GUIDANCE NOTE FOR MANUAL HANDLING IN THE RETAIL INDUSTRY [NOHSC: 3014 (1992)]

FEBRUARY 1992

The National Occupational Health and Safety Commission has adopted a *Guidance Note for Manual Handling in the Retail Industry.*

The expectation of the National Commission is that guidance notes will provide detailed information for use by unions, employers, management, health and safety committee representatives, safety officers, occupational health and safety professionals and others requiring guidance.

It should be noted that National Commission documents are instruments of an advisory character, except where a law, other than the *National Occupational Health and Safety Commission Act 1985* (Cwlth), or an instrument made under such a law, makes them mandatory. The application of any National Commission document in any particular State or Territory is the prerogative of that State or Territory.

National Occupational Health and Safety Commission

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FOREWORD

The National Occupational Health and Safety Commission is a tripartite body established by the Commonwealth Government to develop, facilitate and implement a national occupational health and safety strategy.

This strategy includes standards development, the development of hazard-specific preventive strategies, research, training, information collection and dissemination and the development of common approaches to occupational health and safety legislation.

The National Commission comprises representatives of the peak employee and employer bodies õ the Australian Council of Trade Unions and the Confederation of Australian Industry õ as well as the Commonwealth, State and Territory governments.

Consistent with the National Commission's philosophy of consultation, tripartite standing committees have been established to deal with issues relating to standards development, research and the mining industry. Expert groups may be established to provide advice to the standing committees on those issues with which the National Commission is concerned.

APPENDIX

PREFACE

Approximately one third of all compensable injuries in the Australian workplace during 1986-87 involved manual handling activities. Manual handling injuries account for a larger percentage of compensation payments than any other activity. Most employees in the retail industry perform a wide range of manual handling activities throughout their working day. The risk of injury while performing these activities can be minimised by good workplace design, appropriate management practices and the provision of training and education and suitable equipment.

The cost of manual handling injuries to the retail industry is substantial. The National Occupational Health and Safety Commission has sought to address this problem in its *National Strategy for the Prevention of Occupational Back Pain* [NOHSC:4001(1989)][1]. This industry-specific guidance note has been produced to further address the problems encountered in the retail industry.

This guidance note is consistent and complementary to the National Commission's *National Standard for Manual Handling and National Code of Practice for Manual Handling* [NOHSC:1001(1990)] and [NOHSC:2005(1990)][2]. It provides advice for unions, employers, management, employees, health and safety committee representatives, safety officers, occupational health and safety professionals and others requiring guidance. For information about your legal responsibilities under the manual handling regulations in your State or Territory, contact your local occupational health and safety authority listed in Appendix 1.

While the aim of this guidance note is to provide advice, it is not possible to address every industry situation that may be found. It should be noted that the solutions or improvements provided for common manual handling problems are suggestions only. There may also be other solutions or suitable alternatives available for retailers to use.

The text and illustrations are based on the publication *Manual Handling in the Retail Industry: Common Problems and Solutions*[3] by the Victorian Occupational Health and Safety Authority (formerly part of the Department of Labour). The National Commission gratefully acknowledges the Victorian Occupational Health and Safety Authority for their assistance with this project.

1. INTRODUCTION

1.1 The retail industry covers a wide range of service outlets including:

- department and bulk stores;
- petrol stations;
- supermarkets and food shops;
- plant nurseries;
- hardware and timber merchants; and
- speciality shops.

1.2 A variety of functions are involved in retailing including:

- warehousing;
- stock distribution and pricing;
- customer service and check-out operation;
- cleaning; and
- administration.

Employees often perform a wide range of manual handling activities as part of their duties.

1.3 The size of retail organisations also varies widely, from department stores with hierarchical management structures, to small family-owned grocery stores. Depending on how goods are delivered, stored, distributed and sold, specific manual handling problems may be experienced by certain retail outlets.

1.4 National statistics on the cost of manual handling injuries to the retail industry are currently not available. Compensation payments to the retail industry for manual handling injuries were $12.4 million in New South Wales during 1984-85. In Victoria, between 1985 and 1991, the average cost to WorkCare of compensation for manual handling injuries was $14.8 million per annum. During 1988-89, compensation payments for manual handling injuries in the retail industry in the Australian Capital Territory were $1.1 million. These figures may indicate a national trend.

1.5 These injuries, in turn, generate additional direct costs to the industry, such as claims management, non-recoverable injury costs, and make up of wages. These costs can amount to twice the cost of compensation payments. Further, there are also indirect costs associated with injuries. These include retraining, lost productivity, loss of expertise, investigation of accidents, property damage, loss of morale and negative impact on industrial relations. Indirect costs have been estimated to be between two and ten times that of direct compensation costs. Clearly the total cost of manual handling injuries to the Australian retail industry today is very high.

1.6 Statistics indicate that most injuries in retailing occur in the course of manual handling activities. These manual handling injuries occur most commonly as a consequence of one of the following events:

- over-exertion while lifting, carrying, pushing or pulling an object;
- slips and falls during manual handling; or
- being struck by an object during manual handling.

1.7 The most common types of injuries are back injuries, other sprains and strains, and cuts and lacerations. Strain related injuries can also occur from constant repetitive tasks.

1.8 Body pain and discomfort are most commonly experienced by employees in the back, shoulders and arms. Discomfort or pain can be caused or aggravated by manual handling activities at work, such as lifting, carrying, pushing, holding, and sustained or stressful body postures.

1.9 This guidance note aims to help identify manual handling risks, and suggests solutions to some common manual handling problems. It can be used when assessing and controlling risks in manual handling, as required by relevant State or Territory legislation.

WHAT MANUAL HANDLING IS

1.10 `Manual handling' means any activity where a person is required to exert force to lift, lower, push, pull, carry or otherwise move, hold or restrain any animate or inanimate object.

Manual handling includes activities such as:

Figure 1: Holding

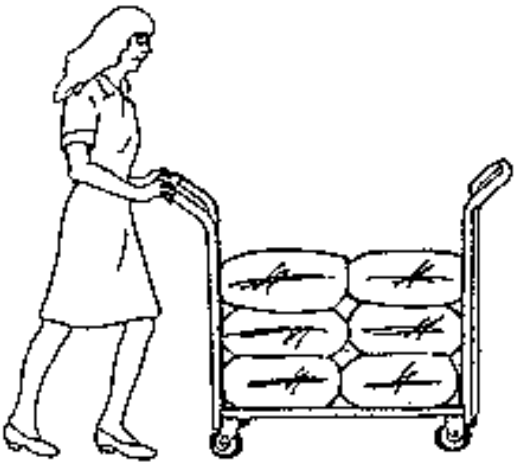


Figure 2: Pushing

Figure 3: Carrying

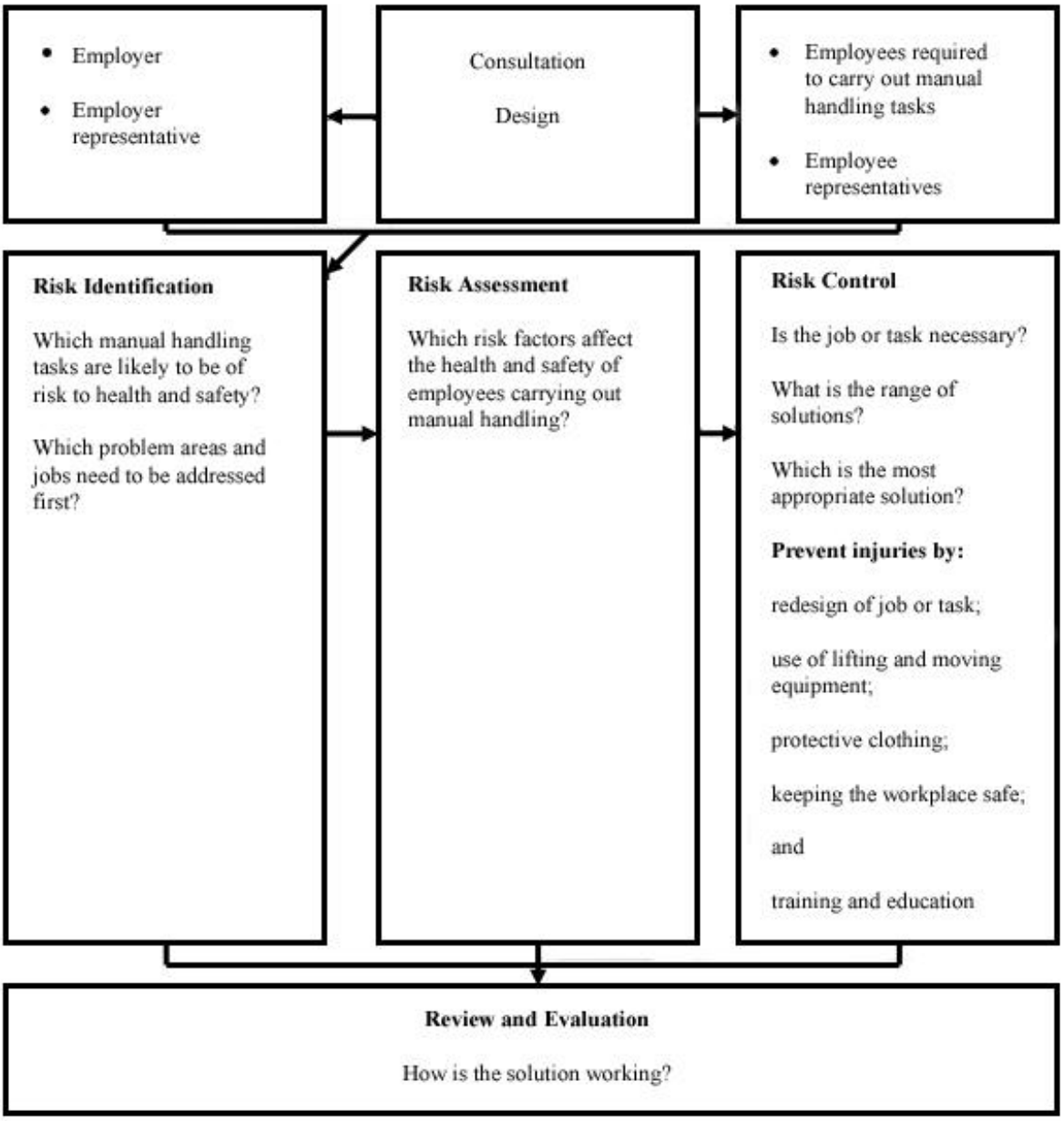
Figure 4: Lifting

A SYSTEMIC APPROACH TO MANUAL HANDLING

1.11 The National Commission's *National Standard for Manual Handling* [NOHSC:1001(1990)][2] requires employers to identify, assess and control manual handling risks in the workplace. The National Commission's *National Code of Practice for Manual Handling* [NOHSC:2005(1990)][2] provides acceptable ways of meeting these requirements.

1.12 The systemic approach of the *National Standard for Manual Handling and National Code of Practice for Manual Handling* [NOHSC:1001 (1990)] and [NOHSC:2005 (1990)][2] is outlined on the next page.

A SYSTEMIC APPROACH TO MANUAL HANDLING



2. CONSULTATION

2.1 Employers should consult with employees and employee representatives when identifying, assessing and controlling risks in manual handling tasks. Consultation is required by occupational health and safety legislation in most parts of Australia.

2.2 Employees carrying out manual handling tasks are likely to have ideas about safer or more efficient ways to do the job. Employees are also usually the first to notice difficulties, and may experience discomfort or pain during their work. To enable prompt assessment and risk control, employees should be encouraged to report these problems to management or employee representatives as early as possible. Workplace occupational health and safety committees, where they exist, may be an appropriate forum for staff to discuss solutions to such problems. By working together, it is possible for employees and employers to find successful `in-house' solutions to many manual handling problems.

2.3 Awareness of manual handling problems, and the willingness to minimise risk, should occur at all levels in organisations regardless of size. In small stores, decisions on work arrangements can be easily made in consultation with employees and employee representatives. In larger retail organisations, decision makers such as store planners, architects, facility designers, human resource planners, buyers, merchandisers, work method engineers, equipment and fitting purchasers, maintenance managers, delivery planners and training managers are often based at regional or head offices. Major decisions affecting outlets are often made at such central offices, and the opportunity for employees to contribute to decision making is minimal. In such situations, large organisations need to ensure that representative consultation occurs when addressing manual handling problems. Employers should ensure that decision makers receive information about the results of risk assessment in retail outlets. This feedback will help develop more effective solutions for reducing manual handling risks.

2.4 Consultation should occur at the planning and design stage, and continue during the introduction of new work methods and the installation, trial-use and evaluation of new equipment and fixtures. This will ensure that new equipment and work practices are appropriate and acceptable, and that any risks associated with their use are minimised.

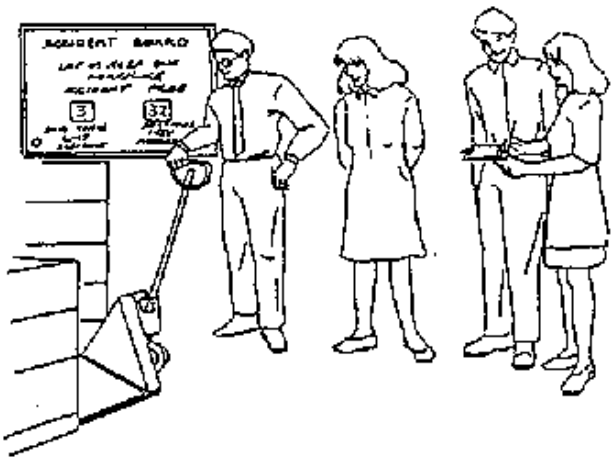


Figure 5: Consultation

3. DESIGN

3.1 It is safer, more productive and less costly to reduce the risk of manual handling injuries at the design stage. Additional costs for modifications may be incurred if risk factors are not considered during the original design stage.

3.2 Guidelines and policies for the selection, design and installation of fixtures, equipment, work procedures and store layout should incorporate ergonomic design principles. For example, it should be ensured that staff can reach to the back of the top shelf for filling and facing up stock. This can be achieved by lowering the height of the top shelf, or by staff using appropriately designed stepping aids. Lowering shelf height has an additional advantage in that customers, who do not have access to stepping aids, can reach stock more easily. Based on this principle, many large supermarkets have reduced the height of their top shelves.

3.3 Ensure that workplace layout, work practices, equipment and fittings are designed and installed to be, as far as practicable, without risk to health and safety. The following principles of stocking store shelves are a good example of safe design in the workplace:

- Weight of product. Lighter items should be placed on higher shelves. Heavier items should be placed on shelves between shoulder and mid-thigh height, ideally at waist height.
- Type of container. To reduce the risk of breakage, avoid placing glass containers on the bottom or top shelves where possible.
- Days of supply. Restrict the amount of any one product on display, dependent on sales.
- Product display on top shelves. To enable easy reach, products on the top shelves should not be stacked on top of each other.

To support a safer store environment for customers and staff, brand name promotion, which often influences shelf stocking, should take these principles into account.

3.4 Work organisation, packaging systems and the characteristics of stock are important considerations in the design of manual handling tasks. For example, the way in which weight, size, shape and wrapping influences the manual handling of stock should be considered before purchase. The type of packaging system, for example, containers, pallets and skips, will also affect manual handling of delivered stock. Delivery schedules should take account of space and staff availability at the time of delivery.

3.5 A period of trial use and evaluation should be allowed prior to the installation of new equipment and changes to workplace layout and work practices.

3.6 Careful assessment of staffing levels should be made during the design, trial-use and evaluation stages to ensure they are adequate.

4. RISK IDENTIFICATION

4.1 Risk identification is the first stage in reducing the risk of manual handling injuries. Risk identification involves the identification of tasks likely to be of risk to health and safety. To identify those tasks, employers should:

- keep and analyse records of injuries to identify the types of injuries, and where and when they have occurred;
- consult with employees and employee representatives about problems in specific tasks; and
- directly observe particular tasks and identify the risk factors involved in those tasks.

4.2 A recording aid for identifying risk factors in particular tasks is given in the `Safe Manual Handling Checklist' on the following pages.

SAFE MANUAL HANDLING CHECKLIST
FOR
GENERAL RISK IDENTIFICATION

Direct observation of work areas and employees at work will assist in identifying risk factors in certain tasks. Workplace inspections, audits, walk-through surveys, and the use of checklists such as this one, can assist in risk identification.

Answers to the following questions are useful when assessing specific tasks. `YES' answers to any of the questions indicate that risk assessment of the task is needed. The more `YES' answers for a particular task, the greater the need for risk assessment of that task.

For further information on risk assessment, and for practical advice on risk identification and risk control, refer to the National Occupational Health and Safety Commission's *National Standard for Manual Handling and National Code of Practice for Manual Handling* [NOHSC:1001 (1990)] and [NOHSC:2005 (1990)], Australian Government Publishing Service, Canberra, 1990.

Work Location_____Date_____

Task Description_____

_____

_____

_____

_____

_____

_____

Employer Representative:_____

Employee:_____

Employee Representative(s)_____

MOVEMENTS, POSTURE AND LAYOUT DURING MANUAL HANDLING

Is there frequent or prolonged bending where the hands pass below mid-thigh height?	☐ **Yes**	☐ **No**
Is there frequent or prolonged reaching above the shoulder?	☐ **Yes**	☐ **No**
Is there frequent or prolonged extended forward reaching?	☐ **Yes**	☐ **No**
Is there frequent or prolonged twisting of the back?	☐ **Yes**	☐ **No**
Are awkward postures assumed frequently or over prolonged periods, that is, postures that are not forward facing and upright?	☐ **Yes**	☐ **No**
Does the work involve repetitive or forceful movements of hands or arms?	☐ **Yes**	☐ **No**

TASK AND OBJECT

Can the order in which tasks are done be improved, for example, workload spread evenly throughout the shift; heavy, tiring tasks alternated with easier tasks?	☐ **Yes**	☐ **No**
Are items being double handled unnecessarily?	☐ **Yes**	☐ **No**
Are loads moved or carried over long distances?	☐ **Yes**	☐ **No**
Is the weight of the load or force applied excessive under the circumstances?	☐ **Yes**	☐ **No**

For pushing, pulling or other applications of force, are large forces involved relative to the part of the body being used?	☐ **Yes**	☐ **No**
Is the load difficult or awkward to handle, for example, due to its size, shape, temperature, instability or unpredictability?	☐ **Yes**	☐ **No**
Is it difficult or unsafe to get an adequate grip on the load?	☐ **Yes**	☐ **No**
Does the task require protective equipment to be worn or used?	☐ **Yes**	☐ **No**
Are large, heavy objects being placed or stored at below mid-thigh or above shoulder height?	☐ **Yes**	☐ **No**
WORK ENVIRONMENT		
Are doorways and entrances too small to admit pallets or lifting and moving equipment?	☐ **Yes**	☐ **No**
Is the workplace layout cramped, therefore restricting access and movement for staff?	☐ **Yes**	☐ **No**
Do tools and equipment need maintenance, for example, ticketing guns, ladders, stools, carton cutters, lifting and moving equipment?	☐ **Yes**	☐ **No**
Is there a shortage of equipment or tools such as trolleys, pallet jacks or stools?	☐ **Yes**	☐ **No**
Are tools and equipment poorly designed for the worker or the task?	☐ **Yes**	☐ **No**
Is the task performed in a confined space?	☐ **Yes**	☐ **No**

Is the lighting inadequate for safe manual handling?	☐ **Yes**	☐ **No**
Is the working environment particularly cold or hot?	☐ **Yes**	☐ **No**
Are the floor surfaces cluttered, uneven, slippery or otherwise unsafe?	☐ **Yes**	☐ **No**
Are unsuitable or unstable stepping aids being used to access high places?	☐ **Yes**	☐ **No**
INDIVIDUAL FACTORS		
Do employees require training and education in appropriate manual handling techniques?	☐ **Yes**	☐ **No**
Have complaints been received from employees about fatigue, pain or difficulties?	☐ **Yes**	☐ **No**
Is the work too strenuous relative to the employee's capacity?	☐ **Yes**	☐ **No**
Is the employee new to the work or returning from an extended period away from work?	☐ **Yes**	☐ **No**
Are there age-related factors, disabilities or other special factors that may affect task performance?	☐ **Yes**	☐ **No**
Does the employee's clothing or personal protective equipment interfere with performance of manual handling tasks?	☐ **Yes**	☐ **No**

5. RISK ASSESSMENT

5.1 If tasks have been identified as likely to be of risk to health and safety, they should be assessed further to determine the appropriate course of action. Risk assessment should be done in consultation with the employees carrying out the manual handling tasks and employee representatives. This is required by occupational health and safety legislation in most parts of Australia.

5.2 The assessment of each manual handling task should include the following factors:

- nature of the object being handled;
- actions and movements involved in the task;
- range of weights handled;
- availability of lifting and moving equipment;
- force to be applied;
- duration and frequency of the task;
- time and distance over which the object is handled;
- working posture imposed by the task;
- training and experience of the employee;
- age of the employee doing the task;
- work environment;
- workplace layout and housekeeping;
- analysis of relevant injury statistics;
- protective clothing and equipment required to do the task; and
- any other factor considered relevant by the employer, employees or employee representatives.

5.3 The risk of a manual handling injury may be affected by a combination of some of the above factors. The cause of injuries can therefore be complex. The *National Code of Practice for Manual Handling* [NOHSC:2005(1990)][2] should be consulted for further guidance on risk assessment. An ergonomics specialist can be referred to for assistance, if necessary. Relevant occupational health and safety legislation in each State and Territory should be consulted for specific requirements on risk assessment.

6. RISK CONTROL

PREVENTING MANUAL HANDLING INJURIES

6.1 The assessment of a manual handling task will indicate if it poses a risk to health and safety. Risk assessment may in turn point to practicable control or preventive measures.

6.2 The first consideration in risk control should be the possibility of eliminating the task concerned. General rearrangement of the work may make this feasible.

6.3 If the task cannot be eliminated, redesign of the task should then be considered. For example, rearrangement of the work area to avoid placing goods on the floor, or adjusting the work height to prevent awkward postures.

6.4 In some cases, the use of lifting and moving equipment will be warranted. Use of protective clothing and team lifting may also reduce the risk. A combination of some of the above risk control methods may be suitable in some situations. Other considerations, including general workplace safety, adequate lighting and keeping floor surfaces clean can reduce the risk of injury.

6.5 Since manual handling risks can never be completely eliminated, training and education in appropriate manual handling techniques is vital for all employees involved in manual handling.

GENERAL PROBLEMS AND SOLUTIONS

6.6 Solutions to manual handling problems may involve physical changes to the workplace or the provision of new equipment. Many changes, such as rearranging workplace layout, changing work organisation, maintenance and adequate supplies of equipment, are not expensive.

6.7 Whenever a manual handling task is identified as a risk to health and safety, a risk assessment of the task is always necessary. The following general problems and suggested solutions are only examples for preventing manual handling injuries. The solutions suggested may only be part of an overall solution to the manual handling problems described.

Problem	Solutions could include the following:
The weight to be lifted is excessive.	Reduce size of packaging or size of load. Provide lifting and moving equipment. Use team lifting.

Excessive pushing and pulling forces are required to move the load.	Reduce size of packaging or size of load. Provide powered moving equipment. Use team effort to handle load. Improve design of moving equipment, that is, bigger wheels, smaller capacity, lighter construction. Maintain equipment in good condition. Provide and maintain even and non-slip floor surfaces.
Excessive forward reaching is required to lift the load.	Place stock within closer reach. Remove barriers that prevent load being brought closer. Provide pallet turntables to avoid reaching across pallet.
The load is being lifted from the floor.	Avoid placing loads on the floor by: - providing platforms or trolleys for stock; - using shelving at waist height, in preference to shelves at floor level; or - using equipment such as hydraulic lift tables or trolleys.
The load is being stored above shoulder level.	Lower height of shelves. Provide a step stool or a ladder fitted with a platform.
An unmarked load is heavier than expected.	Order stock which is clearly marked with weight and contents.
Loads are difficult to grip.	Provide carrying boxes with well-designed handles. Avoid sharp edges, greasy or oily parts.
The load must be carried, pushed or pulled for a long period or distance.	Change workplace layout. Use lifting and moving equipment, for example, roller conveyors or trolleys.

Loads are awkward in shape, preventing them from being lifted or carried easily.	Consider redesign of containers, for example, provide handles to enable team lifting or provide smaller packaging. Provide lifting and moving equipment.
Operators need to bend over for sustained periods while working.	Raise the work height, for example, provide lift tables or adjustable desks. Provide job rotation and task variety.
Floors are slippery.	Ensure spills are cleaned up immediately. Provide a non-slip floor surface. Maintain equipment to stop fluid leaks. Promote good housekeeping, for example, clean floors regularly, if necessary. Encourage employees to wear appropriate footwear. Relocate equipment and stock with the potential to create slip hazards, for example, rotisseries and cut flowers, away from walkways.
Loads are being unloaded frequently from trucks.	Use lifting and moving equipment, for example, hydraulic lift platforms, levelling docks, walk-behind stackers, roller conveyors or slides.
Heavy drums are being manually up-ended and moved.	Provide suitable lifting and moving equipment, for example, trolleys.
Empty pallets are manually moved and stacked.	Provide suitable lifting and moving equipment, for example, walk-behind stackers. Limit stacking height of pallets when manually handled. Train staff in specific pallet handling techniques.

6.8 Some suggested solutions and improvements to manual handling tasks performed in the retail industry are illustrated in the following pages. It should be noted that the solutions or improvements provided are suggestions only. There may also be other solutions or suitable alternatives available for retailers to use. Readers should refer to industry trade journals and ergonomics consultants for further details about the equipment illustrated.

REDESIGN - REDUCE MANUAL HANDLING

Can any High Risk Manual Handling Activities be Eliminated?

Figure 6A: Employees need to hold pricing guns when marking stock.

BETTER

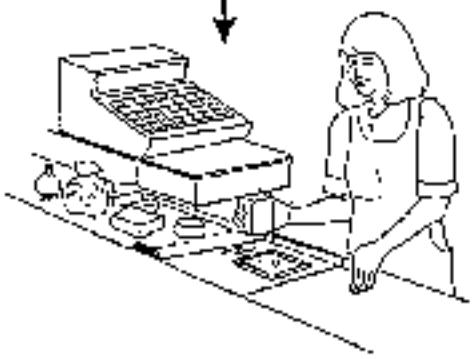


Figure 6B: Bar-coded stock eliminates the need to use pricing guns. Coded items are quickly and easily scanned at the check-out.

Change the Size or Weight of Packaging

6.9 Manual handling injuries can occur while handling heavy or bulky containers. They can also occur when the effort exerted to move an object is inappropriate, for example, when a box is small but unexpectedly heavy. Light objects, if large or awkwardly shaped, may be difficult to lift. The awkward posture required to handle them may lead to injury. An employee's view or path of travel may also be blocked, increasing the risk of slips, falls or collisions.

6.10 The following solutions to these problems are suggested:

- Order stock which is labelled with its weight and contents. Knowing the weight and contents of a container helps employees to recognise the risks of handling it.
- Ensure a range of lifting and moving equipment is available. That way staff can decide the best way to do the job.
- Order stock in larger packaging and handle it by mechanical means, if the workplace layout and conditions allow.
- Alternatively, stock currently in large and heavy packages can be ordered in smaller packages. Such stock can then be handled more easily.

6.11 Manufacturers and suppliers can be approached regarding alternative packaging and delivery of stock. Discuss with them the health and safety features of each type of packaging and delivery system. Ask them if stock is available marked with its contents and weight. Whatever the solution, it is important that individual items are easily handled.

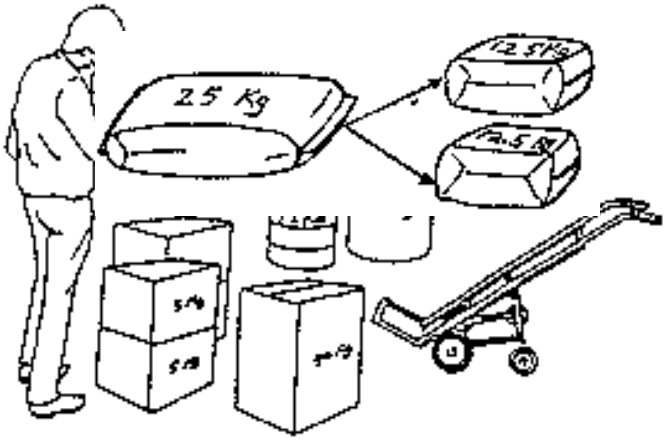


Figure 7: Knowing the weight and contents of containers helps staff recognise the risks of handling them.

Figure 8: Flour, available in 25 kilogram bags for a bakery, could also be available in smaller bags weighing 12.5 kilograms. Smaller bags can be lifted and handled more easily.

Eliminate Double Handling Where Possible

6.12 Double handling of stock is sometimes unnecessary and may increase the risk of injury. Careful analysis of work organisation, workplace layout and long-standing work practices will often eliminate double handling. For example, allowing sufficient space to access stock at the rear of storage areas will avoid the need for double handling. Ordering stock appropriately, taking into consideration available storage space and how quickly supplies are sold, will also help eliminate double handling.

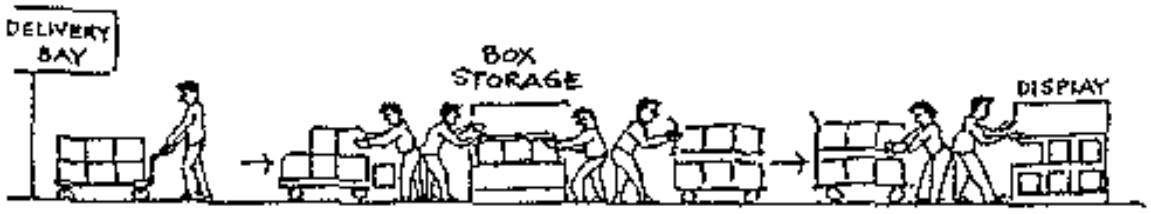


Figure 9A: Stock is moved many times between delivery, storage and display using a trolley.

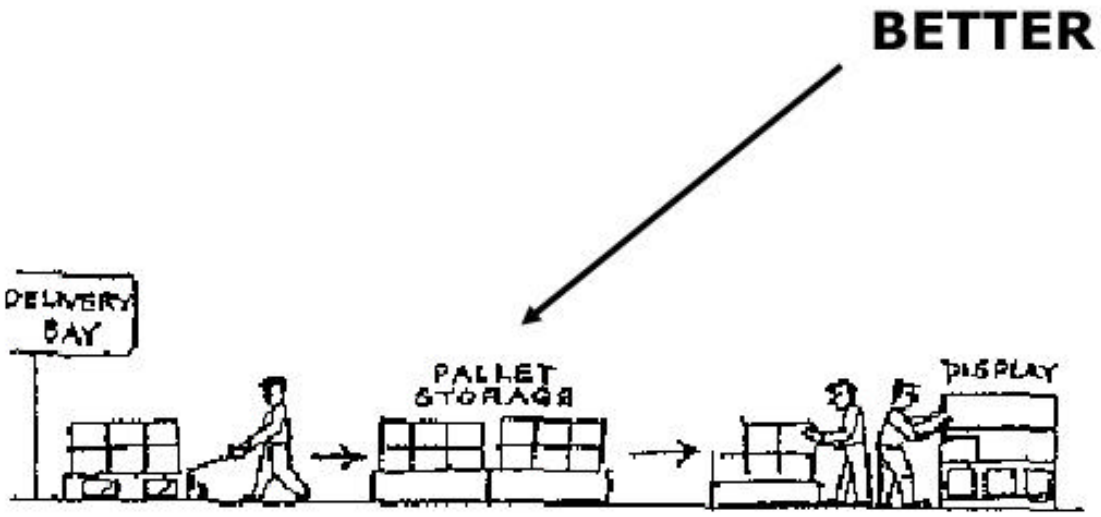


Figure 9B: Using a pallet jack, the stock is moved directly from delivery to display. Careful ordering of stock, balancing depletion with the scheduled delivery of supplies, will eliminate some of the need for storage.

Eliminate Multiple Handling Where Possible

6.13 To eliminate multiple handling, leave stock in cut-down cartons and place directly on shelves. Stock can also be ordered in carton sizes to fit shelves, provided the carton weight is not excessive.

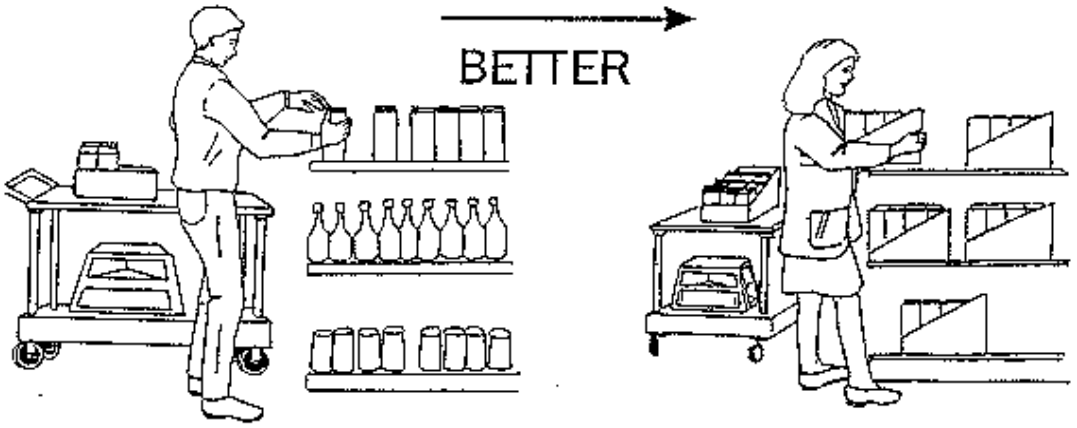


Figure 10A: Each item of stock is individually placed on the shelves.

Figure 10B: Boxes containing stock are cut down and slid directly onto the shelves. This practice is not suitable for high shelves, due to the risk of contents tipping forward during the lift.

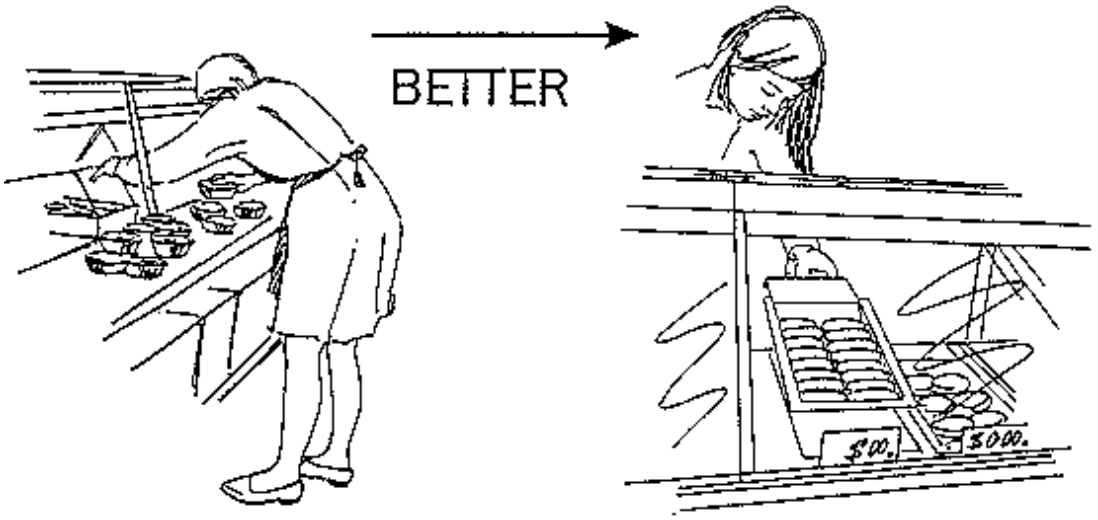


Figure 11A: Employees need to stoop and reach frequently to arrange or serve food items from a deli display cabinet. Items are also regularly rearranged and moved to clean the cabinet.

Figure 11B: The food is displayed on light plastic trays which slide easily in and out of the display cabinet. Employees do not need to stoop or stretch to reach the stock. Stock rotation is easier and the cabinet does not need to be cleaned so often.

Reducing Lifting Forces

6.14 In a busy food shop, this employee must reach frequently above the shoulder to refill a drink dispenser. Two alternatives will eliminate above shoulder reaching and help minimise employee fatigue.

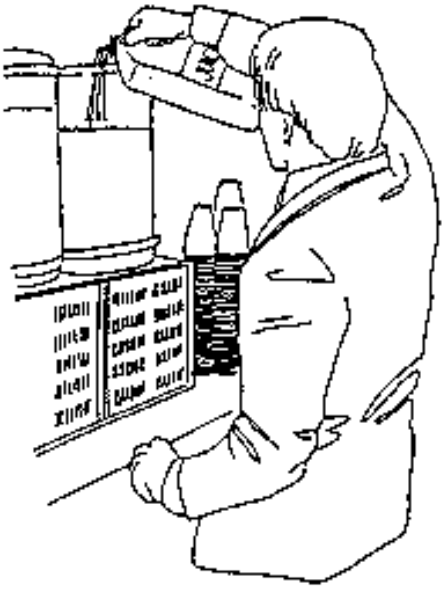


Figure 12A: Lifting a 4 litre juice container to fill a drink dispenser.

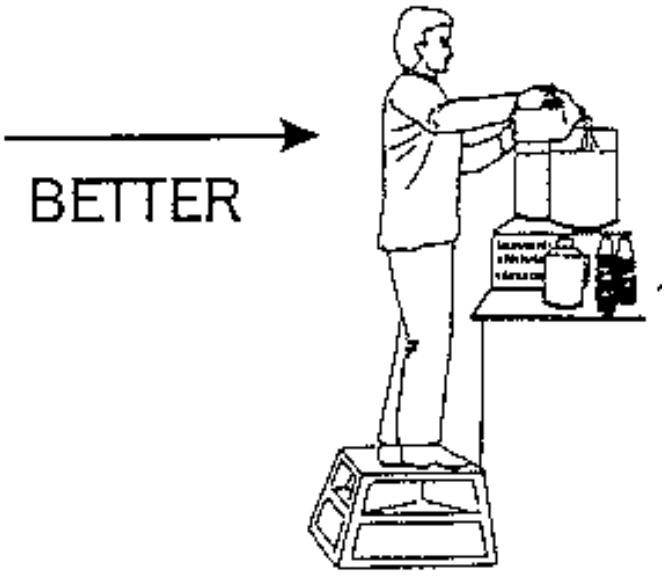


Figure 12B: Use a step stool to fill the drink dispenser more easily. While filling, stand as close to the dispenser as possible.

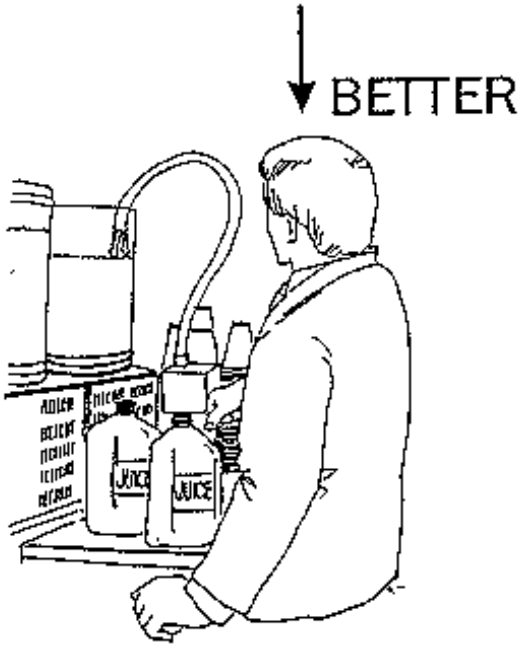


Figure 12C: Leave the juice container on the delivery trolley and use a pump to fill the dispenser.

6.15 Work surfaces at different heights cause unnecessary lifting and twisting of the body.

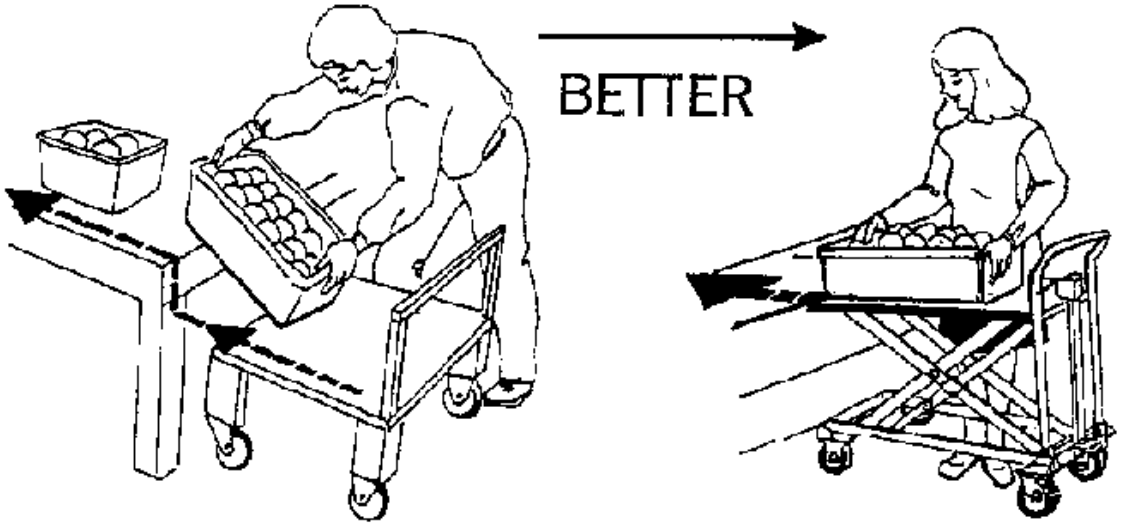


Figure 13A: When work surfaces are at different heights, objects need to be lifted from one surface to another.

Figure 13B: If trolleys and work benches are the same height, stock in boxes can be slid over rather than lifted. To enable this, an adjustable height trolley can be used.

Reducing Pushing Forces

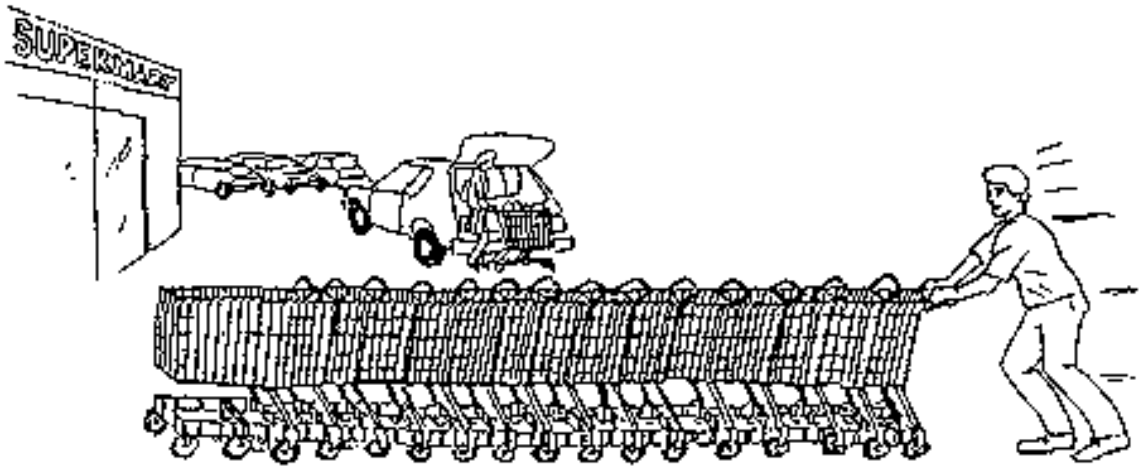


Figure 14A: Excessive force and awkward posture are required to move a large number of shopping trolleys at once. This increases the risk of back pain and strain. Moving these trolleys up shopping centre ramps can also add to the load. After being handled in this way, trolleys can become jammed together and be difficult to separate. Damage to trolleys can also occur as a result of such handling. A large collection of trolleys may be difficult to handle and control. As a result, `runaway' trolleys may also cause damage to cars or injure customers.

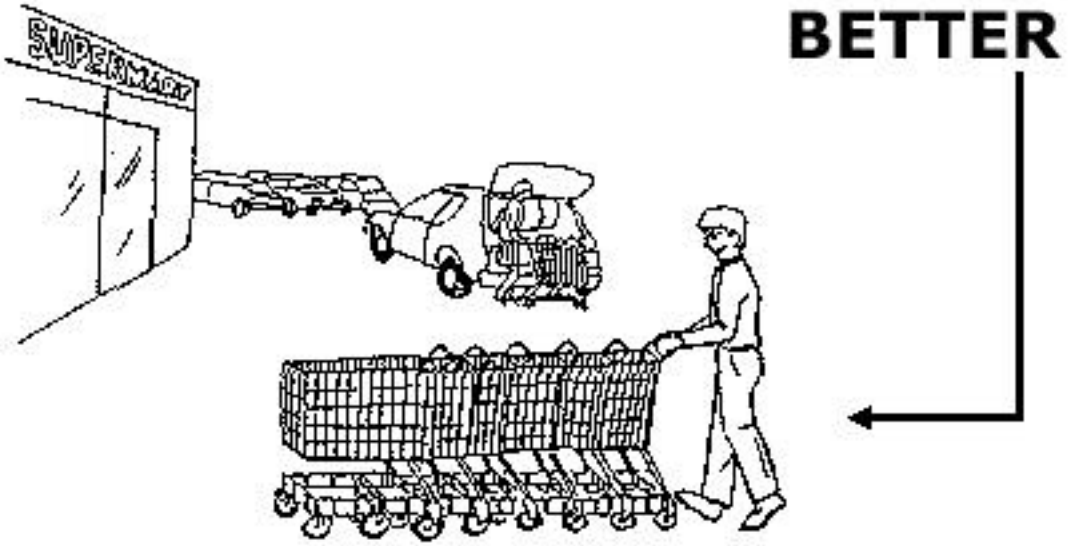


Figure 14B: Limit the number of trolleys to be collected by employees at one time. Fewer trolleys need less force to push and are easier to control. Employers should consult with employees about the maximum number of trolleys to be collected at any one time. This number will depend on a full assessment of conditions, such as local terrain, ramps, corners, road surfaces and capacity of the employee. Employers should give clear instructions about trolley collecting procedures under all conditions. In some situations, a second employee may be needed to assist in the handling of trolleys.

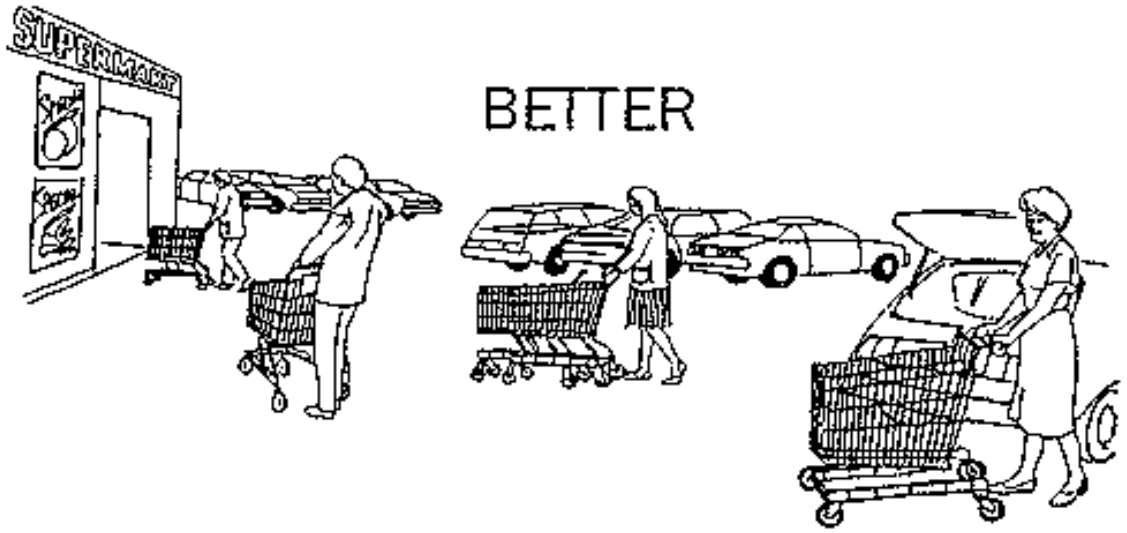


Figure 14C: A refundable-deposit system may encourage customers to return their trolleys to the store.

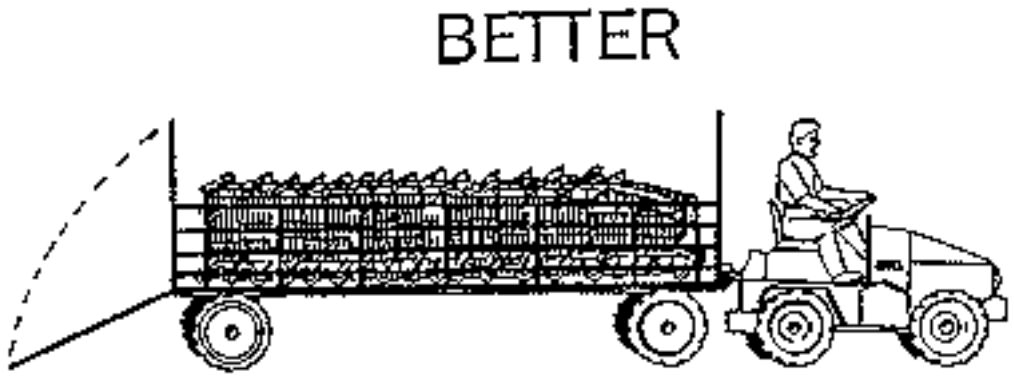


Figure 14D: Use a tractor and trailer to collect trolleys in a large parking area. Employees should limit the number of trolleys being pushed up the ramp of the trailer at one time. Alternatively, a small motorised tug can be used to pull a group of linked trolleys.

6.16 When collecting trolleys from supermarket car parks and shopping centres, employees must sometimes cross busy streets or negotiate full car parks in the rain or at night. Employees should be made aware of the dangers in crossing roads while collecting trolleys. Protective clothing should be worn when collecting trolleys in the rain. A yellow plastic raincoat and hat are ideal. When collecting trolleys at night, a reflective jacket should be worn.

REDESIGN - WORK ORGANISATION

Task Variety

6.17 Job rotation and job enlargement can introduce task variety and reduce the amount of manual handling each employee does throughout a work shift. Task variety can help prevent sprains and strains by providing employees with a change of activity. Job rotation and job enlargement also enable employees to become multiskilled.

6.18 Jobs should be organised to include a variety of activities such as sitting, standing and walking. Appropriate training for all tasks must be provided. Consultation is necessary to ensure this is acceptable to all concerned.

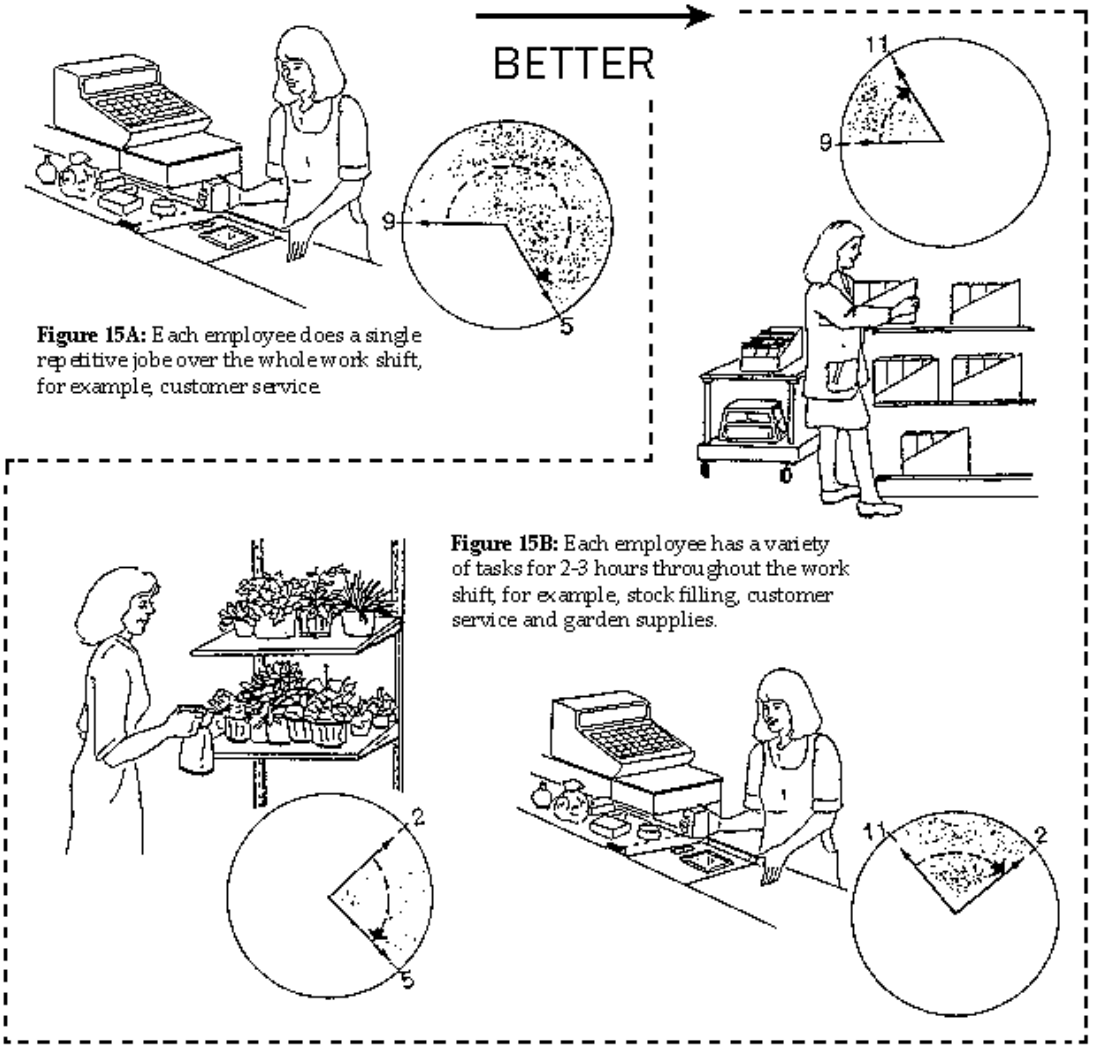


Figure 15A: Each employee does a single repetitive jobe over the whole work shift, for example, customer service.

Figure 15B: Each employee has a variety of tasks for 2-3 hours throughout the work shift, for example, stock filling, customer service and garden supplies.

Adequate Staff Numbers

6.19 Staffing levels should accommodate busy trading times, and allow for meal or rest breaks. Seasonal factors and peak sales periods should be considered when assessing the number of staff required.

Figure 16A: Long queues of customers put pressure on check-out operators to work beyond their capacity. Customers can get impatient and abusive, putting further stress on the operators. This can lead to increased fatigue, injuries and errors.

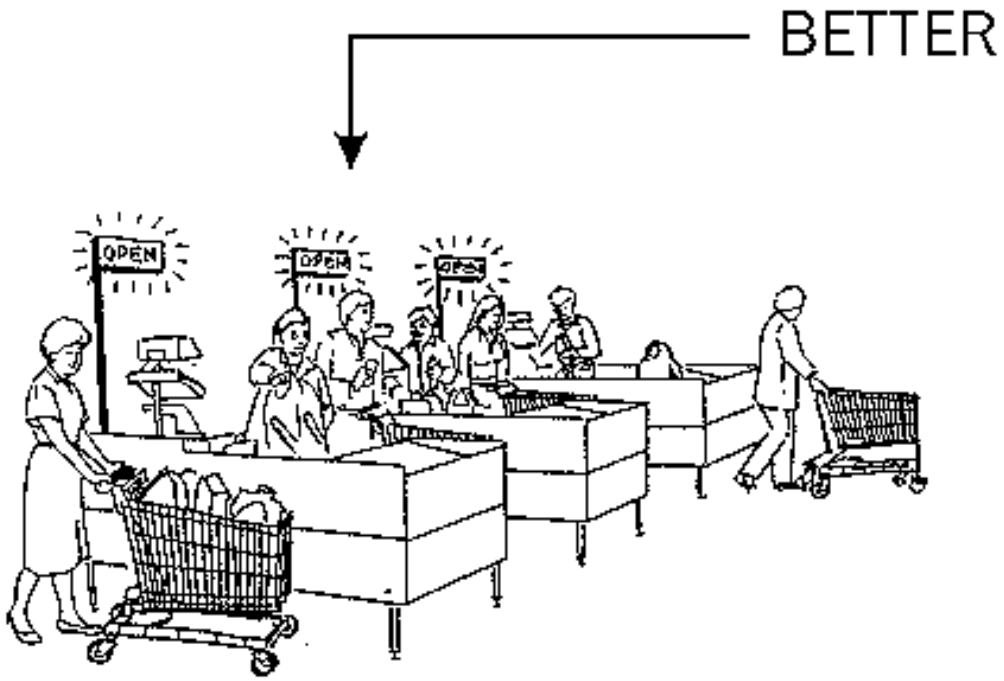


Figure 16B: Adequate staff numbers will lessen the risk of fatigue, injuries and errors. This may increase productivity and the customers will be happier.

REDESIGN - REDUCE REACHING, TWISTING AND BENDING

Ensure Adequate Space for Movement

6.20 Limited space in work areas makes it difficult to handle stock or use lifting and moving equipment. The risk of injury is increased by the use of inappropriate posture or carrying stock over long distances.

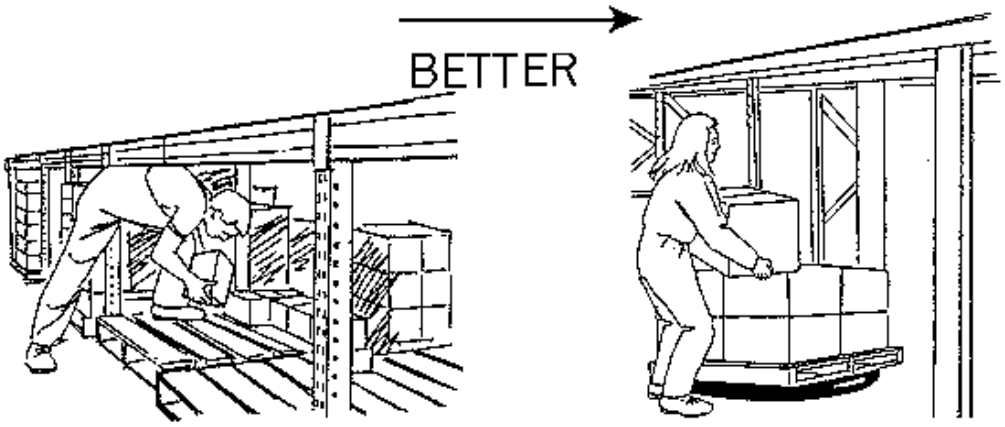


Figure 17A: This employee must stoop and twist or crawl under a shelf with adequate head room to reach stock which is located at the rear of the pallet.

Figure 17B: The pallet is stored in a place with adequate head room for easy access. Use of a pallet hoop means the pallet can be rotated to bring the contents closer. Alternatively, the pallet can be moved by forklift or pallet-jack for easier access.

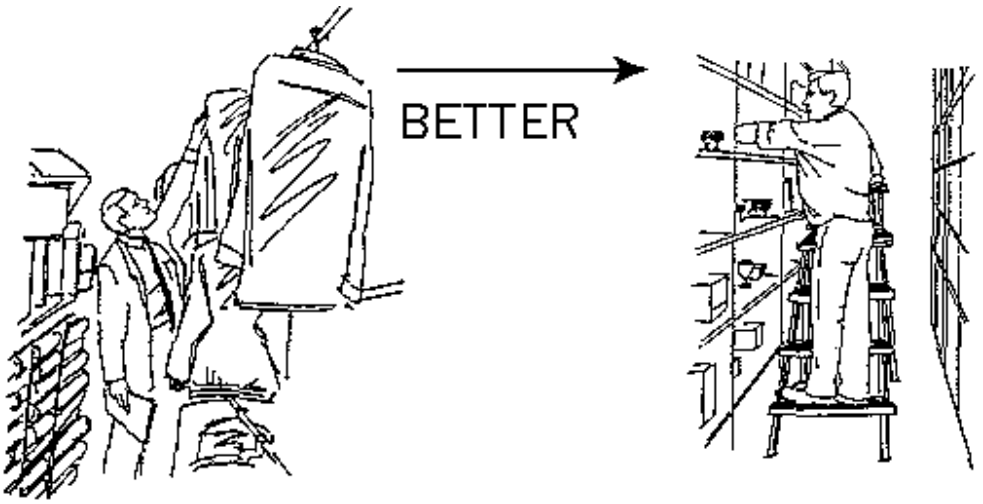


Figure 18A: The aisles in this storage area are not wide enough to enable easy handling of stock.

Figure 18B: Aisles in storage areas should be wide enough to enable safe handling of stock and use of steps, ladders and trolleys.

Design of Equipment and Work Areas

6.21 Fixtures and fittings, trolleys and other equipment should be designed to enable correct posture and good work methods. Equipment that requires repeated or prolonged bending and twisting in its use should be avoided. The design of equipment should be appropriate for the task and the area in which it is used. New equipment should be tested and assessed by staff prior to purchase. The duties of cleaning and maintenance staff should be taken into consideration when installation of new furniture, fixtures and fittings are planned.

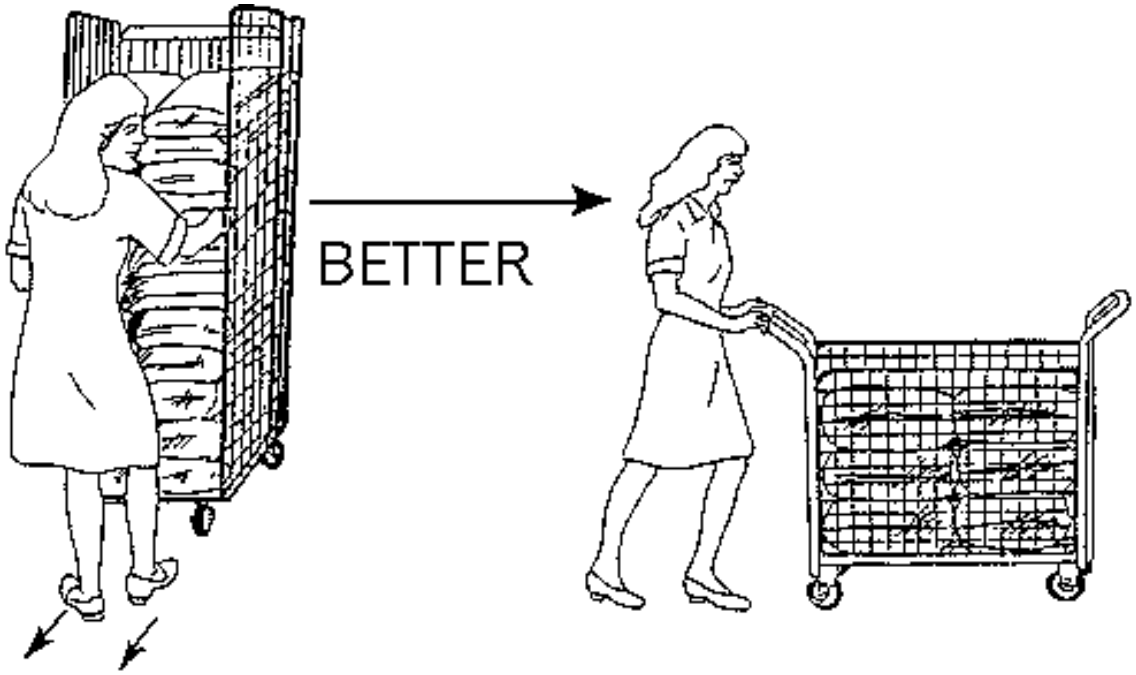


Figure 19A: This employee cannot see if the path ahead of this trolley is clear. While pulling the trolley backwards, she needs to twist her neck and back to check that the path is clear of obstacles.

Figure 19B: This trolley is equipped with well-designed handles. The employee comfortably pushes the trolley forward and can see a clear path ahead. This trolley also features removable mesh sides, enabling easier access to stock. An adjustable height base, available on some trolleys, further enables easier access to stock by reducing the need to bend.

Design of Equipment and Work Areas - Boxes, Containers and Pallets

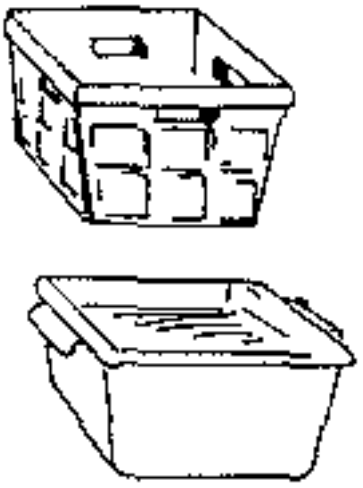


Figure 20: Handles or handspaces on boxes, tubs or containers allow a surer grip and reduce the need to stoop when picking these items up. Plastic boxes are lighter, thus reducing the weight of the load to be lifted.

Figure 21: `All-directional' pallets can be picked up by a forklift or pallet jack from any direction. This is a great advantage and convenience in limited storage areas and on trucks.

Design of Workstations

6.22 Prolonged work at poorly-designed workstations can increase the risk of chronic fatigue, pain and injury.

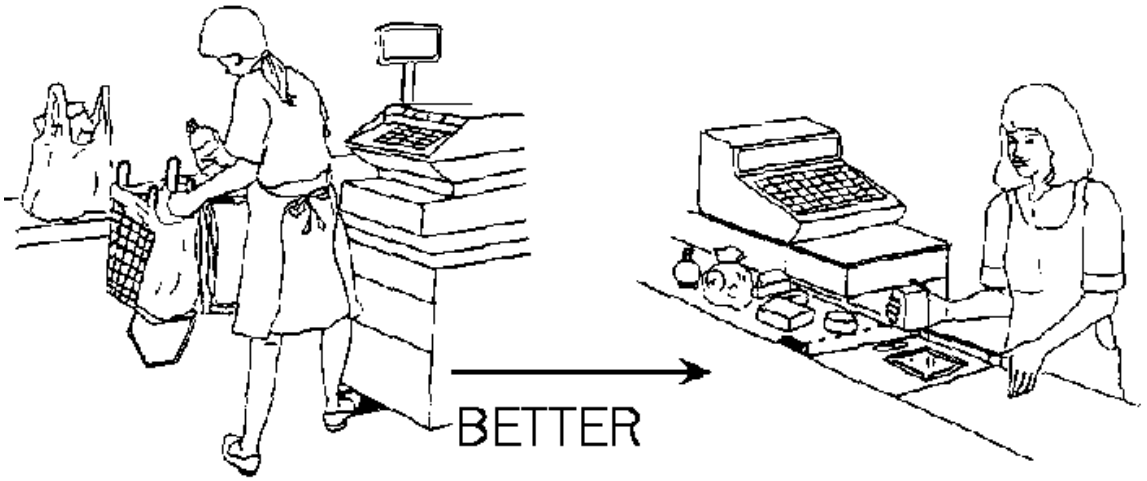


Figure 22A: Prolonged foot pedal operation at a check-out can cause fatigue and pain in the back, leg and foot. This operator needs to twist her back during packing because of restricted posture.

Figure 22B: This conveyor is operated by an automatic light-beam. The conveyor stops whenever an item reaches the light detector next to the scanner. The operator can then choose the most comfortable working posture without restriction of movement.

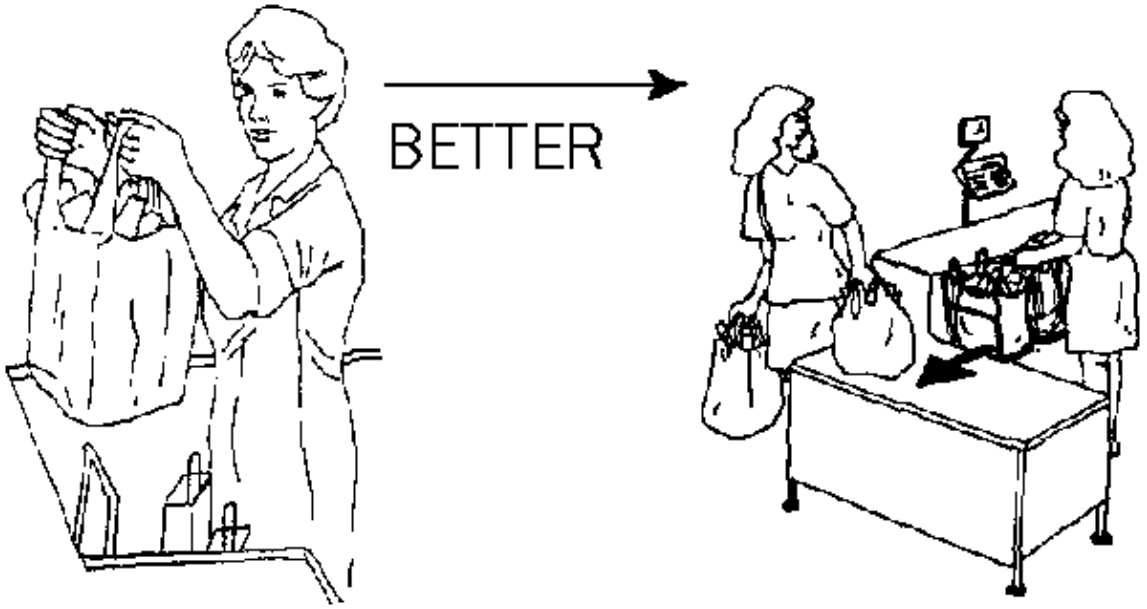


Figure 23A: This employee needs to lift every full shopping bag up onto the check-out counter.

Figure 23B: The design of this check-out allows this operator to easily slide each shopping bag across the counter to customers. The height of bag racks should be comfortable enough not to cause operators to stoop while packing shopping bags.

Figure 24A: Deep display cases are often used in food shops to ensure effective display of goods. Employees need to reach and stoop frequently when cleaning and serving from them.

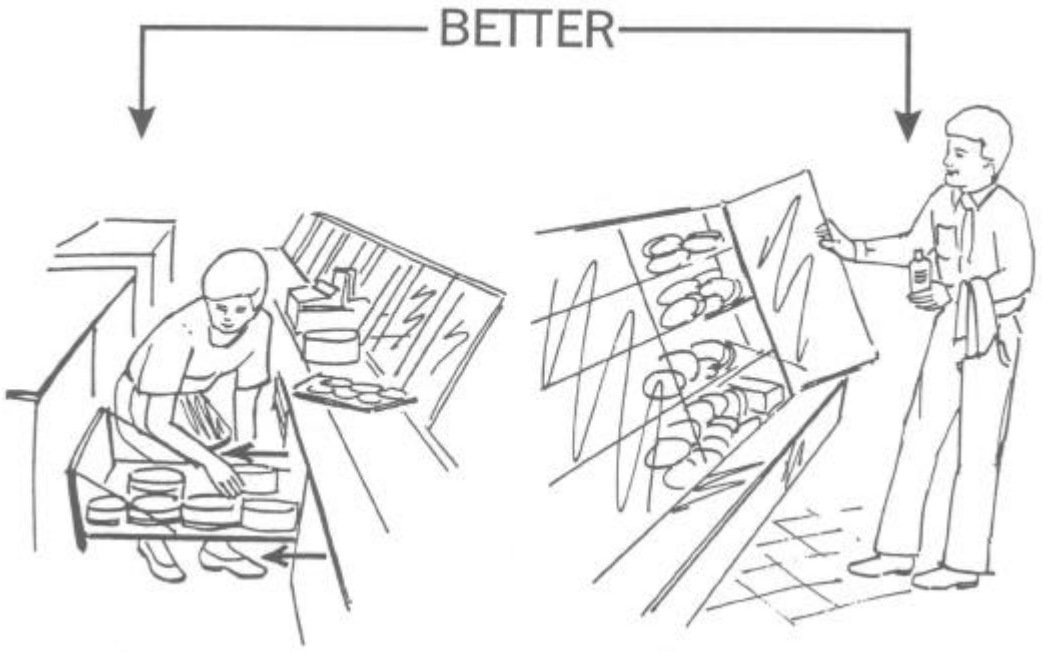


Figure 24B: Roller drawers, which enable easy reach for serving and cleaning, can be used to display stock in deep, low displays.

Figure 24C: The interior and the glass on the inside of this display case is easily accessed for cleaning. Shelves in other work areas can also be designed in this way.

REDESIGN - WORKPLACE LAYOUT

Space for Movement

6.23 When designing displays, ensure that staff have easy access for the arranging and serving of stock, and the dismantling and maintenance of equipment.

Figure 25A: Crowded displays restrict easy access to stock for display arrangement and serving. Customers will also have difficulty in accessing crowded display items.

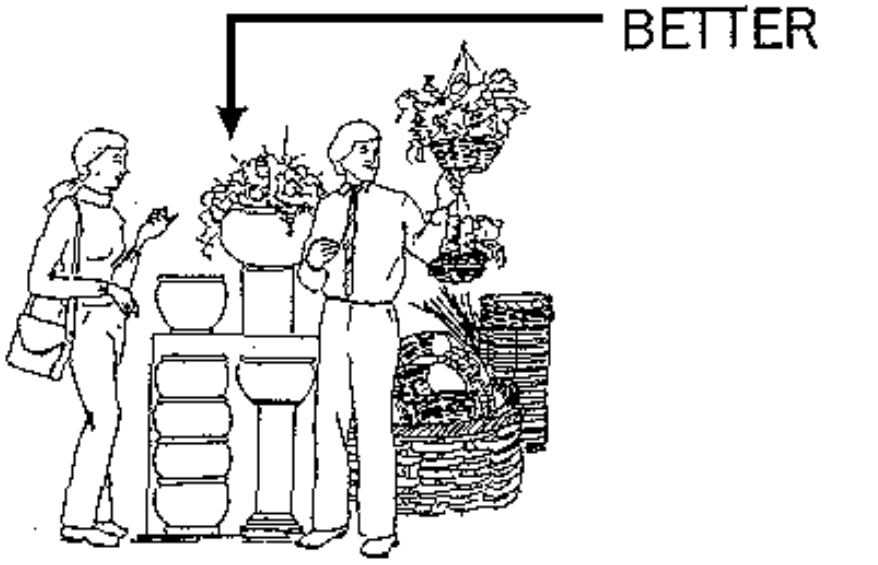


Figure 25B: Avoid serving from crowded displays. Keep enough stock on hand for display and immediate sale, then place excess stock in storage.

Get the Work Height Right

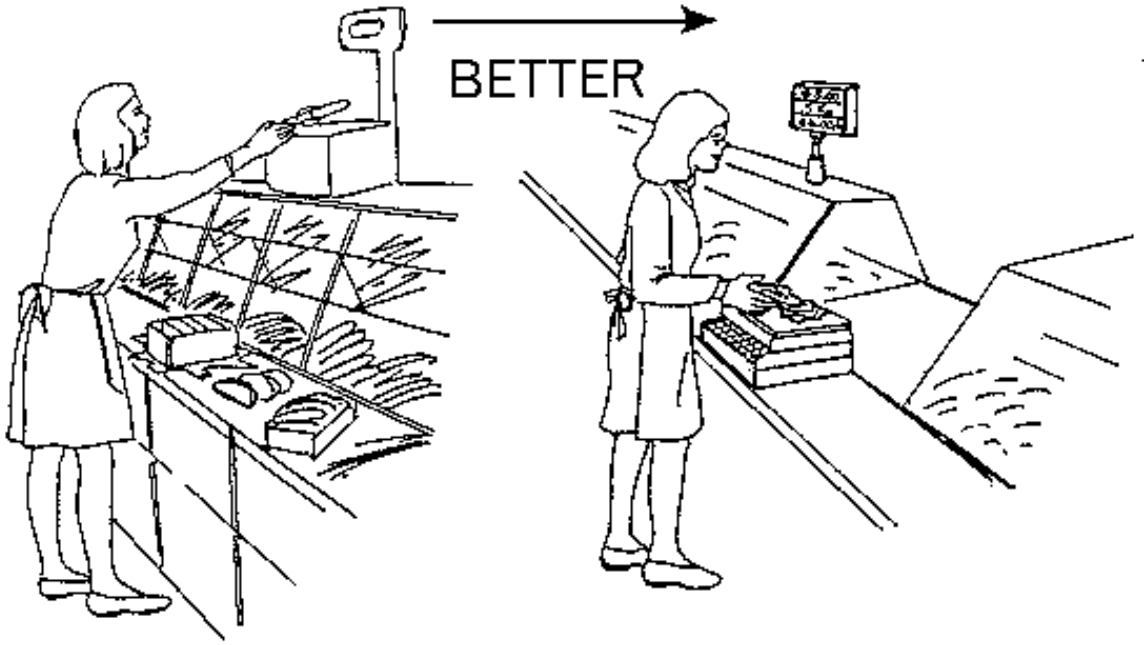


Figure 26A: This employee needs to frequently stretch above her shoulder to reach the scales, and then tilt her head to read the display. She reaches again to pass the purchase to her customer.

Figure 26B: This scale on the preparation bench is within easy reach. Employees can comfortably reach the weighing pan and easily see the display. A space between the cabinets makes it easier to pass purchases to customers.

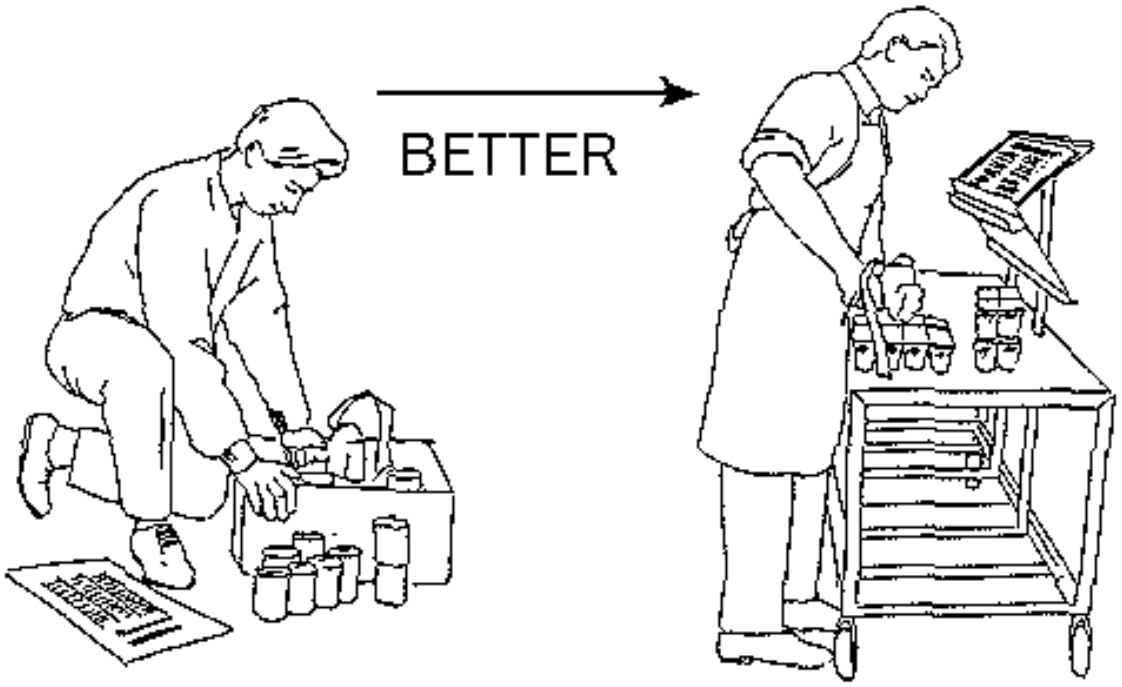


Figure 27A: Crouching and stooping to mark stock at floor level can cause fatigue in the legs, back and neck.

Figure 27B: A flat-top trolley at a comfortable height can be used to mark stock. A sloping shelf at reading height is ideal for placement of stock lists.

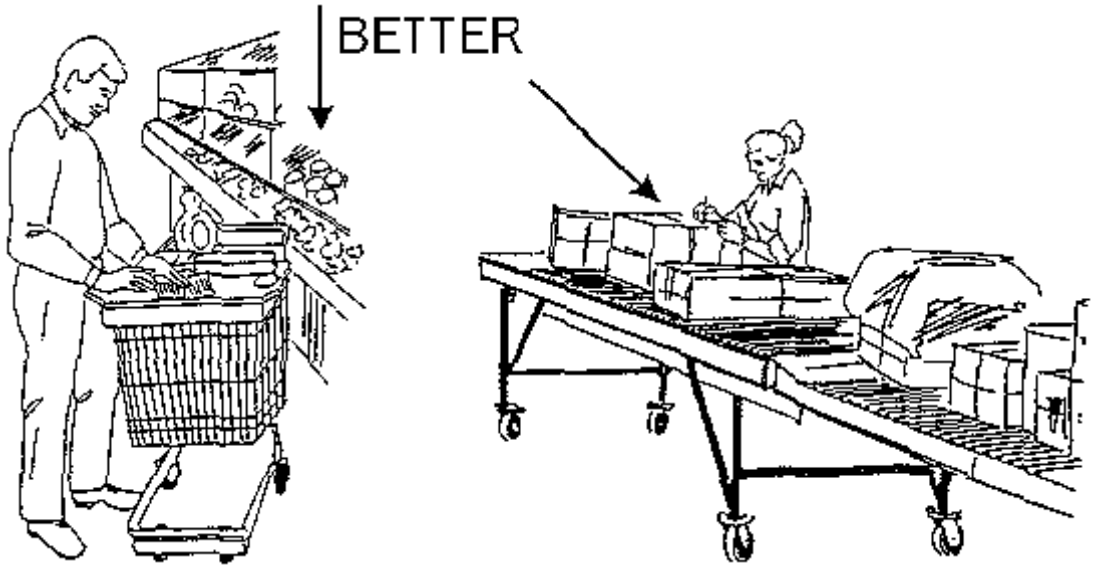


Figure 27C: Existing equipment can be usefully modified at minimal expense. For example, a wooden tray, cut to fit into this shopping trolley, makes an ideal, portable work surface. It can be used for pricing, sorting, ordering and carrying equipment.

Figure 27D: This roller conveyor is used to sort and mark stock in a delivery bay. The conveyor is at a comfortable working height and stock can be pushed along rather than lifted.

6.24 Chairs, stools and platforms should be used to help reduce forward bending and twisting when the work height is low.

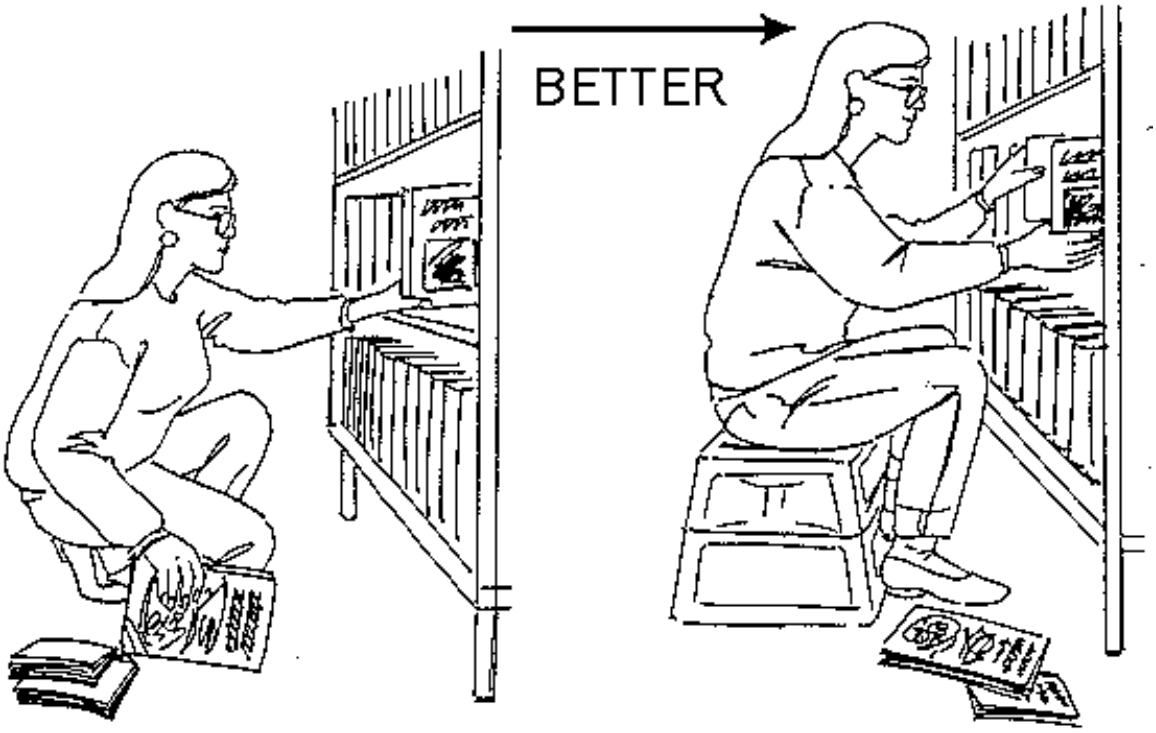


Figure 28A: Stocking of shelves at ground level can be fatiguing, due to the twisting and bending required.

Figure 28B: Use of a small stool will reduce the effort required from twisting and bending.

Work at the Right Height

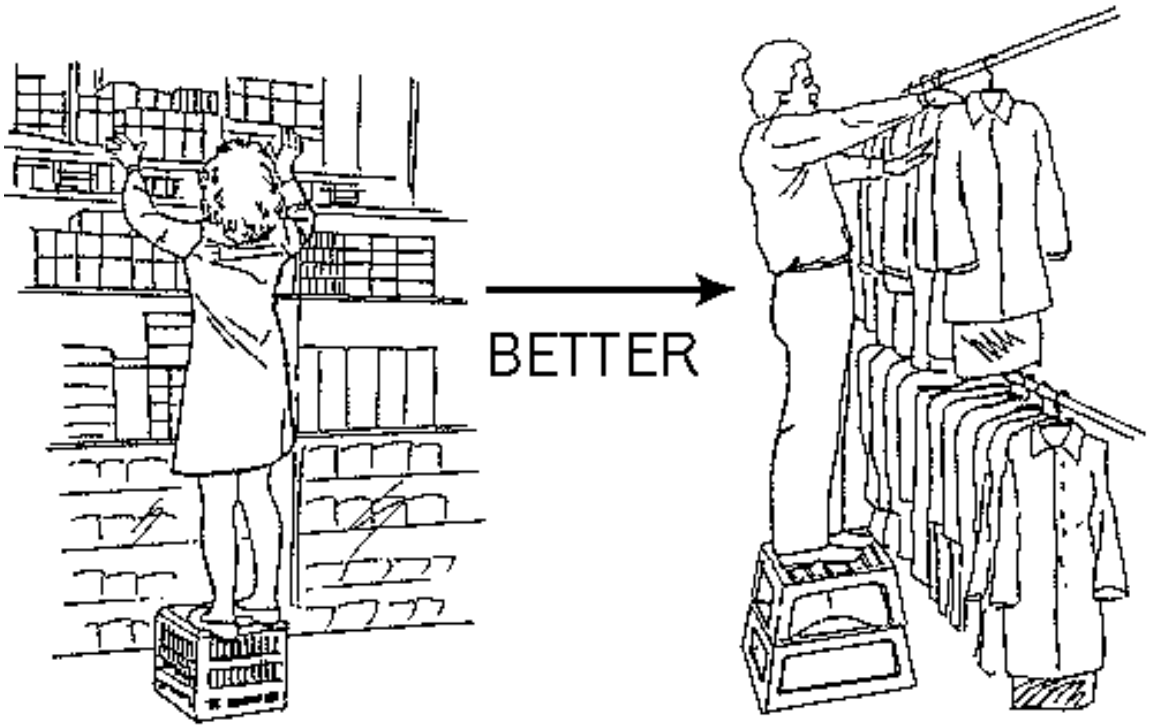


Figure 29A: Milk crates and other similar items are unacceptable for use as stepping aids because they are not designed to be stepped on. Falls and injuries can easily occur during their use.

Figure 29B: Stable, sturdy step stools provide a non-slip standing surface and enable easy access to stock out of reach.

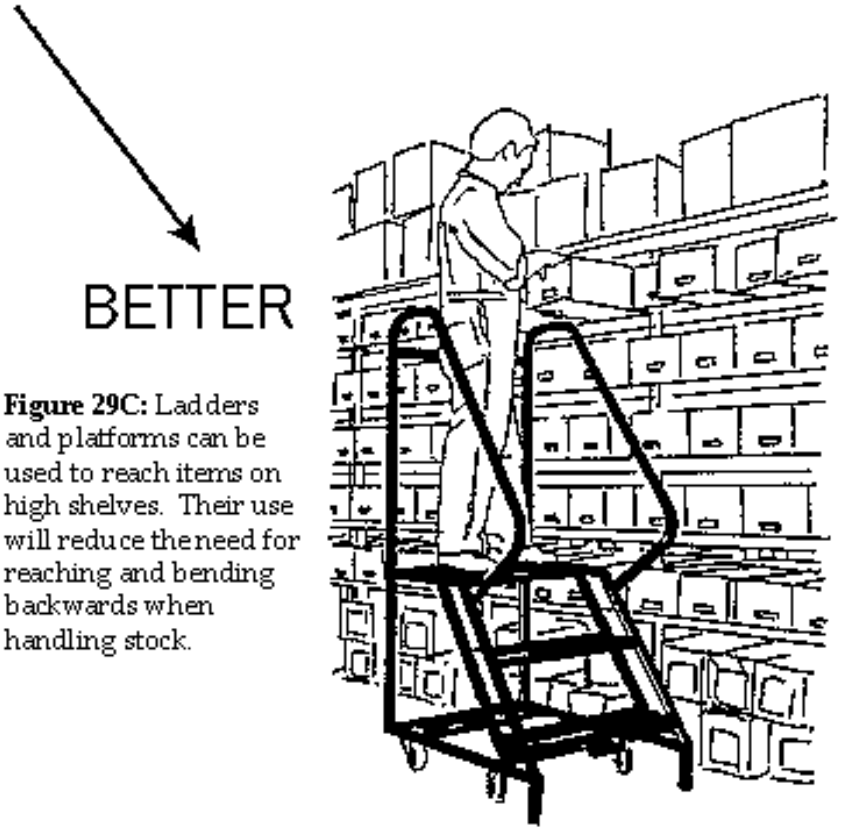


Figure 29C: Ladders and platforms can be used to reach items on high shelves. Their use will reduce the need for reaching and bending backwards when handling stock.

Store at Waist Height

6.25 Handling and lifting of items should ideally be done between mid-thigh and shoulder height. For ease, heavy and high turnover stock should be stored or displayed at waist height. Light or slow moving stock can be placed on shelves above or below waist height.

Figure 30A: Reaching and bending backwards to place on object on a high shelf.

Figure 30B: Squatting to place an object on a low shelf.

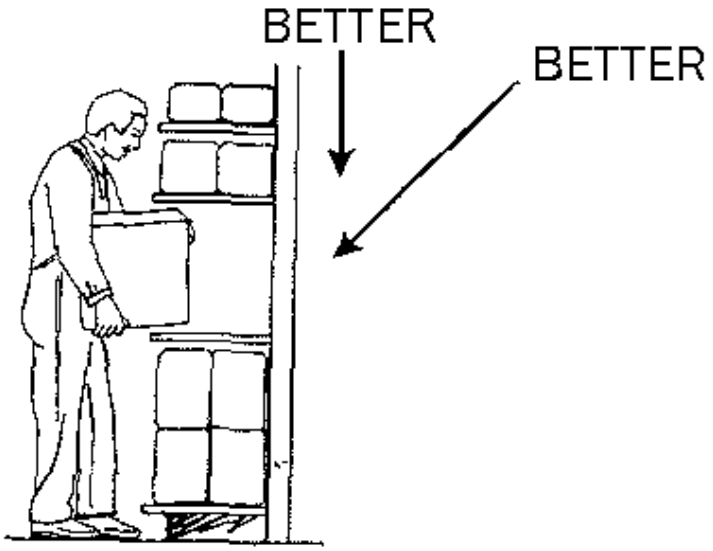


Figure 30C: The ideal lift is done between mid-thigh and shoulder height.

6.26 Stock displays on high shelves are difficult for staff to arrange and customers to reach.

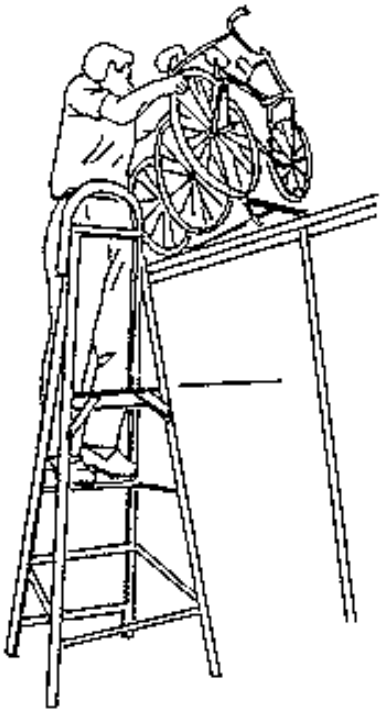


Figure 31A: Large and awkwardly-shaped items, such as bicycles, are difficult to take down from a high display area.

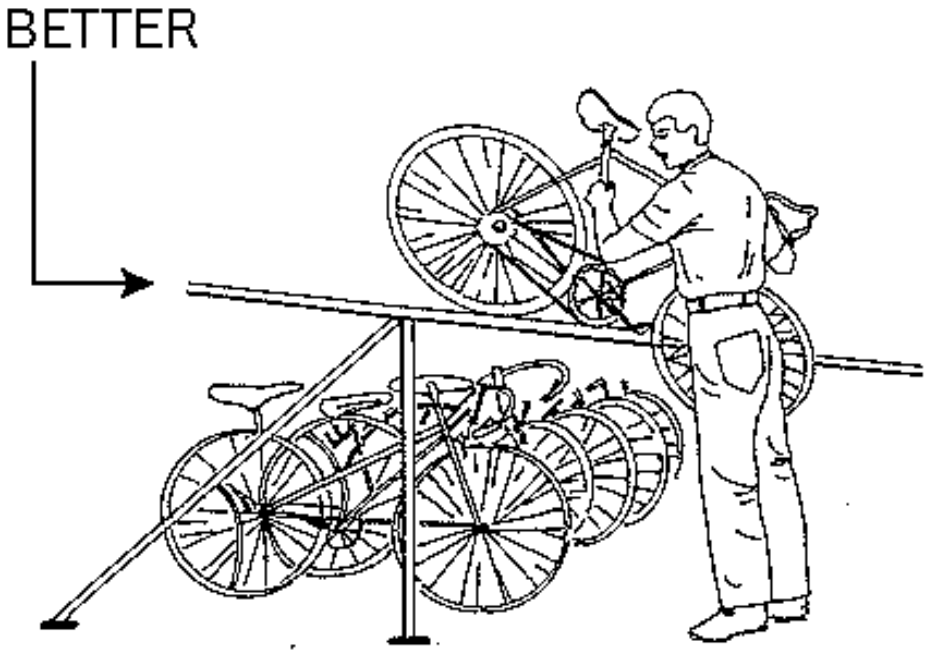


Figure 31B: High turnover stock should be displayed within easy reach. In this case, popular bicycle models are conveniently displayed on the floor or in low racks. The bicycles can be easily removed from, or placed onto, the display.

LIFTING AND MOVING EQUIPMENT

6.27 If a task has been assessed as a risk, and redesign is not feasible, the use of lifting and moving equipment may reduce the risk. Equipment can range from simple trolleys to more expensive aids such as lift trucks, conveyors, adjustable platforms and hoists. The use of such equipment will also make the job easier.

6.28 When purchasing new equipment, it is important for employers to consult with the employees who will be using it. It is also important that proposed equipment is trialled for use. That way, the most appropriate, cost-effective and manoeuvrable equipment will be purchased.

6.29 The use of lifting and moving equipment may create a secondary hazard. To avoid this, employees should be trained to use and maintain the equipment properly.

6.30 The design, installation and use of lifting and moving equipment may be subject to State or Territory legislation.

Trolleys

6.31 A large selection of trolleys is available on the market. Some trolleys can be used in a variety of situations. Others are specifically designed for particular tasks. For example, caterpillar trolleys and six-wheeled trolleys have been designed for manual handling via stairs. For more information on the use of these two trolleys, consult the *Code of Practice for Manual Handling in the Furniture Removal Industry*[4]. This code is available from the Victorian Occupational Health and Safety Authority.

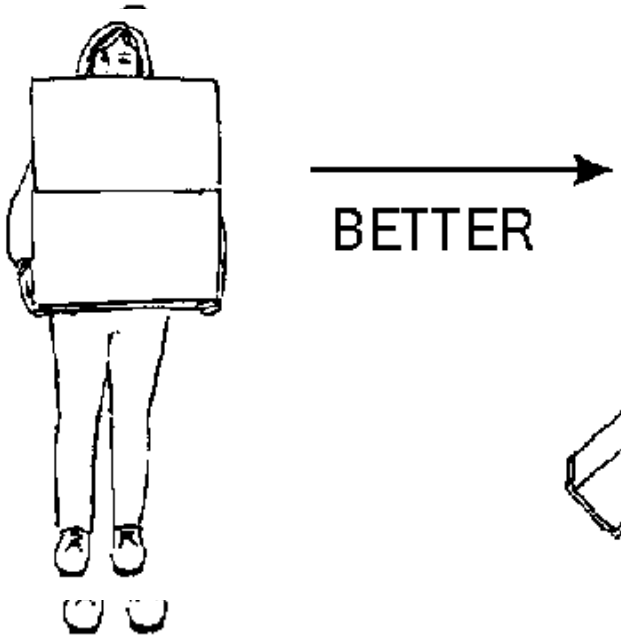


Figure 32A: Employee carrying boxes of fragile glassware from storage area to point-of-sale.

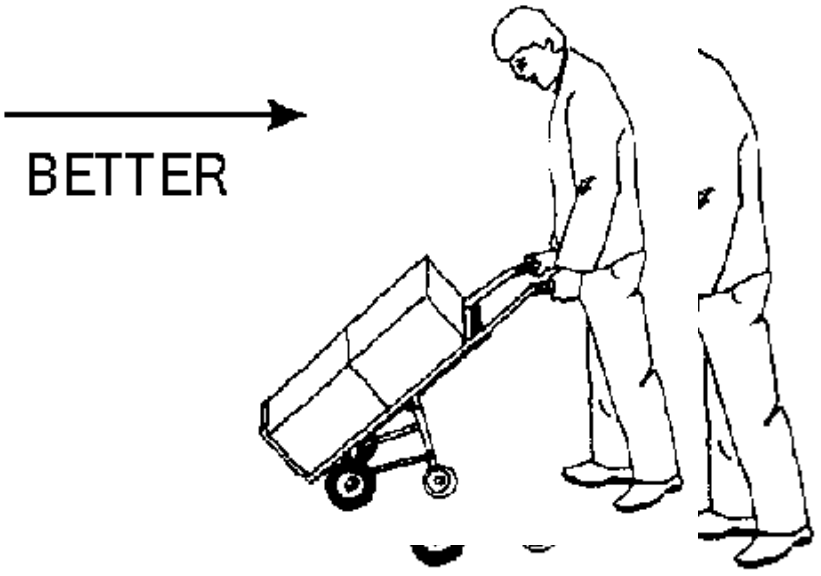


Figure 32B: Use of a trolley makes the job easier and reduces the effort required to move these boxes of stock.

Figure 33A: Two employees carrying plants individually, from the delivery area to the nursery display area.

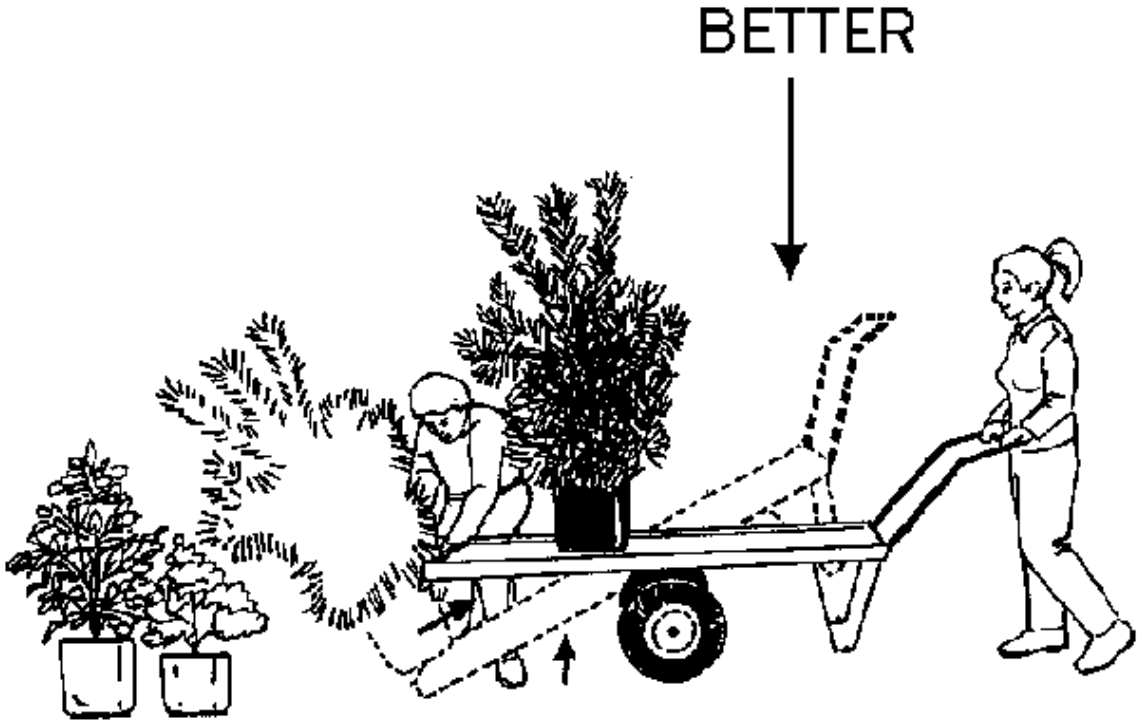


Figure 33B: These employees save time and effort by using a flat-bed trolley to transfer plants where required.

Pallet Turntables, Lifting Devices and Conveyors

6.32 Pallet turntables can be used to enable easy access to stock kept on pallets. Pallets can be easily rotated to bring stock closer, reducing the need to reach and stretch.

6.33 Lifting devices, which use electric or hydraulic power, can be used to raise items to a comfortable working height.

6.34 Conveyors reduce the need to carry stock from one area to another. They can also be used to raise the working area to a comfortable height.

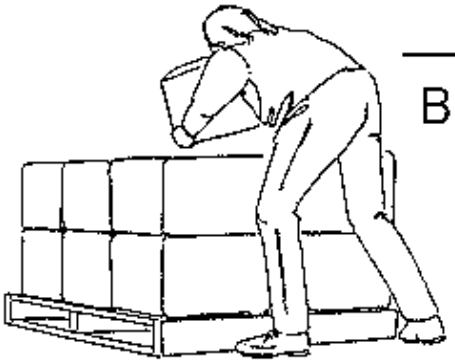


Figure 34A: This employee needs to stretch over the pallet to load and unload boxes on the far side.

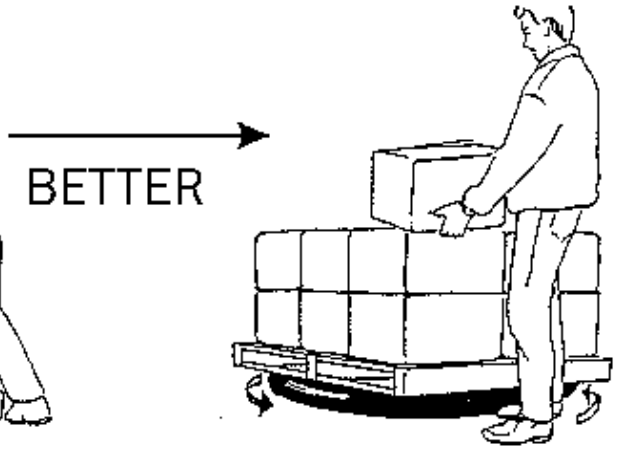


Figure 34B: Use of a pallet turntable brings the far side of the pallet into reach. It provides toe space and brings the load closer to the body, thus reducing the need to stretch and bend.

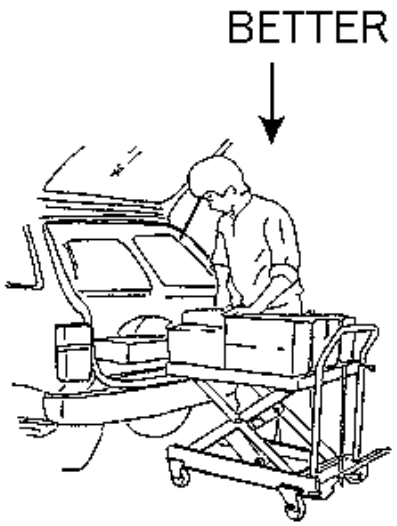


Figure 34C: The platform height on this trolley adjusts by hydraulic pump, making loading and unloading easier.

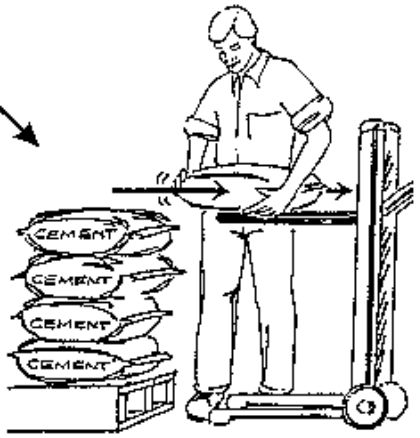


Figure 34D: A hydraulic or power-operated lifting device can reduce the effort of moving these 30 kilogram bags. By adjusting the height of the device, the bags are easily moved off the pallet by sliding them across.

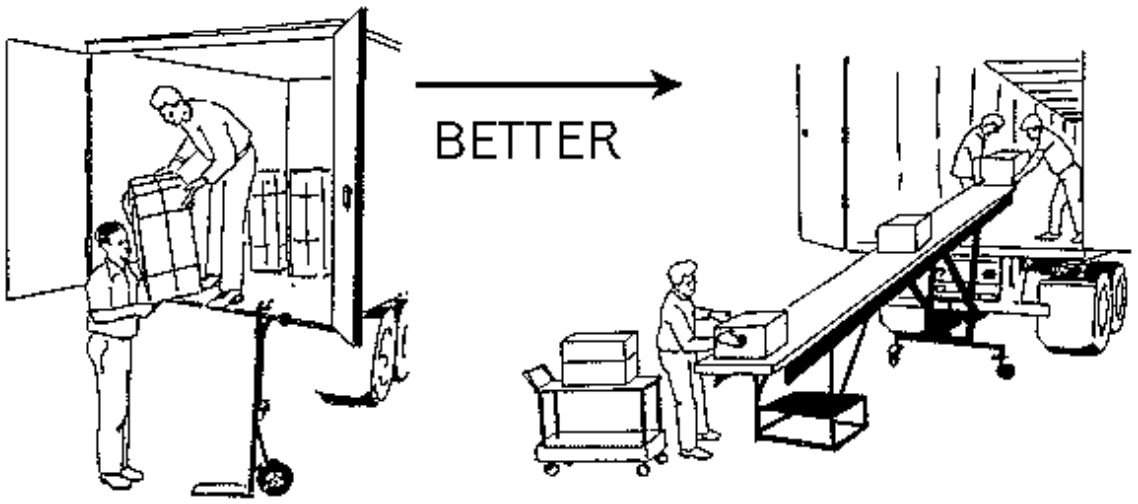


Figure 35A: Every item is individually unloaded from the truck, and passed by hand to another worker.

Figure 35B A portable, height-adjustable conveyor is used to easily move stock out of the truck to the floor level of the delivery bay.

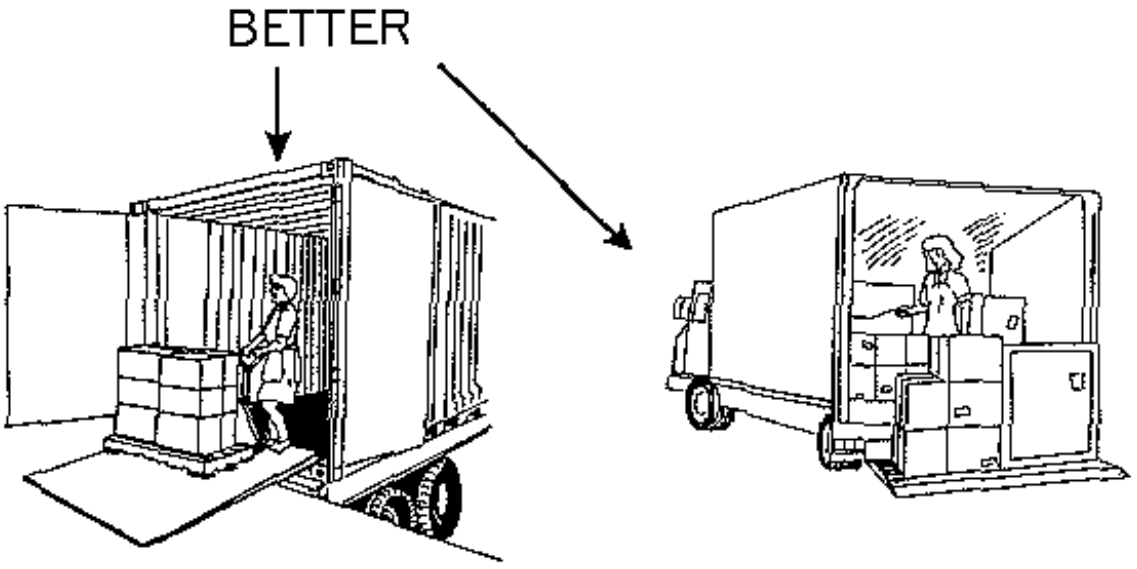


Figure 35C: Unloading of delivery trucks can be made easier by using a levelling dock and pallet jack, providing the slope is not excessive.

Figure 35D: This truck is fitted with a hydraulic tailgate. Goods can be lowered off the truck more easily.

TRAINING AND EDUCATION

Training and Education is More than Teaching People How to Lift Correctly

6.35 The four broad aims of training and education are to ensure that:

- Each employee has the skills and knowledge to do their job safely. Knowledge and skills in specific manual handling techniques can reduce risk of injury (see Figures 36A and 36B, 37A and 37B).
- Each employee understands and recognises the many factors that cause manual handling injuries.
- Each employee understands the effects of manual handling on the body, and is aware of the precautions needed to prevent injuries at work.
- Each employee takes an active role in the prevention of manual handling injuries at work (see Figures 38A and 38B).

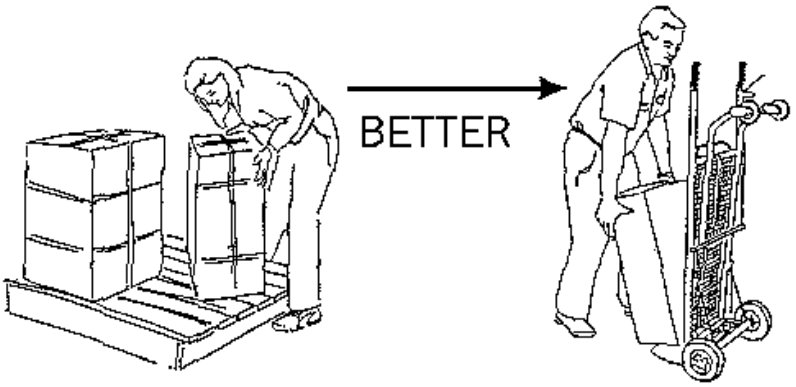


Figure 36A: This employee attempts to lift a heavy, unmarked box, without assistance.

Figure 36B: This employee has been provided with the education, training and equipment to move this box with minimum risk.

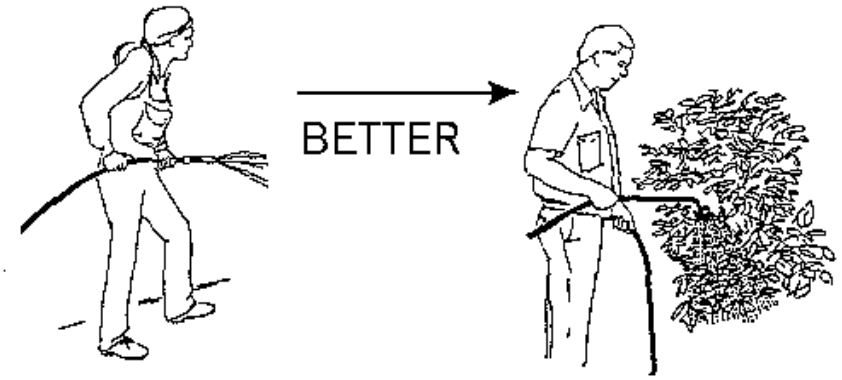
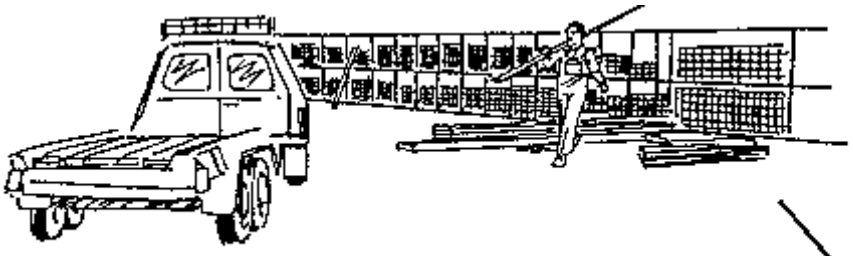


Figure 37A: During prolonged hand-watering in a plant nursery, this employee holds the hose in one hand and drags it along the ground with the other. This unbalanced work posture can increase the risk of fatigue and injury.

Figure 37B: The employee holds the hose around his back and in both hands. Each hand and arm takes half the load and the posture is balanced.



BETTER

Figure 38A: Recently delivered timber blocks customer access. The timber then needs to be carried a considerable distance to a customer's car and trailer.

Figure 38B: Employees are trained to actively keep customer access clear and to direct customers to park close to the timber racks. Consequently, the timber only needs to be carried a short distance.

6.36 Employers should ensure that all employees involved in manual handling receive appropriate training, including safe manual handling techniques. In addition, other groups that require training include:

- supervisors and managers of employees involved in manual handling tasks;
- employee representatives; and
- staff responsible for work organisation, job and task design, purchase of equipment, buying and merchandising of stock.

6.37 Young employees, especially when starting their first job, lack the work skills and experience that their older workmates have developed. This should be taken into account during the training and education of young people.

6.38 Training and education should occur at induction and should be ongoing to ensure that skills are maintained. It should be provided to part-time and casual, as well as full-time employees.

General Principles of Manual Handling

6.39 It is difficult to generalise about how an object should be manually handled. There are many factors involved, besides the actual weight and force. The following points should be considered:

- Lifting and moving equipment should be used if possible.
- There should be sufficient space for lifting, enabling correct posture and body movements.
- There should be no obstructions when moving objects.
- Lifting and setting down should ideally occur at mid-thigh to shoulder height, preferably at about waist height.
- The object should be lifted and carried as close to the body as possible. An object is more difficult (heavier) to lift or carry if held away from the body. For example, 10 kilograms held 80 centimetres away from the body imposes the same load as 50 kilograms held right next to the body.
- The back should not be twisted or bent sideways.
- Lifting with one hand should be avoided.
- If lifting, pushing, or pulling occurs frequently, or for a long time, then the acceptable weight of the object or the level of force exerted quickly decreases.

Vary Heavy Handling Tasks with Lighter Work

6.40 Jobs should be designed to provide lighter, alternative tasks that do not heavily stress the same muscles. Throughout the work shift, heavier handling tasks should be alternated with lighter tasks which allow active muscles to recover.

Team Lifting

6.41 During team lifting, lifting partners should be of similar height and build and be trained in lifting techniques. A person nominated as team leader should coordinate the lift. Team lifting may be a solution to some manual handling problems, but should not be used as the first option in risk control.

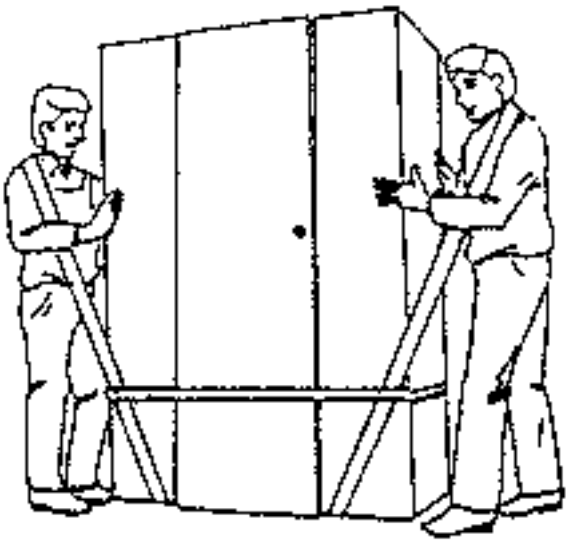


Figure 39: Team lifting.

Ten Step Guide for Lifting Manually

6.42 There may be times when a load must be lifted manually, that is, without the assistance of lifting or moving equipment or other people. In these cases, it is important to follow the general principles for manually lifting objects. The following Ten Step Guide for Lifting Manually can be incorporated into training programs. Adapted from the *Save Your Back: Manual Handling Checklist*[5], by the Retail Traders' Association of New South Wales, it contains general principles for manually lifting objects.

1. Assess the Load

Plan the lift. To do this, assess what you are lifting, deciding where and how you are going to move it. Ideally, lifting should occur at mid-thigh to shoulder height. Avoid unnecessary bending, twisting or reaching. Ensure there is a clear path to your destination and a suitable place to put the load down.

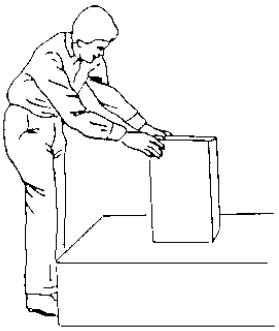


Figure 40: Assess the load.

2. Get Close to the Load

Position yourself as close to the centre of the load as possible. If the load is on a bench, pull it closer towards you. This will minimise strain on the back while lifting, and enable you to use your strongest arm muscles to hold the load.

Figure 41: Get close to the load.

3. Place Feet Apart for Balance

Place your feet apart to make sure your body posture is evenly balanced. If the load is positioned below waist height, straddle it if possible before lifting.

4. Relax the Knees

To begin the lift, gently relax your knees to get down close to the load.

5. Lower Your Body and Bend Your Knees

Lower your body, bending at your knees. Preferably, your knees should not be bent beyond right angles. Bend your back slightly, if necessary.

6. Lower Your Head

Lower your head to look at the load you are lifting.

7. Get a Firm Grip on the Load

Grip the load securely and comfortably with both hands. Use your whole hand, rather than just your fingers. A firm grip should help pull the load closer, as well as support its weight. Pull the load as close to your body as possible.

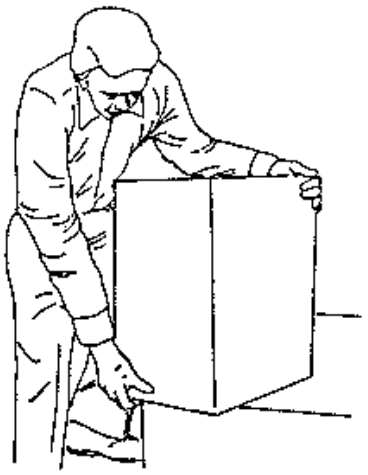


Figure 42: Get a firm grip.

8. Raise Your Head

Gently raise your head upwards. This will help you position your back correctly, and ensure that your arm and leg muscles take most of the load.

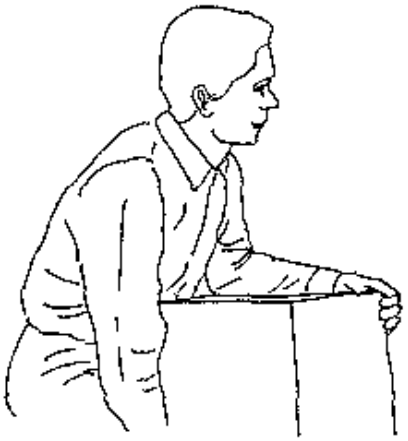


Figure 43: Raise your head gently before lifting.

9. Straighten Your Legs

Straighten your legs and lift slowly and smoothly, minimising the use of your lower back. Keep the load close to your body while lifting.

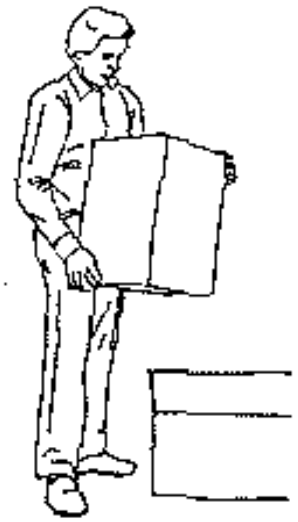


Figure 44: Straighten your legs, keeping the load close to your body.

10. Lift and Turn Your Feet

After lifting the load, turn your feet, then your body in the direction you wish to walk. Avoid twisting your body while carrying out the lift.

PROTECTIVE CLOTHING

6.43 In some situations, protective clothing is required to reduce risk or injury. The following examples demonstrate how protective clothing can reduce the risk of injury:

- Gloves protect hands from cuts and abrasions, and from extreme temperatures, for example, while removing hot baking trays from an oven. They must be appropriate for the job and, when necessary, well fitted, so as not to affect grip.
- Proper footwear helps to prevent injuries from slips and falls by providing better grip on floors. Protective toe caps in safety footwear also help to prevent injury from dropped loads.
- Proper clothing allows loads to be carried close to the body and prevents loads catching on buttons and openings.
- In areas such as freezers and coldrooms, or while handling cold objects, specialised clothing provides protection against cold temperatures.

KEEPING THE WORKPLACE SAFE

Maintenance

6.44 It is important that all equipment, fixtures and fittings are checked and maintained on a regular basis. Accidents can be caused by the failure of equipment parts. Faulty or poorly maintained equipment can cause unexpected or forceful movements, resulting in strains and injuries.

6.45 To prevent injuries:

- assign to a suitably qualified staff member the responsibility for overseeing equipment maintenance;
- maintain a register of information or a `breakdown and maintenance' checklist, and carry out necessary repairs promptly; and
- communicate specific design and maintenance problems or alternative ideas to manufacturers and suppliers.

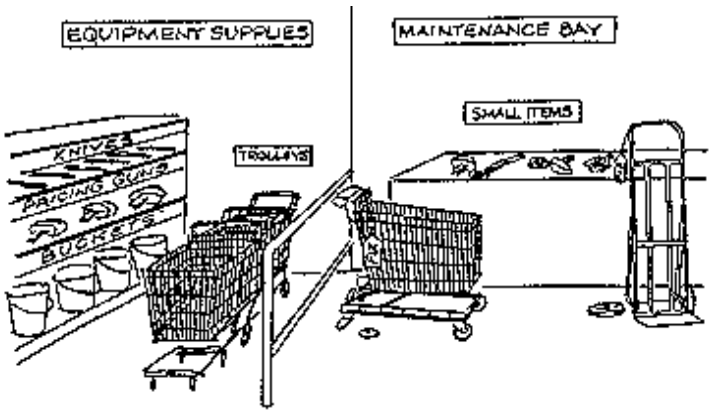


Figure 45: Use a system for identifying and removing faulty equipment for repair. Maintain an adequate supply of equipment for tasks at all times.

Floor Surfaces

6.46 Slips, trips and falls are a common cause of injury during manual handling activities. The condition of floor surfaces in the workplace can contribute to the risk of trips and falls. For example, uneven or damaged floor surfaces can cause loss of footing. They can also add to the force required to push wheeled equipment, thus increasing the risk of fatigue or strain. Providing a non-slip floor surface may help minimise the risk of slips and falls.

6.47 Moving wheeled equipment along ramps often requires force to push or restrain the equipment and the load. When possible, equipment operators should be up-ramp from the load to avoid being injured if control of the load is lost.

6.48 Wet or slippery floors are a common source of slips and falls. Equipment and stock with the potential to create slip hazards, for example, rotisseries and cut flowers, should be relocated away from walkways. Accidents and injuries can also be avoided by regular maintenance and `housekeeping'. Spills should be cleaned up immediately when they occur. The use of appropriate footwear in certain situations may be necessary. All staff should be encouraged to maintain their workplace so that floors remain clean, dry and free of obstacles.

Figure 46A: Slips on wet floors or spilled stock, such as rice or oil, can be the cause of serious injuries.

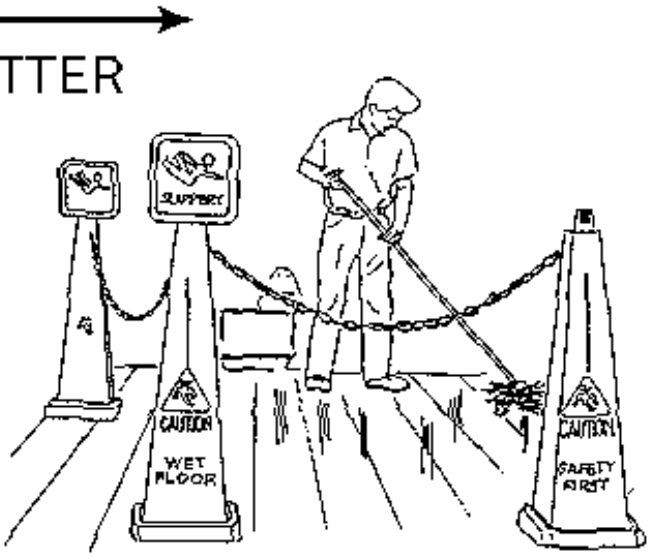


Figure 46B: Cleaning all spills immediately. Use barriers to prevent access until floors are clean and dry. Large signs at eye level warn staff and customers that the floor may be slippery.

Lighting

6.49 Workplace lighting should be adequate to ensure that all manual handling tasks can be carried out safely. This is particularly important in storage areas. For information on lighting, consult the following Australian Standards:

- AS 1680.1 *Interior Lighting - General Principles and Recommendations*[6] ; and
- AS 1680.2.0 *Interior Lighting - Recommendations for Specific Tasks and Interiors*[7].

7. REVIEW AND EVALUATION

7.1 A period of review and evaluation should occur following the implementation of risk control measures. Risk control measures often need further modification to eliminate unforeseen problems. For example, some control measures may introduce secondary hazards to the workplace. Review and evaluation should reveal these problems, enabling them to be corrected.

APPENDIX 1

ORGANISATIONS AVAILABLE FOR FURTHER ASSISTANCE

A1.1 The following organisations can provide information about legislative requirements relating to manual handling, and general advice and/or training material and courses on correct manual handling practices.

KEY

A: Provides information on the requirements of occupational health and safety legislation.

B: Provides general advice and promotional material.

C: Provides training material and/or courses on correct manual handling practices.

NEW SOUTH WALES

The Employers' Federation of
New South Wales
313 Sussex Street
SYDNEY NSW 2000
Telephone: (02) 264 2000
A, B, C

WorkCover Authority
OHS Information Unit
400 Kent Street
SYDNEY NSW 2000
Telephone: (02) 370 5000
A, B

Workers' Health Centre
133 Parramatta Road
GRANVILLE NSW 2142
Telephone: (02) 897 2466
A, B, C

Newcastle Workers' Health Centre
124 Bull Street
NEWCASTLE NSW 2300
Telephone: (049) 292 952
A, B, C

Australian Chamber of Manufactures,
New South Wales
The Denison
65 Berry Street
SYDNEY NSW 2000
Telephone: (02) 963 7558
A, B, C

Labor Council of New
South Wales
Occupational Health and
Training Unit
Ground Floor, Labour Council
Building
377 Sussex Street
SYDNEY NSW 2000
Telephone: (02) 264 1691
or (02) 267 9766
A, B, C

Retail Traders' Association of
New South Wales
20 York Street
SYDNEY NSW 2000
Telephone: (02) 290 3766
A, B, C

Shop, Distributive and Allied
Employees' Association
Level 4
8 Quay Street
SYDNEY NSW 2000
Telephone: (02) 281 7022
A, B

VICTORIA

Occupational Health and Safety
Authority
Workplace Management Division
Level 14, Nauru House
80 Collins Street
MELBOURNE VIC 3000
Telephone: (03) 655 6531
A, B, C
Note: This address will change in 1992.

Victorian Employers'
Chamber of Commerce
and Industry
50 Burwood Road
HAWTHORN VIC 3122
Telephone: (03) 819 1311
A, B, C

Retail Traders' Association of Victoria
Level 2
104 Franklin Street
MELBOURNE VIC 3000
Telephone: (03) 326 5022
or (008) 13 6760 toll free
A, B

Trades Hall
54 Victoria Street
MELBOURNE VIC 3000
Telephone: (03) 663 5460
A, B, C

Australian Chamber of Manufactures,
Victoria
380 St Kilda Road
MELBOURNE VIC 3000
Telephone: (03) 698 4111
A, B, C

QUEENSLAND

Trades and Labour Council of Queensland
Occupational Health and Safety Unit
State Law Building
16 Peel Street
SOUTH BRISBANE QLD 4104
Telephone: (07) 846 2411
A, B, C

Department of Employment,
Vocational Education, Training
and Industrial Relations
Division of Workplace Health
and Safety
30 Makerston Street
BRISBANE QLD 4000
Telephone: (07) 227 4725
A, B, C

Queensland Confederation of Industry
375 Wickham Terrace
BRISBANE QLD 4000
Telephone: (07) 831 1699
A, B, C

Retail Traders and Shopkeepers
Association of Queensland
321 Kelvin Grove Road
KELVIN GROVE QLD 4059
Telephone: (07) 352 6088
A, B

Brisbane Workers' Health Centre
16 Peel Street
SOUTH BRISBANE QLD 4101
Telephone: (07) 846 2719
A, B

Shop, Distributive and Allied
Employees' Association
146 Leichhardt Street
SPRING HILL QLD 4000
Telephone: (07) 832 3303
A, B

SOUTH AUSTRALIA

Department of Labour
Occupational Health Division
61 Hindmarsh Square
ADELAIDE SA 5000
Telephone: (08) 226 6510
A, B
See the State Government section of of the White pages for your local Department of Labour Office.

South Australian Occupational Health and Safety Commission
Henry Waymouth Building
100 Waymouth Street
ADELAIDE SA 5000
Telephone: (08) 226 3120
A, B, C

South Australian Employers' Federation
198 Greenhills Road
EASTWOOD SA 5063
Telephone: (08) 373 1188
A, B, C

Retail Traders' Association of South Australia (Inc)
38 Currie Street
ADELAIDE SA 5000
Telephone: (08) 212 4935
A, B

Shop, Distributive and Allied Employees' Association
6 Glen Osmond Road
PARKSIDE SA 5063
Telephone: (08) 272 6888
A, B, C

Chamber of Commerce and Industry, South Australia
136 Greenhill Road
UNLEY SA 5061
Telephone: (08) 373 1422
A, B, **C**

WESTERN AUSTRALIA

Department of Occupational Health, Safety and Welfare of Western Australia
West Centre Building
1260 Hay Street
WEST PERTH WA 6005
Telephone: (09) 327 8777
A, B

Trades and Labor Council of Western Australia
27 Brewer Street
PERTH WA 6000
Telephone: (09) 328 7877
A, B, C

Confederation of Western Australian Industry
Confederation House
190 Hay Street
EAST PERTH WA 6004
Telephone: (09) 421 7555
A, B

Industrial Foundation for Accident Prevention
Farrington Road
MURDOCH WA 6150
Telephone: (09) 310 3760
B, C

Shop, Distributive and Allied Employees' Association
22 George Street
PERTH WA 6000
Telephone: (09) 221 4321
A, B

TASMANIA

Department of Employment, Industrial Relations and Training
Industry Services Division
81-89 Brisbane Street
HOBART TAS 7001
Telephone: (002) 30 7696
A, B

Department of Health
34 Davey Street
HOBART TAS 7000
Telephone: (002) 30 3785
B

Tasmanian Trades and Labour Council
Box 21, Trades Hall
219 New Town Road
NEW TOWN TAS 7008
Telephone: (002) 28 7866
A, B, C

Tasmanian Confederation of of Industry
30 Burnett Street
NORTH HOBART TAS 7000
Telephone: (002) 34 5933
A, B, C

NORTHERN TERRITORY

Work Health Authority
Minerals House
66 The Esplanade
DARWIN NT 0800
Telephone: (089) 89 5511 or (008) 01 9115 toll free
A, B

Shop, Distributive and Allied Employees' Association
40 Progress Drive
NIGHTCLIFF NT 0810
Telephone: (089) 48 0566
A, B

Northern Territory Trades and Labour Council
Level 1, Suites 6 and 7
Manolas Building
64 Smith Street
DARWIN NT 0800
Telephone: (089) 41 0001
A, B, C

Northern Territory Confederation of Industry and Commerce
4 Shepherd Street
DARWIN NT 0800
Telephone: (089) 81 5755
A, B

AUSTRALIAN CAPITAL TERRITORY

Australian Capital Territory Occupational Health and Safety Office
Chief Minister's Department
Level 1, Carpentaria House
111 Canberra Avenue
GRIFFITH ACT 2603
Telephone: (06) 239 6455
A, B, C

Australian Capital Territory Retail Skills Centre
Frenchan Street
DOWNER ACT 2602
Telephone: (06) 241 7599
A, B, C

Confederation of Australian Capital Territory Industry
129 Thesiger Circuit
DEAKIN ACT 2600
Telephone: (06) 282 2199
A, B

NATIONAL

Worksafe Australia
92 Parramatta Road
CAMPERDOWN NSW 2050
Telephone: (02) 565 9555
B, C

Australian Council of Trade Unions
ACTU House
393-397 Swanston Street
MELBOURNE VIC 3000
Telephone: (03) 663 5266
A, B

Confederation of Australian Industry
80 Collins Street
MELBOURNE VIC 3000
Telephone: (03) 654 2788
A, B, C

GLOSSARY OF TERMS

Assessed as a risk

Means found, as the result of risk assessment, to be a risk to health and safety.

Consultation

Means the sharing of information and exchange of views between employers, employees and employee representatives. It includes the opportunity to contribute to decision making in resolving manual handling risks.

Employee

Means an individual who works under a contract of employment, apprenticeship or traineeship.

Employee representative

Includes an employee member of a health and safety committee where established in the workplace, or a person elected to represent a group of employees on health and safety matters.

Employer

Means a corporation or an individual who employs persons under a contract of employment, apprenticeship or traineeship.

Note: The definition of employer includes the ***self-employed*** which means a person who works for gain, other than under a contract of employment, apprenticeship or traineeship, whether or not that person employs others.

Force

Means any action that tends to maintain the position of an animate or inanimate object, to alter the position of the object, or to distort it.

Hazard

Means the potential to cause harm or injury.

Manual handling

Means any activity where a person is required to exert force to lift, lower, push, pull, carry or otherwise move, hold or restrain any animate or inanimate object.

Practicable

Means `practicable' in Victoria, Queensland, Western Australia and the Northern Territory, `reasonably practicable' in New South Wales, South Australia, the Australian Capital Territory and Commonwealth jurisdiction and a `reasonable precaution' in Tasmania.

Risk

Means the likelihood of harm or injury actually occurring.

Risk factor

Means a factor that contributes to an increased risk of manual handling injury.

Weight

Means the mass of an object (expressed in kilograms).

Workplace

Means any place, including any aircraft, ship or vehicle, where a person works, or is likely to work, and includes any place where a person goes while at work.

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- Grace Brothers Department Store, New South Wales;
- Grace Brothers Distribution Centre, New South Wales;
- Victorian Occupational Health and Safety Authority;
- Retail Traders' Association of New South Wales;
- Shop, Distributive and Allied Employees' Association, New South Wales;
- WorkCare Compensation, Victoria; and
- WorkCover Corporation, South Australia.

REFERENCED DOCUMENTS

1. National Occupational Health and Safety Commission, *National Strategy for the Prevention of Occupational Back Pain* [NOHSC:4001(1989)], Australian Government Publishing Service, Canberra, 1989.

2. National Occupational Health and Safety Commission, *National Standard for Manual Handling and National Code of Practice for Manual Handling* [NOHSC:1001 (1990)] and [NOHSC:2005 (1990)], Australian Government Publishing Service, Canberra, 1990.

3. Victorian Occupational Health and Safety Authority, *Manual Handling in the Retail Industry: Common Problems and Solutions*, Melbourne, 1990.

4. Victorian Occupational Health and Safety Authority, *Code of Practice : Manual Handling in the Furniture Removal Industry,* Melbourne, 1989.

5. Retail Traders' Association of New South Wales, *Save Your Back: Manual Handling Checklist*, Sydney.

6. Standards Australia, AS 1680.1, *Interior Lighting - General Principles and Recommendations*, Standards Australia, Sydney.

7. Standards Australia, AS 1680.2.0 *Interior Lighting - Recommendations for Specific Tasks and Interiors*, Standards Australia, Sydney.

FURTHER READING

National Occupational Health and Safety Commission, *Preventing Back Pain at Work* [NOHSC:12002(1989)], Sydney, 1989.

Victorian Occupational Health and Safety Authority, *Manual Handling: Health and Safety Issues for Women Workers,* Melbourne, 1990.

Victorian Occupational Health and Safety Authority, *Young Workers and Manual Handling: Issues for Employees*, Melbourne, 1990.

Department of Occupational Health, Safety and Welfare of Western Australia, *Supermarkets Strain Reduction Project*, Perth, 1991.

Victorian Employers' Federation, *Manual Handling Training Package for Retail Industry: Back of Stores*, Melbourne, 1991.

MEMBERSHIP OF THE EXPERT WORKING GROUP AND THE REFERENCE GROUP ON MANUAL HANDLING IN THE RETAIL INDUSTRY

Members of the Expert Working Group and the Reference Group on Manual Handling in the Retail Industry are listed below.

Expert Working Group

Ms Callista Bryan (Secretary)	Worksafe Australia
Ms Ramsina Daniel	Shop, Distributive and Allied Employees' Association, New South Wales
Dr Vladimir Diakiw	Worksafe Australia
Mr Stephen Holland	Worksafe Australia
Dr Mike Stevenson (Chairperson)	Worksafe Australia
Ms Katharine Vernon	Coles Supermarkets, New South Wales

Reference Group

Mr Albert Baumgartner	Retail Traders' Association of New South Wales
Ms Ros Kushinsky	Victorian Occupational Health and Safety Authority (formerly part of the Department of Labour)

Individual members were nominated to the Expert Working Group on Manual Handling in the Retail Industry on the basis of their expertise in specific occupational health and safety areas. The recommendations of the Expert Working Group on Manual Handling in the Retail Industry were subject to review by the tripartite Standards Development Standing Committee and the National Commission, where the social, economic and technological implications of these recommendations are considered.

The provisions of this guidance note may not necessarily reflect the views of individual members of the Expert Working Group or the Reference Group on Manual Handling in the Retail Industry.