NL Curriculum Standard

Boom Truck Operator

Government of Newfoundland and Labrador
Department of Advanced Education, Skills and Labour
Apprenticeship and Trades Certification Division

June 2018

Preface

This document describes the Newfoundland and Labrador Curriculum Standard for the Boom Truck Operator apprenticeship training program and outlines each of the technical training units necessary for the completion of apprenticeship.

Acknowledgements

Advisory committees, industry representatives, instructors and apprenticeship staff provided valuable input to the development of this Apprenticeship Curriculum Standard. Without their dedication to quality apprenticeship training, this document could not have been produced.

We offer you a sincere thank you.

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NOTE: Entrance Requirements: All entrants must have a valid Class 5 License for a minimum of 6 months prior to the commencement of this training program.

A. Program Structure

For each and every course, a formal assessment is required for which 70% is the pass mark. A mark of 70% must be attained in both the theory examination and the practical project assignment, where applicable

The order of course delivery within each section can be determined by the educational agency, as long as pre-requisite conditions are satisfied.

Upon completion of an entry-level program, individuals may be required to complete other certifications (employer or job site specific) in order to gain employment.

LEVEL I			
Course No.	**Course Name**	**Hours**	**Pre-Requisite(s)**
BT1101	Crane Operation Safety	75	None
BT1041	Shop Fundamentals for Boom Truck Operators	60	None
BT1130	Boom Truck Operations	60	BT1101
BT1065	Boom Truck Systems	6	None
BT1261	Rigging for Boom Truck Operators	60	None
BT1070	Boom Truck Maintenance	45	None
AM1340	Hoisting Math Fundamentals	30	AM1100
Total Level Hours		336	

*A Direct Entry Boom Truck apprentice is not required to complete AM1100-Math Essentials.

BT1101 Crane Operation Safety

Learning Outcomes:

- Demonstrate knowledge of various codes and regulations required for the safe operation of Boom trucks.
- Demonstrate knowledge of good safety practices in boom truck operations.
- Obtain the following certificates:
    - Professional Driver Improvement
    - Transportation of Dangerous Goods
    - Powerline Hazards
    - Traffic Control and Flagging

Duration: 75 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Personnel Protective Equipment.
    i. identify the compulsory personnel protective equipment required for Boom truck Operators and state its purpose
    ii. state the minimum or C.S.A. codes for compulsory safety gear
    iii. explain when safety items should be replaced

2. Warning signs, symbols and danger tags.
    i. locate and identify, using operator's manual or the actual machine, any warning tag or warning symbol
    ii. correctly match symbols to corresponding meanings
    iii. state the steps to follow when a warning tag or symbol is discovered or when an operator is required to attach a warning tag or symbol to a machine

3. Mount and dismount equipment.
    i. identify, from diagrams or from the actual machine, all safety grab-irons, handrails, steps, and foot-pegs used when mounting or dismounting equipment

4. Safe clearance in work areas.
    i. state the minimum safe operating clearance for the overhead, sides, forward and rearward clearance of obstacles
    ii. state the conditions for determining equipment operating clearances on the job

5. Dangerous operating situations.
    i. identify factors that lead to dangerous operating situations: physiological (body), psychological (mental) mechanical failures, meteorological (weather) and terrestrial (land) conditions
    ii. identify operational malpractice and poor habits that lead to accidents

6. Enclosed areas.
    i. explain the safety procedures to use when running an engine in an enclosed area
    ii. identify the toxic fumes that are associated with engine exhaust gases
    iii. identify hoses and attachments needed to connect the engine exhaust pipe to a central ventilation system in a maintenance shop
    iv. identify devices used to control exhaust fumes from engines when working in an underground work site

7. Fire prevention.
    i. identify the components of the fire triangle
    ii. identify types of fire extinguishers and explain how they work

8. Environmental concerns and safe practices regarding work site.
    i. state the provincial regulations governing exhaust flame or spark arrestor while operating machinery in the forest
    ii. list overhead/underground services that may be found on federal, provincial, municipal, and private lands
    iii. identify the issues the operator should have knowledge of before actual set-up
    iv. state the importance of containing and reporting spills
    v. state the procedure for containment and reporting spills

Practical Requirements:

1. Clean and inspect safety gear.

2. Adjust and fasten fall arrest equipment (seat belts & safety harnesses).

3. Mount/dismount equipment.

4. Demonstrate the use of a fire extinguisher.

BT1041 Shop Fundamentals for Boom Truck Operators

Learning Outcomes:

- Demonstrate knowledge of various shop tools and equipment and their applications.
- Demonstrate knowledge of safety regulations in the operation and maintenance of shop tools.
- Demonstrate knowledge of the use of shop tools in a safe and competent manner.
- Demonstrate knowledge of operating oxy-fuel heating and cutting equipment.

Duration: 60 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Shop Safety.
    i. explain the importance of safe work habits
    ii. identify the required personal safety equipment for boom truck operators
    iii. explain the importance of implementing exhaust control procedures
    iv. explain the effects of excessive noise on hearing
    v. identify factors that contribute to spontaneous combustion
    vi. identify potential hazards to personal safety
    vii. identify unsafe work conditions
    viii. explain the importance of reporting accidents

2. Fasteners.
    i. identify fasteners such as rivets, nails, wood screws, sheet metal screws, bolts, nuts, washers, masonry anchors, and shields
    i. describe specific sizes for each fastener
    ii. identify sizes of fasteners
    iii. identify bolt grades
    iv. identify miscellaneous anchoring devices

1. Describe the procedures to select, safely use, and maintain the following hand tools.
    i. screwdrivers
        - standard
        - phillips
        - robertson
        - torx

    i. pliers
        - combination
        - gripping
        - cutting
        - vise-grips
        - snap ring
        - needle nose

    ii. special hose clamp tools

    iii. wrenches
        - open-end
        - box ends
        - ratcheting box ends
        - special purpose (box)
        - adjustable
        - pipe
        - spanner
        - Allen and multi-spline (metric and imperial)

    iv. sockets and drives (metric and imperial)
        - drive sizes
        - socket points
        - deep sockets
        - flexible sockets
        - drive handles
        - speed handles
        - ratchets
        - universal joints
        - adapters
        - extensions

    v. hammers
        - ball peen
        - cross peen

- plastic tip
- brass-headed
- rubber mallets
- dead blow
- sledge hammers
- hammer handles

vii. punches
- starting
- pin
- centre
- aligning

viii. torque wrenches
- types
- sizes
- purpose

ix. torque multiplier

x. hacksaws
- types and designs
- blade classification and selection

xi. files

4. Describe the procedures to select, safely use and maintain the following power tools.
   i. portable
   ii. cleaning equipment
   iii. drilling equipment
   iv. metal cutting
   v. grinders

5. Identify types of compressors.

6. Describe the procedures to select, safely use, and maintain compressors.

7. Describe the procedures to select, safely use, and store the following shop equipment.
   i. jacks
   ii. shop cranes
   iii. chain hoists

iv. steam cleaners
v. solvent cleaning tanks

8. Describe the procedures to select, safely use, and maintain the following measuring tools
   i. calipers
   ii. measuring tapes
   iii. wire rope gauges
   iv. sheave gauges
   v. anemometers
   vi. feeler gauges

9. Describe procedures to operate oxy-fuel heating and cutting equipment to industrial safety standards for the removal and/or installation of parts.
   i. follows safety precautions
      - safety apparel
      - storage and handling of welding gases
      - pre-operational inspection
   ii. setting up equipment
      - cylinders
      - gauges
      - regulators
      - valves-flame arrestor
      - torches and tips
      - hoses
      - testing for leaks
   iii. operating the torch
      - lighting procedures
      - types of flames and effect on materials
      - shutting down procedures

2. Describe procedures to perform braze welding using oxy-acetylene equipment.

3. Describe procedures to perform flame cutting with oxy-acetylene equipment.

Practical Requirements:

1. Use and maintain personnel protective equipment.

2. Complete a shop safety inspection.

3. Implement exhaust control procedures in a shop.

4. Use hand tools.

5. Use and maintain various cutting tools.

6. Use various fasteners.

7. Use power tools.

8. Use compressed air systems.

9. Use and store of shop equipment.

10. Pre-check, light and adjust oxy-fuel welding and cutting equipment.

11. Perform flame cutting with oxy-fuel equipment.

12. Perform proper shut down procedures with oxy-fuel welding and cutting equipment.

BT1130 Boom truck Operations

Learning Outcomes:

- Demonstrate knowledge of various codes and regulations required for operating boom trucks.
- Demonstrate knowledge of good safety practices when operating boom trucks.
- Demonstrate knowledge of conservation and environmental issues related to boom truck operations.
- Demonstrate knowledge of new boom truck technology.
- Demonstrate knowledge of computer assisted safety devices, LMI/Load Indicators and procedures for use.

Duration: 60 Hours

Pre-Requisites: BT1101

Objectives and Content:

1. Describe the boom truck operation occupation in terms of the work of a boom truck operator.
    i. the boom truck operator's working conditions
    ii. the responsibilities of the various parties involved with boom truck operation

2. Describe boom trucks.
    i. identify types and uses of boom trucks
    ii. describe various boom truck attachments

3. Explain the principles of leverage associated with boom truck operation.
    i. leverage and stability
    ii. forward and backward stability factors
    iii. rotation of upperworks (leverage and capacity)
    iv. leverage calculations

4. Describe the purpose and applications of signaling.
    i. identify all hand signals used in boom truck operations
    ii. identify other construction hand signals which may cause confusion for boom truck operation
    iii. interpret signals
    iv. identify audible signals for boom trucks

5. Define quadrants of operation.
    i. define quadrants and sweep area
    ii. explain division of sweep area into quadrants

6. Interpret load charts for pre-lift planning and hoisting operations.
    i. describe configuration of boom truck bases and booms
    ii. describe quadrants of operation and their effects on load charts
    iii. describe boom lengths and their effects on load charts
    iv. describe effects on values of boom angle, boom length, and load radius for chart listings

7. Define jib and jib offset.
    i. fixed jibs
    ii. luffing jibs

8. State the differences between gross capacity versus net capacity load on a boom truck.
    i. identify the purpose of range diagrams
    ii. describe how to use range diagrams

9. Describe boom extension types and lengths.
    i. full power telescopic
    ii. pinned telescopic booms

10. State the factors that reduce capacity.
    i. effects of increased load radius
    ii. effects of rapid swing rate
    iii. effects of impact loading and rapid acceleration or deceleration of load
    iv. effects of high wind speeds
    v. duty cycle operations

11. Discuss safety considerations for short-term and long-term shutdowns.

12. Describe structural failure and stability failure.

13. Determine conditions of a load chart.
    i. calculate parts of line
    ii. calculate weight of line
    iii. weight of hook block

14. Determine main boom capacities.
    i. list capacity deductions
    ii. calculate net capacities

15. Describe the principles of boom truck operation.
    i. define leverage and stability
    ii. perform leverage calculations
    iii. describe changes in boom truck leverage and capacity during rotation of upperworks.
    iv. describe forward and backward stability factors
    v. describe structural failure
    vi. describe wire rope safety factors for boom truck running and stationary ropes

16. Describe main boom gross capacity for jibs and/or boom extension(s) installed for all boom truck types

17. Determine main boom capacities with jibs or boom extensions installed.
    i. determine the effective weight of jibs and boom extensions
    ii. list capacity deductions
    iii. calculate net capacities

18. Determine jib and boom extension capacities for full telescopic booms.
    i. calculate boom extension capacities
    ii. calculate jib capacities
    iii. calculate boom extension and jib combination capacities

19. Determine jib and boom extension capacities for pinned telescopic booms.
    i. calculate boom extension capacities

ii. calculate jib capacities
iii. calculate boom extension and jib combination capacities

20. Describe inspection procedures for a crane carrier.

21. Describe the procedures for starting, moving, and proper shut down of a crane carrier.

22. Describe the procedures to transport and operate boom trucks.
    i. safety pre-cautions for preparing and boom trucks
    ii. identify municipal considerations for boom trucks
    iii. define the operator's responsibility to prevent accidents, and the need for safety when travelling and operating boom trucks
    iv. identify manufacturer's recommendations or special precautions regarding travelling of boom trucks to and from job sites
    v. determine the maximum allowable ground speed while travelling, corresponding to the boom trucks that are selected
    vi. identify what warning sign(s) if any, must be attached to boom trucks while travelling to and from job sites
    vii. determine clearances required for transporting and operating boom trucks

23. Describe conditions which prohibit boom truck operation.
    i. identify machine configurations that do not meet specifications
    ii. describe improper use of outriggers
    iii. state the importance of the boom truck being level and the potential danger of instability
    iv. describe boom truck leveling procedures
    v. describe ground conditions and blocking procedures
    vi. identify what weather and atmospheric conditions that can restrict boom truck operation
    vii. describe eccentric reeving

24. Plan for performing a lift.
    i. identify and evaluate work to be performed
    ii. describe considerations influencing lifting procedures
    iii. analyze factors influencing equipment selection
    iv. interpret an engineered lift
    v. ~~plan a multiple crane lift~~

25. Identify and describe new model boom trucks.
    i. range of capacities available
    ii. range of boom lengths available
    iii. manufacturers
    iv. advantages/disadvantages

26. Describe the upper structure characteristics of new model boom trucks.
    i. boom technology
    ii. telescoping and pinning systems
    iii. heavy lift attachments

Practical Requirements:

1. Inspect, start-up and shut down a crane carrier.

BT1065 Boom truck Systems

Learning Outcomes:

- Demonstrate knowledge of engines and drive systems, mechanical systems and hydraulic systems, their purpose and operation.
- Demonstrate knowledge of engines and drive systems, mechanical systems and hydraulic systems components, their characteristics and applications.
- Demonstrate knowledge of the procedures used to inspect, maintain and troubleshoot engines and drive systems, mechanical systems and hydraulic systems.

Duration: 6

Pre-Requisite(s): None

Objectives and Content:

1. Define terminology associated with engines and drive systems, mechanical systems and hydraulic systems.

2. Identify hazards and describe safe work practices pertaining to engines and drive systems, mechanical systems and hydraulic systems and their components.
   i) lockout/tagout
   ii) de-energize

3. Interpret codes, standards and regulations pertaining to engines and drive systems, mechanical systems and hydraulic systems.

4. Identify tools and equipment relating to engines and drive systems, mechanical systems and hydraulic systems and their components and describe their applications and procedures for use.

5. Identify types of engine and drive systems and describe their purpose and operation.
   i) gas
   ii) diesel

iii) propane
iv) automatic
v) manual
vi) hydraulic
vii) mechanical
viii) electrical

6. Identify types of mechanical systems and describe their purpose and operation.
   i) air
   ii) electrical
   iii) monitoring and warning
   iv) steering
   v) hoisting
      - hydraulic
      - friction
   vi) travel systems
   vii) outriggers
   viii) travel brakes

7. Identify types of hydraulic systems and describe their purpose and operation.
   i) closed centre
   ii) open centre

8. Identify hydraulic system components and describe their characteristics and applications.
   i) hoses
   ii) pumps
   iii) motors
   iv) filters
   v) tanks
   vi) cylinders
   vii) valves

9. Explain the power transfer principles of hydraulic systems.

10. Identify engines and drive systems, mechanical systems and hydraulic systems components and describe their characteristics and applications.

11. Describe the procedures used to troubleshoot engines and drive systems, mechanical systems and hydraulic systems and their components.

Practical Requirements:

None

BT1261 Rigging for Boom truck Operators

Learning Outcomes:

- Demonstrate knowledge of the procedures to use safety harnesses.
- Demonstrate knowledge of the procedures to perform rigging operations.

Course Duration: 60 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Describe the responsibilities of riggers.

2. Identify and describe the composition of wire rope.
   i. wire
   ii. strand
   iii. core (fibre or wire or strand)

3. Interpret and describe rope lay.
   i. regular
   ii. lang
   iii. right and left
   iv. alternate
   v. herringbone or twin strand
   vi. specialty ropes

4. Identify specialty ropes and how/where they are used including limitations.

5. Describe and interpret sizes, grades and construction of all types of rigging and hoisting ropes.

6. Identify and compare preformed vs. non-preformed types of ropes.

7. Identify and describe the fatigue and abrasion resistance of wire ropes.

8. Identify safety factors for:
    i. rigging slings (IWRC and anti-rotation)
    ii. running ropes
    iii. standing ropes
    iv. hoisting personnel

9. Calculate safe working loads.

10. Identify the classification group.

11. Identify and describe uses for non-rotation and rotating resistant ropes.

12. Describe proper installation procedures for all types of wire rope.

13. Explain the importance of lubricating and cleaning wire ropes.

14. Identify end fittings and connections and explain how they are installed.

15. Identify the minimum rope wraps on a drum that is to be maintained.

16. Identify grades of chain including.
    i. strength
    ii. inspection
    iii. care and use of

17. Describe reeving.

18. Determine the parts of line required.

19. Describe the effect of winch diameter for:
    i. multi-layer (wire rope)
    ii. line speed vs. torque

20. Compare the SWL of rope vs. line pull.

21. Describe the effect of sheave friction during a lift.

22. Identify the mechanical advantage of reeving.

23. Describe wire block reeving methods.
    i. lacing
    ii. square or angle
    iii. skip

24. Identify and describe types and configurations for slings including.
    i. wire rope
    ii. synthetic web
    iii. jacketed round synthetic
    iv. metal mesh
    v. chain
    vi. sling configurations
    vii. single vertical hitch
    viii. bridle hitch
    ix single and double basket hitch
    x. double wrap basket hitch
    xi. single and double choker hitch
    xii. double wrap choker hitch
    xiii. endless slings or grommet
    xiv. braided
    xv. sling angles
    xvi. safe working loads

25. Read and interpret manufacturer identification tags.

26. Describe rigging precautions when using synthetic and specialty slings.

27. Explain the importance of removing frayed, cut, damaged and worn equipment from service.

28. Describe rigging procedures and perform rigging calculations.

29. Determine load weights.

30. Determine the centre of gravity for various loads.

31. Determine tensions on sling legs.

32. Identify the hand signals used for hoisting operations.

Practical Requirements:

1. Plan rigging operations.

2. Calculate safe working loads and sling angles.

1. Calculate loads on equalizer beams.

2. Demonstrate proper signaling for hoisting procedures.

5. Demonstrate installation of multiple parts of line.
    i. lacing
    ii. reeving (square or angle/skip)

6. Demonstrate proper installation and procedures for all types of wire rope.

7. Inspect, use, handle and maintain wire rope.
    i. lubrication
    ii. cleaning

8. Install wire rope wedge socket end termination.

9. Demonstrate the use of:
    i. drums and winches
    ii. sheaves
    iii. hooks
    iv. rings, links and swivels
    v. shackles
    vi. eye bolts and lugs
    vii. turnbuckles
    viii come-a-long and chain hoist
    ix. spreader and equalizer beams
    x. crane blocks

xi. wire rope blocks
xii. snatch block
xiii. block and tackle
xiv. wire rope clips

10. Assemble rigging in a safe and efficient manner.

11. Select appropriate rigging hardware for a given job.

12. Perform maintenance and properly store rigging.

13. Demonstrate proper rigging procedures and calculations.

14. Plan and demonstrate various rigging operations.

BT1070 Boom truck Maintenance

Learning Outcomes:

- Demonstrate knowledge of various codes and regulations required for inspecting and maintaining boom trucks.
- Demonstrate knowledge of good safety practices when maintaining boom trucks.
- Demonstrate knowledge of conservation and environmental issues when maintaining boom trucks.

Duration: 45 Hours

Pre-Requisite(s): None

Objectives and Content:

1. Service manuals.
    i. identify the various sections of service manuals
        - maintenance
        - servicing
        - lubrication procedures
    ii. interpret information in the manual
    iii. explain the importance of complying with service manuals

2. Ordering parts.
    i. locate the machine serial number or Vehicle Identification Number (V.I.N.)
    ii. locate the engine specifications plate and serial number
    iii. complete a sample order form

3. Lubricants and their purposes.
    i. locate the various components of the lubrication system and list the servicing period for each
    ii. identify the various grades of oils to use under various temperature conditions
    iii. identify correct greases
    iv. identify the performance of grease under extreme load and heat

v. state the functions of engine oil
vi. identify the various additives used in engine oil and the advantages and disadvantages of each
vii. identify the characteristics of gear lubricants
viii. define the Engine Service Classification as presented by the American Petroleum Institute (A.P.I)

4. Crane log book.
   i. locate and state the purpose of the service meter

5. Identify start-up and shut down procedures as prescribed in the service manual.

6. Identify the various attachments available, the purpose and maintenance of each attachment.

7. Describe the maintenance and adjustments required for tracks, tires and wheels.

Practical Requirements:

1. Follow a maintenance procedure.

2. Assist in changing lubricating fuels and filters.
   i. select correct grease
   ii. load a grease gun
   iii. grease a piece of equipment
   iv. assist in changing engine oil and a filter on a piece of equipment
   v. assist in changing transmission fluid and filter on a piece of equipment
   vi. adhere to the regulations pertaining to storage and disposal fluids

3. Affix a warning sign where it can be easily recognized on a piece of equipment.

4. Refuel a machine.

AM1340 Hoisting Math Fundamentals

Learning Outcomes:

- Demonstrate knowledge of mathematical concepts in the performance of trade practices.
- Demonstrate knowledge of mathematics as a critical element of the trade environment.
- Demonstrate knowledge of solving mathematical word problems.
- Demonstrate knowledge of mathematical principles for the purposes of problem solving, job and materials estimation, measurement, calculation, system conversion, diagram interpretation and scale conversions, formulae calculations, and geometric applications.

Duration: 30 Hours

Pre-Requisite(s): AM1100

Objectives and Content:

The instructor is required to use trade specific examples to reinforce the course objectives.

1. Employ percent/decimal/fraction conversion and comparison in trade specific situations.

2. Apply ratios and proportions to trade specific problems.

3. Use the Imperial Measurement system in trade specific applications.

4. Use the Metric Measurement system in trade specific applications.

5. Complete Imperial/Metric conversions in trade specific situations.
   i. convert between imperial and metric measurements
   ii. convert to another unit within the same measurement system

6. Manipulate formulas using cross multiplication, dividing throughout, elimination, and substitution to solve trade specific problems, such as:
   i. right angle triangles
   ii. area
   iii. volume
   iv. perimeter

7. Perform calculations involving geometry that are relevant to the trade, such as:
   i. angle calculations
   ii. circle calculations

8. Use practical math skills to complete administrative trade tasks.
   i. material estimation
   ii. material costing
   iii. time & labour estimates
   iv. taxes & surcharges
   v. markup & projecting revenue

Practical Requirements:

1. To emphasize or further develop specific knowledge objectives, students will be asked to complete practical demonstrations which confirm proper application of mathematical theory to job skills.

Note:

This course has been designated as NON-TRANSFERABLE to other trades programs, and NOT ELIGIBLE FOR PRIOR LEARNING ASSESSMENT. Students completing training in this trade program are required to complete this math course.

B. Conditions Governing Apprenticeship Training

1.0 General

The following general conditions apply to all apprenticeship training programs approved by the Provincial Apprenticeship and Certification Board (PACB) in accordance with the *Apprenticeship Training and Certification Act (1999)*. If an occupation requires additional conditions, these will be noted in the specific Plan of Training for the occupation. In no case should there be a conflict between these conditions and the additional requirements specified in a certain Plan of Training. All references to Memorandum of Understanding will also apply to Letter of Understanding (LOU) agreements.

2.0 Entrance Requirements

2.1 Entry into the occupation as an apprentice requires:

Indenturing into the occupation by an employer who agrees to provide the appropriate training and work experiences as outlined in the Plan of Training.

2.2 Notwithstanding the above, each candidate must have successfully completed a high school program or equivalent, and in addition may be required to have completed certain academic subjects as specified in a particular Plan of Training. Mature students, at the discretion of the Director of Apprenticeship and Trades Certification, may be registered. A mature student is defined as one who has reached the age of 19 and who can demonstrate the ability and the interest to complete the requirements for certification.

2.3 At the discretion of the Director of Apprenticeship and Trades Certification, credit toward the apprenticeship program may be awarded to an apprentice for previous work experience and/or training as validated through prior learning assessment.

2.4 An Application for Apprenticeship form must be duly completed along with a Memorandum of Understanding as applicable to be indentured into an Apprenticeship. The Memorandum of Understanding must contain signatures of

an authorized employer representative, the apprentice and an official representing the Provincial Apprenticeship and Certification Board to be valid.

2.5 A new Memorandum of Understanding must be completed for each change in an employer during the apprenticeship term.

3.0 Probationary Period

The probationary period for each Memorandum of Understanding will be six months or 900 employment credit hours. Within that period the memorandum may be terminated by either party upon giving the other party and the PACB one week notice in writing.

4.0 Termination of a Memorandum of Understanding

After the probationary period referred to in Section 3.0, the Memorandum of Understanding may be terminated by the PACB by mutual consent of the parties involved, or cancelled by the PACB for proper and sufficient cause in the opinion of the PACB, such as that stated inSection14.

5.0 Apprenticeship Progression Schedule, Wage Rates and Advanced Training Criteria

Progression Schedule

Boom Truck Operator - 2400 Hours			
APPRENTICESHIP LEVEL AND WAGES			
Year	Wage Rate At This Level	Requirements for progression to next level of apprenticeship	When requirements are met, the apprentice will progress to…
1st	75 %	▪ Completion of Level I training ▪ Pass Level I exam ▪ Minimum 1200 hours of combined relevant work experience and training	2nd Year
2nd	90%	▪ Minimum 2400 hours of combined relevant work experience and training ▪ Sign-off of all workplace skills in apprentice logbook ▪ Pass certification exam	Journeyperson Certification

Wage Rates

- Rates are percentages of the prevailing journeyperson's wage rate in the place of employment of the apprentice.
- Rates must not be less than the wage rate established by the Labour Standards Act (1990), as now in force or as hereafter amended, or by other order, as amended from time to time replacing the first mentioned order.
- Rates must not be less than the wage rate established by any collective agreement which may be in force at the apprentice's workplace.
- Employers are free to pay wage rates above the minimums specified.

Level Exams

- This program may **not** currently contain Level Exams, in which case this requirement will be waived until such time as Level Exams are available.

Direct Entry Apprentice

- Will complete the NLCS or AACS for the trade if available, or:
- Will complete Level I courses through PLA and / or in school training if no NLCS or AACS is available.
- Training will be completed with up to 16 weeks of training per calendar year.

Boom Truck Operator - 2400 Hours		
CLASS CALLS		
Call Level	Requirements for Class Call	Hours awarded for In-School Training
Direct Entry Apprentice to Level I	▪ Minimum of 1000 hours of relevant work experience	336

Direct Entry Apprentice

- Will complete the NLCS or AACS for the trade if available, or:
- Will complete Level I courses through PLA and / or in school training if no NLCS or AACS is available.
  Training will be completed with up to 16 weeks of training per calendar year.

Class calls at Minimum Hours:

- Class calls may not always occur at the minimum hours indicated. Some variation is permitted to allow for the availability of training resources and apprentices.

6.0 Tools

Apprentices shall be required to obtain their own hand tools applicable for the designated occupation of registration or tools as specified by the PACB.

7.0 Periodic Examinations and Evaluation

7.1 Every apprentice shall submit to such occupational tests and examinations as the PACB shall direct. If after such occupational tests and examinations the apprentice is found to be making unsatisfactory progress, his/her apprenticeship level and rate of wage shall not be advanced as provided in Section 5 until his/her progress is satisfactory to the Director of Apprenticeship and Trades Certification and his/her date of completion shall be deferred accordingly. Persistent failure to pass required tests shall be a cause for revocation of his/her Memorandum of Understanding.

7.2 Upon receipt of reports of accelerated progress of the apprentice, the PACB may shorten the term of apprenticeship and advance the date of completion accordingly.

7.3 For each and every course, a formal assessment is required for which 70% is the pass mark. A mark of 70% must be attained in both the theory examination and the practical project assignment, where applicable as documented on an official transcript.

7.4 Course credits may be granted through the use of a PACB approved matrix which identifies course equivalencies between designated trades and between current and historical Plans of Training for the same trade.

8.0 Granting of Certificates of Apprenticeship

Upon the successful completion of apprenticeship, the PACB shall issue a Certificate of Apprenticeship.

9.0 Hours of Work

Any hours employed in the performance of duties related to the designated occupation will be credited towards the completion of the term of apprenticeship. Appropriate documentation of these hours must be provided.

10.0 Copies of the Registration for Apprenticeship

The Director of Apprenticeship and Trades Certification shall provide copies of the Registration for Apprenticeship form to all signatories to the document.

11.0 Ratio of Apprentices to Journeypersons

Under normal practice, the ratio of apprentices to journeypersons shall not exceed two apprentices to every one journeyperson employed. Other ratio arrangements would be determined and approved by the PACB.

12.0 Relationship to a Collective Bargaining Agreement

Where applicable in Section 5 of these conditions, Collective Agreements take precedence.

13.0 Amendments to a Plan of Apprenticeship Training

A Plan of Training may be amended at any time by the PACB.

14.0 Employment, Re-Employment and Training Requirements

14.1 The Plan of Training requires apprentices to regularly attend their place of employment.

14.2 The Plan of Training requires apprentices to attend training for that occupation as prescribed by the PACB.

14.3 Failure to comply with Sections 14.1 and/or 14.2 will result in cancellation of the Memorandum of Understanding. Apprentices may have their MOUs reinstated by the PACB but would be subject to a commitment to complete the entire

program as outlined in the General Conditions of Apprenticeship. Permanent cancellation in the said occupation is the result of non-compliance.

14.4 Cancellation of the Memorandum of Understanding to challenge journeyperson examinations, if unsuccessful, would require an apprentice to serve a time penalty of two (2) years before reinstatement as an apprentice or qualifying to receive a class call to training as a registered Trade Qualifier. Cancellation must be mutually agreed upon by the employer and the apprentice.

14.5 An employer shall ensure that each apprentice is under the direct supervision of an approved journeyperson supervisor who is located at the same worksite as the apprentice, and that the apprentice is able to communicate with the journeyperson with respect to the task, activity or function that is being supervised.

14.6 Under the Plan of Training the employer is required to keep each apprentice employed as long as work is available, and if the apprentice is laid off due to lack of work, to give first opportunity to be hired before another is hired.

14.7 The employer will permit each apprentice to attend training programs as prescribed by the PACB.

14.8 Apprentices who cannot acquire all the workplace skills at their place of employment will have to be evaluated in a simulated work environment at a PACB authorized training institution and have sign-off done by instructors to meet the requirements for certification.

15.0 Appeals to Decisions Based on Conditions Governing Apprenticeship Training

Persons wishing to appeal any decisions based on the above conditions must do so in writing to the Minister of Advanced Education and Skills within 30 days of the decision.

E. Requirements for Provincial Certification

1. Evidence the required work experiences outlined in this Plan of Training have been obtained. This evidence must be in a format clearly outlining the experiences and must be signed by an appropriate person or persons attesting that these experiences have been obtained to the level required.

2. Successful completion of all required courses in the program.

3. A combination of training from an approved training program and suitable work experience totaling 2400 hours.

4. Completion of a Provincial certification examination, to be set at a place and time determined by the Apprenticeship and Trades Certification Division.

F. Roles and Responsibilities of Stakeholders in the Apprenticeship Process

The apprenticeship process involves a number of stakeholders playing significant roles in the training of apprentices. This section outlines these roles and the responsibilities resulting from them.

The Apprentice:

- completes all required technical training courses as approved by the PACB.
- finds appropriate employment.
- completes all required work experiences in combination with the required hours.
- ensures work experiences are well documented.
- approaches apprenticeship training with an attitude and commitment that fosters the qualities necessary for a successful career as a qualified journeyperson.
- obtains the required hand tools as specified by the PACB for each period of training of the apprenticeship program.

The Employer:

- provides high quality work experiences in an environment conducive to learning.

- remunerates apprentices as set out in the Plan of Training or Collective Agreements.

- provides feedback to training institutions, Apprenticeship and Trades Certification Division and apprentices in an effort to establish a process of continuous quality improvement.

- where appropriate, releases apprentices for the purpose of returning to a training institution to complete the necessary technical courses.

- ensures work experiences of the apprentice are documented.

- ensures a certified journeyperson is currently on staff in the same trade area as the apprentice and whose certification is recognized by the NL Department of Advanced Education and Skills.

The Training Institution:

- provides a high quality learning environment.

- provides the necessary student support services that will enhance an apprentice's ability to be successful.

- participates with other stakeholders in the continual updating of programs.

The Apprenticeship and Trades Certification Division:

- establishes and maintains program advisory committees under the direction of the PACB.

- promotes apprenticeship training as a viable career option to prospective apprentices and other appropriate persons involved, such as career guidance counsellors, teachers, parents, etc.

- establishes and maintains a protocol with training institutions, employers and other appropriate stakeholders to ensure the quality of apprenticeship training programs.

- ensures all apprentices are appropriately registered and records are maintained as required.

- schedules all necessary technical training periods for apprentices to complete requirements for certification.

- administers level, provincial and interprovincial examinations.

The Provincial Apprenticeship and Certification Board:

- sets policies to ensure the provisions of the *Apprenticeship and Certification Act (1999)* are implemented.

- ensures advisory and examination committees are established and maintained.

- accredits institutions to deliver apprenticeship training programs.

- designates occupations for apprenticeship training and/or certification.