

Job Demands Analysis – Truck Driver II (Appliance Truck)

Purpose

The appliance truck driver is responsible for driving the appliance truck to pick up abandoned appliances, tires and other non-garbage, recyclable items from Vancouver city streets. The driver also assists in loading for heavier items and dumping at the end of the day.

Essential Duties

The Truck Driver II (appliance) has 2 essential duties:

	<u>% of shift</u>
Duty #1 – Driving	90%
Duty #2 – Loading/dumping	10%

Description of Non-essential Tasks

The driver may be required to perform other work tasks on an occasional basis.

Examples of the tasks that may be performed are:

- Answering questions from the public
- Keeping truck clean

Summary of Demands

	Sedentary	Light	Medium	Heavy	Very Heavy	Comments
Physical (strength)				✓		Based on lifting demands
Physical (endurance)		✓				Stand/walk for up to 10% of shift
Cognitive			✓			Based on driving requirements

Shift Structure

There is only 1 appliance truck and it operates on day shift, although the abandoned garbage crew may use the appliance truck on night shift to pick up an abandoned appliance. Appliance truck drivers work an 8 hour shift (7am – 3:30pm), M-F. There is a 30 minute lunch break and two 10 minute coffee breaks. Breaks can be taken at any time during the shift.

Frequency Rating Definitions

The frequency rating definitions used in the Summary Table are from the Dictionary of Occupational Titles (DOT, 1991, 4th edition) published by the US Department of Labor. A similar classification is used for each Essential Duty, but the percentages are changed to reflect % of Duty rather than % of shift.

	Time per Day	Percentage of Shift
Never	0 minutes	0 %
Rare	0 - 5 minutes	0-1 %
Infrequent	6 - 25 minutes	2-5 %
Occasional	26 minutes – 2.5 hours	6-33 %
Frequent	2.6 - 5.25 hours	34-66 %
Constant	5.26 - 8 hours	67-100 %

STRENGTH	
Strength Category	Weight Handled
1. Limited	Up to 5 kg.
2. Light	5 kg. to 10 kg.
3. Medium	10 kg. to 20 kg.
4. Heavy	>20 kg

Job Demands Analysis – Truck Driver II (Appliance) - Summary Table

a. Physical Demands		Frequency During Shift					Weight		Comments	
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)		Max (kg)
Strength	Lifting – Floor to Knuckle			x				10	23	D2- loading/dumping
	Lifting – Knuckle to Waist			x				10	23	D2 - loading/dumping
	Lifting – Over Shoulder		x					5	10	D2- unloading lighter items out of side of truck at end of day
	Carrying – with Handles		x					10	23	D2- abandoned items with handles
	Carrying – without Handles			x				10	23	D2- tires, TVs, other items
	Pushing – Upper Extremity		x					<5	5	D2-Closing side door of truck
	Pushing – Hips/Legs assist			x				10	30	D2-Moving appliances and heavy items, push shopping carts
	Pulling – Upper Extremity		x					<5	10	D2-Open side door of truck, pull out tire or other light item
	Pulling – Hip/Leg Assist			x				20	30	D2-Moving appliances and heavy items
Mobility	Reach - Shoulder or Above			x				D1,2-climb in/out, unload from side door, holding up high on fridges when moving it		
	Reach - Below Shoulder				x			D1,2-access seat controls, lifting and unloading items, shrink wrapping		
	Handling						x	D1,2-steering wheel, abandoned items, paperwork		
	Fine finger movements	x								
	Neck - Static Flexion	x								
	Neck – Static Neutral					x		D1-looking ahead when driving		
	Neck – Static Extension	x								
	Neck – Static Rotation	x								
	Throwing		x					D2-thowing tires into container when dumping		
	Sitting						x	D1-driving or waiting for labourer to swamp		
	Standing		x					D2-unloading		
	Walking			x				D1,2- pre-trip and when loading/dumping		
	Running/Jumping	x								
	Climbing		x					D1 - in/out of truck		
	Bending/Stooping			x				D1, D2-pre-trip, lifting/unloading		
	Crouching		x					D2 - picking up dropped litter		
	Kneeling	x								
	Crawling	x								
Twisting				x			D1,2- shoulder checking, pre-trip, loading and dumping			
Balancing		x					D1 - when climbing in/out of truck			
Travelling					x		D1-when driving			

Job Demands Analysis – Truck Driver II (Appliance) - Summary Table (continued)

a. Physical Demands (continued)		Frequency During Shift						Comments
		N	R	I	O	F	C	
Sensory / Perception	Hear/Conversations					x		D1,2- co-workers, public, police
	Hear/Other Sounds						x	D1,2-Vehicles, pedestrians, alarms, co-workers
	Vision/Far						x	D1,2-Driving, monitor environment
	Vision/Near						x	D1,2-Driving, loading/dumping
	Vision/Colour					x		D1-Driving demands
	Vision/Depth						x	D1,2-Driving and loading/dumping
	Perception/Spatial				x			D1- viewing mirrors when driving
	Perception/Form		x					D1-Watching for obstacles in poor visibility conditions
	Feeling	x						
	Speech					x		D1,2- co-workers, public, police
Work Environment	Inside Work						x	D1-Inside vehicle
	Outside Work				x			D1,2-pre-trip, loading/dumping
	Slippery		x					D1,2-slippery, snowy, icy weather conditions
	Congested worksite				x			D1,2-Depends on traffic, time of day/, location of work
	Chemical Irritants		x					D2-if come in contact with chemicals on an abandoned item
	Confined Space Entry	x						
	Vapour Fumes				x			D2- Exhaust fumes and other smells
	Noise						x	D1,2- vehicle and street noise
	Proximity to moving objects					x		D1,2-Vehicles and pedestrians, depending on time of day and location of work
	Hazardous Machines	x						
	Electrical hazard	x						
	Sharp Tools		x					D2 - sharp edges on broken/damaged items
	Radiant/Thermal Energy	x						
	Hot/Cold		x					D2-Extremes are rare and weather dependent
	Humid		x					D2-Extremes are rare and weather dependent
	Environmental Dust		x					D1,2-if driving past dusty area with windows down or loading from dusty area
	Organic Substances		x					D2-Substance on outside of abandoned item
	Medical Waste	x						
	Blood Products	x						
	Lighting Issues – Direct		x					D1,2-Dark early mornings in winter
	Lighting Issues – Indirect	x						
	Vibration – Whole Body					x		D1-Driving
	Vibration – Hand/Arm	x						

Job Demands Analysis – Truck Driver II (Appliance) - Summary Table (continued)

b. Cognitive and Psychosocial Demands	Frequency During Shift			Comments
	Never / Rare	Infrequent / Occasional	Frequent / Constant	
Degree of Supervision	X			
Time Pressure	X			
Attention to Detail	X			
Memory Requirements		X		D1,2 - driving route directions, how to dispose of certain items
Interact with co-workers			X	
Interact with public	X			
Work Alone	X			
Reading		X		D1-pre/post trip forms, log book, complaint forms
Writing		X		D1-pre/post trip forms, log book, complaint forms
Irregular Hours	X			
Operating Equipment			X	D1- appliance truck

Physical Environment

The work takes place inside the appliance truck cab, outside on city sidewalks and roads and at the Manitoba yard.

Staffing Levels

The appliance truck driver works as part of a 2 man crew. The other crew member is a labourer.

Tools and Equipment Used

Appliance truck, bolt cutters, dolly, special bags

Other Equipment

The appliance truck driver must wear steel toed boots, a safety vest and gloves for non-driving work.

Data Collection

Mandy Gallant, an ergonomic consultant from ErgoRisk Management Group conducted the JDA assessment on January 9th, 2009. Data was collected using a tape measure, industrial scale, Chatillon push/pull force gauge, digital camera and through observation and discussion with selected employees and the superintendent.

Contact for the on-site assessment

Dennis Cole, Sub-Foreman of Street Cleaning was the contact for the on-site assessment.

Description of Essential Duties

This section describes the work tasks that comprise the 2 essential duties of the job. Essential Duty Tables 2 and 3 (located at the end of this report) provide the physical, cognitive and psychosocial demands for performing each of the essential duties.

Essential Duty 1: Driving

Each morning the appliance truck driver drives from the Manitoba yard downtown to meet with city police in the downtown core (Fig. 1). They then drive a pre-assigned route in the downtown picking up abandoned appliances, tires, shopping carts and other recyclable items that have been dumped over night. This morning routine typically lasts from 8am-11am.

Once the downtown work is done the appliance truck spends the rest of the day picking up items that have come in through customer complaint. Each morning the driver receives a stack of complaint forms and uses his/her discretion to plan the route and pick up whatever items they are able over the course of the shift. Priority is given to picking up fridges as they are more of a safety hazard than some of the other items. The driver keeps a written log of all the work done and also makes notes on the complaint forms as things are picked up.

Prior to leaving the yard in the morning the driver performs a pre-trip inspection of the appliance truck, checking tires, lights, fluid levels, brakes, windshield wipers and appliance truck controls (Fig. 2). If necessary the driver will fill the appliance truck with gas either at the beginning or end of the shift. Drivers tend to keep the same appliance truck each day unless an appliance truck has to be turned in for maintenance. At the end of the shift a post-trip inspection is performed and a pre/post trip inspection form is completed.



Fig. 1: Appliance truck.



Fig. 2: File photo of potential posture for performing a pre-trip inspection.

Essential Duty 2: Swamping

The appliance truck driver stops at each abandoned item, pulling to the curb or side of the lane as close as possible to the item, depending on parked cars or other obstacles. If the item is light enough to be lifted by one person then the labourer gets out and loads the item. It may be loaded into the back of the truck using the electric tailgate (Fig. 3) or may be put in through the side gate of the truck. If the item is heavy such as a fridge, stove, freezer, etc the driver will get out and assist the labourer in loading the item into the back of the truck using the electric tailgate (Fig. 4). Heavy items are 'walked' onto the tailgate and into the truck rather than lifted. If the item is too heavy for a 2 man crew, such as a heavy safe then a second crew may come to assist with the pick up.



Fig. 3: Loading items with electric tailgate.



Fig. 4: Driver and labourer loading a heavy fridge.

At times bolt cutters may be used to cut free an abandoned bicycle, or an appliance dolly may be used to move an item, but this work is typically done by the labourer while the driver waits inside the truck and completes the appropriate paperwork.

Depending on how much abandoned product is picked up the truck may need to be dumped more than once a day, but typically dumping only occurs once in a day.

Different items needs to be dropped in different places, such as shopping carts in a location near the Manitoba yard, broken TV's and monitors in a special location in the Manitoba yard, dry-wall in the transfer station, etc. There are 5 different dumping locations and dumping typically takes an hour at the end of the shift.

When unloading items from the back of the truck at the end of the day both the driver and labourer are involved (Fig. 5). In the case of broken TVs and monitors they must be put into special black bags and stored in a certain location in the yard. Intact computer gear is put into special white bags and intact TV's are placed on separate palettes and shrink wrapped for pick up once the palette is full (Fig. 6). Tires are put into a tire container adjacent to the TV area (Fig. 7). The driver may be involved in any or all of these activities at the end of the day.



Fig. 5: Unloading TVs at Manitoba yard.



Fig. 6: Intact TVs are put on palettes and shrink wrapped



Fig. 7: Abandoned tire container at Manitoba yard.

Essential Duty 1: Truck Driver II (Appliance) – Driving

a. Physical Demands		Frequency During Duty					Weight		Comments
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)	
Strength	Lifting – Floor to Knuckle	x							
	Lifting – Knuckle to Waist	x							
	Lifting – Over Shoulder	x							
	Carrying – with Handles	x							
	Carrying – without Handles	x							
	Pushing – Upper Extremity	x							
	Pushing – Hips/Legs assist	x							
	Pulling – Upper Extremity	x							
	Pulling – Hip/Leg Assist	x							
Mobility	Reach - Shoulder or Above		x						If reach up to check something on pre-trip, climbing in/out of truck
	Reach - Below Shoulder		x						Adjust seat controls, checking low areas during pre-trip inspection
	Handling						x		Steering wheel and other appliance truck controls
	Fine finger movements	x							
	Neck – Static Flexion	x							
	Neck – Static Neutral					x			Looking ahead when driving
	Neck – Static Extension	x							
	Neck – Static Rotation	x							
	Throwing	x							
	Sitting						x		
	Standing		x						Pre-trip inspection only
	Walking		x						Pre-trip inspection only
	Running/Jumping	x							
	Climbing		x						In/out of truck
	Bending/Stooping		x						Pre-trip inspection only
	Crouching	x							
	Kneeling	x							
	Crawling	x							
	Twisting			x					Shoulder check, getting in/out of truck, reaching to controls
	Balancing	x							
Travelling						x			

Frequency Rating Definition for % of Duty

The definitions for frequency ratings are contained at the end of the Table (page 12).

Essential Duty 1: Truck Driver II (Appliance) – Driving (continued)

a. Physical Demands (continued)		Frequency During Duty						Comments
		N	R	I	O	F	C	
Sensory / Perception	Hear/Conversations					x		Co-worker, cell phone/radio calls
	Hear/Other Sounds						x	Traffic noise, sirens, etc
	Vision/Far						x	Driving demands
	Vision/Near						x	Driving demands
	Vision/Colour						x	Driving demands
	Vision/Depth						x	Driving demands
	Perception/Spatial				x			Checking mirrors
	Perception/Form		x					Watching for pedestrians or obstacles in poor visibility conditions
	Feeling	x						
	Speech						x	Co-worker, cell phone/radio calls
Work Environment	Inside Work						x	Inside cab of appliance truck
	Outside Work		x					Pre-trip only
	Slippery		x					Depends on road conditions and weather
	Congested worksite				x			Depends on traffic conditions and time of day and location in the city.
	Chemical Irritants	x						
	Confined Space Entry	x						
	Vapour Fumes			x				Exhaust fumes if driving with windows down
	Noise						x	Vehicle and street noise
	Proximity to moving objects					x		Other vehicles, pedestrians
	Hazardous Machines	x						
	Electrical hazard	x						
	Sharp Tools	x						
	Radiant/Thermal Energy	x						
	Hot/Cold	x						
	Humid	x						
	Environmental Dust		x					If driving past a construction site or dusty area with windows down
	Organic Substances	x						
	Medical Waste	x						
	Blood Products	x						
	Lighting Issues – Direct		x					Dark early mornings in winter
Lighting Issues – Indirect	x							
Vibration – Whole Body						x	Driving	
Vibration – Hand/Arm	x							

Essential Duty 1: Truck Driver II (Appliance) – Driving (continued)

b. Cognitive and Psychosocial Demands	Frequency During Duty			Comments
	Never / Rare	Infrequent / Occasional	Frequent / Constant	
Degree of Supervision	x			
Time Pressure	x			
Attention to Detail	x			
Memory Requirements		x		driving routes and directions
Interact with co-workers			x	
Interact with public	x			
Work Alone	x			
Reading	x			pre/post trip forms, log book, complaint forms
Writing	x			pre/post trip forms, log book, complaint forms
Irregular Hours	x			
Driving Equipment			x	appliance truck

Frequency Rating Definitions for % of Duty

The frequency rating definitions are from the Dictionary of Occupational Titles (DOT, 1991, 4th edition) published by the US Department of Labor.

	Percentage of Duty
Never	0 %
Rare	0-1 %
Infrequent	2-5 %
Occasional	6-33 %
Frequent	34-66 %
Constant	67-100 %

STRENGTH	
Strength Category	Weight Handled
5. Limited	Up to 5 kg.
6. Light	5 kg. to 10 kg.
7. Medium	10 kg. to 20 kg.
8. Heavy	>20 kg

Essential Duty 2: Truck Driver II (Appliance) – Loading/Dumping

a. Physical Demands		Frequency During Duty					Weight		Comments		
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)		Max (kg)	
Strength	Lifting – Floor to Knuckle				x			10	23	Loading/unloading items	
	Lifting – Knuckle to Waist				x			10	23	Loading unloading items	
	Lifting – Over Shoulder		x					5	10	Lifting lighter items like tires out of side of truck	
	Carrying – with Handles		x					10	23	Unloading abandoned items with handles (certain TVs)	
	Carrying – without Handles				x			10	23	Tires, microwaves, other items	
	Pushing – Upper Extremity		x					<5	5	Closing side door of truck	
	Pushing – Hips/Legs assist				x			10	30	Moving appliances and heavy items, push shopping carts	
	Pulling – Upper Extremity			x				<5	10	Open side door of truck, pull out tire or other light item	
	Pulling – Hip/Leg Assist				x			20	30	Moving heavy items	
Mobility	Reach - Shoulder or Above				x					unload from side door, holding up high on fridges when moving it	
	Reach - Below Shoulder					x				lifting and unloading items, shrink wrapping	
	Handling						x			Abandoned items, shrink wrap, tailgate controls	
	Fine finger movements	x									
	Neck - Static Flexion	x									
	Neck – Static Neutral	x									
	Neck – Static Extension	x									
	Neck – Static Rotation	x									
	Throwing			x							Throwing tires into container when dumping
	Sitting	x									
	Standing				x						Unloading, standing on tailgate
	Walking					x					When loading/dumping carrying things from truck to dump area
	Running/Jumping	x									
	Climbing		x								In/out of truck
	Bending/Stooping					x					lifting/unloading
	Crouching		x								Shrink wrapping, checking something low on palette
	Kneeling	x									
Crawling	x										
Twisting					x					Loading, lifting, carrying, dumping	
Balancing	x										
Travelling	x										

Frequency Rating Definition for % of Duty

The definitions for frequency ratings are contained at the end of the Table (page 15).

Essential Duty 2: Truck Driver II (Appliance) – Loading/Dumping (continued)

a. Physical Demands (continued)		Frequency During Duty						Comments
		N	R	I	O	F	C	
Sensory / Perception	Hear/Conversations					x		co-workers, public, police
	Hear/Other Sounds						x	Vehicles, pedestrians, alarms, co-workers
	Vision/Far						x	Monitor environment
	Vision/Near						x	Unloading, dumping, lifting, carrying
	Vision/Colour	x						
	Vision/Depth				x			Stacking items on palettes
	Perception/Spatial	x						
	Perception/Form	x						
	Feeling	x						
	Speech					x		co-workers, public, police
Work Environment	Inside Work	x						
	Outside Work						x	Unloading, dumping, lifting, carrying
	Slippery		x					slippery, snowy, icy weather conditions
	Congested worksite				x			Depends on traffic, time of day, location of work
	Chemical Irritants		x					if come in contact with chemicals draining from appliances
	Confined Space Entry	x						
	Vapour Fumes					x		Exhaust fumes, garbage smells
	Noise						x	vehicle and street noise
	Proximity to moving objects				x			Vehicles and pedestrians, depending on time of day and location of work
	Hazardous Machines	x						
	Electrical hazard	x						
	Hazardous/Sharp Tools		x					Sharp edges on broken/damaged items
	Radiant/Thermal Energy	x						
	Hot/Cold		x					Extremes are rare and weather dependent
	Humid		x					Extremes are rare and weather dependent
	Environmental Dust		x					If loading by construction site or dusty area
	Organic Substances		x					If on abandoned items
	Medical Waste	x						
	Blood Products	x						
	Lighting – Direct		x					Dark early mornings in winter
Lighting – Indirect	x							
Vibration – Whole Body	x							
Vibration – Hand/Arm	x							

Essential Duty 2: Truck Driver II (Appliance) – Loading/Dumping (continued)

b. Cognitive and Psychosocial Demands	Frequency During Duty			Comments
	Never / Rare	Infrequent / Occasional	Frequent / Constant	
Degree of Supervision	x			
Time Pressure	x			
Attention to Detail	x			
Memory Requirements		x		How to wrap/dump certain items
Interact with co-workers			x	
Interact with public	x			
Work Alone	x			
Reading	x			
Writing	x			
Irregular Hours	x			
Driving Equipment	x			

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