managers to ensure that all employees whose work involves DSE either as users or line managers, attend the appropriate training sessions offered by the Council.

8 Record Keeping

- 8.1 It shall be the responsibility of Service Directors, Area Managers and Area Service Managers to ensure that appropriate records are kept in relation to the following aspects of Display Screen Equipment use:-
- a) Lists of defined users
 - b) Workstation assessments including problems raised and resolved
 - c) Eye and eyesight tests including re-tests and issue of glasses etc.
 - d) Training sessions attended
 - e) Amendments to workstations and reviews of assessments.

9 Monitoring and Review

- 9.1 Advisers from the Health and Safety team will monitor the implementation of the policy and guidance as part of their planned programme of visits to premises.
- 9.2 The policy and guidance will be reviewed annually and/or in relation to changes in legislation or HSE guidance

APPENDIX 2

Please ask for:

Direct Dial _____ :

Your Ref:

Our Ref:

Date:

Dear

EYESIGHT TEST OR VISION SCREENING REQUEST FORM

As a display screen user you have recently requested an eye test. Under the Health and Safety (Display Screen Equipment) Regulations 1992 you are entitled to an eye and eyesight test by a registered ophthalmic optician at the expense of the Council **OR** you may opt for a vision screening test, carried out by myself, to check the need for a full eye test.

Please indicate whether you wish to choose the eye and eyesight test, or undertake vision screening, by returning the tear-off slip to your supervisor/section head who will then forward a copy of this slip to me **(only if requesting vision screening)**.

Should you request a full eye test, you will be given the necessary authorisation form, signed by your supervisor/section head, to take to an optician. If you require vision screening, this will be arranged directly by myself.

Occupational Health Adviser

Tear here.....
.....

NAME:

JOB DESIGNATION:

SERVICE:

WORK ADDRESS:

TEL NO:

***DELETE THE STATEMENT THAT IS INAPPLICABLE:**

- A) I wish to have a full eye and eyesight test
- B) I wish to undertake a vision screening

THE HIGHLAND COUNCIL

EYE AND EYESIGHT TESTING

PART A: TO BE COMPLETED BY EMPLOYEE	
FIRST NAME:	
SURNAME:	
JOB TITLE:	
SERVICE/ LOCATION:	
HOME ADDRESS:	
PART B: TO BE COMPLETED BY LINE MANAGER	
The above employee has requested an eye/eyesight test within the provisions of the Display Screen Equipment Regulations.	
MANAGER'S SIGNATURE:	JOB TITLE:
Date:	

PART C: TO BE COMPLETED BY OPTICIAN

DATE OF EXAMINATION:

Are corrective lenses required specifically for V.D.U work? Yes/No

If No, although not specifically required, would corrective lenses be of benefit for V.D.U. work along with other prescribed uses?

Yes/No

RECOMMENDED DATE FOR NEXT EXAMINATION:

SIGNED:

DATE:

OPTICIAN'S STAMP:

TO OPTICIANS:

The Highland Council will pay for:

- 1) Eyesight test - actual cost;
AND
- 2) Corrective lenses/appliances - to a maximum of £50

Please forward your bill/invoice to the appropriate employing Service of the Council. The balance to be recovered from the employee/customer at the time of the collection.

Please return this form with your invoice.

**THE HEALTH & SAFETY TEAM
HUT 4, DOCHF0UR DRIVE
INVERNESS
IV3 5EB**

DISPLAY SCREEN EQUIPMENT

WORKSTATION SELF-ASSESSMENT CHECKLIST

Name:..... **Location:**.....
Date:.....

Cross-reference Workstation

The completion of this checklist will enable you to carry out a self assessment of your own workstation. Your views are essential in order to enable us to achieve our objective of ensuring your comfort and safety at work. Please circle the answer that best describes your opinion, for each of the questions listed. The form should be returned to _____ - _____ as soon as it has been completed.

Environment		
1. Lighting		
Describe the lighting at your usual workstation.		
About right	Too bright	Too dark
Do you get distracting reflections on your screen?		
Never	Sometimes	Constantly
What control do you have over local lighting?		
Full control	Some control	No control
2. Temperature and humidity		
At your workstation, is it usually:		
Comfortable	Too warm	Too cold
Is the air around your workstation:		
Comfortable	Too dry	
3. Noise		
Are you distracted by noise from work equipment?		
Never	Occasionally	Constantly
4. Space		
Describe the amount of space around your workstation:		
Adequate	Inadequate	
Furniture		

5. Chair

Can you adjust the height of the seat?

Yes

No

Can you adjust the height and angle of the backrest?

Yes

No

Is the chair stable?

Yes

No

Does it allow movement?

Yes

No

Is the chair in a good state of repair?

Yes

No

If your chair has arms, do they get in the way?

Yes

No

6. Desk

Is the desk surface large enough to allow you to place all your equipment where you want it?

Yes

No

Is the height of the desk suitable?

Yes

No

Does the desk have a matt surface (non-reflectant)?

Yes

No

7. Footrest

If you cannot place your feet on the floor whilst keying, has a footrest been supplied?

Yes

No

8. Document Holder

If it would be of benefit to use a document holder, has one been supplied?

Yes

No

If you have a document holder, is it adjustable to suit your needs?

Yes

No

9. Display Screen

Can you easily adjust the brightness and the contrast between the characters on screen and the background?

Yes

No

Does the screen tilt and swivel freely?

Yes

No

Is the screen image stable and free from flicker?

Yes

No

Is the screen at a height which is comfortable for you?

Yes

No

10. Keyboard

Is the keyboard separate from the screen?

Yes

No

Can you raise and lower the keyboard height?

Yes

No

Can you easily see the symbols on the keys?

Yes

No

Is there enough space to rest your hands in front of the keyboard?

Yes

No

11. Software

Do you understand how to use the software?

Yes

No

12. Training

Have you been trained in the use of your workstation?

Yes

No

Have you been trained in the use of software?

Yes

No

If you were to have a problem relating to display screen work, would you know the correct procedures to follow?

Yes

No

Do you understand the arrangements for eye and eyesight tests?

Yes

No

13. Health

Are you suffering or have you suffered aches and pains or other health problems associated with the use of the display screen equipment and workstation?

Yes

No

Under what circumstances do these problems occur?
(Please give details)

Any other comments?

**DISPLAY SCREEN EQUIPMENT
WORKSTATION ASSESSMENT**

Location of Workstation

Record No:

Cross-reference Self Assessment Checklist Nos:

Environment	Yes/No	Comments
1. Space		
Is there sufficient space (legal minimum 3.7m ²), with enough storage, to enable easy access to the workstation?		
Does the space, permit reasonable variation in the position of furniture and equipment?		
2. Lighting		
Is there adequate lighting for all tasks?		
Is lighting variable to suit ambient conditions?		
Is the lighting co-ordinated to avoid reflection and glare from falling upon the screen and other equipment?		
Have desk lamps (or other local task lighting) been supplied where necessary?		
3. Reflections and glare		
Have adjustable window blinds (or an alternative type of easily adjustable covering) been fitted?		
Are wall surfaces designed to minimise reflections from falling upon the workstation?		
Have other fixtures and fittings been positioned to avoid reflections upon the workstation?		
Where the need cannot be avoided, has an appropriate screen filter been supplied?		
4. Noise		
Have noisy pieces of equipment (printers, etc) been fitted with a sound attenuation hood, or been moved away from the workstation?		
Have all other sources of noise been reduced to prevent distraction and interference with speech?		
5. Temperature		
Is the temperature at the workstation comfortable?		

Is the temperature maintained at a level that ensures operator comfort?		
Have all sources of excess heat (ie those likely to cause injury or discomfort to operators) been eliminated or suitably controlled?		

Display Screen Equipment	Yes/No	Comments
6. Humidity		
Is there adequate level of relative humidity maintained?		
7. Radiation		
Is work equipment in a good state of repair, thus ensuring the minimisation of radiation, other than visible light?		
8. Display Screens		
Does the display screen have easily adjustable controls for brightness and contrast?		
Is it possible to easily tilt and swivel the screen?		
Does the screen stand upon an adjustable table, or is it possible to achieve the correct height by other means?		
Is the screen free of reflections or glare?		
Is the image on the screen stable and free from flicker?		
Are the characters well-defined and of adequate size, and is there adequate space between individual characters and lines of text?		
Is it possible for the operator to easily alter the position of the screen, having regard to its size and weight and electrical cabling?		
9. Keyboard		
Is the keyboard separate from the screen?		
Is it possible to easily adjust the angle of tilt of the keyboard?		
Are the key symbols adequately contrasted?		
Does the keyboard have a matt surface?		
Is there adequate space at the front of the keyboard to provide support for the hands and arms of the operator?		
Is the keyboard style and the arrangement of keys designed to enable ease of use?		

10. Other equipment

Has a document holder been provided where necessary, and is it adjustable to suit the requirements of the operator?

Has all other equipment (eg mouse, central processing unit, modem, telephone) been assessed for suitability?

DISPLAY SCREEN EQUIPMENT FURNITURE	Yes/No	Comments
11. Work Surface		
Is the desk or work surface sufficiently large to allow a flexible and comfortable arrangement of all work equipment?		
Does the surface have a matt finish to prevent reflections?		
Is the height of the desk or work surface suitable for use with display screen equipment?		
Is there sufficient space below the work surface to enable the operator to achieve a comfortable position?		
12. Chair		
Is the chair stable and does it allow easy freedom of movement?		
Is it possible to easily adjust the height of the seat, the height of the backrest and the angle of the backrest?		
13. Other furniture		
Has a footrest been made available?		
If display screen equipment or any peripheral equipment is placed upon shelves, cupboards, filing cabinets, etc are these secure and stable?		
Operator/Computer Interface		
14. Software design		
Is the software suitable for the task?		
Is it easy for the operator to understand how to use the software?		
15. System performance		
Does the system provide feedback, enabling the operator to monitor system performance?		
Have unnecessary slow system response times been eliminated?		
Is information displayed at a pace intended to be comfortable to the operator?		
Is the format in which information is displayed suitable for the operator?		
Has the operator been made aware of any quantitative or qualitative measurement of performance by the system?		

16. Job design

What are the hours of work for a typical day?

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DISPLAY SCREEN EQUIPMENT	Yes/No	Comments
16. Job design (cont)		
Has the job been designed to incorporate off-screen activities within the working day?		
Are there adequate opportunities for regular breaks from using display screen equipment?		
What formal breaks occur during the day?		
Have steps been taken to minimise repetitive or boring tasks, such as continual data entry?		
Where possible, have “peaks and troughs” in the workload been eliminated?		
Consultation		
17. Worker consultation		
Has the worker, or workers’ representative been consulted about health and safety issues related to the use of display screen equipment?		
Have the views of the operator been taken into account when deciding upon job design?		
Information		
18. Information for workers		
Has the worker, or workers’ representative, been given available information relating to the safe use of display screen equipment?		
Has the worker been made aware of the entitlement to eye testing, eye examination and where appropriate, provision of free corrective appliances?		
Are the arrangements for the provision of eye tests made known to the worker?		
Does the worker know the correct procedures to follow in the event of a health or safety problem arising from the use of display screen equipment?		
Training		
19. Operator training		
Has adequate training been given in the possible risks arising from the use of display screen equipment?		
Has the operator been given adequate training in how to adjust the position of furniture and equipment at the workstation?		
Is the operator encouraged to take regular breaks from		

on-screen activities?

Does the operator know how to use the brightness and contrast controls on his or her screen?

Has the operator been trained in the importance of adopting a comfortable posture at the workstation?

DISPLAY SCREEN EQUIPMENT

Yes/No

Comments

19. Operator training (cont)

Has the operator been trained in the procedures to follow where it is believed that a health and safety problem has arisen at the workstation?

Is the operator trained in how to recognise visual or postural fatigue, and how to respond?

Any other comments?

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Assessed by: _____ Date:

The Schedule

(Which sets out the minimum requirements for workstations which are contained in the Annex to Council Directive 90/270/EEC^(a) on the minimum safety and health requirements for work with display screen equipment)

The Schedule

Extent to which employers must ensure that workstations meet the requirements laid down in this Schedule

- 1 An employer shall ensure that a workstation meets the requirements laid down in this Schedule to the extent that-
 - (a) those requirements relate to a component which is present in the workstation concerned;
 - (b) those requirements have effect with a view to securing the health, safety and welfare of persons at work; and
 - (c) the inherent characteristics of a given task make compliance with those requirements appropriate as respects the workstation concerned.

Equipment

- 2 (a) **General comment**

The use as such of the equipment must not be a source of risk for operators or users.

- (b) **Display screen**

The characters on the screen shall be well-defined and clearly formed, of adequate size and with adequate spacing between the characters and lines.

The image on the screen should be stable, with no flickering or other forms of instability.

The brightness and the contrast between the characters and the background shall be easily adjustable by the operator or user, and also be easily adjustable to ambient conditions.

The screen must swivel and tilt easily and freely to suit the needs of the operator or user.

It shall be possible to use a separate base for the screen or an adjustable table.

The screen shall be free of reflective glare and reflections liable to cause discomfort to the operator or user.

- (c) **Keyboard**

The keyboard shall be tiltable and separate from the screen so as to allow the operator or user to find a comfortable working position avoiding fatigue in the arms or hands.

The space in front of the keyboard shall be sufficient to provide support for the hands and arms of the operator or user.

(a) OJ No L156, 21.6.90, p.14

The Schedule

The keyboard shall have a matt surface to avoid reflective glare.

The arrangement of the keyboard and the characteristics of the keys shall be such as to facilitate the use of the keyboard.

The symbols on the keys shall be adequately contrasted and legible from the design working position.

(d) **Work desk or work surface**

The work desk or work surface shall have a sufficiently large, low-reflectance surface and allow a flexible arrangement of the screen, keyboard, documents and related equipment.

The document holder shall be stable and adjustable and shall be positioned so as to minimise the need for uncomfortable head and eye movements.

There shall be adequate space for operators or users to find a comfortable position.

(e) **Work chair**

The work chair shall be stable and allow the operator or user easy freedom of movement and a comfortable position.

The seat shall be adjustable in height.

The seat back shall be adjustable in both height and tilt.

A footrest shall be made available to any operator or user who wishes one.

Environment

3 (a) **Space requirements**

The workstation shall be dimensioned and designed so as to provide sufficient space for the operator or user to change position and vary movements.

(b) **Lighting**

Any room lighting or task lighting provided shall ensure satisfactory lighting conditions and an appropriate contrast between the screen and the background environment, taking into account the type of work and the vision requirements of the operator or user.

Possible disturbing glare and reflections on the screen or other equipment shall be prevented by co-ordinating workplace and workstation layout with the positioning and technical characteristics of the artificial light sources.

The Schedule

(c) **Reflections and glare**

Workstations shall be so designed that sources of light, such as windows and other openings, transparent or translucent walls, and brightly coloured fixtures or walls cause no direct glare and no distracting reflections on the screen.

Windows shall be fitted with a suitable system of adjustable covering to attenuate the daylight that falls on the workstation.

(d) **Noise**

Noise emitted by equipment belonging to any workstation shall be taken into account when a workstation is being equipped, with a view in particular to ensuring that attention is not distracted and speech is not disturbed.

(e) **Heat**

Equipment belonging to any workstation shall not produce excess heat which could cause discomfort to operators or users.

(f) **Radiation**

All radiation with the exception of the visible part of the electromagnetic spectrum shall be reduced to negligible levels from the point of view of the protection of operators' or users' health and safety.

(g) **Humidity**

An adequate level of humidity shall be established and maintained.

Interface between computer and operator/user

4 In designing, selecting, commissioning and modifying software, and in designing tasks using display screen equipment, the employer shall take into account the following principles:

- (a) software must be suitable for the task;
- (b) software must be easy to use and, where appropriate, adaptable to the level of knowledge or experience of the operator or user; no quantitative or qualitative checking facility may be used without the knowledge of the operators or users;
- (c) systems must provide feedback to operators or users on the performance of those systems;
- (d) systems must display information in a format and at a pace which are adapted to operators or users;
- (e) the principles of software ergonomics must be applied, in particular to human data processing.

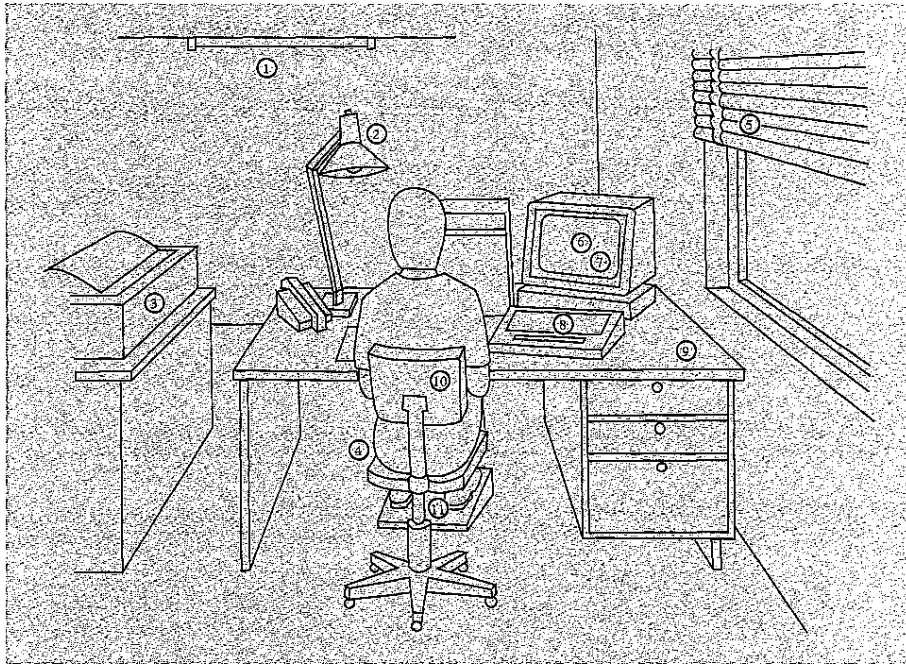


FIGURE 1

SUBJECTS DEALT WITH IN THE SCHEDULE

- ① ADEQUATE LIGHTING
- ② ADEQUATE CONTRAST, NO GLARE OR DISTRACTING REFLECTIONS
- ③ DISTRACTING NOISE MINIMISED
- ④ LEG ROOM AND CLEARANCES TO ALLOW POSTURAL CHANGES
- ⑤ WINDOW COVERING
- ⑥ SOFTWARE: APPROPRIATE TO TASK, ADAPTED TO USER, PROVIDES FEEDBACK ON SYSTEM STATUS, NO UNDISCLOSED MONITORING
- ⑦ SCREEN: STABLE IMAGE, ADJUSTABLE, READABLE, GLARE/REFLECTION FREE
- ⑧ KEYBOARD: USABLE, ADJUSTABLE, DETACHABLE, LEGIBLE
- ⑨ WORK SURFACE: ALLOW FLEXIBLE ARRANGEMENTS, SPACIOUS, GLARE FREE
- ⑩ WORK CHAIR: ADJUSTABLE
- ⑪ FOOTREST

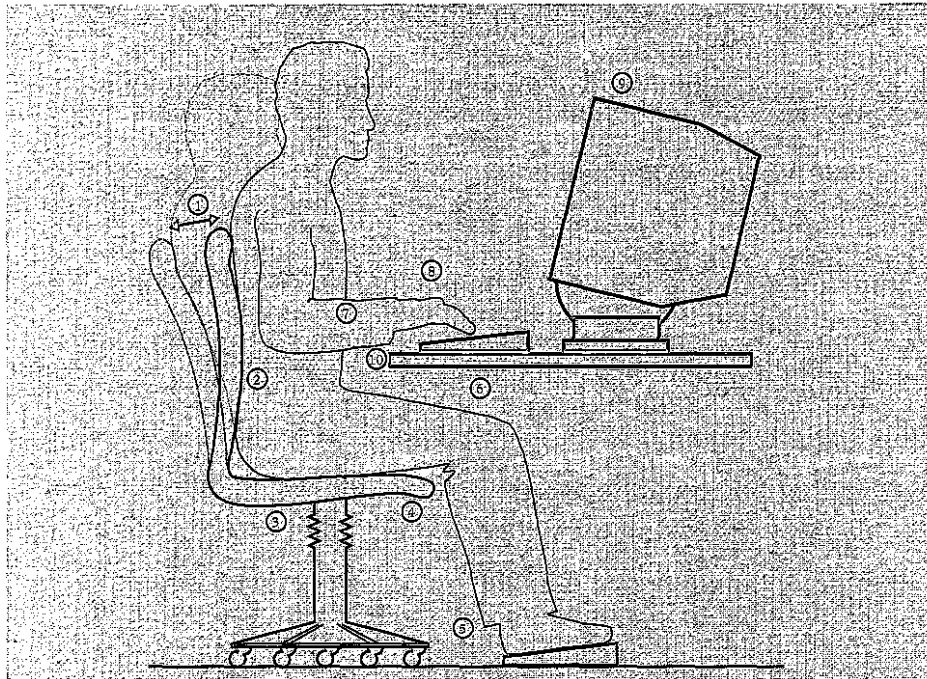


FIGURE 2

SEATING AND POSTURE FOR TYPICAL OFFICE TASKS

- ① SEAT BACK ADJUSTABILITY
- ② GOOD LUMBAR SUPPORT
- ③ SEAT HEIGHT ADJUSTABILITY
- ④ NO EXCESS PRESSURE ON UNDERSIDE OF THIGHS AND BACKS OF KNEES
- ⑤ FOOT SUPPORT IF NEEDED
- ⑥ SPACE FOR POSTURAL CHANGE, NO OBSTACLES UNDER DESK
- ⑦ FOREARMS APPROXIMATELY HORIZONTAL
- ⑧ MINIMAL EXTENSION, FLEXION OR DEVIATION OF WRISTS
- ⑨ SCREEN HEIGHT AND ANGLE SHOULD ALLOW COMFORTABLE HEAD POSITION
- ⑩ SPACE IN FRONT OF KEYBOARD TO SUPPORT HANDS/WRISTS DURING PAUSES IN KEYING

Annex B

Display screen equipment: possible effects on health

The main hazards

1 The introduction of VDUs and other display screen equipment has been associated with a range of symptoms related to the visual system and working posture. These often reflect bodily fatigue. They can readily be prevented by applying ergonomic principles to the design, selection and installation of display screen equipment, the design of the workplace, and the organisation of the task.

Upper limb pains and discomfort

2 A range of conditions of the arm, hand and shoulder areas linked to work activities are now described as work related upper limb disorders. These range from temporary fatigue or soreness in the limb to chronic soft tissue disorders like peritendinitis or carpal tunnel syndrome. Some keyboard operators have suffered occupational cramp.

3 The contribution to the onset of any disorder of individual risk factors (eg keying rates) is not clear. It is likely that a combination of factors are concerned. Prolonged static posture of the back, neck and head are known to cause musculoskeletal problems. Awkward positioning of the hands and wrist (eg as a result of poor working technique or inappropriate work height) are further likely factors. Outbreaks of soft tissue disorders among keyboard workers have often been associated with high workloads combined with tight deadlines. This variety of factors contributing to display screen work risk requires a risk reduction strategy which embraces proper equipment, furniture, training, job design and work planning.

Eye and eyesight effects

4 Medical evidence shows that using display screen equipment is not associated with damage to eyes or eyesight; nor does it make existing defects worse. But some workers may experience **temporary** visual fatigue, leading to a range of symptoms such as impaired visual performance, red or sore eyes and headaches, or the adoption of awkward posture which can cause further discomfort in the limb. These may be caused by:

- (a) staying in the same position and concentrating for a long time;
- (b) poor positioning of the display screen equipment;
- (c) poor legibility of the screen or source documents;
- (d) poor lighting, including glare and reflections;
- (e) a drifting, flickering or jittering image on the screen.

Like other visually demanding tasks, VDU work does not cause eye damage but it may make workers with pre-existing vision defects more aware of them. Such uncorrected defects can make work with a display screen more tiring or stressful than would otherwise be the case.

Fatigue and stress

5 Many symptoms described by display screen workers reflect stresses arising from their task. They may be secondary to upper limb or visual problems but they are more likely to be caused by poor job design or work organisation, particularly lack of sufficient control of the work by the user, under-utilisation of skills, high-speed repetitive working or social isolation. All these have been linked with stress in display screen work, although clearly they are not unique to it; but attributing individual symptoms to particular aspects of a job or workplace can be difficult. The risks of display screen workers experiencing physical fatigue and stress can be minimised, however, by following the principles underlying the Display Screen Equipment Regulations 1992 and guidance, ie by careful design, selection and disposition of display screen equipment; good design of the user's workplace, environment and task; and training, consultation and involvement of the user.

Other concerns

Epilepsy

6 Display screen equipment has not been known to induce epileptic seizures. People suffering from the very rare (1 in 10 000 population) photosensitive epilepsy who react adversely to flickering lights and patterns also find they can safely work with display screens. People with epilepsy who are concerned about display screen work can seek further advice from local offices of the Employment Medical Advisory Service.

Facial dermatitis

7 Some VDU users have reported facial skin complaints such as occasional itching or reddened skin on the face and/or neck. These complaints are relatively rare and the limited evidence available suggests they may be associated with environmental factors, such as low relative humidity or static electricity near the VDU.

Electro magnetic radiation

8 Anxiety about radiation emissions from display screen equipment and possible effects on pregnant women has been widespread. However, there is substantial evidence that these concerns are unfounded. The Health and Safety Executive has consulted the National Radiological Protection Board, which has the statutory function of providing information and advice on all radiation matters to Government Departments, and the advice below summarises scientific understanding.

9 The levels of ionising and non-ionising electromagnetic radiation which are likely to be generated by display screen equipment are well below those set out in international recommendations for limiting risk to human health created by such emissions and the National Radiological Protection Board does not consider such levels to pose a significant risk to health. No special protective measures are therefore needed to protect the health of people from this radiation.

Effects on pregnant women

10 There has been considerable public concern about reports of higher levels of miscarriage and birth defects among some groups of visual display unit (VDU) workers in particular due to electromagnetic radiation. Many scientific studies have been carried out, but taken as a whole their results do

not show any link between miscarriages or birth defects and working with VDUs. Research and reviews of the scientific evidence will continue to be undertaken.

11 In the light of the scientific evidence pregnant women do not need to stop work with VDUs. However, to avoid problems caused by stress and anxiety, women who are pregnant or planning children and worried about working with VDUs should be given the opportunity to discuss their concerns with someone adequately informed of current authoritative scientific information and advice.