



Job Demands Analysis
- MOBILE BOOM TRUCK OPERATOR -

JOB POSITION & SCHEDULE

Job Title:	Mobile Boom Truck Operator (“Crane Operator”)
Essential Job Functions:	Crane Operators operate truck-mounted articulated boom cranes to lift, move, position, or place machinery, equipment and other large objects at construction or industrial sites, and other similar locations. They deliver equipment and materials to ensure the smooth operation and completion of a large variety of jobs.
Hours of work:	7:00 a.m. until 4:30 p.m. Occasional overtime.
Breaks:	Two 10-minute breaks, one 39-minute break daily
Shifts:	9-day fortnight (5 consecutive work shifts, week-one; 4 consecutive work shifts, week-two).

ENVIRONMENTAL CONDITIONS

WorkStation Description:	Company vehicle. Various City of Richmond locales. Other locales within Greater Vancouver.
Lighting:	Outdoor lighting.
Weather:	Occasional exposure to the elements when working outside.
Terrain:	Level or uneven, paved or unpaved outdoor terrain.
Biological Hazards:	No appreciable exposure.
Chemical Hazards:	No appreciable exposure.
Physical Hazards:	Potential exposure to electrical lines/cables and to mechanisms (moving parts). Risk of slip and fall during outdoor exposures (weather influenced) if positioned on deck surface or on loads/equipment. Risk of serious accident from unstable vehicle, from unsecured load, from moving loads etc. Considerable vibration exposure when driving over rough terrain.

SUMMARY OF ESSENTIAL WORK TASKS

Frequency: N/A: not done; Rare 0-5%; Occasional 6-33%; Frequent 34-66%, Constant 67-100%

- | <i>Frequency</i> | <i>Description</i> |
|----------------------|---|
| 1. Occasional | Perform Pre- and Post-Trip Inspections:
<i>The crane operator is responsible for ensuring the safe operation of the vehicle via performing pre- and post-trip inspections. These actions involve accessing the engine compartment, inspecting tires and other vehicle components, checking brakes/slack-adjustors/push-rods etc.</i> |
| 2. Frequent | Operate Vehicle:
<i>The crane operator is responsible for safely driving the automatic transmission vehicle to/from worksites and for positioning it optimally at worksites.</i> |
| 3. Occasional | Safely Secure, Move and Release Loads:
<i>The crane operator is responsible for stabilizing the crane prior to securing loads and for safely securing, moving and releasing loads. These actions involve optimally utilizing equipment such as dunnage, blocks, rigging, slings, straps, associated tools, and vehicle/boom controls.</i> |

TOOLS & EQUIPMENT

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| ▪ Chains (up to 20 feet long) | ▪ Straps |
| ▪ Tie down rods | ▪ Dunnage |
| ▪ Shoulder covers | ▪ Tag ropes |
| ▪ Slings | ▪ Shrink wrap |
| ▪ Safety equipment: eye protection, gloves, safety cones | ▪ Mechanic's creeper |
| ▪ Winches | ▪ 2-chain bridle |
| | ▪ Boom control unit |

PSYCHOSOCIAL & COGNITIVE REQUIREMENTS

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| Degree of Self-Supervision/Accountability: | <i>Predominantly self-supervised throughout the shift (may contact supervisor to obtain work direction as needed)</i> |
| Supervision of Others: | <i>Provides work direction and some elements of managing work performance with the exclusion of disciplinary action</i> |
| Performance Pressure (machine or other): | <i>Time pressure is low: there is occasional pressure to meet deadlines or work within time constraints, the volume of work and the work pace are moderate</i> |
| Attention to Detail: | <i>Significant attention to detail or concentration required for many tasks or intense attention to detail or concentration required for some tasks</i> |

Multi-Tasking:	<i>Not responsible for concurrent multiple tasks. Responsible for performing one task at a time until completion or further direction from supervisor</i>
Level of Collaboration:	<i>Required to work in co-operation with others for some tasks</i>
Working with Public (emotional or confrontational):	<i>Infrequent exposure (approx. monthly) to emotionally stressful circumstances or emotionally distressed individuals with whom the worker must interact in order to complete job requirements (e.g., may attend accident-scenes). No exposure to confrontational situations in the course of duties</i>
Literacy (reading/writing/computer/numerical):	<i>A high degree of reading literacy is required to read manuals and other documents with a high degree of comprehension (in particular during certification processes).</i>
Communication Skills:	<i>Moderate communication skills are required to comprehend and communicate information fluently e.g. to work crews and the general public regarding potential hazards and safe work practices.</i>
Memory Skills:	<i>Basic memory ability is required to recall information that is applied to work tasks on a regular basis, typically without rigid time constraints.</i>

MOBILITY & POSTURAL DEMANDS
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Frequency: N/A: not done; Rare 0-5%; Occasional 6-33%; Frequent 34-66%, Constant 67-100%

Demand	Frequency	Description
Reaching*	F	<i>Inner range reaching to operate vehicle and boom controls. Outer range reaching to grasp or place items in storage receptacles (no prolonged) and to grasp vehicle handholds when climbing. Occasional overhand throwing required to place strapping over large loads. Above shoulder height reaching required when applying strapping, shrink-wrap etc to large loads (may be almost vertical). Maximal reaching height: to 71 inches to grasp handle and open vehicle engine hood.</i>
Handling/Gripping	O	<i>Handle tools and equipment. Grip steering wheel.</i>
Fingering	O	<i>Operate vehicle controls, cellular telephone.</i>

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Sitting	O – C	<i>Operate vehicle.</i>
Standing	O	<i>Dynamic body posturing when performing pre- and post-trip inspections, securing and releasing loads. Static standing when operating boom (positioning boom or moving loads).</i>
Walking	O	<i>Circumnavigate vehicle when performing pre- and post-trip inspections. Navigate worksites.</i>
Climbing stairs/ladders	O	<i>Climb onto vehicle (20 inches to step; 39 inches to bumper; 43 inches to top of tire – facilitated with handholds) to facilitate pre- and post-trip inspections. May climb onto loads/equipment to secure strapping. Climb onto vehicle deck via vertical ladder.</i>
Stooping*	O	<i>Mild stooping over engine compartment during pre-trip inspection. May place or retrieve items to/from floor level via stooping. May walk laterally in crouched posture. May briskly/dynamically stoop/crouch to apply downward force (via lowering body mass) to a tie-down bar (when securing a load). Concurrent stooping and pulling actions when dragging chains, blocks, dunnage etc.</i>
Twisting	O	<i>Shoulder-checking procedures when driving.</i>
Crouching/Kneeling	O	<i>Place or retrieve equipment to/from floor level. Check tires and brakes. May walk laterally in crouched posture. May briskly/dynamically stoop/crouch to apply downward force (via lowering body mass) to a tie-down bar (when securing a load). No kneeling required.</i>
Crawling	R	<i>Rare: may occur when applying strapping to awkward loads or when inspecting undersurface of vehicle (mechanic’s creeper utilized typically).</i>
Balancing	O	<i>Static balancing (brief): e.g., when leaning to inspect brakes.</i>
Driving	O – C	<i>Operate vehicle: variable durations.</i>
Hand/Foot Controls	O – C	<i>Operate vehicle. Operate box via levers in cab.</i>
Awkward Postures	O – F	<i>Awkward and sustained awkward neck postures (frequent upward gazing when observing/gauging load-travel). Awkward combination of outer-range reaching and concurrent force applications (lifting) to place/retrieve items to/from the vehicle’s storage areas.</i>

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Talking	O	<i>Communicate with supervisor(s), City of Richmond staff, worksite workers etc.</i>
Hearing	C	<i>To communicate, to safely operate vehicle.</i>
Tasting	N/A	<i>Not required.</i>
Smelling	N/A	<i>Not required.</i>
Near Acuity	C	<i>Vehicle operation.</i>
Far Acuity	C	<i>Vehicle operation.</i>
Depth Perception	C	<i>Vehicle operation.</i>
Accommodation	C	<i>Vehicle operation.</i>
Color Vision	C	<i>Vehicle operation.</i>

**NB: inner-range reaching: within a forearm's reach; outer-range reaching: the arm extends forward & away from the body; vertical reaching: reaching above shoulder level. Mild stooping = up to approximately 20 degrees of flexion at the waist; moderate stooping = between approximately 20 and 45 degrees of flexion at the waist; severe stooping = greater than approximately 45 degrees of flexion at the waist*

STRENGTH DEMANDS

Frequency: N/A: not done; Rare 0-5%; Occasional 6-33%; Frequent 34-66%, Constant 67-100%

Lifting/Carrying	O	<i>Carry tools equipment: most equipment is less than 10 pounds. Stabilizing blocks weigh 33 pounds. Dunnage weighs 23 pounds (one 4-inch by 4-inch, 8-foot length). Single stage lifting chain: 25 pounds. 20 foot chain: 75 pounds (variable force: partially lift and predominantly drag).</i>
Pushing/Pulling	O	<i>Push/pull (drag) chains and dunnage (estimated 20 pounds of pulling force). Pull strapping tight by hand and push against tie-down bars to further secure loads: variable forces, estimated up to 80 pounds (may be facilitated by optimizing mechanical advantage and generating forces via lowering/altering body mass location). Push/pull against slack adjusters and push-rods during pre-trip inspection. Pull open and controlled lower of vehicle hood: 30 pounds of force approximately.</i>

Overall Strength Category (per the Dictionary of Occupational Titles):

Heavy: Exerting 50-100 lbs. of force occasionally, and/or 25-50 lbs. of force frequently, and/or 10-20 lbs. of force constantly to move objects.