DSE Staff Information sheets

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1. Purpose

1.1. The 'Health and Safety (Display Screen Equipment) Regulations 1992' require 'assessments' are made of workstations to achieve a minimum safety and health standard.

The above Regulations are often simply called the 'DSE Regulations'.

1.2. The DSE Regulations also require 'Users' receive appropriate information and instruction.

1.3. The following information is intended to supplement, and not replace, DSE training covered within the 'Safety Matters' course, etc.

2. Concerns

2.1. Possible eyestrain, fatigue and stress, and upper limb disorders (ULDs), whilst operating DSE

3. Definitions

3.1 The following are key words within the DSE topic:

- *DSE* – Display Screen Equipment, includes alphanumeric or graphic screens (e.g. PC's).
- *User* - An employee who habitually uses DSE as a ***significant*** part of their normal work.
- *Workstation* - assembly of : DSE, telephone, printer, document holder, chair, desk, etc
- *ULD* – Upper limb disorder.

4. Introduction

4.1 Staff defined as DSE 'users' are issued with a copy of these information sheets during their DSE health and safety awareness training, confirming roles and responsibilities in line with West Berkshire Council 'Safety Management System'. The same principles apply at Schools.

4.2 These information sheets summarise safety control measures in line with the above Regulation, necessary to reduce any risk from using DSE to a reasonably practicable level.

4.3 Examples include neck tension, headaches, and lumbar pain.

Dynamic imbalance of our body can become permanent if we unconsciously adopt high risk postures at work. Impaired movement in one or more joints may become semi-permanent, or possibly even permanent. Corrective action may then require specialist medical advice to redress the completely unnecessary pain and imbalance(s) created over a period of time.

4.4 Working space.

A key factor is ensuring enough working space at the workstation to allow the user to achieve a comfortable position, and allow for a variation in posture.

This will reduce the likelihood of fatigue and ill-health, and is particularly important if the workstation is used by a variety of people.

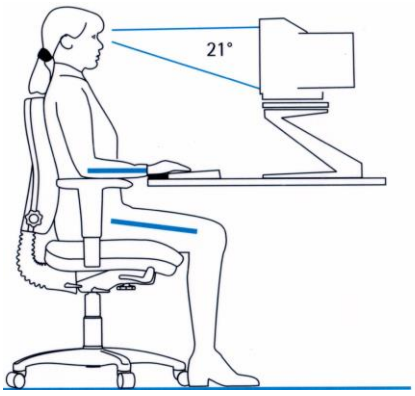
5. Control measures

Sitting correctly when working:

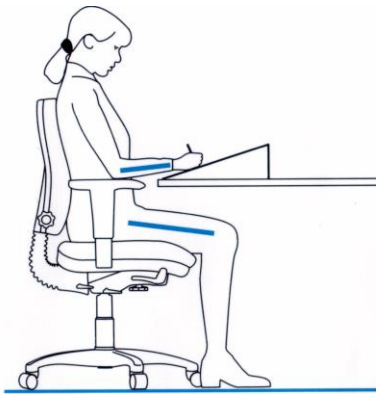
When working with DSE, maximise health benefits and avoid back pain by always sitting correctly. Encourage the spine to lengthen to its neutral 'balanced' position. This means weight is evenly distributed across the intervertebral disks, and there is better balance in the supporting musculature.

- Sit well back into the chair to maintain support of spine/pelvis.
- Do not 'perch' on the front of the seat or slouch - keep the spine in its natural 's' shape.
- Adjust the chair height to suit the task, so hip is slightly higher than knee.
- Move the chair closer to the desk to avoid stretching/leaning the upper body forwards.
- Activity increases blood flow, reducing fatigue and strain on muscles, so keep moving.

The ideal posture for working with DSE.



The ideal posture for writing.



The chair.

The chair should be comfortable throughout the day with controls easy to reach. Adjust the seat and back frequently to suit the task and maintain full back support at all times.

- The chair should be fully adjustable with controls easy to reach from a sitting position.
- Adjust the height from floor, height & tilt of backrest, stability and ease of movement.
- The back and seat depth must fit the user, with adjustable lumbar/pelvic support.

Footrests may be required to ensure that the feet are adequately supported.

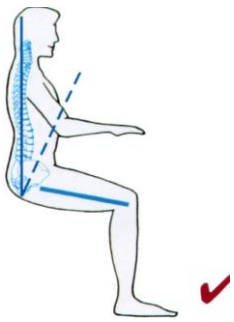
If armrests are provided, they should not interfere with the correct placing of the chair in relation to the desk.

High risk body posture:

- The head is unbalanced, and in front of a shortened spine.
- Breathing / digestion is compromised, lower abdomen restricted.
- Elbow/wrist position incorrectly aligned, not parallel with floor.
- Neck and shoulder muscles unevenly contracted, while lengthened at the back.

The above can quickly lead to a permanent 'rounding' of the shoulders, and increase the risk of developing an RSI condition.

Ideal body posture.



- Spine is lengthened (and therefore balanced).
- Even tension on neck and shoulder muscles, front and back of body.
- Natural lumbar curve maintained.
- Pelvis supported against the back of the chair.
- Breathing and digestion efficient with lower abdomen unrestricted.
- Elbow and wrist position correctly aligned parallel with the floor.

Work surface table.

This should be large enough to allow the user to place the components at the most comfortable position. Adequate space should be allowed at the front of the desk for the user to rest their hands (normally at least 50 mm). This will reduce the strain placed on the hands and forearm whilst inputting data. Some users may find the provision of wrist supports useful.

The depth of the work surface should normally be between 600–800 mm, and the surface should be of a non-reflective nature to avoid reflections and to minimise visual fatigue.

The top of the work surface may be between 660–720 mm above the floor depending upon the person using the workstation. Excessively cramped conditions, or situations where users have to over-reach must be avoided.

Using a monitor.

The screen should tilt and swivel to give the optimum position. Care should be taken to ensure that the height of the screen is suitable for the user, (ideally at eye level), and that there are no distracting reflections.

The screen should be free from flicker to at least 90% of users, (if screens are purchased with a 'refresh rate' of at least 80Hz, this will virtually eliminate screen flicker). All characters on the screen should be well defined with good contrast against the background.

Screen filters are often regarded as a cure-all for DSE, but their introduction should be treated with caution. There is no requirement for screen filters to be fitted, and if screens are affected by glare or reflections, this is best treated by moving the position of the workstation, or installing different or supplementary lighting. So-called 'radiation' filters have no appreciable effect, however, filter screens do help to increase the contrast between characters and background if this is a problem.

- Ideally position the screen at 90^0 to any light source.
- Aim to avoid high contrast created by sighting a monitor directly in front of a window.
- Likewise, avoid a window / light source directly behind, (will result in reflection/glare on the monitor).
- If distracting glare or reflections are an issue, consider window blinds, tinted film, uplighting, or alternative diffuser for exiting overhead lighting.
- If glare/reflections still a problem, use monitor hoods/glare filters to shield the screen.

Using copy holders.

Use a copy holder to keep input data upright and in line within the users field of view. This prevents twisting of the neck/upper body and reduces eye strain due to constant re-focusing of the eyes.

Using hand and arm supports.

Using a hand or wrist support helps to keep one's hand and forearm in a level position while typing. This can help to maintain a neutral position.

Keyboard.

The keyboard should be separate from the screen to allow the person to position it at the most comfortable position allowing at least 50 mm in front of the keyboard in which to rest the hands. If the keyboard has a matt surface it will minimise any reflections which could distract the operator and cause visual fatigue.

Using a mouse.

Set desk/chair height so forearms are horizontal to floor with elbow, wrist and fingertips in a straight line to the top of the mouse. Hold the wrist in a neutral position, using a mouse/wrist support if necessary.

Keep the shoulders relaxed with the elbows tucked in by one's side and 90^0 angle between upper/lower arms.

Stretching the forearm tenses shoulder muscles and can cause rotator cuff problems. Constant clicking with the arm straight and finger tense can cause elbow problems. Use a forearm support to take the strain off the upper limbs/shoulders if necessary.

Chose a mouse appropriate for hand size, preference and frequency of use. Position close to one side of the keyboard, within the 'easy reach' zone. Position the mouse to avoid cable drag, and keep the mouse pad clean so the contact ball/wheels move freely.

Frequently change posture, rocking slightly in the chair increases and improves circulation.

Vary the task, taking regular breaks from the keyboard and mouse.

Laptop computers.

Due to their compact design, laptop computers are not ergonomically efficient, and are therefore less comfortable for prolonged periods. In addition, their portability means that they are often used in poor working environments.

If possible, avoid extensive use, especially where alternative desktop machines are available.

Position the laptop to ensure optimum ergonomics and working environment.

Lighting.

It is generally accepted that natural lighting is the best source of illumination, and this should be provided where possible. Particular care needs to be exercised to avoid glare and reflections on the screen. If this is found to be a problem, it can best be avoided by the provision of adjustable blinds to the windows, etc.

Artificial lighting is also required to supplement natural lighting at times of poor lighting, and when blinds have to be drawn. The level of lighting should be such that there is adequate contrast between the screen and background lighting levels, and glare is avoided.

Display screen equipment should preferably be at right angles to windows, and parallel to and between overhead lights. Despite the claims of some manufacturers, screen filters are not mandatory under the Regulations, and only mask poor positioning of DSE. The provision of screen filters should therefore, only be considered as a last resort.

Noise.

Excessive noise can be distracting and can lead to mental fatigue. Sources of noise such as printers should be investigated and reduced to the lowest level reasonably practicable. This may be achieved by, for example, fitting acoustic hoods or screens separating staff from the noise

Temperature and humidity.

These two elements play an important part in providing a comfortable working environment. Temperatures should neither be too hot, nor too cold, with a minimum working temperature of at least 16^0C, but preferably between 19^0C and 23^0C.

Local heating sources may be required, and cooling fans provided during the summer months.

Humidity levels should be kept between 40–80% depending upon the temperature. Higher temperatures require lower humidity levels.

If there is air-conditioning, checks should be made (with the service engineer), that these levels are being achieved.

If there is no air-conditioning, and the humidity levels are too low, these could be raised by the introduction of potted plants or portable humidifiers.