

DIVISION OF SAFETY & HYGIENE  
ERGONOMICS PROGRAM  
OFFICIAL STATEMENT OF POSITION

"LIFTING TRAINING"

The following is the position of the technical advisor for the BWC Division of Safety & Hygiene as it relates to our philosophy. Philosophies adopted by the BWC in the area of injury/illness prevention through ergonomics are intended to reflect state-of-the-art knowledge while preserving the integrity of the science. Our position relies heavily upon:

- (1) reporting of sound research by proven researchers around the world,
  - (2) the collective experience of recognized professionals in ergonomics application,
  - (3) long-term effects of an application gaging value and return on investment,
- and the ability of these criteria to prevent occupational injury & illness.

POSITION:

Training people how to lift properly is not a sound ergonomic approach to the prevention of back injuries. Although the biomechanics of lifting are very important and should be known by everyone, long-term studies show that **training alone** is ineffective in reducing incidences of back pain.

RATIONALE:

- (1) Getting people to lift "properly" requires behavior modification which may be the greatest obstacle to achieving change.
  - (a) Training on safe lifting procedures, as it is being administered today, is not an effective control for low back injuries.<sup>1</sup> According to NIOSH, the value of training programs in safe lifting is open to question because there have been no controlled studies showing a consequent drop in manual handling accident rate or back injury rate.<sup>2</sup>
  - (b) The "proper lifting technique" (a.k.a. squat lift), is more metabolically taxing than merely bending at the waist to lift.<sup>3</sup> This has implications toward the end of a work shift or after general fatigue has set in that a worker has the tendency to resort back to "the path of least resistance".
- (2) A stoop lift may actually result in less compression on the lumbar spine than the squat type lift<sup>4</sup> even though the squat lift does provide a more favorable distribution of those forces across the disc.<sup>5</sup> This introduces an interesting paradox.
- (3) Often, proper body mechanics are not achievable due to workstation design or load constraints.
- (4) Training \$ last only as long as the employee does. New employees require a re-investment.
- (5) "The ergonomic approach to workplace design must be recognized as the most effective and is the first choice for controlling sources of workplace stress. Administrative controls, such as employee selection and training should not be viewed as primary methods of control."<sup>6</sup>

NOTES:

It is important to realize that where there is lifting, risk factors are present regardless of the posture or technique. However, designing jobs such that manual lifting is minimized, if not eliminated, is a logical ergonomic approach to prevention. Ideally, by removing the hazard, the potential for injury is also gone.

Although proper lifting is absolutely crucial for every employee to learn, teaching people how to avoid lifting and to use materials handling equipment safely and efficiently is absolutely necessary for effective prevention.

REFERENCES:

- 1 Snook, S.H., Ralph, C.A., and Hart, J.W. "A Study of Three Preventive Approaches to Low Back Injury". Journal of Occupational Medicine/ Vol.20. No. 7/July 1978.
- 2 NIOSH: Work Practices Guide for Manual Lifting. DHHS (NIOSH) PUB. NO. 81-122 (Mar '81)
- 3 Rodgers, Suzanne. Ph.D. Working with Backache. Perinton Press, New York, 1985.
- 4 Chaffin, D.B., Andersson, G. Occupational Biomechanics. John Wiley & Sons, New York, 1984.
- 5 Grandjean, E. Fitting the Task to the Man. 4th Edition. Taylor & Francis, New York 1988.
- 6 OSHA Instruction CPL 2.78, Directorate of Technical Support. Appendix A-4.