Occupational Analyses Series

Transport Trailer Technician

2003

Policy and Apprenticeship Division

Human Resources
Partnerships Directorate

Division des politiques et de l'apprentissage

Direction des partenariats en ressources humaines

Disponible en français sous le titre : Réparateur/réparatrice de remorques de camions

The Canadian Council of Directors of Apprenticeship (CCDA) recognizes this Occupational Analysis as the national standard for the occupation of Transport Trailer Technician.

ACKNOWLEDGEMENTS

Human Resources Development Canada (HRDC) wishes to express sincere appreciation for the contribution of the many industrial establishments, professional associations, labour organizations, trades persons, provincial and territorial government departments and agencies, and all others who contributed, directly or indirectly, to this publication.

Special acknowledgement is extended to Ann Dean, Planning and Development, Humber College, who updated this analysis with the assistance of Rick Embree, Joanne McLeod, Dianne Pashie and Cheryl Taylor of Humber College, and the following representatives from the transport trailer technician industry:

Bill Archibald	Nova Scotia
Bruce Heil	Ontario
Vince Loewen	Manitoba
Clarence Nolan	Newfoundland
Lee Seaman	Prince Edward Island
Vernon Seeley	New Brunswick
Robert Sullivan	British Columbia
Richard Tremblay	Quebec
David Yule	Alberta

This analysis was prepared by the Human Resources Partnerships Directorate of HRDC. The overall planning and coordination of the development of this analysis were undertaken by staff members of HRDC's Policy and Apprenticeship Division.

OTHER RELATED OCCUPATIONAL TITLES

This analysis covers tasks performed by a transport trailer technician whose occupational title has been identified by some provinces and territories of Canada under the following names:

- Commercial Trailer Mechanic
- Commercial Trailer Technician
- Transport Truck Trailer Mechanic
- Truck and Trailer Repairer
- Truck-Trailer Service Technician

LIST OF PUBLISHED OCCUPATIONAL ANALYSES *

TITLE	NOC** Code
Appliance Service Technician (1997)	7332
Aquaculture Technician (1977)	2221
Arts Administrator (1989)	0114
Automotive Painter (1995)	7322
Automotive Service Technician (1998)	7321
Automotive Technician - Automatic Transmission (1990)	7321
Automotive Technician - Electrical/Electronics (1992)	7321
Automotive Technician - Engine Repair and Fuel Systems (1989)	7321
Automotive Technician - Front-End (1989)	7321
Automotive Technician - Manual Transmission, Driveline and Brakes (1990)	7321
Aviation Machinist (1994)	7231
Baker (1997)	6252
Blaster (Surface) (1987)	7372
Boilermaker (2003)	7262
Bricklayer (2000)	7281
Cabinetmaker (2000)	7272
Carpenter (1998)	7271
Cement Finisher (1995)	7282
Construction Electrician (2003)	7241
Cook (2003)	6242
Electrical Rewind Mechanic (1999)	7333
Electronics Technician - Consumer Products (1997)	2242
Electronics Technician Vol. I (1986) (Video Equipment)	2242
Electronics Technician Vol. II (1986) (Audio Equipment)	2242

* **Red Seal analyses are indicated in bold**

** **National Occupational Classification**

Electronics Technician Vol. III (1986) (Computer Equipment)	2242
Electronics Technician Vol. IV (1986) (Office Equipment)	2242
Electronics Technician Vol. VI (1986) (Communication Equipment)	2242
Electronics Technician Vol. VII (1986) (Signaling Equipment)	2242
Electronics Technician Vol. VIII (1986) (Navigation Equipment)	2242
Electronics Technician Vol. IX (1986) (Video Game Equipment)	2242
Electronics Technician Vol. X (1987) (CADD Equipment)	2242
Electronics Technician Vol. XI (1987) (CAM Equipment)	2242
Electronics Technician Vol. XII (1987) (Robotics Equipment)	2242
Electronics Technician Vol. XIII (1987) (Biomedical and Laboratory Equipment)	2242
Electronics Technician Vol. XIV (1987) (Industrial Process-Control Equipment)	2243
Farm Equipment Mechanic (2000)	7312
Floorcovering Installer (1997)	7295
Glazier (1994)	7292
Hairstylist (1997)	6271
Heating (Gas and Oil) Servicer - Commercial and Industrial (1978)	7331
Heavy Duty Equipment Mechanic (1998)	7312
Heavy Equipment Operator (1983)	7421
Industrial Electrician (2003)	7242
Industrial Instrument Mechanic (2000)	2243
Industrial Mechanic (Millwright) (1999)	7311
Insulator (Heat and Frost) (2000)	7293
Ironworker (Generalist) (1993)	7264
Lather (Interior Systems Mechanic) (2002)	7284
Logistics (1992)	0713

Machinist (1998)	7231
Major Electrical Appliance Repairer (1984)	7332
Mobile Crane Operator (1997)	7371
Motorcycle Mechanic (1995)	7334
Motor Vehicle Body Repairer (Metal and Paint) (1997)	7322
New Home Builder and Residential Renovation Contractor (1992)	0712
Oil Burner Mechanic (1997)	7331
Painter and Decorator (2000)	7294
Partsperson (1995)	1472
Plumber (1996)	7251
Power Engineer (1997)	7351
Powerline Technician (1996)	7244
Recreation Vehicle Mechanic (2000)	7383
Refrigeration and Air Conditioning Mechanic (1997)	7313
Roofer (1997)	7291
Sheet Metal Worker (1997)	7261
Sprinkler System Installer (2003)	7252
Steamfitter-Pipefitter (1996)	7252
Steel Fabricator (Fitter) (1994)	7263
Tool and Die Maker (1997)	7232
Transport Trailer Technician (2003)	7321
Truck and Transport Mechanic (2000)	7321
Welder (1996)	7265

REQUESTS FOR THESE PUBLICATIONS SHOULD BE FORWARDED TO:

Policy and Apprenticeship Division
Human Resources Partnerships Directorate
Human Resources Development Canada
Place du Portage, Phase IV, 5th Floor
Gatineau, Quebec K1A 0J9

FOREWORD

The first National Conference on Apprenticeship in Trades and Industries, held in Ottawa in 1952, recommended that the federal government be requested to co-operate with provincial apprenticeship committees and officials in preparing analyses of a number of skilled occupations. To this end, Human Resources Development Canada sponsors a program, under the guidance of the Canadian Council of Directors of Apprenticeship (CCDA), to develop a series of occupational analyses.

The Occupational Analysis Program has the following objectives:

- to identify and group the tasks performed by skilled workers in particular occupations;

- to identify those tasks that are performed by skilled workers in every province and territory;

- to develop instruments for use in the preparation of interprovincial standards "Red Seal" examinations and curricula for training leading to the certification of skilled workers;

- to facilitate the mobility, in Canada, of trainees and skilled workers;

- to supply employers and employees, and their associations, industries, training institutions and governments with analyses of the tasks performed in particular occupations.

TABLE OF CONTENTS

Page

Appendices

GUIDE TO ANALYSIS

DEVELOPMENT OF ANALYSIS

A draft analysis is developed by a knowledgeable consultant who, with the assistance of a committee of industry experts in the field, identifies all the tasks performed in the occupation.

The draft is then assigned to occupational analysts at Human Resources Development Canada for translation and then returned to the consultant for review to ensure conformity with the nationally approved format.

The consultant will then forward a copy of this analysis to provincial/territorial authorities for validation by specialists in the field. Their recommendations are assessed and incorporated into the final draft which also includes the identification of the common core tasks performed in the occupation.

The occupational analysis is published in both official languages.

STRUCTURE OF ANALYSIS

To facilitate the understanding of the nature of the occupation, the work performed is divided into the following divisions:

A. **BLOCK** - is the largest division within the analysis and reflects a distinct operation relevant to the occupation.

B. **TASK** - is the distinct activity that, combined with others, makes up the logical and necessary steps the worker is required to perform to complete a specific assignment within a "BLOCK".

C. **SUB-TASK** - is the smallest division into which it is practical to subdivide any work activity and, combined with others, fully describes all duties constituting a "TASK".

Supporting Knowledge & Abilities

The element of skill and knowledge that an individual must acquire to adequately perform the task is identified under this heading.

Trends

Any shifts or changes in technology which affects the block are identified under this heading.

Related Components

All components of a specified task being undertaken by the transport trailer technician are identified under this heading.

Tools and Equipment

All tools and equipment necessary for the transport trailer technician to complete a task are identified under this heading.

VALIDATION METHOD

At the request of the Canadian Council of Directors of Apprenticeship (CCDA), the Standardization Sub-committee developed a method for the validation of the national Red Seal occupational analyses.

A draft of the analysis is sent to all provinces/territories for validation. Each jurisdiction rates the sub-tasks and applies percentage ratings to blocks and tasks. This method for the validation of the national occupational analysis identifies common core tasks across Canada for a specific occupation. This feature facilitates the weighting of the Interprovincial Red Seal examinations.

DEFINITIONS

YES: the sub-task is performed by workers in the occupation in a specific jurisdiction.

NO: the sub-task is not performed by workers in the occupation in a specific jurisdiction.

BLOCK %: the average number of questions (items), derived from the collective decision made by workers within the occupation from all areas of Canada, which will be placed on an interprovincial examination to assess each block of the analysis.

TASK %: the average number of questions (items), derived from the collective decision made by workers within the occupation from all areas of Canada, which will be placed on an interprovincial examination to assess each task of the analysis.

NV: Not Validated by a province/territory.

ND: Not Designated in a province/territory.

PROVINCIAL/TERRITORIAL ABBREVIATIONS

NL: Newfoundland and Labrador
NS: Nova Scotia
PE: Prince Edward Island
NB: New Brunswick
QC: Quebec
ON: Ontario
MB: Manitoba
SK: Saskatchewan
AB: Alberta
BC: British Columbia
NT: Northwest Territories
YK: Yukon
NU: Nunavut

COMMON CORE

The criteria for determining common core are dependant on the performance of sub-tasks. If 70 percent of the responding jurisdictions (excluding NVs and NDs) perform the sub-task, it shall be considered common core.

Interprovincial Red Seal examinations are based on the common core identified through this validation process. This process identifies what will be assessed through the interprovincial examination.

BLOCKS AND TASKS WEIGHTING (APPENDIX "B")

This appendix represents the block and task percentages as submitted by each jurisdiction.

Each jurisdiction, with the use of a provincial/territorial occupational advisory committee, validates the content, places percentages on blocks and tasks, and indicates whether or not the sub-tasks are performed by the skilled workers within the occupation. The results of this exercise are submitted to the consultant who then analyses the data and develops this appendix which provides the individual jurisdictional validation results as well as the national averages of all responses.

PIE CHART (APPENDIX "C")

The graph depicts the national percentages assigned to blocks in the analysis.

SCOPE OF THE TRANSPORT TRAILER TECHNICIAN OCCUPATION

This national occupational analysis has been developed for the work performed by the transport trailer technician. A transport trailer technician is a skilled individual who must possess well-developed building and fabrication abilities. As well, they also must understand and work on the operation and maintenance of a trailer's mechanical and electrical components. Journeypersons in this trade have to perform tasks relating to sheet metal and composite materials, as well as the completion of frame repairs. They must also know how to inspect, service and repair suspension and braking systems, heating and refrigeration units, flooring, electrical and hydraulic systems, along with axles, hubs, tires/wheels and coupling units.

Individuals who work in this trade are also referred to as truck trailer service technicians, truck trailer mechanics, transport trailer mechanics, commercial trailer mechanics, commercial trailer repairers, and truck trailer technicians. These individuals can find employment with fleet repair shops, trailer dealerships, general mechanical repair shops, shipping companies, manufacturers' repair shops and specialized repair shops.

Some of the tasks and sub-tasks associated with the analysis overlap with the responsibilities of other skilled trades. These include: transport refrigeration technician, commercial transport mechanic, truck and transport service technician, welder, truck body repairer, tire technician, heavy duty equipment technician and transport mechanic.

In order to meet government standards and regulations, many transport trailer technicians must attain specialty certifications. These include propane license, refrigeration certificate, tanker inspection certification, specialized pressure vessel welding license and government inspector certificate.

OCCUPATIONAL OBSERVATIONS

Changes in the materials used in the fabrication of trailers and related components have had a considerable impact on this industry. Increasingly, the materials for the chassis and body and suspension systems are lighter in weight, stronger and more durable. Thinner walls and lower suspension systems continue to provide opportunities for greater cargo space.

Trailers also continue to benefit from the increased use of electronic equipment. The trade has also been influenced by enhancements and new developments in diagnostic equipment, increased use of on-board diagnostic computers, disc brakes and Anti-lock Braking Systems (ABS).

A number of the technological advances experienced by this industry have resulted in more specialty repair shops, and less overlap with the work performed by tire technicians.

Computers and Internet technologies have also influenced the trade. More repair manuals are available on the Internet which makes for a more effective and up-to-date distribution system for repair procedures and methods. In addition repair shops are increasingly using the Internet for transmitting digital images and email has become a common method for managing local, national and international customer and supplier communications. Parts and part inventory can now easily be managed through the use of electronic management systems.

Workers and organizations continue to become more environmentally responsible and more attention is being given to the use of fewer hazardous materials and products and new methods for reclaiming, recycling, handling and storing hazardous materials.

SAFETY

Safe working procedures and conditions, accident prevention and the preservation of health are of primary importance to industry in Canada. These responsibilities are shared and require the joint efforts of government, employers and employees. It is imperative that all parties become aware of circumstances that may lead to injury or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to accidents or injury.

It is generally recognized that a safety-conscious attitude and work practices contribute to a healthy, safe and accident-free working environment.

It is imperative to apply and be familiar with the Occupational Health and Safety Act and Regulations. As well, it's essential to determine workplace hazards and take measures to protect oneself, co-workers, the public and the environment.

As safety education is an integral part of training in all jurisdictions, personal safety practices are not recorded in this document. However, the technical safety aspect relating to each task and sub-task are included throughout this analysis.

ANALYSIS

BLOCK A

OCCUPATIONAL SKILLS

Trends: *Towards increased general knowledge of electronics on trailers, electronic test equipment and computers; changes in types of metallurgy; more specialty qualifications required in trailer inspection and certification and specialty trades related to the trailer repair.*

Task 1 **Utilizes drawings, codes, standards, service manuals and Commercial Vehicle Safety Alliance (CVSA).**

Related Components: Drawings, blueprints, schematics, service manuals, government regulations, standards and specifications, Canadian Standards Association (CSA) and Underwriters Laboratories of Canada (ULC), and operating manuals.

Tools and Equipment: Computer, Digital Video Disc (DVD) player, microfiche reader, CD Rom drive, ruler, and calculator.

Sub-task

1.01 Interprets blueprints, drawings and schematics.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

1.01.01 knowledge of types and formats of drawings and schematics

1.01.02 knowledge of information contained on drawings and schematics

1.01.03 ability to recognize symbols and abbreviations

1.01.04 ability to calculate dimensions

1.01.05 ability to visualize a three dimensional product

Sub-task

1.02 Interprets service manuals and technical bulletins.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

1.02.01 knowledge of operation of equipment or component

1.02.02 knowledge of content and structure of service manual

1.02.03 knowledge of content of technical bulletins

1.02.04 knowledge of Original Equipment Manufacturer (OEM) specifications for the testing and repair of truck trailer systems

1.02.05 ability to locate product information, service procedures, and maintenance schedules

1.02.06 ability to locate technical bulletins for specific components

1.02.07 ability to access information from the Internet, Digital Video Disc (DVD) or Compact Disc (CD)

1.02.08 ability to update service manuals

1.02.09 ability to recognize need for and locate technical updates

Sub-task

1.03 Complies with government standards and regulations (federal/provincial/ municipal).

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

1.03.01 knowledge of types and content of government standards and regulations pertaining to truck trailers

1.03.02 knowledge of Commercial Vehicle Safety Alliance (CVSA) standards

Supporting Knowledge & Abilities

1.03.03 knowledge of Canadian Standards Association (CSA) and Underwriters Laboratory of Canada (ULC) approvals

1.03.04 knowledge of legal implications of modifying and installing parts and components

1.03.05 ability to locate and access standards and regulations

1.03.06 ability to interpret standards and regulations

Task 2 Utilizes tools and measuring equipment.

Related Components: None.

Tools and Equipment: As per Appendix "A".

Sub-task

2.01 Uses and services hand tools. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

2.01.01 knowledge of types and function of hand tools such as screwdrivers, wrenches, ratchets, clamps, and side cutters

2.01.02 knowledge of metric and imperial tool sizes

2.01.03 knowledge of operating procedures for hand tools

2.01.04 ability to identify and select hand tool required for task to be performed

2.01.05 ability to clean and lubricate hand tools

2.01.06 ability to perform minor repairs such as sharpen drill bits, replace saw blades, and dress chisels

2.01.07 ability to store hand tools in a safe manner

Sub-task

2.02 Uses and services lifting tools. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

2.02.01	knowledge of types and functions of lifting devices such as jacks, hoists, come alongs
2.02.02	knowledge of operating procedures and techniques for lifting tools
2.02.03	knowledge of lifting capacities
2.02.04	ability to identify and select lifting device for job to be performed
2.02.05	ability to clean and lubricate lifting devices
2.02.06	ability to recognize and report worn, leaking and faulty components
2.02.07	ability to perform minor repairs

Sub-task

2.03 Operates measuring tools. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

2.03.01	knowledge of types and functions of measuring devices such as callipers, micrometers, dial indicators, Digital Volt Ohmmeter (DVOM), gauges and tape measures
2.03.02	knowledge of operating procedures for measuring devices
2.03.03	knowledge of metric and imperial measurement and conversion of both units
2.03.04	knowledge of handling and storage requirements for measuring devices
2.03.05	ability to identify and select measuring device for the job to be performed
2.03.06	ability to check devices for accuracy and calibration

Supporting Knowledge & Abilities

2.03.07 ability to identify damaged, worn or inaccurate measuring tools

2.03.08 ability to store measuring tools

Sub-task

2.04 Operates and services power tools.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

2.04.01 knowledge of types and functions of air, electric, and hydraulic power tools such as porta power tools, drills, air chisels, impact wrenches, hydraulic presses, air riveters and angle grinders

2.04.02 knowledge of operating procedures for air, electric and hydraulic power tools

2.04.03 knowledge of capabilities and limitations of air, electric and hydraulic power tools

2.04.04 knowledge of power supply requirements for selected power tools

2.04.05 ability to identify and select the power tool for the job to be performed

2.04.06 ability to clean and lubricate power tools

2.04.07 ability to perform minor repairs such as change power cord end, air line connector, replace hydraulic or air hoses

2.04.08 ability to store power tools in a safe manner

Sub-task

2.05 Operates and services stationary tools.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

2.05.01	knowledge of types and function of stationary tools such as hydraulic presses, band saws, drum lathes, brake and shear
2.05.02	knowledge of operating procedures of stationary tools
2.05.03	knowledge of capabilities and limitations of stationary tools
2.05.04	ability to identify and select stationary tools for the job to be performed
2.05.05	ability to clean and lubricate stationary tools
2.05.06	ability to perform minor repairs such as change blades, change cutting tools, sharpen cutting edge and adjust tension on blade

Sub-task

2.06 Operates and services computers and diagnostic tools.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

2.06.01	knowledge of types and functions of diagnostic tools such as diagnostic readers, Digital Volt Ohmmeter (DVOM) and digital cameras
2.06.02	knowledge of proper care and handling of diagnostic tools
2.06.03	knowledge of operating procedures for diagnostic tools
2.06.04	knowledge of capabilities and limitations of diagnostic tools

Supporting Knowledge & Abilities

2.06.05 ability to download and upload email and digital images on laptop and desk top computers

2.06.06 ability to interpret readings and fault codes

2.06.07 ability to identify and select diagnostic tools for job to be performed

2.06.08 ability to perform minor maintenance such as changing battery or cleaning connectors

2.06.09 ability to store diagnostic tools in a safe manner

Task 3 Demonstrates common work practices and procedures.

Related Components: Tubing, hoses, compression fittings, wiring, glues, solvents, adhesives, wood, insulating materials, panels, sheet metal, fibreglass, fasteners, fittings, connectors, fabrication and modification related equipment.

Tools and Equipment: As per list of hand, power, hydraulic, lifting, measuring, cutting and diagnostic tools and equipment.

Sub-task

3.01 Installs fasteners, fittings and connectors.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

3.01.01 knowledge of types, styles, purposes and sizes of fasteners, fittings and connectors

3.01.02 knowledge of capabilities and limitations of fasteners, fittings and connectors

3.01.03 knowledge of removal and installation procedures and techniques for fasteners, fittings and connectors

3.01.04 knowledge of required lubricants and sealants on fittings, fasteners and connectors

Supporting Knowledge & Abilities

3.01.05 ability to select fasteners, fittings and connectors compatible and reliable with job specifications

3.01.06 ability to lubricate and seal fasteners, fittings and connectors

3.01.07 ability to verify proper installation of fittings, fasteners and connectors

3.01.08 ability to repair damaged threads

Sub-task

3.02 Applies sealants and adhesives. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

3.02.01 knowledge of types, purpose and compatibility of sealants and adhesives

3.02.02 knowledge of limitations and capabilities of sealants and adhesives

3.02.03 knowledge of application procedures and curing times

3.02.04 ability to select proper sealant or adhesive for job application

3.02.05 ability to prepare surfaces for sealants and adhesives

3.02.06 ability to mix adhesive and sealant components

3.02.07 ability to verify proper application of sealant or adhesive

Sub-task

3.03 Installs gaskets and seals. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

3.03.01 knowledge of types, properties, sizes, purposes and compatibilities of gaskets and seals

3.03.02 knowledge of capabilities and limitations of gaskets and seals

3.03.03 knowledge of installation procedures and techniques for gaskets and seals

3.03.04 ability to select gaskets and seals for job applications

3.03.05 ability to prepare the surface such as clean and flatten, for gasket and seal installation

3.03.06 ability to verify installation of gasket and seal

Sub-task

3.04 Installs hoses, tubing and wiring. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

3.04.01 knowledge of types, gauges, sizes, purpose and compatibility of hoses, tubing and wiring

3.04.02 knowledge of capabilities and limitations of hoses, tubing and wiring

3.04.03 knowledge of installation procedures and techniques for hoses, tubing and wiring

3.04.04 ability to cut and crimp wiring

3.04.05 ability to route and secure tubing, hoses and wiring

3.04.06 ability to identify and select hoses, tubing and wiring for job application

3.04.07 ability to verify proper installation of hoses, tubing and wiring

Supporting Knowledge & Abilities

3.04.08 ability to apply shrink tube to connections

3.04.09 ability to solder wire and connectors

3.04.10 ability to check continuity of wiring

Sub-task

3.05 Performs minor trade-related welding operations.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

3.05.01 knowledge of properties, strength, and types of metals and metal alloys

3.05.02 knowledge of design, function, application and components of oxy-acetylene, propane, arc, Gas Metal Arc Welding (GMAW) and Gas Tungsten Arc Welding (GTAW) equipment

3.05.03 knowledge of operating procedures of welding equipment

3.05.04 knowledge of safety precautions and protective equipment required for welding

3.05.05 knowledge of ventilation requirements

3.05.06 knowledge of confined space entry procedures

3.05.07 ability to select welding equipment for job application

3.05.08 ability to set up and adjust welding equipment

3.05.09 ability to use explosion meters

3.05.10 ability to prepare the surfaces for welding

3.05.11 ability to weld, braze or solder ferrous and non-ferrous materials in all positions

3.05.12 ability to clean and maintain equipment

3.05.13 ability to store welding equipment

Sub-task

3.06 Fabricates parts and components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

3.06.01	knowledge of properties, strengths, types and application of metals, metal alloys and other materials
3.06.02	knowledge of limitations and capabilities of metals and metal alloys and other materials
3.06.03	knowledge of components that can be fabricated such as axle connections, tool boxes, suspension hangers, suspension beams, trailer accessories and load securement devices
3.06.04	knowledge of legal implications of fabricating and installing parts and components
3.06.05	ability to perform fabrication processes such as cutting, welding, drilling, fastening and bonding
3.06.06	ability to design and sketch fabricated product
3.06.07	ability to estimate material requirements
3.06.08	ability to prepare surfaces
3.06.09	ability to select equipment for job application
3.06.10	ability to finish part or component through procedures such as priming, painting and by applying sealants

Sub-task

3.07 Modifies parts and components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

3.07.01	knowledge of properties, strength, applications, and types of metals, metal alloys and other materials

Supporting Knowledge & Abilities

3.07.02 knowledge of limitations and capabilities of metals and metal alloys and other materials

3.07.03 knowledge of components that can be modified such as axle connections, tool boxes, suspension hangers, suspension beams, trailer accessories and load securement devices

3.07.04 knowledge of Original Equipment Manufacturer (OEM) and government standards and specifications

3.07.05 ability to perform modifying processes such as cutting, welding, drilling, fastening and bonding

3.07.06 ability to design and sketch modified product

3.07.07 ability to estimate material requirements

3.07.08 ability to prepare surfaces

3.07.09 ability to select equipment for job application

3.07.10 ability to finish parts or components through procedures such as priming, painting and applying sealant

Sub-task

3.08 Cleans and lubricates parts and components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

3.08.01 knowledge of cleaning equipment such as solvent tanks, sand blasting equipment, pressure washers, acidizing equipment and steam cleaners

3.08.02 knowledge of lubricating equipment such as grease guns, auto lube systems and oil delivery systems

3.08.03 knowledge of characteristics, applications, qualities and capabilities of lubricants and cleaners

Supporting Knowledge & Abilities

3.08.04	knowledge of cleaning and lubricating equipment operating procedures and techniques
3.08.05	knowledge of personal and work area protective equipment
3.08.06	knowledge of ventilation requirements
3.08.07	knowledge of environmental protection requirements for cleaners and lubricants such as recovery, disposal, storage, and handling
3.08.08	ability to select lubricants and cleaners
3.08.09	ability to apply lubricants and cleaners
3.08.10	ability to clean and lubricate electrical connections

Sub-task

3.09 Completes work-related documentation.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

3.09.01	knowledge of required work related documents such as repair orders, maintenance cards/sheets, preventative maintenance sheets and government inspection forms
3.09.02	knowledge of information required for specific work-related documents such as work performed, date performed, signature, and mileage
3.09.03	ability to file and maintain service records
3.09.04	ability to locate and verify identification of vehicle such as Vehicle Identification Number (VIN), license and unit number

BLOCK B

SUSPENSION SYSTEMS

Trends: *Towards integral assemblies, lighter and stronger materials and equipment as well as air ride suspension systems.*

Task 4 **Maintains air suspension systems.**

Related Components: Air spring, height control valves, dump valves, shock absorbers, pilot valves, pressure protection valve, quick release valve, air lines, tubing, hoses, fittings, bushings, hangers, beams, axle seats, u-bolts, radius rods, torque arms, regulator valve, air pressure gauge, air over electric solenoids, on board scale systems, air tank, check valves, axle adapters, pivot belts, coil springs, walking beam, equalizers, pins, anchor bolts, and leaf springs.

Tools and Equipment: Torque wrench, torch, welder, hammer, torque multipliers, impact wrench, axle tubes, tape measure, pogo stick, tension scale, and specialized bushing installer.

Sub-task

4.01 Inspects air suspension systems and components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

4.01.01 knowledge of system operation, capabilities and components

4.01.02 knowledge of types, models and makes of air suspension systems

4.01.03 knowledge of wear limits of components

4.01.04 knowledge of visual inspection procedures and techniques

4.01.05 ability to assess system integrity and component condition

4.01.06 ability to diagnose suspension failures such as weathered air springs, cracked bases, inoperative air valves, worn shock bushings, leaking shocks and shock rubbers

Sub-task

4.02 Performs functional test of air suspension systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

4.02.01 knowledge of test procedures and techniques

4.02.02 knowledge of system operation and capabilities

4.02.03 ability to interpret test results to assess component performance and operation

4.02.04 ability to isolate system or component faults and determine repairs or adjustments required

Sub-task

4.03 Repairs air suspension system components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

4.03.01 knowledge of repair, replacement and adjustment procedures and techniques

4.03.02 knowledge of components that are repairable such as cracks in hangers, axle seats, height control valves

4.03.03 knowledge of types, sizes, capabilities and interchangeability of components

4.03.04 knowledge of types and pressure ratings of valves

4.03.05 knowledge of measuring points and height for height control adjustment

4.03.06 knowledge of types of height control valves

4.03.07 knowledge of types and sizes of lift axles

4.03.08 ability to manually adjust regulator, height control valves, travel of the lift assembly and axle alignment

Supporting Knowledge & Abilities

4.03.09	ability to vent air from systems
4.03.10	ability to replace air system components and ensure components are aligned
4.03.11	ability to service air valves
4.03.12	ability to install bushings
4.03.13	ability to verify operation of replaced, repaired and/or adjusted components

Task 5 Maintains spring suspension systems.

Related Components: Walking beams, equalizers, beams, bushings, pins, anchor bolts, radius rods, torque arms, u-bolts, leaf springs, shock absorbers, hangers, shackles, spring saddles or top plate, spring seat, centre pins and wear pads.

Tools and Equipment: Torque wrench, torch, welder, hammer, torque multipliers, impact wrench, axle tubes, tape measure, pogo stick, and tension scale.

Sub-task

5.01 Inspects spring suspension system and components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

5.01.01	knowledge of system operation, capabilities, and components
5.01.02	knowledge of types, models and makes of spring suspension systems
5.01.03	knowledge of wear limits of components
5.01.04	knowledge of visual inspection procedures and techniques
5.01.05	ability to assess system and verify components

Supporting Knowledge & Abilities

5.01.06 ability to diagnose suspension failures such as broken springs, broken/cracked hangers, bushing and pin failures

Sub-task

5.02 Repairs spring suspension system components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

5.02.01 knowledge of repair, replacement and adjustment procedures and techniques

5.02.02 knowledge of components that are repairable such as hangers, saddles, seats, and springs

5.02.03 knowledge of types, sizes, capabilities and interchangeability of components, hangers and beams

5.02.04 knowledge of types of suspensions

5.02.05 knowledge of measuring points and suspension height

5.02.06 knowledge of spring orientation

5.02.07 ability to select components to meet system requirements

5.02.08 ability to ensure that all attached components are within wear tolerances

5.02.09 ability to ensure that the axles are parallel to each other and squared to the king pin

5.02.10 ability to service components such as the adjustable radius rods

5.02.11 ability to install bushing

5.02.12 ability to verify operation of repaired, replaced and/or adjusted suspension

Task 6 **Maintains rubber block suspension systems.**

Related Components: Walking beams, rubber blocks or load cushions, torque arms, bushings, pins, u-bolts, radius rods, hangers, axle seats, saddles, pivot bolts, torque arm bolts, shock absorbers, rubber cushion, shock brackets and wishbones.

Tools and Equipment: Torque wrench, torch, welder, hammer, torque multipliers, impact wrench, axle tubes, tape measure, pogo stick and tension scale.

Sub-task

6.01 **Inspects rubber block suspension system and components.**

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

6.01.01 knowledge of system operation, capabilities and components

6.01.02 knowledge of types, models and makes of rubber block suspension systems

6.01.03 knowledge of wear limits of components

6.01.04 knowledge of visual inspection procedures

6.01.05 ability to assess system and verify components

6.01.06 ability to diagnose suspension failures such as worn, deteriorated and split bushings and rubber components and missing rivets

Sub-task

6.02 **Repairs rubber block suspension system components.**

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

6.02.01 knowledge of repair, replacement and adjustment procedures and techniques

Supporting Knowledge & Abilities

6.02.02	knowledge of components that are repairable such as pads, beams, mounting plates for rubber blocks and mounting hardware
6.02.03	knowledge of rubber block components that can be replaced
6.02.04	knowledge of types, sizes, capabilities and interchangeability of components such as hangers and beams
6.02.05	knowledge of alignment measurements and procedures
6.02.06	knowledge of measuring points
6.02.07	ability to ensure that the axles are parallel to each other and squared to the king pin
6.02.08	ability to ensure that all attached components are within wear tolerances
6.02.09	ability to select components to meet system requirements
6.02.10	ability to install bushings, blocks and pads
6.02.11	ability to verify operation of repaired, replaced and adjusted rubber block suspension components

BLOCK C

BRAKING SYSTEMS

Trends: *Towards the documentation of braking, mileage, and speed data, the use of disc brakes, cam enclosures, long stroke spring brakes, thicker and wider brake pads, trailer antilock fault light mounted in cab of tractor, steel brake drums in foundation brakes, ABS on all new trailers.*

Task 7 **Maintains foundation brake components.**

Related Components: Disc Brakes – rotors, pads, callipers, power screw cam enclosure, clevis assembly, adjustment indicator and dust/inspection shields.
Drum Brakes (cam or wedge design) – drum, shoes or linings, spiders, anchor pins, mounting hardware, springs, clamps, bushings, sleeves, automatic and standard slack adjusters, dust/inspection shields, adjustment indicators, brake cooling devices and activating arm for electric brake systems.

Tools and Equipment: Hand tools such as hammers, wrenches, pliers, jack, wheel dolly; air tools such as air wrench and air impact wrench; hydraulic presses and pullers, oxy-fuel torch, punches, arc welder, creeper and safety stands; measuring tools such as brake drums, gauges and micrometers; and stationary tools such as drum lathes.

Sub-task

7.01 Inspects disc brake system. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

7.01.01 knowledge of types, sizes and grades of brake lining

7.01.02 knowledge of types of disc brake systems such as hydraulic and air brake systems

7.01.03 knowledge of inspection specifications such as tolerances, fits and limits

7.01.04 knowledge of inspection procedures and techniques

7.01.05 knowledge of causes of fault/malfunction/ damage

7.01.06 ability to secure vehicle

Supporting Knowledge & Abilities

7.01.07	ability to measure lining and rotor thickness
7.01.08	ability to visually inspect mounting hardware
7.01.09	ability to identify type of disc brake pads
7.01.10	ability to check for cracks, grooves, pitted rotors
7.01.11	ability to identify whether brake lining is attached to disc brake pad
7.01.12	ability to diagnose fault to foundation brake
7.01.13	ability to assess further testing requirements

Sub-task

7.02 Tests functional operation and adjustment of disc brakes.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

7.02.01	knowledge of disc brake components such as bushings, rotors, callipers, power screw
7.02.02	knowledge of disc brake test procedures
7.02.03	knowledge of causes of fault/malfunction/ damage
7.02.04	ability to check manual operation of disc brake components such as bushings, rotors, callipers and power screw
7.02.05	ability to isolate malfunction and determine adjustments/repairs required

Sub-task

7.03 Repairs disc brake components. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

7.03.01	knowledge of procedures for repair, replacement and adjustment of disc brake components such as callipers, actuators, disc pads, rotors, power screws and adjustors
7.03.02	knowledge of types of disc brake cleaning fluids
7.03.03	knowledge of disc brake components that can be repaired, replaced and/or adjusted
7.03.04	knowledge of components that meet requirements
7.03.05	ability to replace disc brake components such as disc pads, callipers, rotors and fasteners
7.03.06	ability to clean disc brake components
7.03.07	ability to reassemble disc brake components
7.03.08	ability to measure disc brake clearance
7.03.09	ability to adjust disc brake pad rotor clearance
7.03.10	ability to verify operation of repaired, replaced and/or adjusted components

Sub-task

7.04 Repairs power screw assembly. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	no	yes	yes	ND	NV	NV

7.04.01	knowledge of repair, replacement and adjustment techniques for power screw assemblies
7.04.02	knowledge of types of power screws and assembly parts such as slack adjuster, power screw, pads, rotors callipers seals and snap rings

Supporting Knowledge & Abilities

7.04.03 knowledge of repairable parts such as power screw, actuator and mounting brackets

7.04.04 ability to service and clean actuator and power screw

7.04.05 ability to verify operation of repaired, replaced and/or adjusted components

Sub-task

7.05 Repairs mounting assemblies. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

7.05.01 knowledge of repair procedures and techniques for mounting assemblies

7.05.02 knowledge of types and sizes of mounting assemblies such as brackets and hangers

7.05.03 knowledge of repairable parts such as hanger brackets and bushings

7.05.04 ability to measure clearances between the rotor and the lining

7.05.05 ability to install bushings

7.05.06 ability to verify operation of repaired mounting assembly

7.05.07 ability to verify component integrity

Sub-task

7.06 Repairs hydraulic callipers. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

7.06.01 knowledge of specifications for piston diameter, and clearance between piston and calliper

Supporting Knowledge & Abilities

7.06.02 knowledge of procedures for removal and installation of hydraulic disc brake callipers

7.06.03 ability to remove disc brake callipers

7.06.04 ability to disassemble disc brake callipers

7.06.05 ability to measure piston clearance

7.06.06 ability to replace defective components such as dust seals, pistons, sealing rings and bleeder screws

7.06.07 ability to install a rebuilt kit

7.06.08 ability to verify operation of disc brake callipers

Sub-task

7.07 Inspects drum brake systems. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

7.07.01 knowledge of types of drum brake systems such as air and hydraulic

7.07.02 knowledge of inspection procedures and techniques

7.07.03 knowledge of inspection specifications for drum brake systems

7.07.04 knowledge of types, sizes and grades of drum brake linings

7.07.05 knowledge of tolerance specifications for components such as linings, spiders, shims, slack adjusters, drum brake shoes, hardware kits and fasteners

7.07.06 knowledge of operation of drum brake components

7.07.07 knowledge of government regulations for maximum wear limits

Supporting Knowledge & Abilities

7.07.08 ability to measure brake lining thickness, slack adjuster travel, brake drum diameter, and cam clearance

7.07.09 ability to inspect for brake drum grooves, broken or cracked drums, worn components

7.07.10 ability to check slack adjuster angle

7.07.11 ability to check drum brake fasteners such as snap rings, bolts and springs

7.07.12 ability to inspect lubrication of slack adjusters and cam bushings

7.07.13 ability to assess brake lining attachment to drum brake shoe

7.07.14 ability to assess further testing requirements

7.07.15 ability to diagnose faults in brake system

Sub-task

7.08 Performs functional test of drum brake.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

7.08.01 knowledge of drum brake components such as brake shoes, springs, snap rings and brake drum

7.08.02 knowledge of drum brake test procedures

7.08.03 knowledge of diagnostic equipment such as drum gauge

7.08.04 ability to verify manual operation of drum brake

7.08.05 ability to operate diagnostic equipment such as drum gauge

7.08.06 ability to isolate fault and determine repairs/adjustments required

Sub-task

7.09 Repairs drum brake components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

7.09.01	knowledge of repair, replacement and adjustment procedures and techniques
7.09.02	knowledge of types of drum brake systems and components such as wedge and cam air systems and hydraulic systems
7.09.03	knowledge of specifications for drum brake systems and components
7.09.04	knowledge of tolerance specifications for shoes and drums
7.09.05	knowledge of shoe and drum functions
7.09.06	knowledge of components which can be replaced, such as slack adjusters, cam shafts, bushings, brake shoes and hardware kits
7.09.07	knowledge of repairable components
7.09.08	knowledge of procedures for replacement of drum brake components such as cam brackets and brake spiders
7.09.09	knowledge of types of brand name lining materials and components
7.09.10	knowledge of wheel removal techniques and procedures
7.09.11	knowledge of components that meet requirements
7.09.12	ability to remove drum brake components such as brake drums, brake shoes, cams, cam shafts, slack adjusters and related hardware
7.09.13	ability to measure and adjust clearance between brake shoe and drum
7.09.14	ability to realign spider
7.09.15	ability to remove and reassemble drum brake components

Supporting Knowledge & Abilities

7.09.16 ability to verify operation of repaired, replaced and/or adjusted brake drums and brake drum components

Task 8 Maintains air delivery components to brake systems.

Related Components: Glad hands, hoses, fittings, tubing, air dryers, valves, filters, regulators, tank/reservoirs, spring brakes, roto chambers, drains, chambers and brake-related add-ons.

Tools and Equipment: Air brake analyzers, hand tools such as air impact wrenches, hack saw, pliers, hammers, drills, oxy-fuel torch, pry bars, safety stands, wheel jacks and measuring tape.

Sub-task

8.01 Inspects air delivery components to brake systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

8.01.01 knowledge of inspection procedures and techniques

8.01.02 knowledge of types and sizes of air delivery components such as glad hands, spring brakes, air valves, step-up valves, check valves, pressure protection valves, air tanks, fasteners and air lines

8.01.03 knowledge of specifications for air systems and components

8.01.04 knowledge of operation of components of air brake systems

8.01.05 knowledge of air brake diagrams

8.01.06 knowledge of safety practices and procedures of spring brakes

8.01.07 knowledge of leak detection systems

8.01.08 ability to measure stroke and angle of slack adjuster

Supporting Knowledge & Abilities

8.01.09 ability to perform visual and auditory inspection of air delivery components such as air lines, valves, air tanks, mounts, fasteners, and accessories

8.01.10 ability to assess further testing or repair requirements

Sub-task

8.02 Performs functional test of brake delivery systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

8.02.01 knowledge of functional test procedures and techniques

8.02.02 knowledge of types and sizes of air delivery components such as spring brakes, air valves, step-up valves, check valves, pressure protection valves, air tanks, fasteners and air lines

8.02.03 knowledge of air brake analyzers

8.02.04 knowledge of specifications for air systems and components

8.02.05 knowledge of operation of components of air brake systems

8.02.06 knowledge of safety practices and procedures of spring brakes

8.02.07 ability to pressurize air brake systems and components

8.02.08 ability to check for leaks in the air brake systems, components and accessories

8.02.09 ability to operate diagnostic equipment such as air brake analyzer

8.02.10 ability to verify operation of air brake system and components

Supporting Knowledge & Abilities

8.02.11 ability to isolate fault and determine repairs or adjustments needed

Sub-task

8.03 Repairs air delivery components of brake systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

8.03.01 knowledge of repair and replacement procedures and techniques

8.03.02 knowledge of specifications for replacement of air delivery components and accessories such as glad hands, spring brakes, air lines, filters, air valves, tanks and fasteners

8.03.03 knowledge of components which can be repaired or replaced that meet requirements

8.03.04 knowledge of lubrication methods for air delivery components

8.03.05 knowledge of types of air delivery components such as glad hands, air valves, tanks

8.03.06 knowledge of operation of air delivery components

8.03.07 knowledge of air delivery systems diagrams

8.03.08 ability to replace air delivery components and accessories such as glad hands, air valves, spring brakes and air tanks

8.03.09 ability to disarm spring brake

8.03.10 ability to fix air leak on glad hands and fasteners, air lines and spring brakes

8.03.11 ability to adjust push rod length

8.03.12 ability to verify operation of repaired or replaced air delivery components

Task 9 Maintains hydraulic components to disc/drum brake systems.

Related Components: Master cylinder, booster, steel brake lines, flexible brake lines, wheel cylinder, backing plates, metering block, reservoir and proportioning valve.

Tools and Equipment: Hand tools such as sockets/ratchet, tube cutter, flaring tool, hammers, pliers, oxy-fuel torches and power bleeder.

Sub-task

9.01 Inspects hydraulic components of brake systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

9.01.01 knowledge of types of hydraulic components in brake systems

9.01.02 knowledge of inspection procedures and techniques

9.01.03 knowledge of specifications for brake fluids and hydraulic brake components

9.01.04 knowledge of operation of hydraulic brake systems

9.01.05 ability to identify leaks, worn and damaged components such as master cylinders, wheel cylinders and brake lines

9.01.06 ability to check fluid levels

9.01.07 ability to bleed hydraulic brake systems

9.01.08 ability to check push rod travel in boost system

9.01.09 ability to interpret diagrams and schematics

Sub-task

9.02 Performs functional test of hydraulic systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

9.02.01	knowledge of types of hydraulic components in brake systems
9.02.02	knowledge of functional test procedures and techniques
9.02.03	knowledge of operation of hydraulic brake systems
9.02.04	ability to engage hydraulic braking systems
9.02.05	ability to identify defective cylinders such as boost assist, master cylinder and wheel cylinder
9.02.06	ability to diagnose faults and identify required repair or replacement procedure

Sub-task

9.03 Repairs hydraulic components in brake systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

9.03.01	knowledge of repair, replacement and adjustment procedures and techniques
9.03.02	knowledge of operation of proportional valves
9.03.03	knowledge of adjustment requirements and procedures for proportioning valves
9.03.04	knowledge of operation of hydraulic system and components
9.03.05	knowledge of types, sizes, limitations and capabilities of hydraulic components such as master cylinder, wheel cylinders and brake line tubing

Supporting Knowledge & Abilities

9.03.06	knowledge of hydraulic system components that can be repaired, replaced and/or adjusted
9.03.07	ability to perform adjustment procedures
9.03.08	ability to assess braking requirements per axle
9.03.09	ability to cut and flare brake lines
9.03.10	ability to bleed brake systems
9.03.11	ability to secure brake lines
9.03.12	ability to overhaul wheel cylinder and master cylinder
9.03.13	ability to replace section of brake line and tubing
9.03.14	ability to replace hydraulic brake fittings and components
9.03.15	ability to verify operation of repaired, replaced and/or adjusted hydraulic brake components

Task 10 Maintains electric brake system components.

Related Components: Backing plate, magnet, resistors, wiring and connectors, battery and break-away switch.

Tools and Equipment: Hand tools such as screwdrivers, wrenches, wire cutters, ratchets, sockets, multi meter, oxy-fuel torch and soldering iron.

Sub-task

10.01 Inspects electric brake system components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

10.01.01	knowledge of specifications for electric brake system components

Supporting Knowledge & Abilities

10.01.02 knowledge of types and sizes of electric brake components such as magnets and resistors, fasteners and connectors

10.01.03 knowledge of operation of electric brake components

10.01.04 ability to identify frayed wiring, defective electrical connections and magnets

10.01.05 ability to diagnose fault to electric brake components

Sub-task

10.02 Performs functional test of electric brake systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

10.02.01 knowledge of specifications for electric brake system components

10.02.02 knowledge of types and sizes of electric brake components such as magnets and resistors, fasteners and connectors

10.02.03 knowledge of operation of electric brake components

10.02.04 ability to engage electric braking system

10.02.05 ability to verify operation of electric brake system

10.02.06 ability to isolate fault and determine repairs/adjustments required

Sub-task

10.03 Repairs electric brake system wiring and components. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

10.03.01	knowledge of repair, replacement and adjustment techniques
10.03.02	knowledge of electric components such as electromagnets, resistors, wiring and connectors
10.03.03	knowledge of types and sizes of resistors and electromagnets
10.03.04	knowledge of operation of variable resistors
10.03.05	ability to identify open circuits
10.03.06	ability to replace electric brake systems
10.03.07	ability to secure replaced components
10.03.08	ability to replace connectors
10.03.09	ability to verify operation of electric brake system
10.03.10	ability to verify operation of repaired, replaced and/or adjusted components of electric brake system

Task 11 Maintains Anti-lock Braking System (ABS) components.

Related Components: Sensors, actuator, electronic control unit/module, wiring and connectors, secondary modulator, sensor cables, on-board diagnostic ports and exciter rings.

Tools and Equipment: Hand tools such as wrenches, screwdrivers, hammer, ratchet, sockets, cutters, electronic display unit and multimeter.

Sub-task

11.01 Inspects Anti-lock Braking System (ABS) components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

11.01.01 knowledge of specifications for ABS components

11.01.02 knowledge of inspection procedures and techniques

11.01.03 knowledge of operation of ABS components

11.01.04 knowledge of types of ABS systems

11.01.05 knowledge of ABS system components such as sensors, wiring, Electronic Control Module (ECM) and relay valve

11.01.06 ability to check for defective electrical connections and wiring

11.01.07 ability to diagnose faults in the ABS system

Sub-task

11.02 Performs functional and diagnostic test on Anti-lock Braking Systems (ABS).

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

11.02.01 knowledge of diagnostic electronic display units such as on board diagnostics and portable display units

11.02.02 knowledge of functional test procedures and techniques

11.02.03 knowledge of fault codes

11.02.04 ability to hook up portable diagnostic units

11.02.05 ability to display fault codes

11.02.06 ability to interpret fault codes

Supporting Knowledge & Abilities

11.02.07 ability to diagnose fault in ABS system

Sub-task

11.03 Repairs Anti-lock Braking System (ABS) components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

11.03.01 knowledge of repair, replacement and adjustment procedures and techniques for ABS components

11.03.02 knowledge of types of ABS components such as exciter rings, sensors, module valves, on-board diagnostics, Electronic Control Module (ECM), wiring and power source

11.03.03 knowledge of operation of ABS components

11.03.04 knowledge of types and operation of sensors

11.03.05 knowledge of adjustment and tolerance specifications for sensors

11.03.06 ability to set air gap

11.03.07 ability to replace wiring harness section

11.03.08 ability to apply anti-corrosion compound

11.03.09 ability to secure and connect sensors, Electronic Control Module (ECM) module valves and accessories

11.03.10 ability to replace exciter ring

11.03.11 ability to replace multiplex or standard power supply cords for multiple trailer operations

11.03.12 ability to clean and secure connections and terminals

11.03.13 ability to clear fault codes and re-test ABS system

11.03.14 ability to verify operation of repaired and replaced ABS components

Supporting Knowledge & Abilities

11.03.15 ability to test drive or require test drive of tractor trailer unit to verify ABS operation

BLOCK D

AXLES AND WHEEL ASSEMBLIES

Trends: *Towards more use of synthetic greases and oils as well as smaller and lighter tires and integrated axle suspension units.*

Task 12 Maintains axles and hubs.

Related Components: Bearings, races, seals, gaskets, hub caps, oil, grease, nuts, bearing spacers, axle assembly, central tire inflation system, studs, wheel clamps, valves, and spacers.

Tools and Equipment: Sockets, axle sockets, torque wrench, drivers, dial indicator, jacks, stands, hammers, magnet, welding equipment, hand tools, lifting tools, power tools, measuring tools, cutting and welding tools.

Sub-task

12.01 Inspects axles and hubs.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

12.01.01 knowledge of bearing wear tolerances

12.01.02 knowledge of inspection procedures and techniques

12.01.03 knowledge of axle wear limits

12.01.04 knowledge of bearing end play tolerance

12.01.05 knowledge of components such as studs, nuts, fasteners, shock absorbers and spindle nuts

Supporting Knowledge & Abilities

12.01.06 ability to recognize contaminated lubricants

12.01.07 ability to recognize a worn or bent axle

12.01.08 ability to recognize worn wheel bearings

12.01.09 ability to recognize loose and worn components such as studs

Sub-task

12.02 Tests bearing clearances on hubs.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

12.02.01 knowledge of preset bearings and extended service hubs

12.02.02 knowledge of bearing adjustment procedures

12.02.03 knowledge of bearing wear limits

12.02.04 ability to recognize faults in bearing clearance

Sub-task

12.03 Repairs axle and hub components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

12.03.01 knowledge of repair, replacement and adjustment procedures and techniques

12.03.02 knowledge of types of axle and hub components such as axle, hub, wheel bearings, wheel seals, fasteners, brackets, axle seats, beams, shock mounts and brake chamber supports

12.03.03 knowledge of operation of axles and hubs

12.03.04 knowledge of axle and hub component specifications

Supporting Knowledge & Abilities

12.03.05	knowledge of alignment procedures
12.03.06	knowledge of bearing clearances
12.03.07	ability to recognize worn and damaged bearings
12.03.08	knowledge of wheel end components
12.03.09	knowledge of types, models, change-overs, axle limitations and capacity
12.03.10	ability to replace wheel end components
12.03.11	ability to align axle
12.03.12	ability to replace wheel bearings
12.03.13	ability to repair/straighten bent, broken or worn components and brackets
12.03.14	ability to replace bushings
12.03.15	ability to verify operation/condition of repaired, replaced and/or adjusted components

Task 13 Maintains steering and lift axles.

Related Components: King pin, tie rod ends, tie rod, locking pins, steering stops, shock absorbers, air spring, coil spring, regulator, bearings, races, seals, gaskets, hub caps, oil, grease, nuts, spacers, axle assembly, hydraulic steering cylinders and lift bag.

Tools and Equipment: As per list of hand, power, hydraulic, measuring, cutting and diagnostic tools and equipment.

Sub-task

13.01 Inspects steering and lift axles. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

13.01.01	knowledge of operation of steering and lift axles

Supporting Knowledge & Abilities

13.01.02 knowledge of inspection procedures and techniques

13.01.03 knowledge of types of steering and lift axles

13.01.04 knowledge of components such as king pins, tie rods, tie rod ends, air springs, coil springs, cables and lifting mechanisms

13.01.05 knowledge of wheel end components

13.01.06 ability to identify causes of irregular tire wear on lift and steering axles

13.01.07 ability to identify worn, damaged or defective components such as king pins, tie rods, tie rod ends and air springs

Sub-task

13.02 Performs functional test of steering and lift axles.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

13.02.01 knowledge of lift and steering axle components such as air springs, switches and valves

13.02.02 knowledge of functional test procedures and techniques

13.02.03 knowledge of movement of lift and steering axle

13.02.04 knowledge of adjustments

13.02.05 knowledge of valving

13.02.06 ability to determine air spring inflation

13.02.07 ability to identify defective, worn and damaged components

13.02.08 ability to operate steering and lift axles

13.02.09 ability to diagnose faults in alignment, steering tracking and height travel

Sub-task

13.03 Repairs steering and lift axle components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

13.03.01	knowledge of repair, replacement and adjustment procedures and techniques
13.03.02	knowledge of components such as air springs, switches, valves, cables, shocks, king pins, bushings and torque arms
13.03.03	knowledge of operation and capabilities of steering and lift axles
13.03.04	knowledge of alignment procedures
13.03.05	knowledge of wear limits
13.03.06	ability to operate steering and lift axles
13.03.07	ability to align steering and lift axles
13.03.08	ability to set lift travel and load sharing
13.03.09	ability to set steering travel, tension and toe-in
13.03.10	ability to transfer components
13.03.11	ability to make adjustments to toe-in alignment, wheel bearing clearance and height travel
13.03.12	ability to replace bushings on king pin, track bars, shock absorbers and radius rods
13.03.13	ability to repair air leaks in fitting, line, valve, or air cell
13.03.14	ability to replace air, leaf or coil spring
13.03.15	ability to replace components such as centre bolts, u-bolts, shackles, cables and lift chains
13.03.16	ability to verify operation of repaired, replaced and/or adjusted steering and lift axle components

Task 14 Services tires and rims.

Related Components: Tires, tubes, stud piloted rims, spoke wheels, hub piloted rims, fasteners, valve stems, wheel weights, balancing systems, split rim, lock rings, tubeless rim, spacers, studs, sub-frames, Teflon wheel guards, wheel clamps and nuts.

Tools and Equipment: Torque wrench, impact wrench, sockets, hammer, wire brush or scraper, pressure gauge and tread depth gauge.

Sub-task

14.01 Inspects tires, rims and components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

14.01.01 knowledge of tire wear limits

14.01.02 knowledge of inspection procedures and techniques

14.01.03 knowledge of types and sizes of tires and rims

14.01.04 knowledge of rim wear

14.01.05 ability to identify mismatched tires and multi piece rims

14.01.06 ability to identify broken, cracked or loose rims

14.01.07 ability to recognize corrosion on rims

14.01.08 ability to recognize worn or separated tires

14.01.09 ability to identify mismatched multi piece rim components

Sub-task

14.02 Measures air pressure, tread depth and torque of wheel fasteners.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

14.02.01 knowledge of inflation pressures

Supporting Knowledge & Abilities

14.02.02 knowledge of automatic inflation systems

14.02.03 knowledge of tire sizes, pressures, compounds and tread design

14.02.04 knowledge of tire mating

14.02.05 knowledge of wheel arrangements, designs and fasteners

14.02.06 ability to identify problems in tread depth, pressure and torque

14.02.07 ability to identify problems associated with automatic inflation systems

Sub-task

14.03 Maintains tires, rims and components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

14.03.01 knowledge of replacement procedures and techniques

14.03.02 knowledge of tire sizes, pressures, compounds and tread design

14.03.03 knowledge of inflation pressures

14.03.04 knowledge of tire mating

14.03.05 knowledge of wheel arrangements, designs and fasteners

14.03.06 ability to verify operating condition of components

14.03.07 ability to replace tires, rims and associated components

14.03.08 ability to repair automatic inflation systems

BLOCK E

TRAILER CHASSIS, BODIES AND COUPLING UNITS

Trends: *The trend in trailer chassis is towards lighter frames made with alloys and specialty materials that will support heavier loads. The trend in bodies is towards thinner walls, more use of composite and plastic materials and increased load capacity. With respect to hydraulic components, there are increasingly more attachments to the hydraulic system, more hydropacks and more synthetic oils. Electrical trends include more wires, multiplex cords, multi-circuits and Light Emitting Diode (LED) lights. In terms of landing gear, there is a trend towards lighter units that require less maintenance. With respect to coupling units, there is a trend towards lighter units made from stronger steel alloys and better break away protection systems.*

Task 15 Maintains trailer chassis (frames, sub-frames and sliders).

Related Components: Rails, cross members, slider, slide rails, slider locks, slider stops, bumpers, sub-frames, rivets, bolts, huck bolts, adhesives, sealant, plastic shims, goose necks and scissor necks.

Tools and Equipment: Tape measure, hand tools, impact wrench, welding and cutting equipment, grinder, level, square, jacking and lifting devices, drills, clamps, chalk line, chains, hold downs, support stands and die grinder.

Sub-task

15.01 Inspects trailer chassis.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

Supporting Knowledge & Abilities

15.01.01 knowledge of makes, models and sizes of trailer chassis

15.01.02 knowledge of inspection procedures and techniques

15.01.03 knowledge of welding defects such as factory flaws, poor weld quality, porosity and undercuts

15.01.04 knowledge of wear limits

15.01.05 knowledge of structural tolerance limits for beams, body and frames

Supporting Knowledge & Abilities

15.01.06	ability to diagnose chassis, frames, and sub-frame defects and failures such as broken/bent rails, elongated holes, cracks and corrosion
15.01.07	ability to diagnose slider and linkage assembly defects and failures such as missing parts, worn holes and bent/broken rails
15.01.08	ability to assess assemblies and verify components

Sub-task

15.02 Diagnoses slider(s) and locking mechanism(s).

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

15.02.01	knowledge of assembly components such as air chamber, valves, springs, rods, pins and levers
15.02.02	knowledge of functional test procedures and techniques
15.02.03	knowledge of types, models and makes of sliders and locking mechanisms
15.02.04	knowledge of causes of slider malfunctions such as wear, misuse and seizure
15.02.05	knowledge of causes of locking mechanism malfunctions such as valve failures (air) and missing components such as bolts, pins and rods
15.02.06	ability to test slider malfunction
15.02.07	ability to test locking mechanism malfunction
15.02.08	ability to isolate assembly or component fault and determine repairs or adjustments required

Sub-task

15.03 Repairs trailer chassis, frames, sub-frames and slider components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

15.03.01	knowledge of repair, replacement and adjustment procedures and techniques for components
15.03.02	knowledge of parts, components and structures such as rails, slider pins, bars, rails and flanges
15.03.03	knowledge of types, sizes and interchangeability of components
15.03.04	knowledge of components that meet requirements
15.03.05	knowledge of structural components such as I-beams, channel and tubing
15.03.06	knowledge of use and application of replacement materials
15.03.07	knowledge of types and sizes of slider locks
15.03.08	knowledge of causes of wear and linkage problems
15.03.09	knowledge of types and sizes of rails
15.03.10	knowledge of tolerances for rail deflection
15.03.11	knowledge of types of rail faults such as twisted, swayed and off camber
15.03.12	ability to diagnose amount of rail deflection
15.03.13	ability to re-arch using hot or cold techniques
15.03.14	ability to verify crown measurements
15.03.15	ability to replace pins and control rods
15.03.16	ability to verify operation of slider lock mechanism
15.03.17	ability to replace and/or adjust components

Supporting Knowledge & Abilities

15.03.18 ability to verify operation/condition of repaired, replaced and/or adjusted components

Task 16 Maintains trailer bodies and components.

Related Components: Panels, posts, roof bows, roof material, headers, tail gate, cross members, rails, floor material systems, insulations, scuff liners, floor threadhold plate, load securement devices plate, conspicuity marking, hatch covers, vents, hold downs, valves, roll-up doors, barn doors, fasteners, fall protection devices, ladders and walkways, bunks, hoppers, dump, flooring, doors and hatches.

Tools and Equipment: Tape measure, hand tools, impact wrench, cutting and welding equipment, grinder, level, square, jacks and lifting devices, drills, clamps, chalk line, chains, hold downs, support stands, die grinder, circular saw, sander, rivet guns, cut off saw, caulking gun, spreaders, trowels, nibbler, and shears.

Sub-task

16.01 Inspects trailer bodies and components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

16.01.01 knowledge of makes, models, sizes of bodies and components

16.01.02 knowledge of inspection procedures and techniques

16.01.03 knowledge of wear limits

16.01.04 knowledge of structural tolerances for bodies and framing components

16.01.05 ability to diagnose body and framing components for defects and failures such as loose rivets, broken or bent front, nose and side rails, damaged skins, post damage, and floors

16.01.06 ability to assess condition and existence of body components

Sub-task

16.02 Performs functional tests on trailer bodies and components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

16.02.01 knowledge of leak and sealing test procedures and techniques for doors, hatches and structure

16.02.02 knowledge of types and operating requirements for doors, hatches and components

16.02.03 knowledge of types of load securement devices and fasteners such as winches, straps, cargo nets, tie downs and tarping systems

16.02.04 knowledge of causes of door and hatch failures/defects such as worn mounting attachments, fatigue, and corrosion

16.02.05 knowledge of types of floors such as walking floors and lift floors

16.02.06 knowledge of causes of defects to flooring such as waste, contamination, rot, fatigue and abuse

16.02.07 knowledge of causes of defects/damage to body such as abuse, fatigue and contamination

16.02.08 knowledge of assembly components such as floors, doors and hatches

16.02.09 ability to diagnose sealing ability, door, hatch and floor operation malfunctions

16.02.10 ability to isolate fault and determine repairs or adjustments required

Sub-task

16.03 Repairs trailer bodies and components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

16.03.01 knowledge of repair, replacement and adjustment procedures and techniques

Supporting Knowledge & Abilities

16.03.02	knowledge of parts, components and assemblies such as door frame assemblies, doors, floors, panels, insulation, headers, side posts, hose tubes, roof systems and bumpers
16.03.03	knowledge of tanker unloading and loading equipment such as venting, valving (air, manual) and product handling attachments
16.03.04	knowledge of types, sizes and models of components
16.03.05	knowledge of components that meet requirements
16.03.06	ability to adjust valves and vents
16.03.07	ability to replace pins and bushings
16.03.08	ability to adjust gaskets and clamping devices
16.03.09	ability to adjust flooring
16.03.10	ability to adjust doors, gates, hatches and tracks
16.03.11	ability to cut and install materials such as wood, fibreglass, aluminium, steel and insulation
16.03.12	ability to splice, section and patch materials
16.03.13	ability to install flooring materials
16.03.14	ability to replace seals
16.03.15	ability to replace valves
16.03.16	ability to align components
16.03.17	ability to verify operation/condition of repaired, replaced and/or adjusted components, materials and mechanisms

Task 17 Maintains coupling units and landing gear.

Related Components: King pin, 5th wheel plate, 5th wheel, 5th wheel turntable, upper coupler plate, compensator, draw bars, pintel hooks, landing gear, safety and coupling units, chains and locking pins, tip legs/nose dive legs, landing gear supports, pins, bushings and fasteners.

Tools and Equipment: Tape measure, hand tools, impact wrench, welding and cutting equipment, grinder, level, square, jacks and lifting devices, drills, clamps, support stands, die grinder, 5th wheel lock tester and king pin gauge.

Sub-task

17.01 Inspects coupling units and landing gear.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

17.01.01 knowledge of makes and models of coupling units

17.01.02 knowledge of makes and models of landing gear

17.01.03 knowledge of inspection procedures and techniques

17.01.04 knowledge of characteristics of damaged or worn coupling units such as bent or warped plates, worn surfaces, cracks, missing parts or components, incorrect fasteners, corrosion and fatigue

17.01.05 knowledge of characteristics of damaged or worn landing gear such as bent components, missing parts or components, incorrect fasteners, corrosion and fatigue

17.01.06 knowledge of wear limits and structural tolerances for coupling units

17.01.07 knowledge of wear limits and structural tolerances for landing gear

17.01.08 ability to assess assemblies and verify components

17.01.09 ability to identify worn, damaged or missing coupling units and/or components

Supporting Knowledge & Abilities

17.01.10 ability to identify worn, damaged or missing landing gear and/or components

Sub-task

17.02 Tests coupling units and landing gear.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

17.02.01 knowledge of assembly components on upper coupler (tow plate, pick up plates) such as king pin, plate surface and supporting structures

17.02.02 knowledge of types of coupling units such as 5th wheel plate, pintel hook assembly and eye and turntable

17.02.03 knowledge of 5th wheel lock tester operation

17.02.04 knowledge of functional test procedures and techniques on 5th wheel plate, pintel hook and turntable

17.02.05 knowledge of causes of coupling unit damage/defects including wear, misuse and lack of maintenance

17.02.06 knowledge of types of landing gear such as drop, crank, hydraulic and air legs

17.02.07 knowledge of functional test procedures and techniques for landing gear

17.02.08 knowledge of causes of landing gear damage/defects such as wear, misuse and lack of maintenance

17.02.09 ability to diagnose coupling unit malfunctions

17.02.10 ability to diagnose landing gear malfunctions

17.02.11 ability to isolate assembly or component fault and determine repairs or adjustments required

Sub-task

17.03 Repairs coupling units, landing gear and/or components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

17.03.01 knowledge of repair and replacement procedures and techniques

17.03.02 knowledge of types, sizes and interchangeability of components

17.03.03 knowledge of parts and components such as the plate reinforcements above the upper coupler

17.03.04 knowledge of parts and components on the landing gear such as mounting braces

17.03.05 knowledge of parts and components on coupling units such as air lines, linkages, slider locks, pintel hook locks and lock pins

17.03.06 knowledge of mechanical components on the coupling units such as fasteners, pins, plungers, jaws and springs

17.03.07 knowledge of air related components on the coupling units such as chambers, cylinders, valves, switches and pintel hooks

17.03.08 knowledge of hydraulic and air components on the landing gear such as cylinders, hoses and valves

17.03.09 knowledge of mechanical related components on landing gear such as gears, shafts, bushings, pins, ball bearings, springs and split pins

17.03.10 knowledge of components/materials that meet requirements

17.03.11 knowledge of adjustment procedures and techniques for 5^{th} wheel components such as jaws, compensator, slide locks and locking mechanism

Supporting Knowledge & Abilities

17.03.12 knowledge of adjustment procedures and techniques for pintel hooks such as tensioning mechanisms, mounting systems, and reaches for eyes

17.03.13 knowledge of adjustment procedures and techniques for landing gear components such as leg height/timing

17.03.14 knowledge of causes of wear on coupling units

17.03.15 knowledge of causes for landing gear adjustments

17.03.16 ability to manually adjust tension devices on pintel hooks and eye bolts

17.03.17 ability to verify operation of mechanisms

17.03.18 ability to verify operation/condition of repaired, replaced and/or adjusted components

Task 18 Maintains electrical systems.

Related Components: Wiring, plugs, sockets, connectors, junction boxes, lights, conduits, breakers, switches, relays, nose box, receptacles, battery, multiplex receptacle, electric solenoids, Light Emitting Diode (LEDs), sealed beams, electric motors and vibrators.

Tools and Equipment: Light tester, circuit tester, voltmeters, ohmmeter, battery load tester, pliers, strippers, cutters, electronic reader, Digital Volt Ohmmeter (DVOM), solder, electrical tape, side cutters, crimpers, hand tools and measuring tools such as feeler gauges.

Sub-task

18.01 Inspects electrical systems. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

18.01.01 knowledge of types and components of circuitry

18.01.02 knowledge of inspection procedures and techniques

Supporting Knowledge & Abilities

18.01.03	ability to recognize faults such as broken/corroded connectors, circuits and lights
18.01.04	ability to perform functional test of electrical system

Sub-task

18.02 Tests electrical components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

18.02.01	knowledge of types and sizes of components such as motors, solenoids, switches, batteries, cables, resistors, lights, circuit breakers, fuses, connectors, junction boxes, conduits, receptacles, plugs, Light Emitting Diode (LEDs) and sensors
18.02.02	knowledge of test procedures and techniques
18.02.03	knowledge of function of the circuits
18.02.04	knowledge of component operation
18.02.05	knowledge of faults and fault codes
18.02.06	ability to access/isolate circuit
18.02.07	ability to operate the diagnostic equipment
18.02.08	ability to interpret fault codes
18.02.09	ability to load test battery
18.02.10	ability to isolate faults and determine repair/replacement required

Sub-task

18.03 Repairs electrical system components. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

18.03.01 knowledge of repair and replacement procedures and techniques

18.03.02 knowledge of types, sizes, capabilities and limitations of wiring and electrical components

18.03.03 knowledge of components such as sockets, lamps, bulbs, lenses, switches and batteries

18.03.04 knowledge of compatible components

18.03.05 ability to load test battery

18.03.06 ability to replace components

18.03.07 ability to make adjustments such as voltage and ohm resistance

18.03.08 ability to verify functioning of replaced component

Sub-task

18.04 Repairs trailer body wiring and connections. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

18.04.01 knowledge of repair and replacement procedures and techniques

18.04.02 knowledge of types and sizes of connectors

18.04.03 knowledge of colour coding

18.04.04 knowledge of conduits/looms, junction boxes and terminals

18.04.05 ability to perform repair procedures

18.04.06 ability to verify operation of repaired and replaced wiring and connectors

Task 19 Maintains trailer mounted accessories.

Related Components: Pumps, compressors, blowers, hydro packs, lift cylinders, winches, lift decks, power lift gates, spreaders and compaction equipment.

Tools and Equipment: As list of hand, power, hydraulic, measuring, cutting and diagnostic tools and equipment.

Sub-task

19.01 Inspects trailer mounted accessories.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

19.01.01 knowledge of installation and maintenance specifications for specific accessories

19.01.02 knowledge of inspection procedures and techniques for specific accessories

19.01.03 knowledge of operation of trailer mounted accessories

19.01.04 ability to identify improperly installed and maintained trailer mounted accessories

Sub-task

19.02 Performs functional tests on hydraulic trailer mounted accessories.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

19.02.01 knowledge of operating procedures and techniques for trailer mounted accessories

19.02.02 knowledge of functional test procedures and techniques

19.02.03 knowledge of components and function of trailer mounted accessories

19.02.04 ability to start up and cycle the trailer mounted accessory

Supporting Knowledge & Abilities

19.02.05 ability to isolate faulty components

19.02.06 ability to determine need for specialized repairs

Sub-task

19.03 Repairs trailer mounted accessories.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

19.03.01 knowledge of repair and replacement procedures and techniques for specific accessories

19.03.02 knowledge of operation of trailer mounted accessories and components

19.03.03 knowledge of specifications on components

19.03.04 knowledge of replacement accessory components

19.03.05 ability to replace trailer mounted accessory components

19.03.06 ability to straighten components or mounting brackets

19.03.07 ability to realign components on mounting hardware

19.03.08 ability to relocate trailer mounted accessory to installation location

19.03.09 ability to verify operation of repaired and replaced accessory components

Task 20 Maintains hydraulic components.

Related Components: Automatic greasing system, lift cylinders, walking floors, lift decks, power lift gates and hydraulic steering units.

Tools and Equipment: Flow meter, test gauge, hand tools, air tools, jacks and lifting devices, pullers, presses, snap ring, pliers, picks, micrometers, vernier, callipers and feeler gauges.

Sub-task

20.01 Inspects hydraulic components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

20.01.01 knowledge of makes, models and sizes of components

20.01.02 knowledge of inspection procedures and techniques

20.01.03 knowledge of defects in lines, hoses, rods, mounting brackets, pins and bushings

20.01.04 knowledge of wear limits and tolerances

20.01.05 ability to diagnose defects/failures in system components

20.01.06 ability to assess components and verify parts

Sub-task

20.02 Tests hydraulic components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

20.02.01 knowledge of functional test procedures and techniques

20.02.02 knowledge of types, models and makes of hydraulic components

20.02.03 knowledge of causes of hydraulic failures such as lack of oil, incorrect oil, aeration, cavitation, damaged valves, broken lines, cylinder packing and overload

Supporting Knowledge & Abilities

20.02.04 ability to conduct pressure test

20.02.05 ability to diagnose cause of hydraulic system failures/malfunctions

20.02.06 ability to isolate fault and determine repairs or adjustment required

Sub-task

20.03 Repairs hydraulic components. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV	NV

20.03.01 knowledge of repair, replacement and adjustment procedures and techniques

20.03.02 knowledge of types, sizes and capability of system

20.03.03 knowledge of types and sizes of hoses, lines, fittings, cylinders, pumps, motors, reservoirs, filters and accumulators

20.03.04 knowledge of types, sizes and interchangeability of components

20.03.05 knowledge of limits and tolerances

20.03.06 knowledge of components that meet requirements

20.03.07 ability to measure shaft sizes, bore sizes and wear on end plates

20.03.08 ability to adjust pressures in pumps, control valves or pressure relief valves

20.03.09 ability to verify operation/condition of repaired/replaced components

20.03.10 ability to replace hydraulic components

20.03.11 ability to verify operation of repaired, replaced and/or adjusted components

BLOCK F

COOLING AND HEATING UNITS

Trends: *Towards more electronic controls, more environmentally friendly refrigerants, lighter, more efficient units and maintenance free units.*

Task 21 **Services heating and refrigeration unit.**

Related Components: Condenser, evaporator, compressor, diesel or electric power service, condenser fans, belts, 3-way valves, pilot solenoids, relays, wiring, battery, fuel tanks, mounting brackets, filters, hoses and tubing.

Tools and Equipment: Battery tester, wrenches and ratchets, hand tools, power tools, lifting tools, measuring tools, cutting and welding tools, computer and diagnostic tools.

Sub-task

21.01 Inspects and tests heating and refrigeration unit components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	no	yes	ND	NV	NV

21.01.01 knowledge of operating functions of heating and refrigeration units

21.01.02 knowledge of inspection procedures and techniques

21.01.03 knowledge of different fuels and refrigerants

21.01.04 knowledge of mounting and structural reinforcement specifications

21.01.05 knowledge of components such as lines, pressure evaporator, fuel tanks, burners, compressors, condensers, belts, valves and electronic controls

21.01.06 knowledge of requirement for repair specialists

21.01.07 ability to identify components

21.01.08 ability to locate components

Supporting Knowledge & Abilities

21.01.09 ability to start and operate unit and verify function of operations

21.01.10 ability to recognize worn belt, dead battery or empty fuel tank

Sub-task

21.02 Performs functional tests of heating and refrigeration unit components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	no	yes	ND	NV	NV

21.02.01 knowledge of cycle time and temperature

21.02.02 knowledge of functional test procedures and techniques

21.02.03 knowledge of electronic control procedures

21.02.04 knowledge of operation of the different types of control units

21.02.05 knowledge of capabilities of normal functioning unit such as cycle times, temperature settings and heating and cooling modes

21.02.06 ability to start and operate unit

21.02.07 ability to verify function of heating and cooling operations

21.02.08 ability to check for leaks

Sub-task

21.03 Repairs heating and refrigeration unit serviceable components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	no	no	ND	NV	NV

21.03.01	knowledge of repair, replacement and adjustment procedures and techniques for serviceable components such as belts, coolants and hoses
21.03.02	knowledge of serviceable components such as starter, battery, belt, pulley, fuel lines and tubing, fuel tank and brackets, rad cap and mounting fasteners
21.03.03	knowledge of types, sizes and capabilities of belts and various units
21.03.04	knowledge of structural mounting and reinforcement requirements
21.03.05	knowledge of tension settings for belts
21.03.06	ability to set belt to specified tension
21.03.07	ability to verify adjustments
21.03.08	ability to check and replenish coolants
21.03.09	ability to replace complete units or subcomponents
21.03.10	ability to verify operation of repaired, replaced and/or adjusted units or components

Task 22 Services auxiliary heating systems.

Related Components: Fuel tank, brackets, hoses, regulator, heater unit, mounting frame and structure for heating unit, coolant lines, connections, couplers, fans and connection systems.

Tools and Equipment: Leak detection equipment (soap, water, sniffer), hand tools, power tools, lifting tools, diagnostic tools, measuring tools, cutting and welding tools and pressure gauges.

Sub-task

22.01 Inspects auxiliary heater components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	no	yes	ND	NV	NV

22.01.01 knowledge of types of auxiliary heating systems and components such as propane, diesel, electric and other warming devices

22.01.02 knowledge of inspection procedures and techniques

22.01.03 knowledge of operation of auxiliary heating systems

22.01.04 knowledge of capabilities and limitations of auxiliary heating systems

22.01.05 ability to identify and locate components

22.01.06 ability to operate leak detection devices

22.01.07 ability to identify cracks, broken, damaged or worn components or mounting devices

Sub-task

22.02 Performs functional tests of auxiliary heater components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	no	yes	ND	NV	NV

22.02.01 knowledge of types, sizes, capabilities and limitations of auxiliary heater components

22.02.02 knowledge of functional test procedures and techniques

22.02.03 knowledge of operation procedures of auxiliary heater components

22.02.04 knowledge of requirement for repair specialist such as propane repairer, diesel mechanic and refrigeration technician

Supporting Knowledge & Abilities

22.02.05 ability to start and operate auxiliary heating unit

22.02.06 ability to monitor operation of unit

22.02.07 ability to diagnose malfunction in unit

Sub-task

22.03 Tests heating system for fuel/coolant leaks.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	no	no	ND	NV	NV

22.03.01 knowledge of operation of heating systems

22.03.02 knowledge of test procedures and techniques

22.03.03 knowledge of cooling system capacities and operating pressures

22.03.04 knowledge of different types of fuels and coolants

22.03.05 knowledge of fuel system pressures

22.03.06 knowledge of gauges and level indicators

22.03.07 knowledge of leak detection devices

22.03.08 ability to identify the type of system such as propane, diesel

22.03.09 ability to operate leak detection and pressuring equipment

22.03.10 ability to read the different types of gauges and equipment

22.03.11 ability to diagnose malfunctions

Sub-task

22.04 Repairs auxiliary heating systems and components.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU
NV	yes	yes	yes	yes	yes	yes	yes	no	no	ND	NV	NV

22.04.01 knowledge of repair and replacement procedures and techniques

22.04.02 knowledge of types, sizes and capabilities of heating systems and components

22.04.03 knowledge of capacities and limitations of heater systems and components

22.04.04 knowledge of structural reinforcement procedures

22.04.05 knowledge of types, sizes, capabilities and limitations of mounting brackets and hardware

22.04.06 knowledge of types, sizes, limitations and capabilities of coolant lines and hoses

22.04.07 knowledge of types of coolants such as long life, glycol and water

22.04.08 knowledge of repair/replacement procedures and techniques for lines and connectors

22.04.09 ability to fabricate components

22.04.10 ability to purge the system

22.04.11 ability to replace hoses

22.04.12 ability to section and clamp hoses

22.04.13 ability to verify repairs such as conducting pressure test

22.04.14 ability to verify operation of repaired/replaced components/systems

APPENDICES

TOOLS AND EQUIPMENT

Hand Tools

bars
bushing installer
caulking gun
chisels
clamps
crimping tool
die grinders
drills
files
flaring tool
grease gun
hack saw
hammer
magnet
multiplier
nibblers
picks
pliers
pulling tools
ratchets
rivet gun
sandpaper
scrapers
screwdrivers
seal driver
shears
side cutters
snips
sockets
spreaders
strippers
stud remover
trowel
tube cutters
wire brush
wire cutters
wrenches

Power and Hydraulic Tools

air tools
angle grinder
chisels
circular saw
drills
electric saw
hydraulic porta power tools
hydraulic press
jigs
power saw
punches
reciprocating saws
sanders
soldering iron

Lifting Tools

chain falls
come-alongs
fork lift
hoists
jacks
supports
wheel dolly

Computer and Diagnostic Tools

battery load tester
digital cameras
Digital Video Disc Player
electronic readers
personal computer
portable diagnostic unit
testers

Measuring Tools

- 5th wheel adjustment tool
- air brake analyzer
- brake drum gauges
- calculator
- callipers
- chalk line
- circuit tester
- dial indicator
- digital indicator
- Digital Volt Ohmmeter (DVOM)
- flow meter
- gauges
- level
- light tester
- micrometers
- multimeter
- oxy/gas analyzers
- plumb bob
- pogo stick
- pressure gauge
- ruler
- specialized measured tool
- spring scale
- square
- tape measure
- tension scale
- trailer alignment equipment
- voltmeter

Cutting/Welding Tools

- arc air gauging tool
- arc welder
- Gas Metal Arc Welder (GMAW)
- Gas Tungsten Arc Welder (GTAW)
- hole saws
- oxy acetylene
- plastic cutters
- propane torch
- welder

Stationary Tools

- band saws
- bench grinders
- brakes and shears
- die grinder
- drill press
- drum lathe
- hydraulic press

Safety Equipment

- eye protection
- eye wash station
- face shields
- fire blanket
- fire extinguishers
- fire hoses
- first aid station
- gloves
- leather apron
- leggings
- personal protection clothing
- protective harness
- safety boots
- safety cage
- safety signs
- self-contained breathing apparatus
- shields and guards
- showers
- ventilation equipment
- welder's helmet
- wheel chocks

APPENDIX “B”

BLOCKS AND TASKS WEIGHTING

BLOCK A OCCUPATIONAL SKILLS

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	National Average
%	NV	10	10	8	5	4	10	10	20	10	ND	NV	NV	10%

Task 1 Utilizes drawings, codes, standards, service manuals and Commercial Vehicle Safety Alliance (CVSA).

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	40	20	34	25	20	50	20	30	40	ND	NV	NV	31%

Task 2 Utilizes tools and measuring equipment.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	30	40	31	25	23	25	30	30	20	ND	NV	NV	28%

Task 3 Demonstrates common work practices and procedures.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	30	40	35	50	57	25	50	40	40	ND	NV	NV	41%

BLOCK B SUSPENSION SYSTEMS

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	National Average
%	NV	20	30	18	25	22	20	8	20	30	ND	NV	NV	21%

Task 4 Maintains air suspension systems.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	50	40	48	55	51	60	60	40	55	ND	NV	NV	51%

Task 5 Maintains spring suspension systems.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	40	40	35	35	32	30	30	40	40	ND	NV	NV	36%

Task 6 Maintains rubber block suspension systems.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	10	20	17	10	17	10	10	20	5	ND	NV	NV	13%

BLOCK C BRAKING SYSTEMS

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	National Average
%	NV	30	30	24	30	31	20	27	20	30	ND	NV	NV	27%

Task 7 Maintains foundation brake components.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	20	30	15	25	24	25	35	20	30	ND	NV	NV	25%

Task 8 Maintains air delivery components to brake systems.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	30	30	17	40	20	25	35	25	30	ND	NV	NV	28%

Task 9 Maintains hydraulic components to disc/drum brake systems.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	15	15	20	10	14	15	10	20	5	ND	NV	NV	14%

Task 10 Maintains electric brake system components.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	10	10	15	5	13	10	10	10	5	ND	NV	NV	10%

Task 11 Maintains Anti-lock Braking System (ABS) components.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	25	15	33	20	29	25	10	25	30	ND	NV	NV	23%

BLOCK D AXLES AND WHEEL ASSEMBLIES

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	National Average
%	NV	15	10	21	20	25	20	10	20	12	ND	NV	NV	17%

Task 12 Maintains axles and hubs.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	40	40	32	50	47	50	30	40	60	ND	NV	NV	43%

Task 13 Maintains steering and lift axles.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	40	30	31	25	35	20	40	40	10	ND	NV	NV	30%

Task 14 Services tires and rims.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	20	30	37	25	18	30	30	20	30	ND	NV	NV	27%

BLOCK E TRAILER CHASSIS, BODIES AND COUPLING UNITS

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	National Average
%	NV	20	15	20	15	13	20	35	20	15	ND	NV	NV	19%

Task 15 Maintains trailer chassis (frames, sub-frames and sliders).

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	10	25	18	30	26	20	15	20	30	ND	NV	NV	22%

Task 16 Maintains trailer bodies and components.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	10	10	21	20	22	20	17	20	25	ND	NV	NV	18%

Task 17 Maintains coupling units and landing gear.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	25	20	11	10	17	20	17	20	20	ND	NV	NV	18%

Task 18 Maintains electrical systems.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	25	25	27	30	13	20	17	20	10	ND	NV	NV	21%

Task 19 Maintains trailer mounted accessories.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	10	10	12	5	11	10	17	10	5	ND	NV	NV	10%

Task 20 Maintains hydraulic components.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	20	10	11	5	11	10	17	10	10	ND	NV	NV	11%

BLOCK F COOLING AND HEATING UNITS

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	National Average
%	NV	5	5	9	5	5	10	10	0	3	ND	NV	NV	6%

Task 21 Services heating and refrigeration unit.

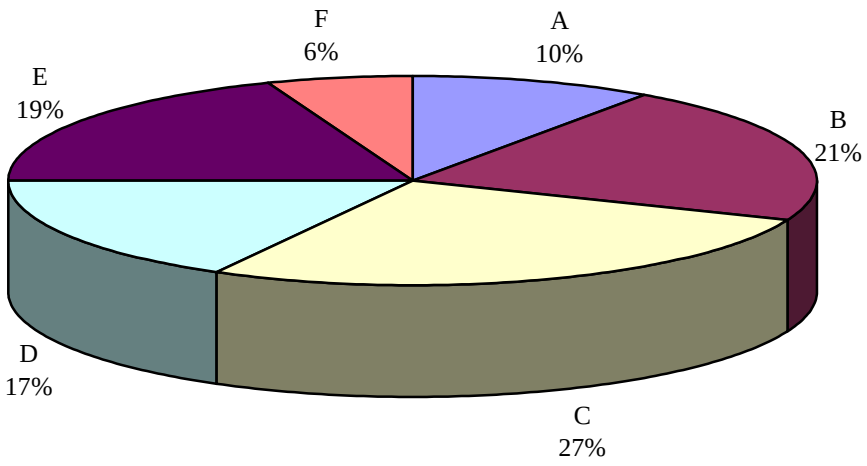
	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	75	60	57	80	66	75	90	0	50	ND	NV	NV	69%

Task 22 Services auxiliary heating systems.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	NU	
%	NV	25	40	43	20	34	25	10	0	50	ND	NV	NV	31%

APPENDIX “C”

PIE CHART *
Transport Trailer Technician



TITLES OF BLOCKS

Block A	Occupational Skills	Block D	Axles and Wheel Assemblies
Block B	Suspension Systems	Block E	Trailer Chassis, Bodies and Coupling Units
Block C	Braking Systems	Block F	Cooling and Heating Units

* The average percentage of the total number of questions on an interprovincial examination, assigned to assess each block of the analysis, as derived from the collective input from workers within the occupation from all areas of Canada. Interprovincial examinations typically have from one hundred up to one hundred and fifty multiple-choice questions on each examination.

TRANSPORT TRAILER TECHNICIAN (2003)

BLOCKS	TASKS	SUB-TASKS								
A **Occupational Skills**	**1.** Utilizes drawings, codes, standards, service manuals and Commercial Vehicle Safety Alliance (CVSA).	1.01 Interprets blueprints, drawings and schematics.	1.02 Interprets service manuals and technical bulletins.	1.03 Complies with government standards and regulations (federal/provincial/ municipal).						
	2. Utilizes tools and measuring equipment.	2.01 Uses and services hand tools.	2.02 Uses and services lifting tools.	2.03 Operates measuring tools.	2.04 Operates and services power tools.	2.05 Operates and services stationary tools.	2.06 Operates and services computers and diagnostic tools.			
	3. Demonstrates common work practices and procedures.	3.01 Installs fasteners, fittings and connectors.	3.02 Applies sealants and adhesives.	3.03 Installs gaskets and seals.	3.04 Installs hoses, tubing and wiring.	3.05 Performs minor trade-related welding operations.	3.06 Fabricates parts and components.	3.07 Modifies parts and components.	3.08 Cleans and lubricates parts and components.	3.09 Completes work-related documentation.
B Suspension Systems	**4.** Maintains air suspension systems.	4.01 Inspects air suspension systems and components.	4.02 Performs functional test of air suspension systems.	4.03 Repairs air suspension system components.						
	5. Maintains spring suspension systems.	5.01 Inspects spring suspension system and components.	5.02 Repairs spring suspension system components.							
	6. Maintains rubber block suspension systems.	6.01 Inspects rubber block suspension system and components.	6.02 Repairs rubber block suspension system components.							

TRANSPORT TRAILER TECHNICIAN (2003)

BLOCKS	TASKS	SUB-TASKS							
C Braking Systems	**7.** Maintains foundation brake components.	7.01 Inspects disc brake system.	7.02 Tests functional operation and adjustment of disc brakes.	7.03 Repairs disc brake components.	7.04 Repairs power screw assembly.	7.05 Repairs mounting assemblies.	7.06 Repairs hydraulic callipers.	7.07 Inspects drum brake systems.	7.08 Performs functional test of drum brake.	7.09 Repairs drum brake components.
	8. Maintains air delivery components to brake systems.	8.01 Inspects air delivery components to brake systems.	8.02 Performs functional test of brake delivery systems.	8.03 Repairs air delivery components of brake systems.						
	9. Maintains hydraulic components to disc/drum brake systems.	9.01 Inspects hydraulic components of brake systems.	9.02 Performs functional test of hydraulic systems.	9.03 Repairs hydraulic components in brake systems.						
	10. Maintains electric brake system components.	10.01 Inspects electric brake system components.	10.02 Performs functional test of electric brake systems.	10.03 Repairs electric brake system wiring and components.						
	11. Maintains Anti-lock Braking System (ABS) components.	11.01 Inspects Anti-lock Braking System (ABS) components.	11.02 Performs functional and diagnostic test on Anti-lock Braking Systems (ABS).	11.03 Repairs Anti-lock Braking System (ABS) components.						
D Axles and Wheel Assemblies	**12.** Maintains axles and hubs.	12.01 Inspects axles and hubs.	12.02 Tests bearing clearances on hubs.	12.03 Repairs axle and hub components.						
	13. Maintains steering and lift axles.	13.01 Inspects steering and lift axles.	13.02 Performs functional test of steering and lift axles.	13.03 Repairs steering and lift axle components.						

TRANSPORT TRAILER TECHNICIAN (2003)

BLOCKS	TASKS	SUB-TASKS			
E **Trailer Chassis, Bodies and Coupling Units**	**14.** Services tires and rims.	14.01 Inspects tires, rims and components.	14.02 Measures air pressure, tread depth and torque of wheel fasteners.	14.03 Maintains tires, rims and components.	
	15. Maintains trailer chassis (frames, sub-frames and sliders).	15.01 Inspects trailer chassis.	15.02 Diagnoses slider(s) and locking mechanism(s).	15.03 Repairs trailer chassis, frames, sub-frames and slider components.	
	16. Maintains trailer bodies and components.	16.01 Inspects trailer bodies and components.	16.02 Performs functional tests on trailer bodies and components.	16.03 Repairs trailer bodies and components.	
	17. Maintains coupling units and landing gear.	17.01 Inspects coupling units and landing gear.	17.02 Tests coupling units and landing gear.	17.03 Repairs coupling units, landing gear and/or components.	
	18. Maintains electrical systems.	18.01 Inspects electrical systems.	18.02 Tests electrical components.	18.03 Repairs electrical system components.	18.04 Repairs trailer body wiring and connections.
	19. Maintains trailer mounted accessories.	19.01 Inspects trailer mounted accessories.	19.02 Performs functional tests on hydraulic trailer mounted accessories.	19.03 Repairs trailer mounted accessories.	
	20. Maintains hydraulic components.	20.01 Inspects hydraulic components.	20.02 Tests hydraulic components.	20.03 Repairs hydraulic components.	

TRANSPORT TRAILER TECHNICIAN (2003)

BLOCKS	TASKS	SUB-TASKS			
Cooling and Heating Units	**21.** Services heating and refrigeration unit.	21.01 Inspects and tests heating and refrigeration unit components.	21.02 Performs functional tests of heating and refrigeration unit components.	21.03 Repairs heating and refrigeration unit serviceable components.	
	22. Services auxiliary heating systems.	22.01 Inspects auxiliary heater components.	22.02 Performs functional tests of auxiliary heater components.	22.03 Tests heating system for fuel/coolant leaks.	22.04 Repairs auxiliary heating system and components.