Ergonomics

Definition of Ergonomics:

Ergonomics derives from two Greek words: ergon, meaning work, and nomoi, meaning natural laws, to create a word that means the science of work and a person's relationship to that work.

Organizations:

The International Ergonomics Association (IEA) is a federation of ergonomics and human factors societies from around the world. The mission of the IEA is to elaborate and advance ergonomics science and practice, and to improve the quality of life by expanding its scope of application and contribution to society. As of September 2008, the International Ergonomics Association has 46 federated societies and 2 affiliated societies.

The International Society of Automotive Engineers (SAE) is a professional organization for mobility engineering professionals in the aerospace, automotive, and commercial vehicle industries. The Society is a standards development organization for the engineering of powered vehicles of all kinds, including cars, trucks, boats, aircraft, and others. The Society of Automotive Engineers has established a number of standards used in the automotive industry and elsewhere. It encourages the design of vehicles in accordance with established Human Factors principles. It is one the most influential organizations with respect to Ergonomics work in Automotive

design. This society regularly holds conferences which address topics spanning all aspects of Human Factors/Ergonomics.[*citation needed*]

In the UK the professional body for ergonomists is The Institute of Ergonomics and Human Factors and in the USA it is the Human Factors and Ergonomics Society. In Europe professional certification is managed by the Centre for Registration of European Ergonomists (CREE). In the USA the Board of Certification in Professional Ergonomics performs this function. In Canada the professional body for ergonomists is the Association of Canadian Ergonomists.

The Human Factors and Ergonomics Society (HFES) is the world's largest organization of professionals devoted to the science of human factors and ergonomics. The Society's mission is to promote the discovery and exchange of knowledge concerning the characteristics of human beings that are applicable to the design of systems and devices of all kinds.[8]

In the UK, one organisation which has a long history of the practical application of ergonomics is the Institute of Occupational Medicine (IOM). Founded by the coal industry in 1969, from the outset the IOM employed ergonomics staff to apply ergonomics principles to the design of mining machinery and environments. To this day, the IOM continues ergonomics activities, especially in the fields of musculoskeletal disorders; heat stress and the ergonomics of personal protective equipment (PPE). Like many in occupational ergonomics, the demands and requirements of an ageing UK workforce are a growing concern and interest to IOM ergonomists.

The Benefits of Ergonomics:

Ergonomics can help you in many ways. Among other things, it can benefit your life, health, productivity and accuracy. One of the great benefits of ergonomics is an improvement in communication. Understanding how to use something without training lets you get up to speed faster and work more intuitively.

Efficacy of Ergonomics:

Companies once thought that there was a bottom-line tradeoff between safety and efficiency. Now they embrace ergonomics because they have learned that designing a safe work environment can also result in greater efficiency and productivity. Recently, U.S. laws requiring a safe work environment have stimulated great interest in Ergonomics - from ergonomic furniture to ergonomic training. But it is in the design of the workplace as a whole where the greatest impact can be seen for both safety and efficiency.

The easier it is to do a job, the more likely it is to see gains in productivity due to greater efficiency. Analogously, the safer it is to do a job, the more likely it is to see gains in productivity due to reduced time off for injury. Ergonomics can address both of these issues concurrently by maximizing the workspace and equipment needed to do a job.

Ergonomics examples:

Prolonged work at a computer can strain your arms, neck, hands and back. In most cases, health problems occur because of a poorly designed or setup workstation.

A well designed workstation considers your chair, lighting, noise, and the position of the screen, keyboard and documents.

Ways to control hazards

- Assess work methods and workplace setup, and implement ergonomic workstations for keyboard operators.
- Use an ergonomically designed chair with:
    - a height adjustment (from the floor)
    - an adjustable back rest (in height, angle and depth)
    - a curved seat edge
    - cloth covered seat and back
    - a five-star castor base.
- Adjust the seat so your feet rest firmly on the floor. Take your weight through your feet.
- Adjust the back rest of the chair so you sit in a position where your thighs are fully supported, except for a two-finger width space behind the knee.
- Maintain a relaxed posture, especially in your shoulders and neck:
    - Keep elbows by your side.
    - Keep forearms and hands parallel to the ground (with about 90 degree angle at the elbow).
    - Do not bend or cock your wrists when typing.
    - Sit at a comfortable distance from the keys (the length of your forearm away).
- There is no single height of a monitor which is suitable for all users. Some people find looking down slightly more comfortable than having the top of the screen at eye level. The height and angle of the monitor affects the gaze angle and inclination of the head. With the newer thinner LCD monitors it is now possible to have a monitor that is about arm¿s length away. The best advice is to avoid extremes of head and neck bending, avoid having to look up at a screen (as this requires the head to be titled backwards and places pressure on the neck) and arrange you monitor so that you feel comfortable.
- Position documents and the screen about the same distance from your eyes. Use a document holder to place the documents:
    - in a level position beside the screen (when the keyboard is in a central position) or
    - directly below the screen, just above the keyboard.

- Position the screen directly in front of the keyboard if you spend most of the time looking at it. If you spend most of the time looking at a document, place the document directly in front of the keyboard.
- Place the screen at right angles to a window. Alter the angle of the screen to avoid glare and reflection, or use blinds, curtains or screens to block glare.
- Ideally, place screens parallel to overhead fluorescent lights (to avoid rebound reflection).
- Adjust the contrast of text and background on the screen to a moderate level.
- Rest your eyes occasionally. Look out a window or at a wall poster.
- When typing, take short breaks of 30 - 60 seconds. Relax your hands in your lap or on the desk. Change the activity to relieve fatigue. Stand or walk about. Vary your posture as much as possible.
- Remove or control distracting noises. Use acoustic hoods over printers, remove noisy equipment from the work area or use quiet air conditioners.
- Provide adequate ventilation to the work area to counter the heat generated by computers and associated equipment.