



School/Worksite: Bus Shop Staff Group: Mechanics		Job/Position Summary: Responsible for the repair and maintenance of the School Buses and fleet vehicles owned by Chinook's Edge School Division according to the traffic safety act and national safety code.					Assessment Team:			Date Completed: 23 January 2019			
Step 1 (1) List types of work and work related activities		Step 2 (2) Identify Existing or Potential Hazard Sources/Types		Step 3 Assess Risk and Prioritize the Hazards			Step 4 Identify and Implement Hazard Controls						
Type of Work	Related Task/Activities	Environmental Tools/Equipment People  Hazard Types Ergonomic, Biological, Psychosocial, Physical, Chemical	A - Frequency of Exposure (6)	B - Hazard Probability (7)	C - Potential Consequence (8)	Risk Level A x B x C	Risk Priority (9)	Engineering (3) Administrative (4) Personal Protective Equipment (5)		Corrective Action			
								Summary of Recommended Hazard Controls		In Place		Initial	Date Completed
								Yes	No				
<b>Inspecting the bus</b>	1. Bus Inspection (pre-trip), semi-annual, B inspection	1. Driving an unsafe vehicle. Strains or pinches while opening and closing hood/doors. Tripping or hitting mirrors while hood is open. Physical injury (strain, slip/fall) from snow or uneven grounds, exterior walk around.	3	3	3	27	Med	1. Follow checklist & schedule 2. Wear PPE (gloves, proper shoes as required) Lift/close hood with both hands/arms. Ensure proper environmental clothing and footwear when necessary.					
	2. Entering/exiting bus	2. Slips/falls. Workers at risk while exiting bus in traffic areas	3	2	3	18	Low	2. Always use handrails. Proper traction footwear. Slow/careful ascend/descend. Wear vest in high traffic areas					
	3. Visual Inspection (inside)	3. Twisting wrong causing back injury while checking the seats/floors, or rear emergency door	3	1	2	6	Low	3. Bend at your knees, avoid awkward twisting and keep back straight.					



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Inspecting the bus Continued	4. Driving the bus	4. Backing up – poor visibility. Collision causing injury due to accident caused by: <input type="checkbox"/> Adverse weather (storms, ice, fog) <input type="checkbox"/> Animals on road <input type="checkbox"/> Distractions <input type="checkbox"/> Farm equipment <input type="checkbox"/> Fatigue <input type="checkbox"/> Other drivers Road Rage	2	1	3	6	Low	4. Walk around inspection before driving. Check for lock out tags. Sound the horn to back up. Adjust mirrors. First aid training. Don't take calls while driving. Watch for known deer locations. Fatigue training link: <a href="http://www.nafmp.com/en/">http://www.nafmp.com/en/</a> No retaliation or hand gestures				
General Bus Maintenance & Servicing	5. Washing outside of bus	5. Debris in eyes. Bus on jack – bus falling hazard. Slips and falls inside wash bay. Cleaning chemical exposure	3	2	3	18	Low	5. Always wear safety glasses. Hold onto handle of wash wand before starting. Ensure bus brake is on. Wear non-slip footwear. Ventilate wash bay.				
	6. Fueling/fluids check/fill	6. Eyes/face/body contamination from fuel blowback, spills, explosion. Burns from warm bus parts. Exposure to various chemicals.	2	2	2	8	Low	6. Turn off vehicle. Monitor fuel level while filling. No smoking. Do not refuel with passengers onboard. Ensure current SDS is available Use proper funnel where needed.				
	7. Change Oil	7. Used oil contains- arsenic, cadmium, organic halogens, chromium, lead; polychlorinated biphenyls and zinc. - These chemicals have been known to cause cancer, liver damage and nervous system damage	3	3	4	36	Med	7. Safety Glasses and gloves must be worn. Ensure any spills are immediately wiped up. Properly dispose of all used oils.				
	8. Lubricating bus	8. Bus rolling accidentally. Hose ruptures. Grease in eyes, on hands, on floor creating slippery surface. Slips and falls.	3	3	2	18	Low	8. Apply bus brake. Safety Glasses and gloves must be worn. Clean up all spills. Report all accidents.				
	9. Cleaning inside of bus in the wash bay.	9. Twisting or other possible injury while checking/ cleaning the seats/ floors, inspecting rear emergency door. Slips and falls, Cleaning chemical exposure. Exposed to high pressure water.	3	3	2	18	Low	9. Use a broom to move items closer to avoid twisting or reaching. When washing use extreme caution when walking and handling pressure washer hose. Always wear safety glasses and gloves.				



Chinook's Edge School Division No. 73

Hazard Assessment

Average Hazard Rating: 17.87 Hazard Rating

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	10. Using hoist for servicing buses.	10. Hoist failure causing bus to drop.	3	1	4	12	Low	10. Annual inspection of hoists. Pre use checks of hoist. Insertion of safety bar if applicable.					
Outside of shop	11. On road bus repair (example: lights, etc.)	11. Working alone. Working in traffic. Rushing. Slips and falls.	2	3	4	24	Med	11. Advise somebody of destination and return time. Put out traffic cones and ensure 8 way flashers are on. Wearing of proper footwear and using extra caution. Wear safety vest.					
	12. Towing of bus.	12. Traffic hazards. Flagging traffic, not being seen or ignored. Traffic can hit tow cables crossing the road. Injury by pinch points, or broken parts from tow truck.	2	3	4	24	Med	12. Use amber light on tow truck, Use a safety vest. Put out traffic cones or have a flag person, or both. Use flashlight if daylight is fading. Develop a checklist for towing.					
	13. Going out for parts.	13. Accidents/injury/property damaged caused by fatigue, distracted driving, poor visibility, busy roads, other drivers or when backing up.	3	1	2	6	Low	13. Do walk around inspection of vehicle before leaving. Use caution backing up. Wearing of seat belts and following the rules of the road at all times including speed limits. Drive defensively.					
	14. Boosting battery & electrical work.	14. Battery explosion. Acid spill. Electrocutation. "Frying" of parts on bus.	2	2	2	8	Low	14. Follow safe boosting in operators manual. Wear safety glasses and gloves. Ask for help if necessary.					



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<b>Repair Jobs in shop</b>	15. Repairing of Wheels, brakes and tires.	15. Crowbars; back strain. Impact wrench; noise, hand-arm vibrator (nerve damage and tingling). Exposure to loud noises; 109 decibel impact wrench. Torque wrench; back strain. Wheels & tires ; tire 85 psi hazardous pressure, split rims. Bus falling off jack without stands. Lifting; strain or foot injury. Back strain from moving tires. Toxic cleaners sprays (i.e. brakeleen)	4	2	3	24	Med	15. Use appropriate tools. Change tasks frequently when using vibration tools, use anti vibration gloves if necessary. Wearing hearing protection & bi-annual hearing test. Remote inflate tires. Stand in safe location to inflate. Always use jack stands when using jacks. Use a wheel dolly to move tires. Use proper lifting techniques. Use Organic Vapour cartridge with respirator as per MSDS.				
	16. Engine work-removing engine head/hood.	16. Pinch points, scrapes, lacerations. Engine falling off hoist causing breaks or strains. Slips and falls as a result of leaking fluids.	2	3	4	24	Med	16. Use proper tools/ hoists / crane. Wear safety glasses. Use caution when using tools. Ask for assistance when required.				
	17. Auto body repairs.	17. Grinders- flying debris or broken grinding disk. Spray painting and thinners- toxic vapour & isocyanates. Noise	1	3	3	9	Low	17. Use guard on grinders, face shield and safety glasses. Ventilate dusts and paint. Half Mask with organic vapor cartridge as per MSDS. Consider p100+OV cartridge for any hazardous dusts.				
	18. Clutches & transmissions	18. Heavy weights-strains pinches, feet. Clutch lining dust	2	3	3	18	Low	18. Use proper tools/hoists. Use P95 dust mask and safety glasses. Clean up any fluid spills. Ask for assistance when required.				
	19. Change or install lights including strobe.	19. Work at heights just under 3m.-potential for falls. Cuts from broken bulbs. Slips and falls.	3	2	2	12	Low	19. Use appropriate ladder to reach lights. Use caution when removing broken bulbs. Ensure feet are fully on ladder steps.				
	20. Welding / torching / cutting (bolts, etc.)	20. Working with flammable gases (oxy-acetylene, propane - fire, burns, explosions) eye damage from flashes.	3	3	3	27	Med	20. Remain on site 1 hour after finished to ensure no fires start. Flash back arrestors/backflow preventers in place. Ensure cylinders are properly stored and secured. Use ventilation. Use glove and welding goggles helmets.				



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	21. Cleaning parts	21. Varsol - chemical exposure, solvents, paints, acids and flammable vapours. Dermatitis and rashes	3	2	2	12	Low	21. WHMIS 2015 training. SDS binder in shop. Gloves – nitrile. Replace with safer product (aqueous solution). Have a fire extinguisher handy.					
	22. Working on cement floors	22. Strains or pain to knees, feet and back. Slips and falls from materials on the floor.	4	2	3	24	Med	22. Use anti-fatigue mats. Good quality footwear. Replace boot insoles regularly.- Good housekeeping. Absorbents on spills					
	23. Lifting (parts)	23. Injury from dropping material on feet/fingers. Strain (back, shoulder, etc) from overexertion. Slips/trips/falls (wet, footwear, stairs)	4	3	2	24	Med	23. Wear gloves/steel toe shoes when risk of hand or foot injury. Assistance with heavy load lifting. Toolkit-Lifting/handling loads. Use mechanical aids (cart/dolly). Dry footwear; hold railing.					
General Tasks	<b>Physical</b> 24. General physical duties summary	24. Lifting: strains or crushing injuries. Repetitive motions: wrist, hands, knees, feet. Slips and falls: sprains, head injuries. Working at heights: falls from top of bus. Moving parts: finger or limb injury. Pressure: debris, broken air lines, exploding tires. Vehicles: moving vehicles worker not being seen. Electricity: shock hazards when welding or doing wiring or batteries. Working with tools: Noise (hearing loss). Vibration: HAVS (Hand Arm Vibration Syndrome). Burns: from welding and hot work.	4	3	3	36	Med	24. Use mechanical aid. Adjust worksite to fit you. Clean up spills immediately. Use fall protection above 3m. Use guards on equipment. Inspect and bleed airlines yearly. Vehicle Walk around and honk when backing. Voltage tester & lockout procedure. Hearing protection. Alternate tasks. Wear appropriate PPE at all times.					
	25. Air Tools.  Assembling / disassembling and replacing parts.	25. Noise and hearing loss, hand arm vibration (HAVS) / Particles being blowing in face or skin / whipping air hose. Cuts, abrasions, hitting head, pinches.	4	2	2	16	Low	25. Hearing testing program. Wearing of hearing protection. Label areas above 85 DBs and make hearing protection mandatory in these areas. Don't clean clothes with air. Stand a Safe distance when inflating tires. Know all emergency shutdown locations. Use the right tool for the job.					



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26. Lifting (parts)	26. Injury from dropping material on feet/fingers. Strain (back, shoulder, etc.) from over lifting.	4	3	3	36	Med	26. Wear gloves/steel toe shoes when risk of injury. Ask for assistance with heavy load loads or lifting. Use mechanical aids (cart/dolly).						
<b>Chemical</b> 27. General chemical use	27. Acids solvents cleaners, paints, gases, acetylene, oxygen, exposure oils, and fluids. Exposure to diesel exhaust, dusts and chemicals. Many of these chemical or fumes or contact with these products can have short or long term health effects. Storing combustibles and potential fires.	4	2	2	16	Low	27. Good ventilation & shop fans usage. PPE, SDS & WHMIS 2015 training. Use exhaust hoses when idling. Use shop dust suppressant. Keep flammables & combustibles in appropriate metal cabinets or containers.						
<b>Biological</b> 28. Hanta Virus, H1N1, and other communicable diseases	28. Illness and death. Diseases / illness ranging in seriousness	1	2	4	8	Low	28. Wear gloves and mask and wet area with mild bleach solution for droppings. After working in the bus, wash hands thoroughly. Hanta Virus Bulletin (use mask N95 or greater and wet area with bleach solution to clean droppings)						
<b>Psychosocial</b> 29. Paperwork / computer work	29. Eye strain, wrist and neck strain	4	3	1	12	Low	29. Set up screen at eye level and mouse at elbow level. Ergonomic mouse and keyboard. WCB office ergonomics link: <a href="http://www.wcb.ab.ca/pdfs/public/office_ergo.pdf">http://www.wcb.ab.ca/pdfs/public/office_ergo.pdf</a>						
30. Dealing with the public	30. Violence / harassment. Encounters with threatening strangers / staff / students. Working alone	2	2	3	12	Low	30. Working alone guidelines and administrative procedures. Check - in with supervisor & have a working cell phone or radio. Avoid high risk activities working alone						



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		<b>Step 5:</b> Review/Communicate with affected staff (List staff members)	
		<b>Step 6:</b> Date of review with affected staff members	

<sup>1</sup> **TYPE OF WORK** includes a description of the broad general nature of the work carried out (e.g. office work, classroom preparation, cleaning). The **WORK RELATED ACTIVITIES** would be the specific activities carried out within each type of work starting with an action verb e.g. operating office equipment, using computers, lesson planning, vacuuming floors)

<sup>1</sup> **HAZARDS** can be identified using several methods including personal experience/intuition, physical observations, task/job analysis, or incident investigation.

<sup>1</sup> **Engineering Controls:** Preferred method. Reduces exposure by removing or isolating hazard from worker. E.g. elimination, ventilation, substitution, , redesign, guarding, enclosure, automation, mechanical aids

<sup>1</sup> **Administrative Controls:** Practices that reduce likelihood of exposure by altering the time or way a task is performed e.g. training/education, safe work procedures, purchasing stds, supervision, signage, job rotation/scheduling, housekeeping etc.

<sup>1</sup> **Personal Protective Equipment (PPE):** Not to be used as primary control unless engineering or administrative controls are not feasible. E.g. safety glasses, safety footwear, gloves, respiratory protection, hearing protection

<sup>1</sup> **ASSESS AND PRIORITIZE:** Frequency of Exposure to Hazard: 1= less once/month; 2= at least once/month; 3 = at least once/week; 4= one or more times daily

<sup>1</sup> Hazard Probability: Likelihood hazard will result in an incident causing harm: 1= not likely; 2= Remote- not likely but possible once every 5-20 years; 3= Occasional – likely to happen once every 1-5 years; 4= probable – expected to happen often once/year

<sup>1</sup> Potential Consequence: Severity of loss if hazardous event occurs 1= negligible (no injury , first aid; limited property damage); 2=Marginal ( medical aid, minor injury/illness-no lost time ); 3= Critical ( lost time injury, temporary disability); 4= Catastrophic (serious injury/illness; permanent disability, death, extensive property damage)

<sup>1</sup> Risk Classification: 1-18 = **Low risk** (minimal controls); 19-36 = **Medium Risk**- Take scheduled action to minimize; 40-64= **High Risk** – “Critical Task” Take immediate action to eliminate hazard or reduce degree of risk