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HSD2: Personal Injury Liability and Absence Reduction

## **Assignment 3: Manual Handling Assessment**

**NCRQ**

Dear Director,

After reviewing the recent incident and injury to an employee related to manual handling tasks, I have put together some recommendations in this report:

## **Part 1.**

### **Identifying the lifting activities and the risks arising from each task.**

In the bakery scenario, there are currently ***three*** separate lifting activities:

- A. The bakery handler lifts loaves and other bakery waste food items from the shop shelves and counter tops into strong plastic bin bags. This step includes holding a barcode scanner with one hand.
- B. The fully loaded polythene bags are then lifted and stacked onto a roll cage.
- C. Each filled bin bag is lifted from the roll cage and dropped into a large commercial waste bin outside in the yard.

Choosing the right level of risk assessment for each lifting operation requires use of the HSE's Tools and Filters (HSE L23 Guidance).

This will ensure compliance with the Manual Handling Operations Regulations 1992, the Management of Health and Safety at Work Regulations 1999 and the Health and Safety at Work Act 1974. Regulation 4(1)(b) from MHOR 1992 provides the framework for looking at all MH tasks and for making adaptations to the **Task, Individual, Load and Environment to reduce the risks of injury.**

The Safety Representatives and Safety Committees Regulations 1977 would be an important component in a national supermarket chain to help decide on work processes and equipment which comply with Regulation 4(1)(b).

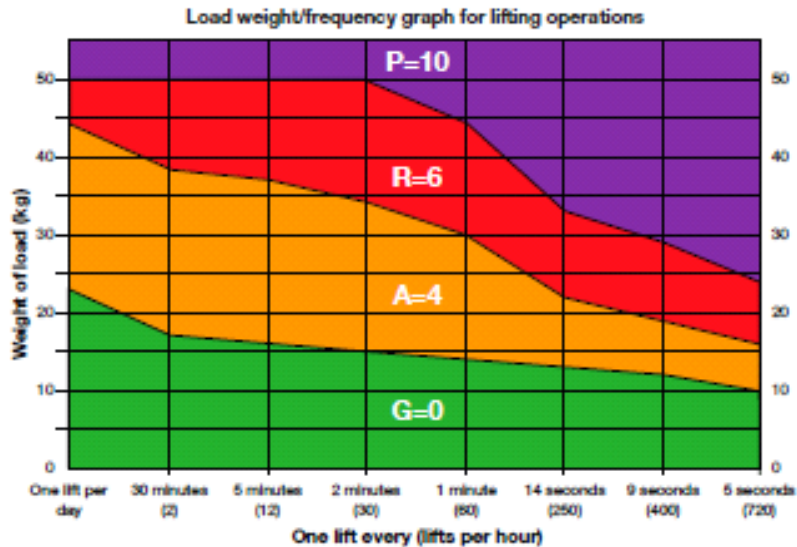
By complying with the statutory provisions, consulting with employees involved with manual handling tasks and putting in added control measures we can effectively **reduce** *Muscular Skeletal Disorder injuries, civil claims, and lost work days.*

By doing a risk assessment of each Task A, B and C in turn we can see what level of risk to the employee these tasks present. We can use HSE filter tools for manual handling and Guidance L23 Fig.19.

MAC and ART Tools from [www.hse.gov.uk/msd/](http://www.hse.gov.uk/msd/) can also be used in the risk assessment of these lifting activities.

### **A. Lifting waste bakery items off the shop shelves, scanning the barcodes and dropping them into polythene bin bags.**

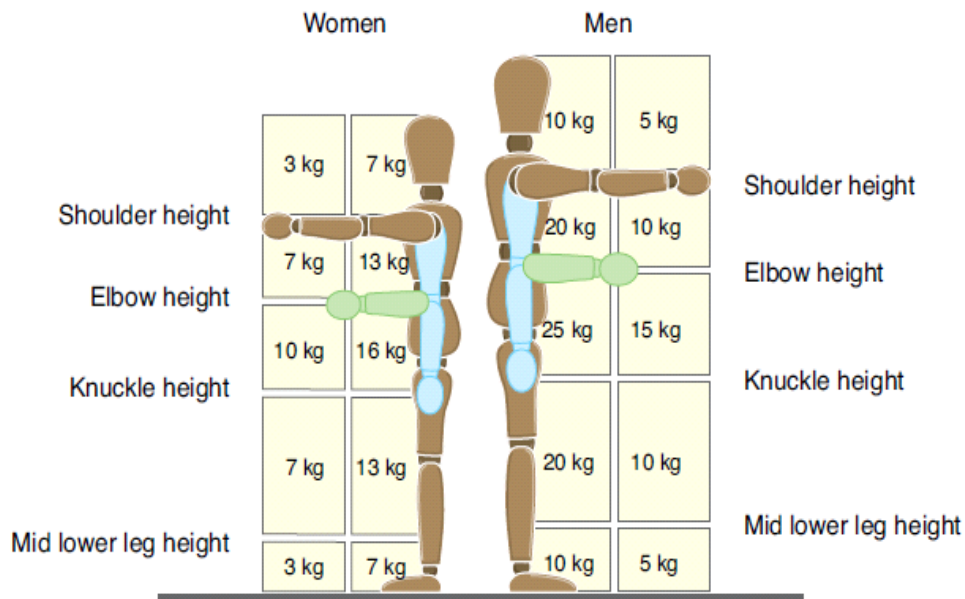
- By applying the Lifting and Lowering risk filter (Fig.20) Appendix from The HSE Guidance L23 for lifting task A., we can see that each item 0.8 kg is well within the loads “risk of injury” guidelines.
- Assuming the barcode scanner is held in one hand while the items are lifted off the shelves with the other hand then this motion will be repeated 200 times to fill the bin bags (based on the data given). The items are easy to grasp with minimal force. There will be significant movement of the elbow and shoulder joints. The ART tool can be applied to check the safe limit in number of repetitions.
- The handler is performing this lifting operation indoors so the environmental conditions are favourable. There is a flat and even shop floor to work on. Assuming they are wearing kitchen PPE there is no interference with the task: hair cover, gloves, aprons etc.
- The employee can work in a **stable body position** with an unrestricted posture. There is minimal bending or twisting involved in any body joint while performing this lifting task.
- The pace is relaxed, no machine equipment is setting the timing and 10 lifts per minute or less would be a reasonable **frequency**. [This amounts to a Load/Frequency of 8 kg per minute]. 6 sec/ lift. See MAC fig. Below.



**MAC Tool for risk assessing activity involving weight and lifting [See Page 10]**

- Filling 10 bags in one shift rota while in a stable **body position** should not present a postural risk unless the shelves are too high or low for the employee.. No marked bending or twisting motions are employed either at the neck or the waist.
- **Psychosocial factors** here are positive: increased latitude of decision: variable tasks: independent action (not part of a chain/ assemble line): safe environment: useful outcome: varied tasks within shift rota: supported by other staff.
- **Team handling** with another employee is an option if one is available. Positioning a worker to scan barcodes next to the handler would not present any additional risk provided they both have room to manoeuvre and can agree on the process implemented.
- **The work environment** here, provides shop floor conditions in a supermarket, well-lit, ventilated with level floors and unobstructed aisles, with staff available to clean up spills and contamination of work surfaces.

## Lifting and lowering risk filter



**Figure 20** Lifting and lowering risk filter

From this list of filter checks of Task A, the results would show that **no further detailed risk assessments** are required for this lifting operation. The filters recommended in the HSE L23 Guidelines Fig. 19 are based on credible research and evidenced to protect 95% of workers to a reasonable level of risks.

The worker in this case is defined as slight build, shorter height than average, 155 cm tall, and therefore unable to tolerate higher levels of weight/ loads per minute than some of her cohort group with larger body weights and heights.

We will see in the following lifting Tasks B and C that the worker's size, strength capability and stature can significantly alter the level of risk. This means that *reasonably practicable measures* have to be implemented to protect this employee which failed to happen in the given scenario.

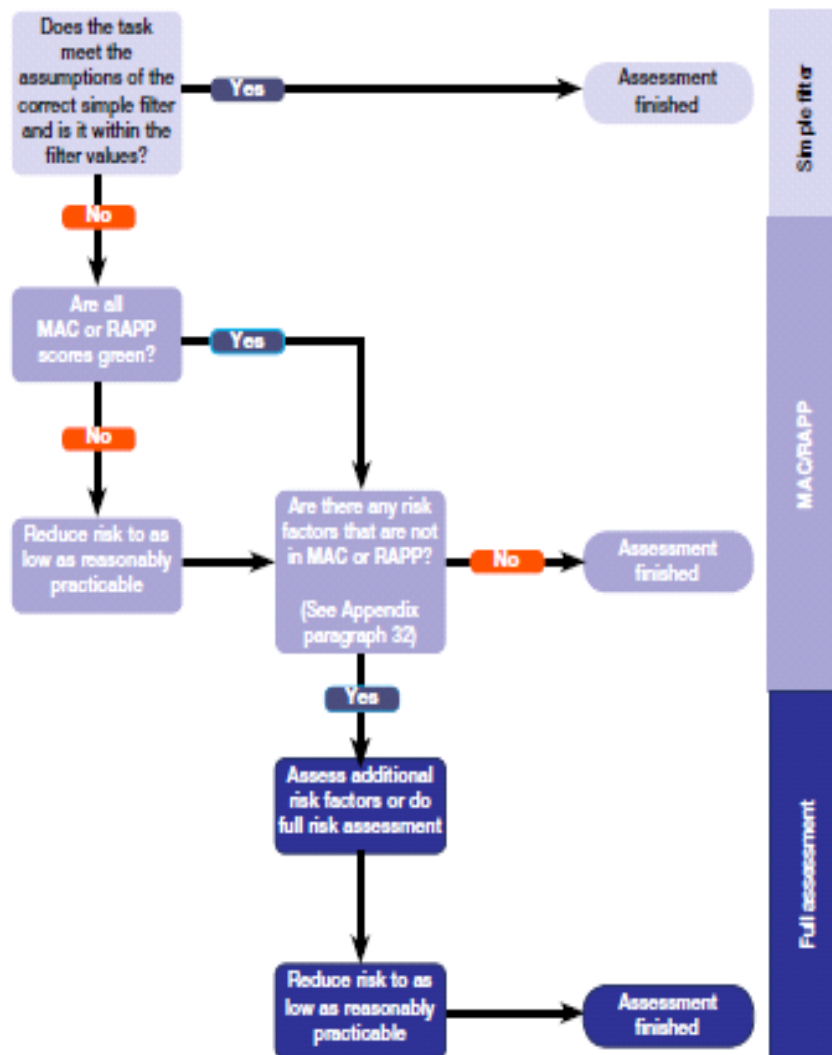


Figure 19 How detailed should the risk assessment be?

### The filters

- Under the **Manual Handling Operations Regulations 1992 Regulation 4 (1)(a) and (b)**:
- Specifically, an employer must **avoid** scheduling operations in handling tasks which involve a risk of injury (a). Eliminate manual handling tasks.
- If this is not practicable for reasons of time, cost or efforts then a risk assessment must be carried out of the manual handling tasks and the work **redesigned** (ergonomically) to reduce all risks to a minimum (b)(i).

**Regulation 4** (1) refers to this duty which also satisfies the risk assessment duties under **The Management of Health and Safety at Work Regulations 1999** regulation 3 and SCHEDULE 1 (The general principles of prevention).

Considering aspects of the work being assessed we can use Schedule 1 MHOR 1992:  
**Task Individual Load Environment**

*We will apply each criterion to the lifting task in the scenario as it is being performed.*

### **B. Lifting full bin bags weighing 16Kg each onto a roll cage.**

- The load of 16Kg per bag goes **outside** the limits shown in Fig. 20 for any position held except close to the waist level. Lifting one bag presents an injury risk for the female employee in this case.

*A full risk assessment must be carried out on this lifting task.*

- A plastic bag filled with 20 loaves or bakery items is bulky, unwieldy > 75cm. It also holds unstable contents which can shift in any direction when handled.
- A load of this shape and size cannot be held close to the body to reduce momentum and the risk of injury, even with a team of two.
- The centre of gravity will not be in the centre of these bags and if piled high enough on a roll cage shown in the scenario would easily topple over.
- The polythene is slippery to grasp and even with plastic handles PPE gloves would be needed to prevent pressure into the finger.
- As the 10 bags are piled on top of each other in the roll cage (assuming it has all 3 sides in place) the raised arm position required to place the top layer of bags would cause a substantial amount of strain on a small built employee of 155cm height.
- A requirement of moving a roll cage fully loaded is that the handler should be able to see over this load in the direction of movement. This would pose a restricted view for our handler once all 10 bags are loaded on top of one another.

- Placing large heavy bags at a distance from the mid spine creates a hazardous moment causing the handler to stoop, twist, and stretch across from the waist and hips.

### **C Lifting the bin bags into the commercial bin outdoors.**

- This presents a similar weight problem as for Task B.
- Each bag weighs 16 kg and the lifting vertical distance is between 1000mm and 0mm to place into the commercial bin. See Figs. 19 and 20 HSE L23 and MAC tool diagram

**GREEN** = Low risk   **AMBER**= Medium risk   **RED**= High risk

***A full risk assessment needs to be done to mitigate Amber and Red zones***

- The bags will **not** be close to the spine or at waist height creating a large load moment on the handler.
- To lift a bag off the roll cage and to place into the commercial bin involves a twisting movement at the waist and a significant load moment.
- Reaching above shoulder level to drag a bin bag off the top of the pile would be high risk for MSD injury for a handler of 155cm height.
- Stooping down to lift a full bag off the bottom of the pile on the roll cage would be a high risk move based on the wide dimensions of the bag, momentum of arms out away from the body and the unstable contents causing a sudden jerky force on the muscles.
- Steadying a fully loaded roll cage outdoors on uneven paving in bad weather conditions and poor lighting would pose a very high risk to a handler. The roll cage could topple easily and cause serious injury to the worker.

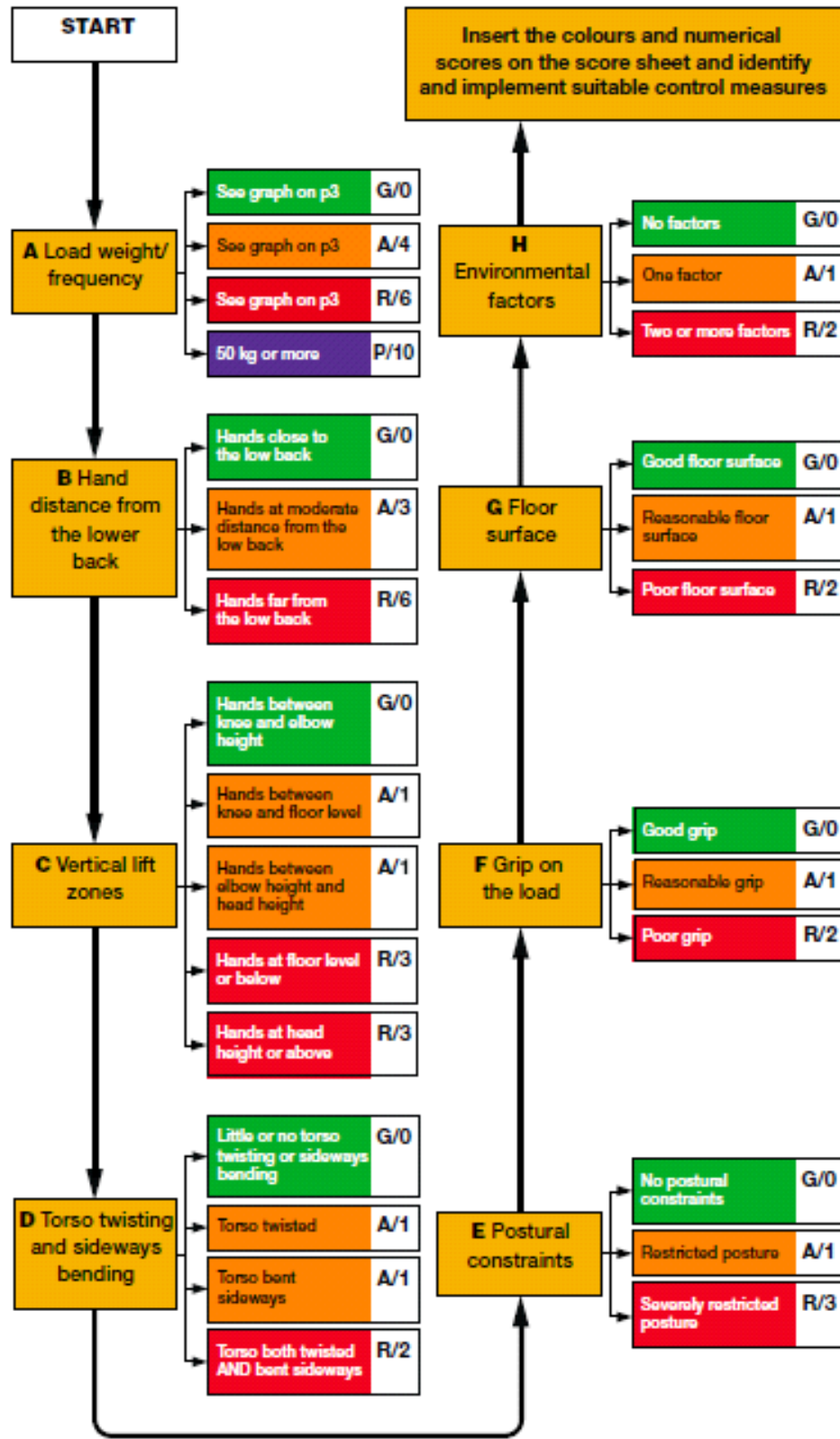


- The temperatures in the yard are often extreme, poor lighting and uneven paving to support the cage and the handler. High winds and rain/ heat and humidity would often be very destabilising for anyone handling large plastic bags.
- Psychosocially, for a lone handler this outdoor task can be very challenging with no other staff on hand to assist. The expectation put on a worker in this scenario would be intimidating added to the danger of being assaulted by someone having access from the street. **AMBER-RED**

Looking at the MAC Tool diagram assessment pathway, starting with the load and frequency of lifts, we can see how several factors take the handler into the amber and red zones when doing Tasks B and C.

If a full risk assessment of the task and equipment is made and scored using the MAC tool (see above diagram) we will see that the second option still puts Task B into the **AMBER** zones. The better control measures should always be implemented to stay in the **GREEN** on MAC thereby reducing the probability of incidents and employer liability.

*Avoiding all types manual handling (by introducing mechanical aids) is the ideal option but is more costly to the company.*



## Part 2.

### Remedies to minimise the risk of injuries from Task B.

- Task B can be **eliminated 100%** from the workflow.
- The task can be **redesigned** by **replacing** the roll cage by a low centre-of-gravity trolley. The cost per trolley is similar to a roll cage.
- By providing a **laundry trolley** (see image here) we are giving the handlers a load with a lower centre-of-gravity. The top of the rim comes up to about 700mm (waist height for our worker) making it low risk for lifting bags off the bottom of it. It is stable, solid sided and quiet.



- The trolley can be filled with empty bin bags (50L) and the items dropped in after scanning each one in Task A. Using this trolley the 10 bags are ready to be trundled out into the yard without further handling of the load (total weight = 160kg).
- The hands can be kept between the knees and elbow height and the load held closer to the waist (spine) keeping the MAC score in the **GREEN** in this activity.

### ***A Second Option for Low risk using Team Lifting***

- Reduce the load on the handler by putting half the loaves in each bag. This would increase *the number* of bin bags needed *and increase the time* taken to unload the 200 loaves.
- A worker team of 2 handlers would be an improvement provided they agree on the work process, they position themselves without twisting, bending, or restricting vision.
- With a team of 2 handlers lifting there will still be some stooping, reaching and issues with lifting bulky, shifting and unwieldy 8kg bags away from the spine. **AMBER on MAC**
- Environmental factors and psychosocial are low risk **GREEN** as the conditions are indoor, moderate temperature, retail premises, assuming clear aisles and unrestricted spaces around the task. Lighting and staff support are reliable in this area of work.
- This task can be varied on a rota with other types of work interspersed for the employees. It would not take 2 workers more than an hour to complete loading all bags including recovery breaks.
- Using correct EN338 latex gloves for food handling with a good grip we can score **GREEN on MAC for grip**.

Working in teams helps to reduce risks of worker injury keeping MAC scores well within the **GREEN zones**. (Risk assessments *must* be done on all moving equipment, PPE. employees and hand held scanners.)

### Remedies for minimising the risks of injury from Task C

- By setting up a special wheelie bin in the yard, we can reduce the risks from lifting loads above waist height (Fig.20 L23) while unloading the bags out of the trolley. These drop-front bins cost less than £160 for 1100 L capacity made out of a new robust plastic material with rubber wheels on a galvanised steel axle.



- This *eliminates* manual handling the bags at shoulder height keeping lifting between the knees and elbows and close to the waist. **GREEN**
- The handlers assigned must have competency training to open the front of the bin which can be left in position on the concrete area in the yard.
- Normal food-handling PPE with EN388 (1010) latex good grasp gloves would be suitable for handling the bags outdoors. Specifically, SRC tested footwear helps counteract slippery conditions outside in the yard. **GREEN** on MAC
- Rough weather conditions in the yard can be allowed for by having a cement platform to support the commercial bins and large enough to hold the adjacent trolley while Task C is carried out. Bad weather and poor lighting **RED** on MAC score

- Installing an awning with motion sensor lighting over the bin area would help to keep the rain and snow from accumulating on the bins and help protect the handlers while they transfer the bags. **AMBER**
- The time taken to complete Task C could be reduced significantly by a team of two workers transferring (lifting the bags) to minimise the added **environmental** risks of working outdoors [TILE]

## Conclusions:

1. By implementing the correct use of a trolley, a drop-sided waste bin, team lifting and a smaller load for Tasks A and C, we have reduced the risks to a safe level and **eliminated** Task B. A full risk assessment has been included for Task C (**see Pages 7 & 8 above**) *The employer has complied with the duty under Regulation 4(a) and (b) whilst reducing their level of liability.*
2. This remedial action facilitates lifting tasks to be undertaken by a wider range of employees allowing for differences in stature, resilience and strength.
3. We have **reduced the potential** for accidents and ill-health and subsequent **civil claims or the costs of sick leave.**
4. By documenting all the reasonably practicable control measures implemented by the employer to reduce injuries in Manual Handling lifting operations then we have confidently **reduced the liability** for any future civil claims.
5. By including risk assessments filters and better risk control measures my review provides a reliable and cost-effective case for redesigning the current procedures.

Thank you for consulting me in this case.

Kind regards,

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