

EMPLOYEE:

CLAIM #

JOB ANALYSIS SUPPLEMENT
To King County Job Analysis for Coach Operator
HAND FUNCTIONS

Job Title: Coach Operator
 Date: 1/9/02
 VRC: Jeff Casem, CRC
 VRC: Peter J. Hu, M.A, CRC

DOT #: 913.463-010
 Major Hand: Right ___ Left ___
 Date Completed: 9-28-09
 Date Reviewed: 7/20/11

Brief description of which positions are required and which tasks are performed in each position:

King County Metro operates several different makes and models of buses, with operator wheel controls described as follows:

Bus Make/Model	Wheel diameter	Spoke diameter	Spoke circumference		Lock to Lock	
30 foot Gillig	19 inches	1 5/8 inches	4 inches		2.75	
40 foot Gillig	19 inches	1 5/8 inches	4 inches		4	
Breda Articulated	19.5 inches	1 1/3 inches	3.5 inches		4	
Trolley-900 40 Ft.	19 inches	1 5/8 inches	4		8	
Trolley- MAN 60 Ft.	19 inches	1 5/8 inches	4 inches		4	
Americana 40 Ft D	21.5 inches	1 1/3 inches	3.5 inches		4	
New Flyer Articulated	19 inches	1 5/8 inches	4 inches		4	
Bus Make/Model	Max Wheel force-stopped w/ brake	Max Wheel force-Lane change	Push/Pull distance 6-15 inches		Hand over Hand Rotations	
			Lane	90 deg	Lane	90 deg
30 foot Gillig	5 pounds	2.5 pounds	1-3	3	0	1.5-3
40 foot Gillig	5 pounds	2.5 pounds	1-3	3	0	1.5-3
Breda Articulated	5 pounds	2.5 pounds	1-3	3	0	1.5-3
Trolley-900 40 Ft.	7.5 pounds	3.5 pounds	3-5	6	0	3-6
Trolley- MAN 60 Ft.	5 pounds	2.5 pounds	1-3	3	0	1.5-3
Americana 40 Ft D	2.5 pounds	2.5 pounds	1-3	3	0	1.5-3
New Flyer Articulated	5 pounds	2.5 pounds	1-3	3	0	1.5-3
Bus Make/Model	Wheel Hor. Plane adjustment range	Wheel Vert. plane adjustment range	Throttle engage range to max		Brake engage range to max	
30 foot Gillig	8 - 43 degrees	65 - 80 degrees	45 to 30		45 to 35	
40 foot Gillig	8 - 43 degrees	65 - 80 degrees	45 to 30		45 to 35	
Breda Articulated	8 - 43 degrees	65 - 80 degrees	45 to 30		45 to 35	
Trolley-900 40 Ft.	8 - 43 degrees	65 - 80 degrees	45 to 30		45 to 35	
Trolley- MAN 60 Ft.	8 - 43 degrees	65 - 80 degrees	45 to 30		45 to 35	
Americana 40 Ft D	16-26 degrees	75 - 85 degrees	45 to 30		45 to 35	
New Flyer Articulated	8 - 43 degrees	65 - 80 degrees	45 to 30		45 to 35	



EXTENSION: This is required as a component of the motion to apply the PP-1 (air brake) valve. This is performed on an occasional to frequent basis – see tip grasp for details.



FLEXION: This is required as a component of the motion to apply the PP-1 (air brake) valve. This is performed on an occasional to frequent basis – see tip grasp for details.



CYLINDRICAL GRIP (Side Pinch): Although the steering wheel of the bus is grasped in a neutral manner (see photos) for the majority of the time, this grip is utilized during the hand over hand motion required to fully rotate the steering wheel. This occurs on an Occasional to Frequent basis dependent on route and rider ship.

This grasp also occurs when reaching at shoulder to above shoulder level when pulling the poles of an electric trolley (40 and 60 ft.). This activity requires grasping a 3/8 inch nylon rope and pulling to either remove poles from rack on top of bus, or to re-position on electric line of rack. Forces to overcome range from 10 pounds to remove and replace on bus rack, to 7.5 static pounds to hold in place mid position, to 5-8.5 pounds when positioning on wires.

This grip is further required when operating the tensioning unit of the pole re-tractor. This requires gripping a 1 inch diameter handle and cranking in a forward/back manner-forces begin a 5 pounds, increase to 10 pounds when nearing end of activity, culminating in 25 pounds when fully tensioned.



PALMAR GRASP (Tip Pinch): This rarely occurs when operating incidental control switches.



HOOKING GRASP: See below.



TIP GRASP: To operate (engage) the PP 1 air brake valve this grasp using 2 or 3 fingers (or a hook grasp above) is utilized (see photos). Depending on location of valve this may be a 90 degree upward pull, or include a reach forward incorporating a 30-60 degree angle depending on bus (see photos). Force required to engage is as follows: (variability is result of level of air in reservoir.)

Bus Make/Model	Engage (pull)	Dis-Engage (push)
30 foot Gillig	17 pounds	3.5-5 pounds
40 foot Gillig	20 pounds	3.5-5 pounds
Trolley – Phantom 40 foot	12 pounds	3.5-5 pounds
Trolley – Breda 60 foot	12 pounds	3.5-5 pounds
40 foot Orion	17 pounds	3.5 – 5 pounds
60 foot New Flyer LF Articulated	15 pounds	3.5 – 5 pounds
60 foot New Flyer LF Hybrid	15 pounds	3.5 – 5 pounds
StarTrans 19 Passenger Vans	7 pounds	N/A

The valve is pushed downward with either fingertips or palm of hand



LATERAL GRASP (Key Pinch) with Twist (forward and aft Ulnar deviation):
 The lever to open and close bus doors is operated with the left hand at waist height, either directly below or slightly ahead of shoulder (dependent on seat location) or forward on side console. Different buses required varying amounts of force (function of mechanics and length of handle) to operate, as follows.

EMPLOYEE:

CLAIM #

Job Analysis Supplement
DOT Title: Coach Operator
DOT number: 913.463-010

Page 4

Bus Make/Model	Engage (pull)	Dis-Engage (push)
30 foot Gillig	1.5 pounds	1 pound
40 foot Gillig	1.5 pounds	1 pound
Breda Articulated	1.5 pounds	1 pound
Trolley-900 40 Ft.	.5 pounds	1 pounds
Trolley- MAN 60 Ft.	1.5 pounds	1 pound
Americana 40 Ft D	1.5 pounds	1 pound
New Flyer Articulated	.5 pounds	.5 pounds

PHYSICIAN:

- I agree that the above name injured worker can perform the physical activities described in this job analysis supplement and can return to work. State date worker is released to return to work if different from today's date _____.
- I agree that the above named injured worker can perform the physical activities described in this job analysis supplement on a part-time basis for _____ hours per day, _____ days per week. The worker can be expected to progress to full-time, regular duties in _____ weeks ρ or months ρ
- I agree the injured worker can perform the described job but only with modifications (described in comments section). Modifications are needed on a ρ permanent or ρ temporary basis.
- The above named injured worker **temporarily** cannot perform this job based on the following physical limitations:

Anticipated release date: _____

Treatment plan:

- The above named injured worker is **permanently** restricted from performing the physical activities described in this job analysis supplement based on the following physical limitations (state objective medical findings):

Comments:

Physician

Date