



Job Demands Analysis Report – Arena Service Worker

Company: City of Richmond

Address:
City of Richmond
6911 No. 3 Road
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Phone: (604) 787-5411

Provider: Ms. Mandeep Brar

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Referral Source: Ms. Gail Townsley

Referral Date: December 7, 2016

Report Submitted: January 12, 2017

Employer Contact Person: Ms. Gail Townsley

Phone: 604-244-4330

Site Visit Address: Richmond Ice Centre, 14140 Triangle Rd, Richmond, BC V6W1B1

Date of Visit: December 7, 2016

Position Assessed: Arena Service Worker

Participants Attending:

- Mr. Scott Schroeder
- Mr. Trevor Shaw
- Ms. Gail Townsley
- Mr. JR. Robinson, VRC (WorkSafeBC)
- Ms. Mandeep Brar, Consultant Kinesiologist (Evaluator)
- Mr. Ralph Cheesman, Occupational Therapist
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Work Hours/Work Schedule:

- **Typical Work Schedule:** 9.33 hour shift inclusive of a 1 hour break.
- **Break Schedule:** Two 10-minute coffee breaks and 1-hour lunch.

Back In Motion Functional Assessments, Inc.

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Please Note: Variable days and start times. Nine shifts performed every two weeks for full time workers. Possible shift times are from 7:00 am to 4:20 pm or 3:50 pm to 1:20 am.

Environmental/Psychosocial Factors:

The work duties completed by the Arena Service Worker are completed both indoors and outdoors. The worker is thereby exposed to variations in temperature and the elements such as direct sunlight, rain and intermittently snow. There is level indoor terrain and paved outdoor terrain. There are biological hazards where there is potential exposure to body fluids. Chemical hazards include exposure to cleaning agents and ammonia, and physical hazards including risk of slip and fall, some work at heights (ladders, steps), significant force application (lifting/carrying and pushing/pulling) required, power tool usage, potential for confrontations with the general public, occasional exposure to noise (refrigeration room and edger/Ice Re-surfacer). The arena has a total of 6 rinks, 24 change rooms and 3 referee rooms. The essential job functions of an Arena Service Worker involve cleaning and maintaining ice and rink surfaces, the ice plant and arena building. The worker is also responsible for assisting the general public as needed, and performing tasks including the set up and take down of equipment for functions.

Duties and Physical Demands:

The job duties of the Arena Service Worker are somewhat variable from day to day, as a different work demands are assigned based on the time of year and the available workorders.

Overall, the Arena Service Worker can be responsible for completing the following job duties throughout the course of regular work duties:

1. Maintain Rink Surfaces:

- **Spudding (Occasional):** Use of a spudder tool is used to deliver blows to break up and loosen hard or compact ice/snow on the ice surface. Estimated 20-50 lbs. of force application (with jarring) is encountered when chipping ice. Completed once every couple days for about 30 minutes at a time (variable).
 - **Edging (Occasional):** Edging involves the use of a large cutting device to shave down ice around the edges of the ice rink where there is extra build up. Constant pushing force of approximately 25 lbs. is encountered when performing edging, with estimated forces of up to up to 40 pounds when pressing forcefully against the boards. Up to 66 lbs. of force to tilt and roll over lips (facilitated with body weight application). This job demand is completed twice a week for approximately 15 minutes sustained.
 - **Replacing glass (Rare):** 50 to 70 lbs. of lifting force (distributed amongst 2-3 workers with some concurrent outer range reaching) for Plexiglas; 27 lbs. solo lift for temporary plywood sheet application.
 - **Shoveling Snow (Occasional):** Repetitive lifting of 5-10 lb. loads on snow shovel are required for approximately 5 minutes at a time.
 - **Pulling hoses (Occasional):** 200 foot pull; approximately 30 lbs. of pulling force. The hoses are used to flood the rink with water for ice to build.
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- **Sweeping and Mopping (no ice rink)** (Occasional): Sweeping of rink surface with large push broom (6 ft. breadth) is completed twice a shift for 30 minutes at a time. Continuous walking and pushing are required during this task.
Floor cleaning (no ice rink) (Occasional): Fill machine with water via hose, push automated floor-machine (self-propelled). Completed for approximately 1 hour continuously. Total of 2 hours per shift.

2. Building Cleaning and Maintenance:

- **Garbage bin emptying** (Occasional): Variable loads weighing up to maximum of 30 lbs. (typically 10-15 lbs.) are handled when emptying garbage bins. There are 25 bins that are emptied in sequence, twice a week. The garbage bags will have to be lifted over a 5 foot lip into the dumpster (may use stool to facilitate).
- **Sweeping and Mopping (bleachers)** (Occasional): Sweep 3 steps bleachers times 200 ft. Mop benches (same distance). Requires repetitive stair climbing. Completed once a week for 2 hours. Mop buckets of variable weight: typically 20-30 lbs.
- **Cleaning duties** (Occasional to Frequent.): Push a cart (less than 5 lbs. of force). Clean urinals, sinks, counters and toilets. Increased frequency in the summer season. Completed for 2 hours per shift in the summer months. Somewhat less in wither months.
- **Replacing lights:** Requires worker to climb ladders and complete overhead reaching tasks for replacement of florescent light bulbs.

3. Maintain Ice Re-surfacer

- **Replacing Ice Re-surfacer Blades** (Rare): 57 lbs. blade, carry/drag about 10-15 ft. Completed once per week. Requires worker to crouch and replace blade in awkward arm angles to unscrew and screw on new blade.

4. Assorted other tasks

- **Moving nets** (Occasional.): Ice- 65 lbs. initial force (to lift/tilt) for hockey nets for about 20 ft. completed up to 4 times a shift. No Ice- 35 lbs. of initial force for roller hockey nets (to tip, when positioning 2-wheeled net-mover); significantly less force for lacrosse nets (estimated at less than 20 lbs. total). Push up to 50 ft. (*Workers can ask for assistance from referees*)
 - **Open ice rink gates** (Occasional.): A well maintained ice rink gate requires a pulling force up to 15-20 lbs. and a pushing force of 10-20 lbs. Completed 12 times a shift.
 - **Pushing rental skate cart** (Rare): 45 lbs. initial pushing force maximum 100 ft.
 - **Assisting with events** (Occasional.): Move tables- 45 lbs. each, variable quantities. Typically carried by 2 workers. Approximately 100 ft. carry at maximum. May carry up and down steps.
 - **General tasks:** Fixing nets, adjusting hockey sticks, locking/unlocking doors, computer applications (checking ice readings)
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Additional Notes:

- **Equipment used includes:** Ice re-surfacer, blades, automated floor- machine ('auto scrubber'), hose for flooding ice, edger, spudder, Arena glass (4' by 4' and 5' by 4' sheets), arena boards, tables, chairs, hand and power tools (multiple assorted; e.g. pliers, wrenches, ratchets, screwdriver, table saw), cleaning tools and supplies (i.e. toilet scrub brush, rags), required to wear anti slip grip on shoes when on ice and gloves, step and extension ladders, dolly (to facilitate garbage bin transport)
- **Safety Equipment includes:** Ice shoe grips when on slippery surfaces, high-vise vest when outside

Table Summary of Physical Requirements:

PHYSICAL REQUIREMENTS	Frequency/Reps/Weight	Task Examples
Reaching	Bilateral and unilateral reaching demands are completed at inner and outer ranges on a frequent basis. Cleaning tasks are completed unilaterally with one's dominant hand.	Reaching above shoulder is encountered when fixing/replacing light fixtures, lifting glass or plywood into place on arena boards, lifting garbage containers when dumping in dumpster, taking supplies of shelves, scrubbing walls/mirrors and vacuuming vents. Reaching below shoulder is encountered when grasping controls/handles, shoveling, spudding, lifting bins, sheets of glass/plywood, moving nets, ratcheting ice re-surfacer blade nuts, driving ice re-surfacer, using hand tools, sweeping and mopping and fixing board signs with hand tools.
Handling/Gripping	Unilateral and bilateral materials handling, involving palmer and power grasps is required on a frequent basis. Typically not exceeding 30 minutes at a time.	Assorted tools and equipment, ice re-surfacer controls and encountered when spudding, shoveling and mopping and operating the ice re-surfacer.
Fingering/Pinching	Bilateral fingering and pinching movements are required on an occasional basis.	Ice re-surfacer controls (buttons). Pen and paper tasks, computer application.
Sitting	Sitting demands vary slightly from day to day, however are required on an occasional basis only. Sitting demands will not typically exceed fifteen minutes at a time.	Completed when operating ice re-surfacer, performing computer applications. 7 to 13 times per shift approximately.
Standing/Walking	A combination of static and dynamic standing are required on a frequent to constant basis. Typically sustained up to about 1 hour. May be in excess of 2 hours	The facility is large; walk to access different work environments, sweeping rinks, bleachers (30 minutes- twice per shift in summer), and using automated

	continuously. There is less seated work in summer months.	floor-machine. Standing is interspersed with walking and other work postures.
Stooping	Dynamic posturing requiring mild to moderate stooped postures are required on up to an occasional basis.	Mild to moderate stopping (with concurrent lateral trunk tilt) when shoveling or spudding. Mild to moderate stopping when pushing edger (handle at 37 inches above floor). Mild to moderate stopping when cleaning washroom surfaces. Mild stopping when sweeping. Workers are able to take micro-postural breaks as required.
Crouch/Squat/Kneel	Dynamic crouching and squatting are completed on an occasional basis of up to 10-15 minutes.	Sustained crouch or kneel to remove and replace ice re-surfacer blade (with concurrent forward rounded trunk) or to drill ice. Crouch to scrub toilet. Workers are able to take micro-postural breaks as required.
Stair Climbing/Ladder Climbing	Ladder climbing is required on an occasional basis on a 20 foot ladder. Stair climbing is required on an occasional basis	Climbing extension ladders for fixing light fixtures, climbing bleachers and climb onto ice re-surfacer (3 steps).
Lifting	Lifting up to heavy loads is required on an occasional basis. Between floor to shoulder level. (Average load depends on job demand. Can lift up to 65 lbs.).	Encountered when completing rink glass replacement, resurface blade replacement, tilting nets and edger, emptying garbage bins, shoveling snow, moving tables, and handling mop buckets, tools and supplies. Note the majority of items handled will be in the light and medium range, but intermittent exposure to heavy weighted demands is encountered.
Carrying	Carrying of up to 45 lb. load is required on an occasional basis, over various distances up to 200 ft. for light tools, up to 10 ft. for garbage bags, plywood sheets, blades and glass). Items that are carried vary in weight and size.	Encountered when carrying hand tools, replacement parts, panes of glass, garbage bins and bags, plywood sheets, and re-surfacer blades. A dolly is available to minimize carrying distances and is used at the workers discretion.
Pushing/Pulling	Horizontal pushing and pulling demands requiring up to heavy levels of resistance are required on an occasional basis. The distances that items are pushed and pulled can vary up to 200 ft.	Encountered when using the edger, dragging nets, sliding plywood sheets and moving the ice re-surfacer blade. Pulling hose onto rink surfaces, opening/closing gates, using the automated floor-machine.
Balance	Occasional	Dynamic when walking on ice surfaces. Static when perching on ladders (change bulbs).
Awkward Postures	Occasional	Sustained crouch or kneel to remove and replace ice re-surfacer blade (with

		concurrent forward rounded trunk) sustained trunk side-tilting (to left) when gauging path of ice re-surfacer. Shoveling actions include concurrent stooping and side tilting with force application.
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Overall analysis of the Arena Service Worker is suggestive that this job requires heavy strength capacity as per the National Occupational Classification systems definition.

NOTE:

"limited", refers to NOC guidelines – Handling loads up to 11 lbs.

"light", refers to NOC guidelines – Handling loads between 11-22 lbs.

"medium", refers to NOC guidelines – Handling loads between 22 – 44 lbs.

"heavy", refers to NOC guidelines – Handling loads greater than 44 lbs.

"continuous", refers to activities that are, on a cumulative basis, performed for 67-100% of the work day

"frequent", refers to activities that are, on a cumulative basis, performed for 33-66% of the work day

"occasional", refers to activities that are, on a cumulative basis, performed for 0-33% of the work day

"mild stooping" – flexion at the hip/waist up to approximately 20°

"moderate stooping" – flexion at the hip/waist between approximately 20° & 45°

"severe stooping" – flexion at the hip/waist greater than approximately 45°

"inner-range reaching" within a forearm's reach

"outer-range reaching" the arm extends away from the body

Should clarification or further information be required regarding this report, please contact me at **(604)-314-8270**.

Report Prepared By:



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Consultant Kinesiologist
Back in Motion Functional Assessments, Inc.

APPENDIX- PHOTOS

Photo A-C: Ice re-surfacer controls and chair

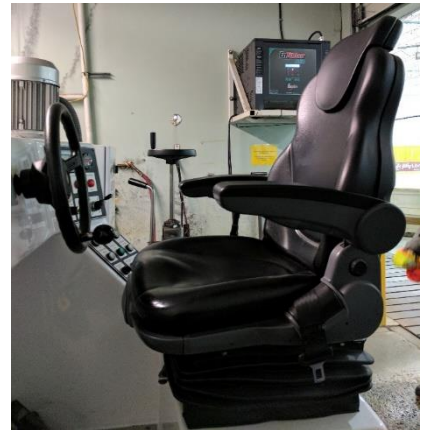


Photo A

Photo B

Photo C



Photos D-F: Spudder tool. Photo E is showing how workers are intended to use the tool. Photo F shows how workers actually use the tool on ice.

Photo D

Photo E

Photo F

Photo G-H: Forceful push with body to loosen door to open



Photo G



Photo H

Photo I: Hose pulled onto rink surface by 3 workers to fill with water to create ice



Photo J: Bleachers at Richmond Ice Centre

