

CASE STUDY – Cooking (Short Order Grill)

TASK TITLE: Cooking (Short Order Grill)	
Task Description:	<p>The Cooking (Short Order Grill) task occurs in a cafeteria-style environment. In this work situation, the employee uses two primary work surfaces; the food preparation counter and the grill. These work surfaces are usually opposite each other and the employee turns or pivots 180 degrees between the two as needed. Food orders are given to the employee verbally or on order slips that are hung above the food preparation counter. The food/supplies/plates are typically stored under, over and/or to the sides of the grill and food preparation counters. The tools most commonly used include spatulas, knives, brushes, and a scraper for cleaning the grill surface.</p> <p>Typical environments in which the Cooking (Short Order Grill) task occurs can include (but are not necessarily limited to):</p> <ul style="list-style-type: none">• Cafeteria• Dining hall
Job Performance Measures Most Often Impacted by Cooking (Short Order Grill):	<p>Measures of work performance can include (but are not necessarily limited to):</p> <ul style="list-style-type: none">• Speed of service/waiting time for order• Quality of food serving/presentation.
Typical Employee Comments about Cooking (Short Order Grill):	<p>Employees typically experience discomfort in the back, shoulders and wrists.</p> <p>The back/torso and shoulders/neck are the body areas that most commonly receive a “High” priority rating. The remaining body areas, with the exception of the head/eyes, are more likely to receive a “Medium” priority rating, or lower.</p>
Suggested Level II Analysis:	Elemental Task Analysis, Dynamic Task Analysis, Biomechanical Lifting Analysis

Shoulder/Neck

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
1. Reaching	<ul style="list-style-type: none"> Food order slips are too high and/or too far away Plates and other frequently used items are too high above the work surface Storage shelves are too deep Grill is too large/too deep Cooking on the rear of the grill The scraper tool handle is too short 	32. Lower the work piece/work surface		✓	med	low	low
		<ul style="list-style-type: none"> clip the order slips on a lazy susan which is no higher than 50 inches (127 cm) above the floor store plates inside a portable spring loaded plate dispenser (as often is used at the beginning of a buffet) 		✓	high	low	low
		38. Move closer to the work location	✓		low	low	med
		<ul style="list-style-type: none"> avoid using the rear areas of shelves except for infrequently used items; store plates on the forward edge of shelves encourage the employee to avoid using the rear area of the grill whenever possible 	✓		low	low	low
		24. Increase size of work surface		✓	high	low	low
		<ul style="list-style-type: none"> provide a wide grill surface no deeper than 30 inches (76 cm) 					
		149. Provide appropriate tools	✓		low	low	low
		<ul style="list-style-type: none"> Provide tools with appropriate handle diameters and lengths lengthen the scraper tool handle to prevent reaching when scrapping the rear areas of the grill (make long enough to use two hands, providing leverage) 	✓		low	low	low

Shoulder/Neck (cont'd)

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
	<ul style="list-style-type: none"> Surface (sill) for placement of finished order is too far away 	38. Move closer to the work location <ul style="list-style-type: none"> relocate the food preparation table to provide direct access to the sill 41. Move work piece closer to body <ul style="list-style-type: none"> if the food preparation table must be located under the sill, decrease the depth of the table 	✓		low	low	low
			✓		med	low	low
2. Arm forces: Repeated arm forces or holding/ carrying materials	<ul style="list-style-type: none"> Prolonged holding of plate while serving Scraping of grill can require excessive force 	11. Eliminate unnecessary tasks <ul style="list-style-type: none"> do not hold plate; place plate on grill's side while placing food 137. Sharpen blades frequently <ul style="list-style-type: none"> keep scraper tool blade sharp 149. Provide appropriate tools <ul style="list-style-type: none"> provide tools with appropriate handle diameters and lengths lengthen the scraper tool handle to prevent reaching when scraping the rear areas of the grill (make long enough to use two hands, providing leverage) 11. Eliminate unnecessary tasks <ul style="list-style-type: none"> encourage the employee to squirt water (with a squirt bottle or sprayer) on grill to "deglaze" prior to scraping; food residue can then be wiped from the grill 	✓		low	low	low
			✓		low	low	low
			✓		low	low	low
				✓	med	low	med
			✓		low	low	low

Shoulder/Neck (cont'd)

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
3. High speed, sudden shoulder movements	<ul style="list-style-type: none"> Rarely occurs 	N/A					
4. Head/neck bent or twisted	<ul style="list-style-type: none"> Food order slips are too high; employee must look up to read Grill too low 	<p>32. Lower the work piece/work surface</p> <ul style="list-style-type: none"> clip the order slips on a lazy susan which is no higher than 50" (127 cm) above the floor <p>124. Raise the work piece/work surface</p> <ul style="list-style-type: none"> consider raising the grill to slightly above elbow height (40"-45") (102-114 cm) 		<p>✓</p> <p>✓</p>	<p>med</p> <p>med to high</p>	<p>low</p> <p>med</p>	<p>low</p> <p>med</p>

Hands/Wrists/Arms

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
5. Bent wrists/ repeated wrist movements or repeated forearm rotation	<ul style="list-style-type: none"> Repeated or excessive use of spatulas for flipping meat patties or other food items  <ul style="list-style-type: none"> Spreading of dressing or butter on bread using knife or spatula repeated manual cutting tasks (e.g., slicing/dicing vegetables) 	11. Eliminate unnecessary tasks <ul style="list-style-type: none"> install grill press which cooks meat patties/grilled sandwiches on both sides simultaneously 		✓	high	low	med
		13. Encourage ergonomic work techniques <ul style="list-style-type: none"> alternate hands whenever possible insert spatula under meat patty from the side and flip in a single motion 	✓	✓	low low	low low	low low
		148. Provide appropriate equipment <ul style="list-style-type: none"> spread melted butter and other soft food products with brushes 	✓		low	low	low
		66. Provide a power tool <ul style="list-style-type: none"> provide a food processor slice/dice frequently used items in small batches 	✓	✓	med low	med med	med med

Hands/Wrists/Arms (cont'd)

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
6. Repeated manipulations with fingers	<ul style="list-style-type: none"> Rarely occurs 	N/A					
7. Hyper-extension of finger/thumb or repeated single finger activation	<ul style="list-style-type: none"> Excessive use of aerosol spray oil 	149. Provide appropriate tools <ul style="list-style-type: none"> spread a light coating of oil using a brush 	✓		low	low	low
8. Hand/grip forces	<ul style="list-style-type: none"> Scraping of grill can require excessive force 	137. Sharpen blades frequently <ul style="list-style-type: none"> keep scraper tool sharp 	✓		low	low	low
		149. Provide appropriate tools <ul style="list-style-type: none"> provide tools with appropriate handle diameters and lengths lengthen the scraper tool handle to prevent reaching when scraping the rear areas of the grill (make long enough to use two hands, providing leverage) 	✓ ✓		low low	low low	low med
		11. Eliminate unnecessary tasks <ul style="list-style-type: none"> encourage the employee to squirt water (with a squirt bottle or sprayer) on grill to “deglaze” prior to scraping; food residue can then be wiped from the grill 	✓		low	low	low
		94. Provide appropriate handles <ul style="list-style-type: none"> provide cooking tools with larger grips 	✓		low	low	low
	<ul style="list-style-type: none"> Cooking tools require pinch grips 						

Hands/Wrists/Arms (cont'd)

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
9. High speed hand/wrist/arm movements or vibration, impact or torque to the hand	<ul style="list-style-type: none"> Rarely occurs 	N/A					
10. Exposure to hard edges	<ul style="list-style-type: none"> Tool has sharp edges 	93. Provide appropriate gloves 9. Eliminate exposure to hard edges <ul style="list-style-type: none"> use pot holders to avoid exposure to hard edges 	✓		med	low	low
			✓		low	low	low
11. Hands and fingers exposed to cold temperatures	<ul style="list-style-type: none"> Handling of frozen foods is a low frequency task and would not be considered a problem 	N/A					

Back/Torso

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
12. Repeated forward or sideways bending movements	<ul style="list-style-type: none"> Food order slips are too far away Plates are stored too low Storage shelves are too deep Grill is too large/too deep Cooking on the rear of the grill 	32. Lower the work piece/work surface <ul style="list-style-type: none"> clip the order slips on a lazy susan which is no higher than 50 inches (127 cm) above the floor and no further away than 30 inches (76 cm) 		✓	med	low	low
		124. Raise the work piece/work surface <ul style="list-style-type: none"> store plates inside a portable spring loaded plate dispenser (as is often used at a buffet) 		✓	high	low	low
		41. Move work piece closer to body <ul style="list-style-type: none"> avoid using the rear areas of shelves except for infrequently used items; store plates on the forward edge of shelves encourage the employee to avoid using the rear area of the grill whenever possible 	✓		low	low	low
		24. Increase size of work surface <ul style="list-style-type: none"> provide a wide grill surface no deeper than 30 inches (76 cm) 	✓		low	low	med

Back/Torso (cont'd)

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
	<ul style="list-style-type: none"> The scraper tool handle is too short 	<p>149. Provide appropriate tools</p> <ul style="list-style-type: none"> provide tools with appropriate handle diameters and lengths lengthen the scraper tool handle to prevent reaching when scrapping the rear areas of the grill (make long enough to use two hands, providing leverage) 	✓		low	low	low
	<ul style="list-style-type: none"> Surface (sill) for placement of finished order is too far away 	<p>38. Move closer to the work location</p> <ul style="list-style-type: none"> relocate the food preparation table to provide direct access to the sill <p>41. Move work piece closer to body</p> <ul style="list-style-type: none"> if the food preparation table must be located under sill, decrease the depth of the table 	✓		low	low	med
				✓	med	low	med

Back/Torso (cont'd)

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
13. Twisting of the lower back	<ul style="list-style-type: none"> Person tends to twist with the back instead of moving the entire body 	150. Re-design work space <ul style="list-style-type: none"> Re-design work space so that adjacent work surfaces are at right angles to each other or are placed so that the aisle between is not greater than 42 inches 		✓	high	low	med
		67. Provide a powered cart <ul style="list-style-type: none"> Provide a cart with swiveling casters to hold and move food products between work surfaces. 		✓	high	low	med
		13. Encourage ergonomic work techniques <ul style="list-style-type: none"> provide training on ergonomics principles and proper body mechanics 	✓		low	low	low
		<ul style="list-style-type: none"> encourage person to move the feet instead of reaching/twisting between the two work surfaces 	✓		low	low	low
14. High speed, sudden movements or Lifting awkward, uneven, shifting or bulky items.	<ul style="list-style-type: none"> Person tends to lift with a jerky motion instead of a smooth motion 	147. Provide an alternate container <ul style="list-style-type: none"> approach vendor to request packaging that is easier to handle 		✓	low to high	low	med
		13. Encourage ergonomic work techniques <ul style="list-style-type: none"> use slow controlled movements 	✓		low	low	low

Back/Torso (cont'd)

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On			
			✓ Minor Modification	✓ Major Change		Quality	Productivity		
15. Static, awkward back postures	<ul style="list-style-type: none"> Prolonged leaning over the work surface 	124. Raise the work piece/work surface <ul style="list-style-type: none"> place the grill on blocks/increase height raise the food preparation table on blocks install adjustable height legs to the food preparation table 	✓		low	low	low		
			✓		low	low	low		
				✓	med	low	low		
				13. Encourage ergonomic work techniques <ul style="list-style-type: none"> encourage the person to stand up straight periodically during the job encourage the person to lean on one arm/hand while reaching with the other 	✓		low	low	low
					✓		low	low	low
16. Lifting forces	<ul style="list-style-type: none"> Lifting full pans to/from the oven and lifting ingredients from shelves 	4. Change a lifting/carrying task into a rolling or pushing task <ul style="list-style-type: none"> provide adjustable height cards which adjust to bench, shelf and oven heights to minimize lifting 		✓	med	med	med		
			✓		low	med	med		
		<ul style="list-style-type: none"> Handling oil 	151. Reduce the weight of the load placed on the cart <ul style="list-style-type: none"> talk with vendor regarding smaller or lighter containers 	✓		low	med	med	

Back/Torso (cont'd)

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
17. Pushing or pulling	<ul style="list-style-type: none"> Rolling/sliding resistance of cart or piece of equipment causes high forces 	19. Improve wheel condition	✓		low	med	med
		<ul style="list-style-type: none"> remove or replace broken or missing wheels remove debris between caster and coupling check bearings and tread composition to ensure ability to meet loading and movement requirements 	✓		low	med	med
			✓		low	low	low
	<ul style="list-style-type: none"> Floor/surface condition causes high forces during a rolling or sliding task Heavy/difficult to open door 	119. Provide wheels		✓	med	low	low
		17. Improve floor condition	✓		low	med	med
		<ul style="list-style-type: none"> improve housekeeping repair cracks or gaps in floor provide ramps to compensate for minor differences in floor height 	✓	✓	high	med	med
	11. Eliminate unnecessary tasks	✓		high	low	med	
	<ul style="list-style-type: none"> replace freezer door with an air curtain repair freezer doors 		✓	low	med	med	
18. Whole body vibration	<ul style="list-style-type: none"> Rarely occurs 	N/A					

Legs/Feet

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
19. Fixed position, standing	<ul style="list-style-type: none"> Prolonged work in a standing position 	12. Incorporate rest pauses 25. Increase task variety	✓		low	low	low
20. Exposure to hard edges on legs, knees, and feet <u>or</u> Standing on hard surfaces	<ul style="list-style-type: none"> Standing on a hard surface 	96. Provide appropriate shoe inserts	✓		low	low	low
		86. Provide an appropriate anti-fatigue mat <ul style="list-style-type: none"> provide matting designed for a food service environment and for ease of cleaning; matting should cover the entire floor surface between the grill and the food preparation surfaces 		✓	med	med	low
		143. Wear appropriate shoes	✓		low	low	low
21. Awkward leg postures	<ul style="list-style-type: none"> Rarely occurs 	N/A					
22. Awkward foot postures	<ul style="list-style-type: none"> Rarely occurs 	N/A					

Head/Eyes

Job Factor	Potential Causes	Corrective Action	Level of Changes		Cost	Impact On	
			✓ Minor Modification	✓ Major Change		Quality	Productivity
23. Difficult to see/light levels too low/too high	<ul style="list-style-type: none"> Rarely occurs 	18. Improve visual access to work <ul style="list-style-type: none"> Light level should be 75fc to 100fc for work 		✓	low to med	med	med
24. Intensive visual tasks, staring at work objects for long periods	<ul style="list-style-type: none"> Rarely occurs 	N/A					

This page intentionally left blank