Occupational Analyses Series

Truck and Transport Mechanic

2000

Interprovincial Partnerships and Occupational Information Division

Division des Partenariats interprovinciaux et Information sur les carrières

Human ResourcesPartnerships Directorate

Direction des partenariats en ressources humaines

Disponible en français sous le titre :

Mécanicien/mécanicienne de camions et transport

The Canadian Council of Directors of Apprenticeship (CCDA) recognizes this occupational analysis as the national standard for the occupation of truck and transport mechanic.

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OTHER RELATED OCCUPATIONAL TITLES

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

- Commercial Transport Vehicle Mechanic
- Transport Truck Mechanic
- Truck and Coach Technician
- Truck and Transport 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 (1994)	7262
Bricklayer (2000)	7281
Cabinetmaker (2000)	7272
Carpenter (1998)	7271
Cement Finisher (1995)	7282
Construction Electrician (1994)	7241
Cook (1997)	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 (1997)	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) (1994)	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 (1995)	7252
Steamfitter-Pipefitter (1996)	7252
Steel Fabricator (Fitter) (1994)	7263
Tool and Die Maker (1997)	7232
Truck-Trailer Repairer (1994)	7321
Truck and Transport Mechanic (2000)	7321
Welder (1996)	7265

REQUESTS FOR THESE PUBLICATIONS SHOULD BE FORWARDED TO:

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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.

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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 completion of the sub-tasks are identified under this heading.

Related Components

All components of a specified project being undertaken by the truck and transport mechanic are identified under this heading.

Tools and Equipment

All tools and equipment necessary for the truck and transport mechanic 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 SubCommittee 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 analyses 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 ABREVIATIONS

NF: 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

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 "C")

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 analyzes 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 "D")

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

SCOPE OF THE TRUCK AND TRANSPORT MECHANIC OCCUPATION

Truck and transport mechanics inspect, troubleshoot, repair, replace and maintain operating systems and components. These include chassis and frames, brakes and steering, cab and body, engine and supporting systems, drive train, and accessories. In addition, truck and transport mechanics perform preventative maintenance and diagnose performance of vehicles.

Truck and transport mechanics work on buses, motor homes, tankers, and different types of trucks (dump trucks, flat beds, pick-up trucks, etc.) that are over 4,500 GVW (Gross Vehicle Weight). In some jurisdictions, truck and transport mechanics should check with their respective Departments of Transportation to determine their eligibility to perform inspections.

The truck and transport mechanic can be found in small repair shops, large fleet maintenance companies, public transportation companies and construction companies.

OCCUPATIONAL OBSERVATIONS

There are on-going changes in the trucking industry that the truck and transport mechanic must be aware of and be trained to work with these changes. Components and materials are better engineered to improve the aerodynamics of the truck and to reduce the amount and frequency of maintenance to the truck and components. Trucks have fewer mechanical parts, more power, and are able to carry more payloads. The components on the truck are more electronically controlled and require less servicing. The body of the truck and the components are made with lighter and stronger materials.

The truck and transport mechanic uses a variety of tools, equipment, and materials and works in difficult conditions. As a result, safety regulations have increased. To promote safety in the occupation and the industry, trucks are built with more user-friendly equipment and self-monitoring systems.

Because of an increase in environmental regulations, trucks have cleaner burning engines and lower emission levels. Also, more stringent regulations for the disposal of materials are in effect. The components on the trucks are becoming more environmentally friendly.

The design of trucks is continually changing to provide more comfort and a smoother ride for the operator, and a better "feel" for the road during operation.

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 which may lead to injury or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to cause an accident 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 onself, co-workers, the public and the environment.

As safety education is an integral part of a 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: *To the use of computers for the recording of data such as maintenance performed, planned maintenance schedules, parts availability and test results.*

Task 1 **Completes maintenance records and documents.**

Related Components: Company record forms, vehicle history, maintenance checklists, computer printouts.
Materials: None identified.

Tools and Equipment: Computer, data bases, writing implements.

Sub-task

1.01 **Documents work performed.**

Supporting Knowledge & Abilities

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

1.01.01 knowledge of documenting procedures

1.01.02 knowledge of type of information required

1.01.03 ability to document accurately

Sub-task

1.02 **Completes maintenance schedules and checklists.**

Supporting Knowledge & Abilities

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

1.02.01 knowledge of recording procedures

1.02.02 knowledge of standard maintenance schedules

1.02.03 knowledge of company policies and procedures

Supporting Knowledge & Abilities

1.02.04	ability to interpret manufacturers recommendations
1.02.05	ability to determine workable schedules
1.02.06	ability to manually record information
1.02.07	ability to use computer

Sub-task

1.03 Records road test results. **Supporting Knowledge & Abilities**

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

1.03.01	knowledge of types of road tests
1.03.02	knowledge of required information
1.03.03	ability to identify vehicle faults
1.03.04	ability to accurately and thoroughly record information
1.03.05	ability to use computer
1.03.06	ability to operate road test equipment

Sub-task

1.04 Records inspection results. **Supporting Knowledge & Abilities**

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

1.04.01	knowledge of types of inspections
1.04.02	knowledge of vehicle fault
1.04.03	knowledge of required information

Supporting Knowledge & Abilities

1.04.04	ability to record accurately all required information
1.04.05	ability to use computer

Task 2 Operates and maintains tools and equipment.

Related Components: Hand tools, power tools, safety equipment, special tools, measuring equipment.
Materials: Greases, lubricants, tape.

Tools and Equipment: Files, cutters.

Sub-task

2.01 Uses general hand tools.

Supporting Knowledge & Abilities

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

2.01.01	knowledge of types of hand tools
2.01.02	ability to use appropriate hand tools
2.01.03	ability to identify damaged tools
2.01.04	ability to maintain hand tools

Sub-task

2.02 Operates power tools.

Supporting Knowledge & Abilities

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

2.02.01	knowledge of types of power tools
2.02.02	knowledge of company policies and procedures

Supporting Knowledge & Abilities

2.02.03	ability to use appropriate power tools
2.02.04	ability to determine condition of power tools

Sub-task

2.03 Operates/uses measuring devices.

Supporting Knowledge & Abilities

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

2.03.01	knowledge of types of measuring devices
2.03.02	ability to use appropriate measuring devices
2.03.03	ability to identify damaged or defective measuring devices
2.03.04	ability to maintain measuring devices

Sub-task

2.04 Operates lifting and supporting equipment.

Supporting Knowledge & Abilities

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

2.04.01	knowledge of types of lifting and supporting equipment
2.04.02	knowledge of application of lifting and supporting equipment
2.04.03	knowledge of company policies and procedures
2.04.04	knowledge of equipment operating procedures
2.04.05	ability to set up lifting and supporting equipment
2.04.06	ability to identify required lifting and supporting equipment

Sub-task

2.05	**Sets up and operates diagnostic and testing equipment.**				**Supporting Knowledge & Abilities**						
NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV

2.05.01	knowledge of set-up procedures
2.05.02	knowledge of operation of equipment
2.05.03	knowledge of types of diagnostic and testing equipment
2.05.04	ability to determine required diagnostic test
2.05.05	ability to evaluate test results
2.05.06	ability to maintain equipment

Sub-task

2.06	**Sets up and operates staging equipment.**				**Supporting Knowledge & Abilities**						
NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	ND	NV

2.06.01	knowledge of types of staging equipment
2.06.02	knowledge of set-up procedures
2.06.03	knowledge of operating procedures
2.06.04	ability to select required staging equipment

Task 3 Inspects and cleans vehicle components.

Related Components: All vehicle operating systems and components.
Materials: Cleaning agents, cloths, lubricants.

Tools and Equipment: Brushes, cleaning equipment.

Sub-task

3.01 Inspects vehicle operating systems and related components.

Supporting Knowledge & Abilities

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

3.01.01	knowledge of vehicle operating systems and related components
3.01.02	knowledge of required manuals
3.01.03	knowledge of inspection procedures
3.01.04	knowledge of manufacturers□ specifications
3.01.05	knowledge of required inspection tools
3.01.06	knowledge of vehicle handling characteristics
3.01.07	knowledge of regulations (GVW-gross vehicle weight)
3.01.08	knowledge of vehicle maintenance history
3.01.09	ability to detect potential defects or damage
3.01.10	ability to verify alignments
3.01.11	ability to interpret information

Sub-task

3.02 Cleans vehicle components for inspection purposes.

Supporting Knowledge & Abilities

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

Supporting Knowledge & Abilities

3.02.01	knowledge of cleaning equipment and methods
3.02.02	knowledge of cleaning agents
3.02.03	knowledge of material safety data sheets
3.02.04	knowledge of potential safety hazards
3.02.05	knowledge of environmental regulations
3.02.06	ability to determine damage or defect

Sub-task

3.03 Interprets inspection results. **Supporting Knowledge & Abilities**

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

3.03.01	knowledge of types of inspection
3.03.02	knowledge of maintenance manual recommendations
3.03.03	ability to analyze test results of system
3.03.04	ability to identify component malfunction

Task 4 Conducts road tests.

Related Components: Vehicle.
Materials: None identified.

Tools and Equipment: Test equipment.

Sub-task

4.01 Determines type of road test required.

Supporting Knowledge & Abilities

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

4.01.01	knowledge of types of road tests
4.01.02	knowledge of company policies and procedures
4.01.03	knowledge of required road test equipment
4.01.04	ability to gather required information

Sub-task

4.02 Selects road test diagnostic equipment.

Supporting Knowledge & Abilities

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

4.02.01	knowledge of types of road test equipment
4.02.02	ability to select required test equipment depending on vehicle operating problems

Sub-task

4.03 Hooks-up road test diagnostic equipment.

Supporting Knowledge & Abilities

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

4.03.01	knowledge of hook-up procedures
4.03.02	ability to verify proper hook-up
4.03.03	ability to run trial test of equipment

Sub-task

4.04 Drives vehicle. **Supporting Knowledge & Abilities**

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

4.04.01	knowledge of standard operating conditions
4.04.02	knowledge of type of vehicle
4.04.03	knowledge of licensing requirements to test drive vehicle
4.04.04	ability to operate various types of vehicles (transport)
4.04.05	ability to gather required information

Sub-task

4.05 Interprets road test results. **Supporting Knowledge & Abilities**

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

4.05.01	knowledge of type of road test
4.05.02	knowledge of vehicle problem
4.05.03	ability to analyze road test results of vehicle
4.05.04	ability to identify vehicle operating problems

Task 5 Maintains vehicle.

Related Components: Vehicle operating systems and related components.
Materials: Lubricants, fluids, filters.

Tools and Equipment: Maintenance manuals, company policies and procedures, shop tools and equipment, vehicle history, computer, diagnostic equipment, Original Equipment Manufacturers (EOMs) manuals, Material Safety Data Sheets (MSDS), computer read-outs, requisitions, work orders, work sheets.

Sub-task

5.01 Replenishes fluids.

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

Supporting Knowledge & Abilities

5.01.01	knowledge of fluid types and classifications
5.01.02	knowledge of company policies and procedures
5.01.03	knowledge of maintenance schedules
5.01.04	knowledge of procedures for clean-up and disposal of fluids
5.01.05	ability to verify condition of fluids
5.01.06	ability to interpret manufacturers specifications
5.01.07	ability to drain fluids

Sub-task

5.02 Replaces filters.

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

Supporting Knowledge & Abilities

5.02.01	knowledge of filtering systems
5.02.02	knowledge of company policies and procedures
5.02.03	knowledge of maintenance schedules
5.02.04	knowledge of procedures for disposal of filters
5.02.05	ability to check condition of filters

Supporting Knowledge & Abilities

5.02.06	ability to interpret manufacturers specifications
5.02.07	ability to clean filters

Sub-task

5.03 Lubricates assemblies and components.

Supporting Knowledge & Abilities

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

5.03.01	knowledge of types of lubricants and their properties
5.03.02	knowledge of lubrication systems
5.03.03	knowledge of company policies and procedures
5.03.04	knowledge of maintenance schedules
5.03.05	ability to interpret manufacturers specifications
5.03.06	ability to select appropriate lubricant

Sub-task

5.04 Consults required documentation.

Supporting Knowledge & Abilities

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

5.04.01	knowledge of different types of manuals and documentation
5.04.02	knowledge of MSDS requirements
5.04.03	ability to access required information from manuals and documents/forms
5.04.04	ability to analyze technical information

BLOCK B

CHASSIS AND FRAMES

Trends: *Towards lighter but stronger materials; improved engineering of materials; smoother ride; lower maintenance costs; less maintenance, and, incorporated scaling systems.*

Task 6 Modifies length and height of frames.

Related Components: Frame rails, cross members, gusset, fasteners.
Materials: Frame rails, cross members, gussets, fasteners, required metals, and welding materials.

Tools and Equipment: Frame alignment machine, plumb bob, measuring equipment, basic hand tools, basic power tools, cutting tools, welding torch, lifting devices, cutting devices.

Sub-task

6.01 Cuts frames.

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

Supporting Knowledge & Abilities

6.01.01	knowledge of cutting procedures
6.01.02	knowledge of required cutting tools
6.01.03	knowledge of frame structure and materials
6.01.04	knowledge of company policies and procedures
6.01.05	ability to interpret manufacturers specifications
6.01.06	ability to measure accurately
6.01.07	ability to secure work area

Sub-task

6.02 Drills frames. **Supporting Knowledge & Abilities**

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

6.02.01	knowledge of drilling procedures
6.02.02	knowledge of required drilling tools and attachments
6.02.03	knowledge of materials
6.02.04	ability to interpret manufacturers specifications
6.02.05	ability to align pieces
6.02.06	ability to measure accurately

Sub-task

6.03 Welds frames and components. **Supporting Knowledge & Abilities**

(NOT COMMON CORE)

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

6.03.01	knowledge of welding procedures
6.03.02	knowledge of required welding equipment
6.03.03	knowledge of company policies and procedures
6.03.04	knowledge of welding materials
6.03.05	knowledge of frame materials
6.03.06	knowledge of frames and components
6.03.07	ability to interpret manufacturers recommendations

Supporting Knowledge & Abilities

6.03.08	ability to operate welding equipment
6.03.09	ability to secure work area

Sub-task

6.04 Replaces components. **Supporting Knowledge & Abilities**

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

6.04.01	knowledge of types of components
6.04.02	knowledge of potential hazards
6.04.03	knowledge of torque specifications
6.04.04	knowledge of alignment specifications and procedures
6.04.05	knowledge of required tools
6.04.06	knowledge of types and grades of fasteners
6.04.07	knowledge of reusable guidelines
6.04.08	ability to remove and install components according to procedures
6.04.09	ability to re-align components
6.04.10	ability to replace fasteners

Task 7 Works on suspensions.

Related Components: Springs, mounting devices, alignment devices, axle housings, valves, rubber block suspensions, spring suspension, air spring suspension, torsion bar suspension, walking beam suspension, hangers, torque rods, transverse rods, U-bolts, spring seats, shocks, shock brackets, saddles, and seats.
Materials: Greases, lubricants, fasteners, shim materials, spring steel.

Tools and Equipment: Re-alignment materials, measuring devices, lifting and supporting devices, shop manuals, hand tools, torque wrenches (large), power tools, hydraulic equipment, press, reamers, alignment machine, torch, magnetic drill.

Sub-task

7.01 Repairs suspensions. **Supporting Knowledge & Abilities**

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

7.01.01 knowledge of suspension systems and components

7.01.02 knowledge of affected components

7.01.03 knowledge of repair or replacement procedures

7.01.04 knowledge of adjustment procedures and specifications

7.01.05 ability to inspect parts and components for damage and wear

7.01.06 ability to remove and replace damaged/worn components

7.01.07 ability to make adjustments according to specifications

Sub-task

7.02 Modifies suspensions. **Supporting Knowledge & Abilities**

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

7.02.01 knowledge of suspension systems and components

7.02.02 knowledge of effects of modifications on related components

Supporting Knowledge & Abilities

7.02.03	knowledge of modification procedures
7.02.04	knowledge of legislated requirements applicable to suspension systems modifications
7.02.05	ability to interpret manufacturers recommendations
7.02.06	ability to install additional components

Sub-task

7.03 Rebuilds suspensions. **Supporting Knowledge & Abilities**

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

7.03.01	knowledge of types of rebuilds
7.03.02	knowledge of components and their operation
7.03.03	knowledge of supporting systems
7.03.04	knowledge of testing procedures
7.03.05	ability to interpret manufacturers recommendations
7.03.06	ability to remove and install components

Task 8 Works on hitches and couplers.

Related Components:	5th wheel, pintle hitch, controls, slides, related hardware, king pin, Teflon plate. Materials: Shop supplies, lubricants, and metals.
Tools and Equipment:	5th wheel adjuster, pin gauge, pry bar, gauges, hand tools, power tools, welding equipment, lifting and supporting devices, specialized tools.

Sub-task

8.01 Troubleshoots hitches and couplers.

Supporting Knowledge & Abilities

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

8.01.01	knowledge of hitching and coupling systems and their related components
8.01.02	knowledge of inspection and testing procedures
8.01.03	ability to interpret manufacturers□ specifications
8.01.04	ability to inspect and test hitching and coupling systems
8.01.05	ability to identify damaged parts and components
8.01.06	ability to interpret test results

Sub-task

8.02 Removes hitches and couplers.

Supporting Knowledge & Abilities

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

8.02.01	knowledge of removal procedures
8.02.02	knowledge of disassembly procedures
8.02.03	knowledge of supporting systems
8.02.04	knowledge of types of hitches and couplers
8.02.05	ability to disassemble according to specifications

Sub-task

8.03 Repairs hitches and couplers.

Supporting Knowledge & Abilities

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

Supporting Knowledge & Abilities

8.03.01	knowledge of types of hitching and couplings
8.03.02	knowledge of supporting systems
8.03.03	knowledge of repair procedures
8.03.04	knowledge of component operation
8.03.05	ability to replace components

Sub-task

8.04 Installs hitches and couplers.

Supporting Knowledge & Abilities

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

8.04.01	knowledge of supporting systems
8.04.02	knowledge of assembly procedures
8.04.03	knowledge of components and controls
8.04.04	knowledge of installation procedures
8.04.05	knowledge of welding procedures
8.04.06	ability to assemble hitches and couplers
8.04.07	ability to fabricate mounting and hardware
8.04.08	ability to interpret design instructions
8.04.09	ability to install controls and components

BLOCK C

AIR SYSTEMS, BRAKES AND STEERING

Trends: *Better engineering resulting in greater efficiency; better serviceability of systems; use of anti-skid devices; lighter materials; improved cooling systems for brakes; discs as opposed to drums; less maintenance; environmentally improved (removal of asbestos); towards a better feel for the road; more electronics in the steering systems (steer-by-wire); longer maintenance intervals, more stringent regulations.*

Task 9 Works on air systems.

Related Components: Air compressor, reservoir, lines, dryer, valves, gauges, governor, chambers, filters, alcohol evaporator, air compressor drives.
Materials: Rubber hoses, fittings, plastic lines, O-ring, sealant, repair kit, fasteners, fluids, lubricants, soapy water.

Tools and Equipment: Listening devices, gauges, hand tools, power tools, multimeter, timing devices, pullers.

Sub-task

9.01 Troubleshoots air systems. **Supporting Knowledge & Abilities**

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

9.01.01	knowledge of inspection and test procedures
9.01.02	knowledge of air systems and components
9.01.03	knowledge of air system specifications
9.01.04	ability to inspect systems and components
9.01.05	ability to identify damaged and worn parts and components
9.01.06	ability to interpret test results

Sub-task

9.02 Disassembles air systems. **Supporting Knowledge & Abilities**

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

9.02.01	knowledge of disassembly procedures
9.02.02	knowledge of manufactures recommendations
9.02.03	knowledge of air systems and components
9.02.04	knowledge of supporting systems

Sub-task

9.03 Repairs air systems. **Supporting Knowledge & Abilities**

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

9.03.01	knowledge of adjustment procedures
9.03.02	knowledge of types of components
9.03.03	knowledge of guidelines for reusable parts
9.03.04	knowledge of repair procedures and specifications
9.03.05	knowledge of system operation
9.03.06	knowledge of applicable regulations
9.03.07	ability to replace parts and components
9.03.08	ability to identify damaged or worn parts

Sub-task

9.04 Rebuilds air systems. **Supporting Knowledge & Abilities**

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

Supporting Knowledge & Abilities

9.04.01	knowledge of types of rebuilds
9.04.02	knowledge of air systems and components
9.04.03	knowledge of testing procedures
9.04.04	ability to interpret manufacturers recommendations
9.04.05	ability to replace parts and components

Sub-task

9.05 Installs air systems.

Supporting Knowledge & Abilities

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

9.05.01	knowledge of assembly procedures
9.05.02	knowledge of installation procedures
9.05.03	knowledge of supporting systems
9.05.04	ability to install parts and components

Task 10 Works on braking systems.

Related Components: Slack adjusters (automatic/manual), drums, shoes, hardware, cams, bushings, bearings, brake chambers, backing plates, spiders, wheel speed sensors, modulators, valves, ECU, boosters, master cylinder, calipers, rotors.
Materials: Solvents, soaps, fluids.

Tools and Equipment: Specialized diagnostic equipment meter, lifting and supporting devices, brake bleeder, brake lathes, hand tools, power tools.

Sub-task

10.01 Troubleshoots braking systems. **Supporting Knowledge & Abilities**

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

10.01.01	knowledge of braking systems and braking components
10.01.02	knowledge of inspection and test procedures
10.01.03	knowledge of supporting systems
10.01.04	ability to inspect and test braking systems
10.01.05	ability to identify damaged or worn parts

Sub-task

10.02 Disassembles and assembles braking systems. **Supporting Knowledge & Abilities**

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

10.02.01	knowledge of disassembly and assembly procedures
10.02.02	knowledge of braking systems and components
10.02.03	knowledge of supporting systems
10.02.04	ability to interpret manufacturers specifications

Sub-task

10.03 Repairs braking systems. **Supporting Knowledge & Abilities**

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

10.03.01	knowledge of adjustment procedures
10.03.02	knowledge of repair and replacement procedures

Supporting Knowledge & Abilities

10.03.03	ability to identify damaged and worn parts
10.03.04	ability to remove and replace components
10.03.05	ability to make adjustments
10.03.06	ability to test braking systems
10.03.07	ability to interpret test results

Sub-task

10.04 Rebuilds braking systems.

Supporting Knowledge & Abilities

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

10.04.01	knowledge of types of brakes and braking systems
10.04.02	knowledge of rebuild procedures
10.04.03	knowledge of manufacturers specifications and recommendations

Task 11 Works on steering systems.

Related Components:	Steering box (es), steering pump, hoses, steering columns, arms, tie rod and ends, king pins, u-joints, shafts, assist cylinders, fluids, spindles, reservoirs, filters, belts and gears, pulleys, couplings. Materials: Fluids, lubricants, fasteners.
Tools and Equipment:	Wheel alignment machine, steering analyzer, vehicle history, hand tools, specialty tools, lifting and supporting devices.

Sub-task

11.01 Troubleshoots steering systems.

Supporting Knowledge & Abilities

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

11.01.01	knowledge of steering systems and components
11.01.02	knowledge of steering system specifications
11.01.03	knowledge of inspection and testing procedures
11.01.04	ability to inspect and test components
11.01.05	ability to interpret test results
11.01.06	ability to identify damaged and worn parts and components

Sub-task

11.02 Disassembles and reassembles steering systems.

Supporting Knowledge & Abilities

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

11.02.01	knowledge of steering systems and components
11.02.02	knowledge of disassembly and assembly procedures
11.02.03	knowledge of supporting systems
11.02.04	ability to interpret manufacturers□ specifications

Sub-task

11.03 Repairs steering systems.

Supporting Knowledge & Abilities

NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK

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

Supporting Knowledge & Abilities

11.03.01	knowledge of repair and replacement procedures
11.03.02	knowledge of adjustment procedures
11.03.03	knowledge of steering systems and components
11.03.04	ability to remove and replace damaged components
11.03.05	ability to make adjustments according to specifications
11.03.06	ability to test operation of steering systems after repair

Sub-task

11.04 Rebuilds steering system components.

Supporting Knowledge & Abilities

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

11.04.01	knowledge of disassembly procedures
11.04.02	knowledge of rebuild procedures
11.04.03	knowledge of components
11.04.04	knowledge of supporting systems
11.04.05	ability to interpret manufacturers specifications
11.04.06	ability to disassemble components
11.04.07	ability to test rebuild
11.04.08	ability to assemble components

Task 12 Works on tires, wheels, rims and hubs.

Related Components: Bearings, tires, wheels, hubs, cover, locking spindles, rims, mounting drums, discs, king pin, hardware, seals, wedges.
Materials: Sealants, lubricants, soapy water.

Tools and Equipment: Dial indicators, balancers, specialized equipment, torque wrenches, lifting and supporting devices, gauges, air chuck.

Sub-task

12.01 Troubleshoots tires, wheels, rims and hubs.

Supporting Knowledge & Abilities

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

12.01.01	knowledge of tires, wheels, rims and hubs and specifications
12.01.02	knowledge of inspection and test procedures
12.01.03	ability to inspect and test tires, wheels, rims and hubs
12.01.04	ability to interpret test results

Sub-task

12.02 Removes tires, wheels, rims and hubs.

Supporting Knowledge & Abilities

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

12.02.01	knowledge of removal procedures
12.02.02	knowledge of disassembly procedures
12.02.03	ability to interpret manufacturers recommendations and specifications
12.02.04	ability to disassemble tires, wheels, rims and hubs

Sub-task

12.03 Repairs tires, wheels, rims and hubs.

Supporting Knowledge & Abilities

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

12.03.01	knowledge of repair and replacement procedures
12.03.02	knowledge of adjustment procedures
12.03.03	ability to identify damaged or worn parts
12.03.04	ability to replace damaged or worn components
12.03.05	ability to adjust tires, wheels, rims and hubs according to specifications
12.03.06	ability to test tires, wheels, rims and hubs

Sub-task

12.04 Installs tires, wheels, rims and hubs.

Supporting Knowledge & Abilities

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

12.04.01	knowledge of assembly procedures and specifications
12.04.02	knowledge of installation procedures
12.04.03	ability to interpret manufacturers recommendations
12.04.04	ability to reassemble tires, wheels, rims and hubs

BLOCK D

ELECTRICAL AND ELECTRONIC SYSTEMS

Trends: *Greater emphasis placed on electrical and electronic systems.*

Task 13 Works on electrical systems.

Related Components: Batteries, belts, connections.
Materials: None identified.

Tools and Equipment: Battery tester, hand tools, manuals, wire brush, DVOM, specialized diagnostic equipment, jumper cables.

Sub-task

13.01 Maintains batteries.

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

Supporting Knowledge & Abilities

13.01.01 knowledge of batteries and battery specifications

13.01.02 ability to check battery condition

13.01.03 ability to check electrolyte condition and levels

13.01.04 ability to load-test batteries

Sub-task

13.02 Maintains belts.

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

Supporting Knowledge & Abilities

13.02.01 knowledge of belt specifications

13.02.02 ability to determine belt condition and tension

13.02.03 ability to adjust and replace belts

Sub-task

13.03 Maintains components and connections.

Supporting Knowledge & Abilities

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

13.03.01	knowledge of electrical continuity
13.03.02	ability to inspect components and connections
13.03.03	ability to identify damaged or worn parts and poor connections
13.03.04	ability to clean and secure terminals and cable connections

Task 14 Works on charging systems.

Related Components: Alternators, generators, regulators, battery cables, wiring, fuses and circuit breakers, gauges.
Materials: None identified.

Tools and Equipment: Hand and power tools, shop equipment, electrical tools and equipment, DVOM, specialized equipment.

Sub-task

14.01 Troubleshoots and tests charging systems and components.

Supporting Knowledge & Abilities

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

14.01.01	knowledge of charging systems and components
14.01.02	knowledge of charging system specifications
14.01.03	knowledge of inspection and test procedures
14.01.04	ability to inspect and test charging system parts and components

Supporting Knowledge & Abilities

14.01.05	ability to interpret test results
14.01.06	ability to identify damaged or worn charging system parts and components

Sub-task

14.02 Disassembles charging systems and components.

Supporting Knowledge & Abilities

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

14.02.01	knowledge of disassembly procedures
14.02.02	knowledge of supporting systems
14.02.03	ability to interpret manufacturers specifications

Sub-task

14.03 Repairs charging systems and components.

Supporting Knowledge & Abilities

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

14.03.01	knowledge of procedures for repairing or replacing charging system parts and components
14.03.02	ability to interpret manufacturers specifications
14.03.03	ability to remove and replace damaged and worn parts and components

Sub-task

14.04 Reassembles charging systems and components.

Supporting Knowledge & Abilities

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

Supporting Knowledge & Abilities

14.04.01	knowledge of assembly procedures
14.04.02	ability to interpret manufacturers□ specifications
14.04.03	ability to test repairs

Task 15 Works on starting systems.

Related Components: Starters and solenoids, cables, connectors, batteries, relays, switches.
Materials: None identified.

Tools and Equipment: Hand and power tools, shop equipment, specialized equipment, DVOM.

Sub-task

15.01 Troubleshoots and tests starting systems and components.

Supporting Knowledge & Abilities

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

15.01.01	knowledge of starting systems and components
15.01.02	knowledge of starting systems specifications
15.01.03	knowledge of inspection and test procedures
15.01.04	ability to inspect and test starting system parts and components
15.01.05	ability to interpret test results
15.01.06	ability to identify damaged or worn starting system parts and components

Sub-task

15.02 Disassembles starting systems and components.

Supporting Knowledge & Abilities

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

15.02.01	knowledge of disassembly procedures
15.02.02	knowledge of supporting systems
15.02.03	ability to interpret manufacturers recommendations

Sub-task

15.03 Repairs starting systems and components.

Supporting Knowledge & Abilities

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

15.03.01	knowledge of procedures for repairing or replacing starting systems, parts and components
15.03.02	ability to interpret manufacturers specifications
15.03.03	ability to remove and replace damaged and worn parts and components

Sub-task

15.04 Reassembles starting systems and components.

Supporting Knowledge & Abilities

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

15.04.01	knowledge of assembly procedures
15.04.02	ability to interpret manufacturers specifications
15.04.03	ability to test repairs

Task 16 Works on ignition systems.

Related Components: Magneto coils, condensers, points distributors, H.T. wire, spark plugs, switches, resistors, wiring, relays, pick-up coils, distributors caps, rotors.
Materials: None identified.

Tools and Equipment: Hand and power tools, shop tools, electrical tools and equipment, scope scanners, DVOM.

Sub-task

16.01 Troubleshoots and tests ignition systems and components.

Supporting Knowledge & Abilities

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

16.01.01	knowledge of ignition systems and components
16.01.02	knowledge of ignition system specifications
16.01.03	knowledge of inspection and test procedures
16.01.04	ability to inspect and test ignition system parts and components
16.01.05	ability to interpret test results
16.01.06	ability to identify damaged or worn ignition system parts and components

Sub-task

16.02 Disassembles ignition systems and components.

Supporting Knowledge & Abilities

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

16.02.01	knowledge of disassembly procedures
16.02.02	knowledge of supporting systems
16.02.03	ability to interpret manufacturers recommendations

Sub-task

16.03 Repairs ignition systems and components. **Supporting Knowledge & Abilities**

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

16.03.01	knowledge of procedures for repairing or replacing ignition system parts and components
16.03.02	ability to interpret manufacturers□ specifications
16.03.03	ability to remove and replace damaged and worn parts and components

Sub-task

16.04 Reassembles ignition systems and components. **Supporting Knowledge & Abilities**

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

16.04.01	knowledge of assembly procedures
16.04.02	ability to interpret manufacturers□ specifications
16.04.03	ability to test repairs

Task 17 Works on electrical conductors and connectors.

Related Components: Wiring, single and multiple connectors, fuses, circuit breakers. Materials: None identified.

Tools and Equipment: Hand and power tools, shop tools and equipment, electrical tools and equipment, wire strippers.

Sub-task

17.01 Troubleshoots and tests electrical conductors. **Supporting Knowledge & Abilities**

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

Supporting Knowledge & Abilities

17.01.01	knowledge of electrical conductors and connectors
17.01.02	knowledge of inspection and test procedures
17.01.03	ability to interpret manufacturers specifications
17.01.04	ability to inspect and test electrical conductors and connectors
17.01.05	ability to interpret test results
17.01.06	ability to identify damaged electrical conductors or connectors
17.01.07	ability to use conductors and connectors

Sub-task

17.02 Disassembles electrical conductors.

Supporting Knowledge & Abilities

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

17.02.01	knowledge of disassembly procedures
17.02.02	knowledge of supporting systems
17.02.03	ability to interpret manufacturers recommendations

Sub-task

17.03 Repairs electrical conductors.

Supporting Knowledge & Abilities

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

17.03.01	knowledge of procedures for repairing or replacing electrical conductors and connectors

Supporting Knowledge & Abilities

	17.03.02	ability to interpret manufacturers specifications
	17.03.03	ability to remove or replace damaged electrical conductors and connectors

Sub-task

17.04 Reassembles electrical conductors.

Supporting Knowledge & Abilities

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

	17.04.01	knowledge of assembly procedures
	17.04.02	ability to interpret manufacturers specifications
	17.04.03	ability to test repairs

Task 18 Works on electronic components.

Related Components:	On-board computer system, communication satellites, diagnostic equipment. Materials: Shop supplies, non serviceable components.
Tools and Equipment:	Ohmmeters, voltmeters, test rights, specialty tools, crimping solder, continuity testers.

Sub-task

18.01 Troubleshoots and tests electronic components.

Supporting Knowledge & Abilities

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

	18.01.01	knowledge of electronic components
	18.01.02	knowledge of inspection and test procedures

Supporting Knowledge & Abilities

18.01.03	ability to interpret manufacturers specifications
18.01.04	ability to inspect and test electronic components
18.01.05	ability to interpret test results
18.01.06	ability to identify damaged electronic components

Sub-task

18.02 Replaces electronic components.

Supporting Knowledge & Abilities

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

18.02.01	knowledge of procedures for replacing electronic components
18.02.02	ability to interpret manufacturers specifications
18.02.03	ability to remove and replace damaged electronic components
18.02.04	ability to test repairs

Task 19 Works on electrical and electronic accessories.

Related Components: Instrument gauges, entertainment and comfort accessories, radio, wipers, light system, sensors, GPS.
Materials: None identified.

Tools and Equipment: Standard mechanic s tool kit, test light, DVOM, soldering iron/gun, wire cutters, wire strippers.

Sub-task

19.01 Troubleshoots electrical and electronic accessories.

Supporting Knowledge & Abilities

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

19.01.01	knowledge of electrical and electronic accessories
19.01.02	knowledge of inspection and test procedures
19.01.03	ability to interpret manufacturers□ specifications
19.01.04	ability to inspect and test electrical and electronic accessories
19.01.05	ability to interpret test results
19.01.06	ability to identify damaged electrical and electronic accessories

Sub-task

19.02 Disassembles electrical and electronic accessories.

Supporting Knowledge & Abilities

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

19.02.01	knowledge of disassembly procedures
19.02.02	knowledge of supporting systems
19.02.03	ability to interpret manufacturers□ recommendations

Sub-task

19.03 Repairs electrical and electronic accessories.

Supporting Knowledge & Abilities

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

Supporting Knowledge & Abilities

19.03.01	knowledge of procedures for repairing or replacing electrical and electronic accessories
19.03.02	ability to interpret manufacturers specifications
19.03.03	ability to remove or replace damaged electrical and electronic accessories

Sub-task

19.04 Reassembles electrical and electronic accessories.

Supporting Knowledge & Abilities

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

19.04.01	knowledge of assembly procedures
19.04.02	ability to interpret manufacturers specifications
19.04.03	ability to test repairs

BLOCK E

CAB AND BODY

Trends: *More efficient operation of electrical systems; increased comfort; better engineering; greater safety guidelines; more monitoring systems; different types of refrigerants; more environmental regulations; more environmental friendly materials; electronic climate controls; user friendly equipment; self-monitoring systems; move to unibodies; greater use of corrosion resistant materials; lower centre of gravity for stability; see-through materials; increased payloads; improved aerodynamics; lighter and stronger materials; quieter cab;*

more ergonomically designed; more bonding to reduce weight and appearance (replacing rivets).

Task 20 Works on HVAC (Heating, Ventilation, Air Conditioning) and refrigeration systems.

Related Components: Compressor, clutch, drives, receiver dryer, expansion valve, evaporator, pressure switches, thermo-couple, monitor devices, controls condenser, hoses, lines, refrigerants, lubricants, filter dryer. Materials: Dye, nitrogen, lubricants, soapy water.

Tools and Equipment: Flashlight, leak detector, specialized diagnostic equipment, charging station, recovery unit, leak detector, nitrogen station, basic hand tools, refrigerant analyzer, power tools.

Sub-task

20.01 Troubleshoots HVAC and refrigeration systems.

Supporting Knowledge & Abilities

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

20.01.01	knowledge of HVAC and refrigeration systems and components
20.01.02	knowledge of supporting systems
20.01.03	knowledge of systems specifications, refrigerants and legislated requirements
20.01.04	knowledge of inspection and test procedures
20.01.05	ability to inspect and test systems
20.01.06	ability to interpret test results
20.01.07	ability to identify damaged and worn HVAC and refrigeration systems parts and components

Sub-task

20.02 Disassembles HVAC and refrigeration systems.

Supporting Knowledge & Abilities

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

Supporting Knowledge & Abilities

20.02.01	knowledge of disassembly procedures
20.02.02	knowledge of supporting systems
20.02.03	ability to interpret manufacturers recommendations

Sub-task

20.03 Repairs HVAC and refrigeration systems.

Supporting Knowledge & Abilities

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

20.03.01	knowledge of repair and replacement procedures
20.03.02	knowledge of regulations
20.03.03	ability to interpret manufacturers specifications
20.03.04	ability to remove and replace damaged or worn parts and components
20.03.05	ability to purge and recharge system in accordance with legislated requirements
20.03.06	ability to test repairs

Sub-task

20.04 Installs HVAC and refrigeration systems.

Supporting Knowledge & Abilities

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

20.04.01	knowledge of installation procedures
20.04.02	knowledge of assembly procedures

20.04.03 knowledge of supporting systems

Supporting Knowledge & Abilities

20.04.04 ability to interpret manufacturers specifications

20.04.05 ability to test installation

Task 21 Works on trailer bodies.

Related Components: Doors, bumpers, tanks, landing gear, frames, valves, manifolds, piping, gauges, transfer pumps.
Materials: Bonding compounds, sealants, abrasives, shop supplies hardware, metal.

Tools and Equipment: Smoke bomb, hand tools, power tools, lifting and supporting devices, clamping equipment, specialized tools, cutting tools, staging platform.

Sub-task

21.01 Troubleshoots trailer body components.

Supporting Knowledge & Abilities

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

21.01.01 knowledge of specifications

21.01.02 knowledge of inspection and test procedures

21.01.03 knowledge of trailer body components

21.01.04 ability to inspect and test components

21.01.05 ability to interpret test results

21.01.06 ability to identify damaged and worn trailer body components

Sub-task

21.02 Removes trailer body components.

Supporting Knowledge & Abilities

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

21.02.01	knowledge of removal procedures
21.02.02	knowledge of disassembly procedures
21.02.03	knowledge of supporting systems
21.02.04	ability to disassemble components

Sub-task

21.03 Repairs trailer body components.

Supporting Knowledge & Abilities

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

21.03.01	knowledge of repair procedures
21.03.02	ability to interpret manufacturers specifications
21.03.03	ability to replace damaged components
21.03.04	ability to test components

Sub-task

21.04 Installs trailer body mechanical components.

Supporting Knowledge & Abilities

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

21.04.01	knowledge of assembly procedures

21.04.02 knowledge of installation procedures

Supporting Knowledge & Abilities

21.04.03 ability to interpret manufacturers specifications

21.04.04 ability to assembly components

Task 22 Works on cab body and trim.

Related Components: Cab assembly, doors, windows, hoods, bumpers, fenders, fairings, hardware.
Materials: Bonding compounds, paint, sealants, abrasives, finishing materials, shop supplies, hardware, metal, plywood, soapy water.

Tools and Equipment: Leak detector, hand tools, power tools, lifting and supporting devices, specialized tools, welding equipment, clamping equipment, cutting tools.

Sub-task

22.01 Removes cab body trim and components.

Supporting Knowledge & Abilities

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

22.01.01 knowledge of cab body trim and components

22.01.02 knowledge of cab body and trim specifications

22.01.03 knowledge of types of damage and defects

22.01.04 knowledge of removal procedures

22.01.05 knowledge of disassembly procedures

22.01.06 ability to detect damaged or broken components

22.01.07 ability to disassemble components

22.01.08 ability to inspect cab body and trim

Sub-task

22.02 Repairs cab body and trim. **Supporting Knowledge & Abilities**

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

22.02.01 knowledge of repair and replacement procedures

22.02.02 ability to interpret manufacturers specifications

22.02.03 ability to replace components

Sub-task

22.03 Installs cab body and trim. **Supporting Knowledge & Abilities**

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

22.03.01 knowledge of assembly procedures

22.03.02 knowledge of installation procedures

22.03.03 ability to interpret manufacturers specifications

22.03.04 ability to assemble components

BLOCK F

ENGINE AND SUPPORTING SYSTEMS

Trends: *Increased horsepower; fewer mechanical parts, more efficient operations considerations; environmental (emission controls-cleaner burning engines); lighter engines; increase in use of more precise tools; increase in specialized training; higher engine temperature to meet emission standards; larger cooling system capacity; small and lighter radiators; longer interval between coolant changes; better design for better aerodynamics and cooling capacity; more environmental regulations for disposal of coolants; synthetic oils; longer intervals between oil changes in part due to more efficient filters; better design of lubrication systems; higher fuel injection pressure; computer controlled; alternate fuels; fewer moving parts; quieter operation of exhaust and intake system; lower emission levels.*

Task 23 Works on engines.

Related Components: Cylinder heads, turbo, cylinder, liners, valves, pistons, rods, crank shaft, cam shaft, valve train, fly wheel, etc.
Materials: Dyes, solvents, rags, abrasives, brushes, lubricants, acids.

Tools and Equipment: Black light, manuals, dynamometer, diagnostic tools, hand tools, power tools, P.P.E. (Personal Protective Equipment).

Sub-task

23.01 Troubleshoots engine operation.

Supporting Knowledge & Abilities

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

23.01.01	knowledge of engine and components operation
23.01.02	knowledge of inspection and test procedures
23.01.03	ability to interpret manufacturers□ specifications
23.01.04	ability to inspect and test engine operation, parts and components
23.01.05	ability to troubleshoot mechanical engine management system
23.01.06	ability to interpret test results

					23.01.07	ability to identify damaged or worn engine parts					

Sub-task

23.02 Disassembles engines. **Supporting Knowledge & Abilities**

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

23.02.01	knowledge of disassembly procedures
23.02.02	knowledge of supporting systems
23.02.03	ability to interpret manufacturers specifications

Sub-task

23.03 Repairs engines. **Supporting Knowledge & Abilities**

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

23.03.01	knowledge of engine repair procedures
23.03.02	ability to interpret manufacturers specifications
23.03.03	ability to identify damaged and worn parts and components
23.03.04	ability to replace components
23.03.05	ability to test repair

Sub-task

23.04 Installs engines. **Supporting Knowledge & Abilities**

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

23.04.01	knowledge of assembly procedures
23.04.02	knowledge of installation procedures
23.04.03	knowledge of supporting systems
23.04.04	ability to interpret manufacturers specifications

	23.04.05	ability to assemble engine parts and components

Sub-task

23.05 Rebuilds engine components.

Supporting Knowledge & Abilities

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

23.05.01	knowledge of disassembly procedures
23.05.02	knowledge of rebuild procedures
23.05.03	knowledge of components
23.05.04	knowledge of supporting systems
23.05.05	ability to interpret manufacturers□ specifications
23.05.06	ability to disassemble components
23.05.07	ability to test rebuild

Task 24 Works on cooling systems.

Related Components:	Radiators, water pump, thermostat, drives, belts, controlling devices, gauges, fan, oil coolers, by-pass, sensors, hoses, lines, pulley, cap, fan hub, fan blade, shroud, etc. Materials: Dye, hardware, gasket material, sealants, hoses, abrasives, solder, shop supplies, coolant.
Tools and Equipment:	Coolant testing materials, diagnostic equipment, specialized equipment, hand tools, power tools.

Sub-task

24.01 Troubleshoots cooling systems.

Supporting Knowledge & Abilities

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

24.01.01	knowledge of cooling systems and components operation
24.01.02	knowledge of supporting systems

Supporting Knowledge & Abilities

24.01.03	knowledge of coolants, additives and contaminants
24.01.04	knowledge of cooling system specifications
24.01.05	ability to inspect and test cooling system and components
24.01.06	ability to interpret test results
24.01.07	ability to identify damaged and worn parts and components

Sub-task

24.02 Disassembles cooling systems.

Supporting Knowledge & Abilities

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

24.02.01	knowledge of supporting systems
24.02.02	knowledge of disassembly procedures
24.02.03	ability to interpret manufacturers specifications
24.02.04	ability to remove parts and components

Sub-task

24.03 Repairs cooling systems.

Supporting Knowledge & Abilities

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

24.03.01	knowledge of repair procedures
24.03.02	knowledge of cooling system specifications
24.03.03	ability to identify damaged and worn parts and components
24.03.04	ability to replace damaged and worn parts

Sub-task

24.04 Installs cooling systems.

Supporting Knowledge & Abilities

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

24.04.01	knowledge of assembly procedures
24.04.02	knowledge of installation procedures
24.04.03	ability to interpret manufacturers specifications
24.04.04	ability to assemble cooling systems
24.04.05	ability to test systems

Sub-task

24.05 Rebuilds cooling system components.

Supporting Knowledge & Abilities

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

24.05.01	knowledge of disassembly procedures
24.05.02	knowledge of rebuild procedures
24.05.03	knowledge of components
24.05.04	knowledge of supporting systems
24.05.05	ability to interpret manufacturers specifications
24.05.06	ability to disassemble components
24.05.07	ability to test rebuild

Task 25 Works on lubrication systems.

Related Components: Filter, oil cooler, pump, thermostat, by-pass valve, relief valves, regulating valves, gauges, sensors, oil pan, hardware (nuts, bolts, etc.).
Materials: Dyes, seals, cleaning agents, gasket.

Tools and Equipment: Diagnostic equipment, oil analysis equipment, manual, pressure washer, hand tools, power tools.

Sub-task

25.01 Troubleshoots lubrication systems.

Supporting Knowledge & Abilities

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

25.01.01	knowledge of lubrication system specifications
25.01.02	knowledge of lubrication systems operation
25.01.03	knowledge of inspection and testing procedures
25.01.04	ability to inspect and test lubrication systems, components and parts
25.01.05	ability to interpret test results
25.01.06	ability to identify damaged or worn parts

Sub-task

25.02 Disassembles lubrication systems.

Supporting Knowledge & Abilities

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

25.02.01	knowledge of disassembly procedures
25.02.02	knowledge of supporting systems
25.02.03	ability to interpret manufacturers recommendations
25.02.04	ability to remove parts and components

Sub-task

25.03 Repairs lubrication systems. **Supporting Knowledge & Abilities**

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

25.03.01	knowledge of repair procedures (includes special procedures)
25.03.02	knowledge of lubrication system operation
25.03.03	knowledge of lubrication system specifications
25.03.04	ability to identify damaged and worn parts
25.03.05	ability to replace damaged and worn parts

Sub-task

25.04 Installs lubrication systems. **Supporting Knowledge & Abilities**

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

25.04.01	knowledge of assembly procedures
25.04.02	knowledge of installation procedures
25.04.03	knowledge of supporting systems
25.04.04	ability to interpret manufacturers recommendations
25.04.05	ability to assemble parts and components
25.04.06	ability to test systems

Sub-task

25.05 Rebuilds lubrication system components. **Supporting Knowledge & Abilities**

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

Supporting Knowledge & Abilities

25.05.01	knowledge of disassembly procedures
25.05.02	knowledge of rebuild procedures
25.05.03	knowledge of components
25.05.04	knowledge of supporting systems
25.05.05	ability to interpret manufacturers specifications
25.05.06	ability to disassemble components
25.05.07	ability to test rebuild

Task 26 Works on fuel systems.

Related Components: Fuel tanks, fuel lines, fuel, injectors, injection pumps, fuel pump, timing advance mechanism, governors, control unit, wiring, valves, sensors, filtering systems.
Materials: Fuels, solvents, abrasives, dyes.

Tools and Equipment: Basic diagnostic equipment, specialized diagnostic equipment, hand tools, power tools, specialized tools, maintenance manual.

Sub-task

26.01 Troubleshoots fuel systems. **Supporting Knowledge & Abilities**

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

26.01.01	knowledge of fuel system specifications
26.01.02	knowledge of fuel system operation
26.01.03	knowledge of inspection and test procedures
26.01.04	ability to inspect and test fuel systems
26.01.05	ability to interpret test results
26.01.06	ability to identify damaged or worn parts

Sub-task

26.02 Disassembles fuel systems. **Supporting Knowledge & Abilities**

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

26.02.01	knowledge of disassembly procedures
26.02.02	knowledge of supporting systems
26.02.03	ability to interpret manufacturers□ specifications
26.02.04	ability to remove parts and components

Sub-task

26.03 Repairs fuel systems. **Supporting Knowledge & Abilities**

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

26.03.01	knowledge of repair procedures
26.03.02	knowledge of fuel system specifications
26.03.03	ability to identify damage and worn parts
26.03.04	ability to replace damaged and worn parts

Sub-task

26.04 Reassembles fuel systems. **Supporting Knowledge & Abilities**

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

26.04.01	knowledge of assembly procedures
26.04.02	knowledge of supporting systems
26.04.03	ability to interpret manufacturers□ recommendations
26.04.04	ability to assemble parts and components

	26.04.05	ability to test fuel system

Sub-task

26.05 Rebuilds fuel system components.

Supporting Knowledge & Abilities

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

26.05.01	knowledge of disassembly procedures
26.05.02	knowledge of rebuild procedures
26.05.03	knowledge of components
26.05.04	knowledge of supporting systems
26.05.05	ability to interpret manufacturers□ specifications
26.05.06	ability to disassemble components
26.05.07	ability to test rebuild

Task 27 Works on intake, exhaust and emission systems.

Related Components: Manifolds, turbo, piping, pyrometer, muffler, catalytic converters, charge air cooler, air filter, restriction gauge, exhaust brake, sensors, gauges, rapid warm-up restriction valve, ether system, glow plugs, hardware.
Materials: Ether, sealants, solvents, abrasive, muffler cement, hardware, aluminum rod, shop supplies, soapy water.

Tools and Equipment: Hand tools, power tools, special diagnostic equipment, welder, specialized equipment.

Sub-task

27.01 Troubleshoots intake, exhaust and emission systems.

Supporting Knowledge & Abilities

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

Supporting Knowledge & Abilities

27.01.01	knowledge of intake, exhaust, and emission systems and components operation
27.01.02	knowledge of supporting systems
27.01.03	knowledge of system specifications
27.01.04	knowledge of inspection and test procedures
27.01.05	ability to inspect and test systems
27.01.06	ability to interpret test results
27.01.07	ability to identify damaged and worn parts

Sub-task

27.02 Disassembles intake, exhaust and emission systems.

Supporting Knowledge & Abilities

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

27.02.01	knowledge of disassembly procedures
27.02.02	knowledge of supporting systems
27.02.03	ability to interpret manufacturers□ specifications
27.02.04	ability to remove parts and components

Sub-task

27.03 Repairs intake, exhaust and emission systems.

Supporting Knowledge & Abilities

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

27.03.01	knowledge of intake, exhaust and emission systems and components operation

Supporting Knowledge & Abilities

27.03.02	knowledge of systems specifications
27.03.03	knowledge of supporting systems
27.03.04	knowledge of repair procedures
27.03.05	ability to identify damaged and worn parts
27.03.06	ability to replace damaged and worn parts

Sub-task

27.04 Reassembles intake, exhaust and emission systems.

Supporting Knowledge & Abilities

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

27.04.01	knowledge of assembly procedures
27.04.02	knowledge of supporting systems
27.04.03	ability to interpret manufacturers recommendations
27.04.04	ability to assemble parts and components
27.04.05	ability to test repairs

Sub-task

27.05 Rebuilds intake, exhaust and emission system components.

Supporting Knowledge & Abilities

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

27.05.01	knowledge of disassembly procedures
27.05.02	knowledge of rebuild procedures

27.05.03 knowledge of components

Supporting Knowledge & Abilities

27.05.04 knowledge of supporting systems

27.05.05 ability to interpret manufacturers specifications

27.05.06 ability to disassemble components

27.05.07 ability to test rebuild

Task 28 Works on auxiliary braking systems.

Related Components: Retarder by combustion engine, retarders, exhaust-brake retarders. Materials: Solvents, soaps, fluids.

Tools and Equipment: Specialized diagnostic tools/equipment, lifting and supporting devices, hand tools, power tools, specialized equipment.

Sub-task

28.01 Troubleshoots auxiliary braking systems.

Supporting Knowledge & Abilities

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

28.01.01 knowledge of auxiliary braking systems and their components

28.01.02 knowledge of inspection and testing procedures

28.01.03 knowledge of supporting systems

28.01.04 ability to inspect and test auxiliary braking systems

28.01.05 ability to identify damaged and worn parts

Sub-task

28.02 Disassembles auxiliary braking systems.

Supporting Knowledge & Abilities

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

28.02.01	knowledge of disassembly and assembly procedures
28.02.02	knowledge of auxiliary braking systems and their components
28.02.03	knowledge of supporting systems
28.02.04	ability to interpret manufacturers specifications

Sub-task

28.03 Repairs auxiliary braking systems components.

Supporting Knowledge & Abilities

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

28.03.01	knowledge of adjustment procedures
28.03.02	knowledge of repair or replacement procedures
28.03.03	ability to identify damaged or worn parts
28.03.04	ability to remove and install components
28.03.05	ability to make adjustments
28.03.06	ability to test auxiliary braking systems
28.03.07	ability to interpret test results

Sub-task

28.04 Rebuilds auxiliary braking systems.

Supporting Knowledge & Abilities

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

Supporting Knowledge & Abilities

28.04.01	knowledge of types of brakes and braking systems
28.04.02	knowledge of rebuild procedures
28.04.03	ability to interpret manufacturers□ specifications

BLOCK G

DRIVE TRAIN

Trends: *Better engineered to accommodate higher torque engines; less hazardous material (use of more organic materials); towards automatic shifting using electronic controls; use of synthetic oils; quieter; bigger and stronger; less maintenance; better serviceability; lighter and stronger components; longer life and warranties.*

Task 29 Works on clutches.

Related Components: Clutch disk(s) (organic and ceramic), fly wheel, pressure plate, shifting mechanisms, pilot bearing, clutch linkage, clutch brake, release bearing, hydraulic release system, intermediate plate, torque converter, cooler (air or coolant), gears, gauges, sensors, hardware, air regulator, lubricants and contaminants, flex plate, main shaft, synchronizers, shift covers, forks, etc.
Materials: Shop supplies.

Tools and Equipment: Air regulator, specialized diagnostic tools/equipment, hand tools, power tools, dial indicator, lifting and supporting devices, manual.

Sub-task

29.01 Troubleshoots clutches.

Supporting Knowledge & Abilities

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

29.01.01	knowledge of clutches and components operation
29.01.02	knowledge of supporting systems
29.01.03	knowledge of inspection and testing procedures
29.01.04	ability to interpret manufacturers specifications
29.01.05	ability to inspect and test clutches and components
29.01.06	ability to interpret test results
29.01.07	ability to identify damaged and worn parts and components

Sub-task

29.02 Removes clutches.

Supporting Knowledge & Abilities

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

29.02.01	knowledge of removal procedures
29.02.02	knowledge of disassembly procedures
29.02.03	knowledge of supporting systems
29.02.04	ability to interpret manufacturers specifications
29.02.05	ability to disassemble parts and components

Sub-task

29.03 Repairs clutches. **Supporting Knowledge & Abilities**

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

Supporting Knowledge & Abilities

29.03.01	knowledge of clutches and component specifications
29.03.02	knowledge of repair procedures
29.03.03	knowledge of inspection and test procedures
29.03.04	knowledge of supporting systems
29.03.05	ability to interpret test results
29.03.06	ability to identify damaged and worn parts

Sub-task

29.04 Installs clutches. **Supporting Knowledge & Abilities**

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

29.04.01	knowledge of assembly procedures
29.04.02	knowledge of installation procedures
29.04.03	knowledge of supporting systems
29.04.04	ability to interpret manufacturers recommendations
29.04.05	ability to assemble parts and components
29.04.06	ability to test clutches

Sub-task

29.05 Rebuilds clutch components. **Supporting Knowledge & Abilities**

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

Supporting Knowledge & Abilities

29.05.01	knowledge of disassembly procedures
29.05.02	knowledge of rebuild procedures
29.05.03	knowledge of components
29.05.04	knowledge of supporting systems
29.05.05	ability to interpret manufacturers specifications
29.05.06	ability to disassemble components
29.05.07	ability to test rebuild

Task 30 Works on standard transmissions.

Related Components: Clutch disk(s) (organic and ceramic), fly wheel, pressure plate, shifting mechanisms, pilot bearing, clutch linkage, clutch brake, release bearing, hydraulic release system, intermediate plate, torque converter, cooler (air or coolant), gears, gauges, sensors, hardware, air regulator, lubricants and contaminants, flex plate, main shaft, synchronizers, shift covers, forks, etc.
Materials: Shop supplies.

Tools and Equipment: Air regulator, specialized diagnostic tools/equipment, hand tools, power tools, dial indicator, lifting and supporting devices, manual.

Sub-task

30.01 Troubleshoots standard transmissions.

Supporting Knowledge & Abilities

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

30.01.01	knowledge of standard transmissions and components operation
30.01.02	knowledge of supporting systems

30.01.03 knowledge of inspection and testing procedures

Supporting Knowledge & Abilities

30.01.04 ability to interpret manufacturers specifications

30.01.05 ability to inspect and test standard transmissions and components

30.01.06 ability to interpret test results

30.01.07 ability to identify damaged and worn parts and components

Sub-task

30.02 Removes standard transmissions.

Supporting Knowledge & Abilities

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

30.02.01 knowledge of removal procedures

30.02.02 knowledge of disassembly procedures

30.02.03 knowledge of supporting systems

30.02.04 ability to interpret manufacturers specifications

30.02.05 ability to disassemble parts and components

Sub-task

30.03 Repairs standard transmissions.

Supporting Knowledge & Abilities

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

30.03.01 knowledge of standard transmissions and components specifications

30.03.02 knowledge of repair procedures

30.03.03 knowledge of inspection and test procedures

Supporting Knowledge & Abilities

30.03.04 knowledge of supporting systems

30.03.05 ability to interpret test results

30.03.06 ability to identify damaged and worn parts

Sub-task

30.04 Installs standard transmissions.

Supporting Knowledge & Abilities

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

30.04.01 knowledge of assembly procedures

30.04.02 knowledge of installation procedures

30.04.03 knowledge of supporting systems

30.04.04 ability to interpret manufacturers recommendations

30.04.05 ability to assemble parts and components

30.04.06 ability to test standard transmissions

Sub-task

30.05 Rebuilds standard transmission components.

Supporting Knowledge & Abilities

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

30.05.01 knowledge of disassembly procedures

30.05.02 knowledge of rebuild procedures

30.05.03 knowledge of components

30.05.04 knowledge of supporting systems

Supporting Knowledge & Abilities

30.05.05 ability to interpret manufacturers specifications

30.05.06 ability to disassemble components

30.05.07 ability to test rebuild

Task 31 Works on automatic transmissions.

Related Components: Gears, gauges, sensors, hardware, lubricants and contaminants, flex plate, main shaft, converter, valve body retarders, oil coolers, range selector, electronic control module (ECM), solenoids and road speed governors.
Materials: Shop supplies.

Tools and Equipment: Air regulator, specialized diagnostic tools/equipment, hand tools, power tools, dial indicator, lifting and supporting devices, manual.

Sub-task

31.01 Troubleshoots automatic transmissions.

Supporting Knowledge & Abilities

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

31.01.01 knowledge of automatic transmissions and components operation

31.01.02 knowledge of supporting systems

31.01.03 knowledge of inspection and testing procedures

31.01.04 ability to interpret manufacturers specifications

31.01.05 ability to inspect and test automatic transmissions and components

31.01.06 ability to interpret test results

31.01.07 ability to identify damaged and worn parts and components

Sub-task

31.02 Removes automatic transmissions.

Supporting Knowledge & Abilities

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

31.02.01	knowledge of removal procedures
31.02.02	knowledge of disassembly procedures
31.02.03	knowledge of supporting systems
31.02.04	ability to interpret manufacturers specifications
31.02.05	ability to disassemble parts and components

Sub-task

31.03 Repairs automatic transmissions.

Supporting Knowledge & Abilities

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

31.03.01	knowledge of automatic transmissions and components specifications
31.03.02	knowledge of repair procedures
31.03.03	knowledge of inspection and test procedures
31.03.04	knowledge of supporting systems
31.03.05	ability to interpret test results
31.03.06	ability to identify damaged and worn parts

Sub-task

31.04 Installs automatic transmissions.

Supporting Knowledge & Abilities

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

31.04.01	knowledge of assembly procedures
31.04.02	knowledge of manufacturers recommendations
31.04.03	knowledge of installation procedures
31.04.04	knowledge of supporting systems
31.04.05	ability to assemble parts and components
31.04.06	ability to test automatic transmissions

Sub-task

31.05 Rebuilds automatic transmission components.

Supporting Knowledge & Abilities

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

31.05.01	knowledge of disassembly procedures
31.05.02	knowledge of rebuild procedures
31.05.03	knowledge of components
31.05.04	knowledge of supporting systems
31.05.05	ability to interpret manufacturers specifications
31.05.06	ability to disassemble components
31.05.07	ability to test rebuild

Task 32 Works on drive lines.

Related Components: U-joints, yokes, center bearings, shafts, hardware, braking system (vehicle retarder).
Materials: Hardware, shop supplies.

Tools and Equipment: Magnetic protractor, hand tools, power tools, lifting and supporting devices, heat gun, specialized tools.

Sub-task

32.01 Troubleshoots drive lines. **Supporting Knowledge & Abilities**

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

32.01.01	knowledge of drive line operation
32.01.02	knowledge of inspection and test procedures
32.01.03	knowledge of supporting systems
32.01.04	ability to interpret manufacturers specifications
32.01.05	ability to inspect and test drive line lines
32.01.06	ability to interpret test results
32.01.07	ability to identify damage and worn parts and components

Sub-task

32.02 Removes drive lines. **Supporting Knowledge & Abilities**

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

32.02.01	knowledge of removal procedures
32.02.02	knowledge of disassembly procedures
32.02.03	knowledge of supporting systems
32.02.04	ability to interpret manufacturers specifications
32.02.05	ability to disassemble parts and components

Sub-task

32.03 Repairs drive lines. **Supporting Knowledge & Abilities**

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

32.03.01	knowledge of repair procedures
32.03.02	knowledge of drive line specifications
32.03.03	ability to identify damaged and worn parts
32.03.04	ability to replace damaged and worn parts

Sub-task

32.04 Installs drive lines. **Supporting Knowledge & Abilities**

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

32.04.01	knowledge of assembly procedures
32.04.02	knowledge of installation procedures
32.04.03	knowledge of supporting systems
32.04.04	ability to interpret manufacturers recommendations
32.04.05	ability to assemble parts and components
32.04.06	ability to test drive lines

Task 33 Works on differentials and transfer cases.

Related Components: Power divider, differential lock-up, locking device, axles, attaching hardware, 2-speed motor, shifting device, shift fork, lubricants and contaminants, filter, vent, seals, yoke.
Materials: Cleaning agents, grease marker, sealants, blueing, lock wire.

Tools and Equipment: Heat gun, pressure regulator, specialized tools, lifting and supporting devices, hand tools, abrasive materials, dial indicator, power tools, torque wrench, spring scale, string.

Sub-task

33.01 Troubleshoots differentials and transfer cases.

Supporting Knowledge & Abilities

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

33.01.01	knowledge of differentials, transfer cases and components operation
33.01.02	knowledge of inspection and test procedures
33.01.03	ability to interpret manufacturers specifications
33.01.04	ability to inspect and test differentials and transfer cases
33.01.05	ability to interpret test results
33.01.06	ability to identify damaged and worn parts

Sub-task

33.02 Removes differentials and transfer cases.

Supporting Knowledge & Abilities

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

33.02.01	knowledge of removal procedures
33.02.02	knowledge of disassembly procedures
33.02.03	knowledge of supporting systems
33.02.04	ability to interpret manufacturers specifications
33.02.05	ability to disassemble parts and components

Sub-task

33.03 Repairs differentials and transfer cases.

Supporting Knowledge & Abilities

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

33.03.01	knowledge of differentials, transfer cases and components specifications
33.03.02	knowledge of supporting systems
33.03.03	knowledge of repair procedures
33.03.04	ability to identify damaged and worn parts
33.03.05	ability to replace damaged and worn parts

Sub-task

33.04 Installs differentials and transfer cases.

Supporting Knowledge & Abilities

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

33.04.01	knowledge of assembly procedures
33.04.02	knowledge of installation procedures
33.04.03	knowledge of supporting systems
33.04.04	ability to interpret manufacturers recommendations
33.04.05	ability to assemble parts and components
33.04.06	ability to test differentials and transfer cases

Sub-task

33.05 Rebuilds differential and transfer case components.

Supporting Knowledge & Abilities

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

Supporting Knowledge & Abilities

33.05.01	knowledge of disassembly procedures
33.05.02	knowledge of rebuild procedures
33.05.03	knowledge of components
33.05.04	knowledge of supporting systems
33.05.05	ability to interpret manufacturers specifications
33.05.06	ability to disassemble components
33.05.07	ability to test rebuild

BLOCK H

ACCESSORIES

Trends: *More user friendly; more monitoring systems, more compact; aimed at operator/driver convenience; more difficult to install; more electronic controls; faster response time, increase in maintenance intervals; quieter components.*

Task 34 Works on accessories.

Related Components:	Electrical accessories (eg. converter), pneumatic (eg. PTO control), hydraulic (eg. tailgate). Materials: Shop supplies, hardware, fluids, gases, lubricants.
Tools and Equipment:	Specialty tools, gauges, welder (equipment), hand tools, power tools.

Sub-task

34.01 Troubleshoots accessories. **Supporting Knowledge & Abilities**

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

34.01.01	knowledge of accessories and components operation
34.01.02	knowledge of supporting systems
34.01.03	ability to interpret manufacturers specifications
34.01.04	ability to inspect and test accessories
34.01.05	ability to interpret test results
34.01.06	ability to identify damaged and worn parts

Sub-task

34.02 Removes accessories. **Supporting Knowledge & Abilities**

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

34.02.01	knowledge of removal procedures
34.02.02	knowledge of disassembly procedures
34.02.03	knowledge of supporting systems
34.02.04	ability to interpret manufacturers specifications
34.02.05	ability to disassemble parts and components

Sub-task

34.03 Repairs accessories. **Supporting Knowledge & Abilities**

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

Supporting Knowledge & Abilities

34.03.01 knowledge of repair procedures

34.03.02 ability to interpret manufacturers specifications

34.03.03 ability to identify damaged and worn parts

34.03.04 ability to replace damaged and worn parts

Sub-task

34.04 Installs accessories.

Supporting Knowledge & Abilities

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

34.04.01 knowledge of assembly procedures

34.04.02 knowledge of installation procedures

34.04.03 knowledge of supporting systems

34.04.04 knowledge of accessory operation

34.04.05 ability to assemble accessories and hardware

34.04.06 ability to test accessories

Sub-task

34.05 Rebuilds accessory components.

Supporting Knowledge & Abilities

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

34.05.01 knowledge of disassembly procedures

34.05.02 knowledge of rebuild procedures

34.05.03 knowledge of components

34.05.04 knowledge of supporting systems

Supporting Knowledge & Abilities

34.05.05	ability to interpret manufacturers specifications
34.05.06	ability to disassemble components
34.05.07	ability to test rebuild

Task 35 Works on hydraulic systems.

Related Components: Pumps, cylinders, hoses, valves, drives, hydraulic motors, reservoirs, coolers, filters, couplers, gauges, accumulators, drive shafts, PTO (Power Take Offs), controls, sensors.
Materials: Solvents, sealants, abrasive, shims, hardware, lubricants, gasket materials.

Tools and Equipment: Filters, hand tools, specialized equipment, power tools, lifting and supporting devices.

Sub-task

35.01 Troubleshoots hydraulic systems.

Supporting Knowledge & Abilities

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

35.01.01	knowledge of hydraulic systems and components operation
35.01.02	knowledge of supporting systems
35.01.03	ability to interpret manufacturers specifications
35.01.04	ability to inspect and test hydraulic systems
35.01.05	ability to interpret test results
35.01.06	ability to identify damage or worn parts

Sub-task

35.02 Disassembles hydraulic systems.

Supporting Knowledge & Abilities

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

35.02.01	knowledge of disassembly procedures
35.02.02	knowledge of supporting systems
35.02.03	ability to interpret manufacturers□ specifications
35.02.04	ability to remove parts and components

Sub-task

35.03 Repairs hydraulic systems.

Supporting Knowledge & Abilities

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

35.03.01	knowledge of repair procedures
35.03.02	knowledge of hydraulic system specifications
35.03.03	ability to identify damaged and worn parts
35.03.04	ability to replace damaged parts

Sub-task

35.04 Installs hydraulic systems.

Supporting Knowledge & Abilities

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

35.04.01	knowledge of assembly procedures
35.04.02	knowledge of installation procedures
35.04.03	knowledge of supporting systems

Supporting Knowledge & Abilities

35.04.04	ability to interpret manufacturers recommendations
35.04.05	ability to assemble parts and components
35.04.06	ability to test repairs

APPENDICES

TOOLS AND EQUIPMENT

Shop Supplies

A/C nitrogen
A/C o-rings/oil
A/C supplies - insulation tape for
air gun oils
air line couplings
clevis pin
cotter pins
coveralls
cut off saw wheels
die grinders
drills @ to □ inch
dust masks
ear plugs
emery paper
extra bulk solvents
face shields
files
flashlight batteries
flashlight bulbs
floor mats (paper)
fuel for filters
grease
grinding stones
grinding wheels
grommets
hacksaw blades
lacquer cleaner
lock wire
machine screws and nuts
machinery bits and equipment
metals
MIG weld - gas
nuts, washer, bolts
o-rings
office supplies
paint thinners
R.O. paper
rags/cloth
razor blades
ready rod
safety glasses
sanding machine papers
sanding wheels
sandpaper
scotch brite pads
scotch brite wheels
seat covers
sheet metal screws
solvent cleaner sental
solvents
special adhesives
speed nuts
stainless bolts
star washers
steam cleaner soap
tapes (electrical, masking, duct, 2-way)
taps and dyes
time tickets
tire valves
trouble light bulbs
truckwash soap
valve covers
welding protective gear
welding rods (arc)
welding rods (gas)
wire wheel (for die grinder)
wire wheel rolls for metal and
wire wheels (large)
yellow paint for shop floor

Hand Tools

feeler gauges
files
filter wrenches
hammers
lighting devices
magnets
magnifying glass
mirrors
pick set
pry bars
punches and chisels
saws
screwdrivers
sockets and ratchets
wrenches

Power Tools

air hammers
air wrench
drills
sanders
saw
torque wrench

Safety Equipment

exhaust ventilation
fall protection system
fire blanket
fire extinguisher
guard rails
welding shields

Personal Protective Equipment

aprons
boots
ear protection
gloves
goggles/shields
hard hats
masks
welding helmets

Lifting/Supporting Equipment

axle stands
blocking
cranes
hoists
jacks
ladders
stands

Staging Equipment

ladders
scaffolding
steps
stools

Hardware

bolts
brackets
clamps
clips
connectors
fasteners
grommets
heat shrink
nuts
pins
rivets
screws
shim stock
terminals
tie straps
washers

Specialized Equipment

As indicated in Original Equipment Manufacturers manuals.

Measuring Tools, Gauges and Equipment

ammeter
antifreeze tester
boost gauge
calipers
circuit tester
compression gauges
continuity tester
dial indicators
dwell-meter
dynamometer
exhaust analyzer
feeler gauge
hydrometer
micrometer
ohmmeter
pressure gauges
rules
spark plug tester
squares
straight edge
tachometers
telescopic gauge
temperature gauge
timing light
tire gauge
trammel gauge
vacuum gauge
verniers

GLOSSARY

In preparing this analysis the "what" and "how" have been consolidated in many instances to shorten the length of the analysis and reduce the number of references to other parts of the analysis. When these terms are used, therefore, they imply that certain actions are required to be performed by the worker. To clarify the meaning of each term, a definition within the context of the analysis is provided in the following Glossary. The reader may assume that encountering these terms in the text indicates performance by the tradesperson.

adjusts	this normally involves items such as brakes, steering controls and does not usually involve dismantling the component involved. This procedure requires a knowledge of special procedures and the use of special tools and equipment.
aligns	this usually involves parts of the equipment such as wheels, gear strains, lights and lighting equipment. It does not necessarily involve taking the equipment apart, although there are some instances when this action is necessary. It does involve also, the use of special testing equipment and the use of hand or power tools to loosen and fasten nuts, bolts, clamps, straps and hangers.
installs (assembles)	this involves the mechanical actions necessary to install engines, components, ancillary equipment and attachments. This implies that the mechanic is acquainted with the use of hand tools, power tools and power equipment such as jacks and hoists. It invariably involves a knowledge of the inter-relationship of components to a main piece of equipment and the steps necessary to protect clamps, lines, linkages when such a procedure is necessary.
inspects	this is normally a visual inspection carried out after the main equipment or component has been cleaned and/or disassembles. It is then inspected for excessive wear or damage and a decision is made as to what further action is to be taken. Examples of inspection procedures would be measuring spark plug gaps using feeler gauges; measuring bearings using micrometers and measuring the inside of cylinder chambers using micrometers and dial gauges.
manufacturers specifications	this term includes manufacturers, instruction, performance standards for engines, ancillary equipment and component parts, engineering specifications such as dimensions of parts, clearances, etc. usually outlined in parts and services manuals, and bulletins.
modifies	involves allowable/recommended modifications. The mechanic refers to manufacturers specifications and may require special tools and equipment.
reassembles	this action is an integral part of the actions which necessitates that en engine, engine component, ancillary equipment and their components be taken apart. It involves putting the equipment back together and the same tools are used which initially took it apart.

rebuilds this is a highly specialized function performed as a rule only in very large establishments. By its very concept, it involves other actions such as TESTING and REMOVING. It also involves the use of a wide spectrum of tools and power equipment such as machine lathes, drill presses, power-actuated socket wrenches, tapping and dieing tools, boring equipment and precision measuring instruments such as feeler gauges, inside and outside calipers, micrometers, dial gauges and finely calibrated rulers.

rekits essentially this involves replacing parts of a carburetor or diesel injection valve. This is a specialized function within the scope of the competency of the mechanic. It also involves the use of specialized precision hand tools which require careful and deliberate movements.

removes (disassembles) this involves the mechanical actions necessary to remove an engine from its chamber and housing; components from an engine without removing the whole engine; removing ancillary equipment and attachments. This implies that the mechanic is acquainted with the use of hand tools, power tools and power equipment such as jacks and hoists. It invariably involves a knowledge of the inter-relationship of components to a main piece of equipment and the steps necessary to protect clamps, lines, linkages when such a procedure is necessary.

repairs this involves fixing, mending, or restoring the worn or damaged parts of an engine, ancillary equipment and their component. Repair involves actually performing some action with these parts or the main equipment by performing machining operations such as grinding valves, honing brake drums and using machine lathes. It also involves using a wide range of tools such as screwdrivers, hammers, wrenches, power wrenches, brazing and soldering equipment, welding equipment, torque wrenches, pliers and files.

replaces simply the one-for-one replacement of a part or component (modular concept) and requires a knowledge of the relation the replacement part has to the equipment as a whole. It is a function that can be carried out in a location other than a workshop and involves the use of tools as outlined in REPAIR. For the purpose of this analysis the phrases as required, when necessary, etc., have been omitted. It is understood that when the word REPLACES is used singly or in sequence that parts or components are replaced only when necessary or required.

tests this embraces a number of diagnostic and testing procedures ranging from simple running tests to complicated and lengthy tests using highly specialized and sophisticated equipment applicable to a particular vehicle, engine or component. Examples of diagnoses and tests are simple run-in tests and listening to the sound of a motor; testing injector valves from diesel engines by manually operating the injector cylinder to observe the scatter pattern of the fuel; testing the integrity of lines, hoses and connections by conducting complicated bench running tests using a dynamometer and instruments to record temperature and speeds.

BLOCKS AND TASKS WEIGHTING

BLOCK A OCCUPATIONAL SKILLS

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	National Average
%	8	5	5	3	12	3	5	2	5	7	ND	NV	6%

Task 1 Completes maintenance records and documents.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	15	20	10	23	15	0	5	16	25	15	ND	NV	15%

Task 2 Operates and maintains tools and equipment.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	23	25	40	18	20	33	30	24	25	15	ND	NV	25%

Task 3 Inspects and cleans vehicle components.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	20	15	10	18	25	33	35	13	15	25	ND	NV	21%

Task 4 Conducts road tests.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	10	15	20	17	20	0	15	34	25	15	ND	NV	17%

Task 5 Maintains vehicle.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	32	25	20	24	20	34	15	13	10	30	ND	NV	22%

BLOCK B CHASSIS AND FRAMES

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	National Average
%	8	10	15	8	10	10	10	10	10	8	ND	NV	10%

Task 6 Modifies length and height of frames.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	17	25	20	25	20	20	15	10	25	35	ND	NV	21%

Task 7 Works on suspensions.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	52	50	50	46	60	50	60	80	50	45	ND	NV	54%

Task 8 Works on hitches and couplers.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	31	25	30	29	20	30	25	10	25	20	ND	NV	25%

BLOCK C AIR SYSTEMS, BRAKES AND STEERING

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	National Average
%	20	18	20	19	20	22	25	20	20	20	ND	NV	20%

Task 9 Works on air systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	24	24	20	28	15	27	30	30	30	30	ND	NV	26%

Task 10 Works on braking systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	30	30	40	25	40	32	30	30	30	20	ND	NV	31%

Task 11 Works on steering systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK

%	28	26	20	26	35	27	20	30	30	30	ND	NV	27%

Task 12 Works on tires, wheels, rims and hubs.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	18	20	20	21	10	14	20	10	10	20	ND	NV	16%

BLOCK D ELECTRICAL AND ELECTRONIC SYSTEMS

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	National Average
%	17	19	20	25	15	20	10	25	20	15	ND	NV	18%

Task 13 Works on electrical systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	13	24	20	15	25	10	10	20	15	10	ND	NV	16%

Task 14 Works on charging systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	18	13	20	16	20	15	20	20	15	15	ND	NV	17%

Task 15 Works on starting systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	18	12	20	16	15	15	20	20	5	15	ND	NV	16%

Task 16 Works on ignition systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	10	11	10	13	0	5	10	0	5	10	ND	NV	7%

Task 17 Works on electrical conductors and connectors.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	13	10	5	11	20	10	5	10	20	10	ND	NV	12%

Task 18 Works on electronic components.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	16	18	20	16	5	30	15	20	20	20	ND	NV	18%

Task 19 Works on electrical and electronic accessories.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	12	12	5	13	15	15	20	10	20	20	ND	NV	14%

BLOCK E CAB AND BODY

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	National Average
%	2	9	5	8	1	10	10	10	10	8	ND	NV	7%

Task 20 Works on HVAC (Heating, Ventilation, Air Conditioning) and refrigeration systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	71	50	50	45	60	50	80	95	50	50	ND	NV	60%

Task 21 Works on trailer bodies.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	29	25	20	28	35	30	10	0	25	25	ND	NV	23%

Task 22 Works on cab body and trim.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	0	25	30	27	5	20	10	5	25	25	ND	NV	17%

BLOCK F ENGINE AND SUPPORTING SYSTEMS

NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	National Average

%	19	18	15	19	20	16	15	15	20	20	ND	NV	18%

Task 23 Works on engines.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	27	32	20	24	30	25	35	45	35	25	ND	NV	30%

Task 24 Works on cooling systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	18	16	20	18	20	6	20	13	15	15	ND	NV	16%

Task 25 Works on lubrication systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	15	13	10	12	10	6	10	10	10	15	ND	NV	11%

Task 26 Works on fuel systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	20	18	25	20	15	25	20	15	20	25	ND	NV	20%

Task 27 Works on intake, exhaust and emission systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	14	17	23	15	20	32	10	8	10	20	ND	NV	17%

Task 28 Works on auxiliary braking systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	6	4	2	11	5	6	5	9	10	0	ND	NV	6%

BLOCK G DRIVE TRAIN

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	National Average
%	21	13	15	10	20	15	15	15	10	15	ND	NV	15%

Task 29 Works on clutches.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	7	25	25	21	8	13	10	11	10	15	ND	NV	15%

Task 30 Works on standard transmissions.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	13	17	20	25	12	33	20	21	15	15	ND	NV	19%

Task 31 Works on automatic transmissions.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	17	3	5	19	20	13	20	18	15	15	ND	NV	15%

Task 32 Works on drive lines.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	32	21	10	15	40	20	15	15	20	20	ND	NV	21%

Task 33 Works on differentials and transfer cases.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	31	34	40	20	20	21	35	35	40	35	ND	NV	30%

BLOCK H ACCESSORIES

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	National Average
%	5	8	5	8	2	4	10	3	5	7	ND	NV	6%

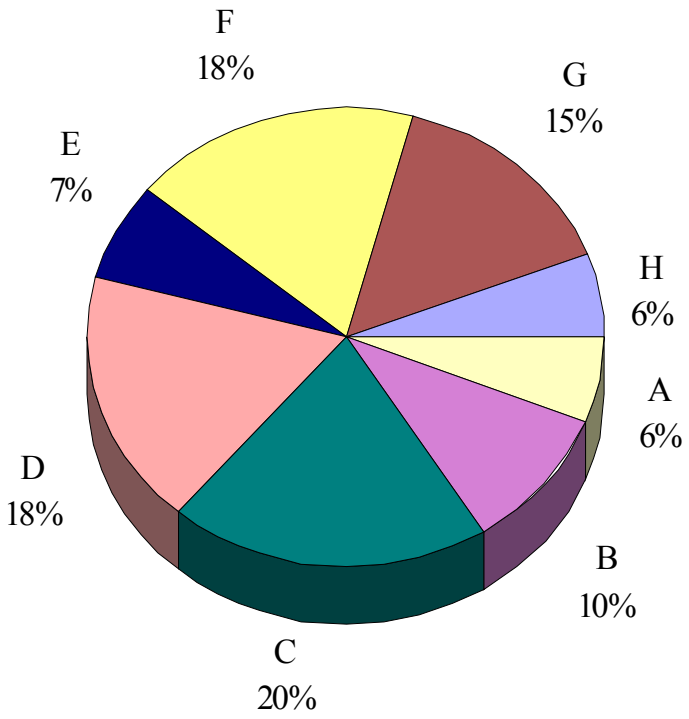
Task 34 Works on accessories.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	52	49	50	50	100	25	30	65	50	35	ND	NV	51%

Task 35 Works on hydraulic systems.

	NF	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YK	
%	48	51	50	50	0	75	70	35	50	65	ND	NV	49%

PIE CHART*
Truck and Transport Mechanic



TITLES OF BLOCKS

Block A	Occupational Skills	Block E	Cab and Body
Block B	Chassis and Frames	Block F	Engine and Supporting Systems
Block C	Air Systems, Brakes and Steering	Block G	Drive Train
Block D	Electrical and Electronic Systems	Block H	Accessories

- 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 examinations.

TRUCK AND TRANSPORT MECHANIC (2000)

	BLOCKS	TASKS	SUB-TASKS
A	**Occupational Skills**	**1.** Completes maintenance records and documents.	1.01 Documents work performed. 1.02 Completes maintenance schedules and checklists. 1.03 Records road test results. 1.04 Records inspection results.
		2. Operates and maintains tools and equipment.	2.01 Uses general hand tools. 2.02 Operates power tools. 2.03 Operates/uses measuring devices. 2.04 Operates lifting and supporting equipment. 2.05 Sets up and operates diagnostic and testing equipment. 2.06 Sets up and operates staging equipment.
		3. Inspects and cleans vehicle components.	3.01 Inspects vehicle operating systems and related components. 3.02 Cleans vehicle components for inspection purposes. 3.03 Interprets inspection results.
		4. Conducts road tests.	4.01 Determines type of road test required. 4.02 Selects road test diagnostic equipment. 4.03 Hooks-up road test diagnostic equipment. 4.04 Drives vehicle. 4.05 Interprets road test results.
		5. Maintains vehicle.	5.01 Replenishes fluids. 5.02 Replaces filters. 5.03 Lubricates assemblies and components. 5.04 Consults required documentation.
B	**Chassis and Frames**	**6.** Modifies length and height of frames.	6.01 Cuts frames. 6.02 Drills frames. 6.03 Welds frames and components. 6.04 Replaces components.
		7. Works on suspensions.	7.01 Repairs suspensions. 7.02 Modifies suspensions. 7.03 Rebuilds suspensions.
		8. Works on hitches and couplers.	8.01 Troubleshoots hitches and couplers. **8.02** Removes hitches and couplers. 8.03 Repairs hitches and couplers. 8.04 Installs hitches and couplers.
c	**Air Systems, Brakes and Steering**Error! Bookmark not defined.	**9.** Works on air systems.	9.01 Troubleshoots air systems. 9.02 Disassembles air systems. 9.03 Repairs air systems. 9.04 Rebuilds air systems. 9.05 Installs air systems.

BLOCKS		TASKS	SUB-TASKS			
		10. Works on braking systems.	10.01 Troubleshoots braking systems.	10.02 Disassembles and assembles braking systems.	10.03 Repairs braking systems.	10.04 Rebuilds braking systems.
		11. Works on steering systems.	11.01 Troubleshoots steering systems.	11.02 Disassembles and reassembles steering systems.	11.03 Repairs steering systems.	11.04 Rebuilds steering system components.
		12. Works on tires, wheels, rims and hubs.	12.01 Troubleshoots tires, wheels, rims and hubs.	12.02 Removes tires, wheels, rims and hubs.	12.03 Repairs tires, wheels, rims and hubs.	12.04 Installs tires, wheels, rims and hubs.
D	**Electrical and Electronic Systems**	**13.** Works on electrical systems.	13.01 Maintains batteries.	13.02 Maintains belts.	13.03 Maintains components and connections.	
		14. Works on charging systems.	14.01 Troubleshoots and tests charging systems and components.	14.02 Disassembles charging systems and components.	14.03 Repairs charging systems and components.	14.04 Reassembles charging systems and components.
		15. Works on starting systems.	15.01 Troubleshoots and tests starting systems and components.	15.02 Disassembles starting systems and components.	15.03 Repairs starting systems and components.	15.04 Reassembles starting systems and components.
		16. Works on ignition systems.	16.01 Troubleshoots and tests ignition systems and components.	16.02 Disassembles ignition systems and components.	16.03 Repairs ignition systems and components.	16.04 Reassembles ignition systems and components.
		17. Works on electrical conductors and connectors.	17.01 Troubleshoots and tests electrical conductors.	17.02 Disassembles electrical conductors.	17.03 Repairs electrical conductors.	17.04 Reassembles electrical conductors.

		18. Works on electronic components.	18.01 Troubleshoots and tests electronic components.	18.02 Replaces electronic components.		
		19. Works on electrical and electronic accessories.	19.01 Troubleshoots electrical and electronic accessories.	19.02 Disassembles electrical and electronic accessories.	19.03 Repairs electrical and electronic accessories.	19.04 Reassembles electrical and electronic accessories.
E	**Cab and Body**	**20.** Works on HVAC (Heating, Ventilation, Air Conditioning) and refrigeration systems.	20.01 Troubleshoots HVAC and refrigeration systems.	20.02 Disassembles HVAC and refrigeration systems.	20.03 Repairs HVAC and refrigeration systems.	20.04 Installs HVAC and refrigeration systems.
		21. Works on trailer bodies.	21.01 Troubleshoots trailer body components.	21.02 Removes trailer body components.	21.03 Repairs trailer body components.	21.04 Installs trailer body mechanical components.
		22. Works on cab body and trim.	22.01 Removes cab body trim and components.	22.02 Repairs cab body and trim.	22.03 Installs cab body and trim.	
F	**Engine and Supporting Systems**	**23.** Works on engines.	23.01 Troubleshoots engine operation.	23.02 Disassembles engines.	23.03 Repairs engines.	23.04 Installs engines.	23.05 Rebuilds engine components.
		24. Works on cooling systems.	24.01 Troubleshoots cooling systems.	24.02 Disassembles cooling systems.	24.03 Repairs cooling systems.	24.04 Installs cooling systems.	24.05 Rebuilds cooling system components.
		25. Works on lubrication systems.	25.01 Troubleshoots lubrication systems.	25.02 Disassembles lubrication systems.	25.03 Repairs lubrication systems.	25.04 Installs lubrication systems.	25.05 Rebuilds lubrication system components.
		26. Works on fuel systems.	26.01 Troubleshoots fuel systems.	26.02 Disassembles fuel systems.	26.03 Repairs fuel systems.	26.04 Reassembles fuel systems.	26.05 Rebuilds fuel system components.

		27. Works on intake exhaust and emission systems.	27.01 Troubleshoots intake, exhausts and emission systems.	27.02 Disassembles intake, exhaust and emission systems.	27.03 Repairs intake, exhaust and emission systems.	27.04 Reassembles intake, exhaust and emission systems.	27.05 Rebuilds intake, exhaust and emission system components.
		28. Works on auxiliary braking systems.	28.01 Troubleshoots auxiliary braking systems.	28.02 Disassembles auxiliary braking systems.	28.03 Repairs auxiliary braking systems components.	28.04 Rebuilds auxiliary braking systems.	
G	**Drive Train**Error! Bookmark not defined.	**29.** Works on clutches.	29.01 Troubleshoots clutches.	29.02 Removes clutches.	29.03 Repairs clutches.	29.04 Installs clutches.	29.05 Rebuilds clutch components.
		30. Works on standard transmissions.	30.01 Troubleshoots standard transmissions.	30.02 Removes standard transmissions.	30.03 Repairs standard transmissions.	30.04 Installs standard transmissions.	30.05 Rebuilds standard transmission components.
		31. Works on automatic transmissions.	31.01 Troubleshoots automatic transmissions.	31.02 Removes automatic transmissions.	31.03 Repairs automatic transmissions.	31.04 Installs automatic transmissions.	31.05 Rebuilds automatic transmission components.
		32. Works on drive lines.	32.01 Troubleshoots drive lines.	32.02 Removes drive lines.	32.03 Repairs drive lines.	32.04 Installs drive lines.	
		33. Works on differentials and transfer cases.	33.01 Troubleshoots differentials and transfer cases.	33.02 Removes differentials and transfer cases.	33.03 Repairs differentials and transfer cases.	33.04 Installs differentials and transfer cases.	33.05 Rebuilds differential and transfer case components.
H	**Accessories**Error! Bookmark not defined.	**34.** Works on accessories.	34.01 Troubleshoots accessories.	34.02 Removes accessories.	34.03 Repairs accessories.	34.04 Installs accessories.	34.05 Rebuilds accessory components.
		35. Works on hydraulic systems.	35.01 Troubleshoots hydraulic systems.	35.02 Disassembles hydraulic systems.	35.03 Repairs hydraulic systems.	35.04 Installs hydraulic systems.	