



The Safety Association for Canada's Upstream Oil and Gas Industry

[ ENTRY LEVEL ]

# Sideboom Operator Training Standard



By industry, for industry



The professionals who operate sidebooms bring experience, concentration and a serious attitude to the job. Operators must steer the heavy equipment, control the sideboom, watch out for people and follow the directions from the signal person—all at the same time

Moving and setting pipe can involve as many as five sideboom pipelayers. The team must work as one unit, with each operator understanding the equipment and how to share the load. This potentially hazardous work takes place over rough terrain and in poor weather.

This Industry Training Standard is a guideline for third party training organizations and pipeline companies that provide in-house training. The guideline provides industry with Entry Level Sideboom Operator Training advice. It aims to create acceptable, industry-wide training standards for entry-level sideboom operators. It also establishes acceptable, minimum competencies for these operators.

The following individuals helped to develop this standard through the Canadian Energy Pipeline Association (CEPA):

<i>Edna Fleming (Chair)</i>	<i>Kinder Morgan Canada</i>
<i>Karen Duckworth (Vice-chair)</i>	<i>NEB</i>
<i>Michael Ardon</i>	<i>ek pass</i>
<i>Lindley Imeson</i>	<i>Pipeline Machinery International (PLMP)</i>
<i>Ziad Saad</i>	<i>CEPA</i>
<i>Rob Smith</i>	<i>Pembina Pipeline Corporation</i>
<i>Scott Smith</i>	<i>Willbros Canada</i>
<i>Robert Stark</i>	<i>Ledcor Pipeline</i>
<i>Sheridon Taylor</i>	<i>Willbros Canada</i>
<i>Craig Vest</i>	<i>ek pass</i>

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## **1. PURPOSE**

This standard provides the requirements for developing and delivering a basic sideboom operator training program.

It describes the minimum length and necessary content—the subject areas your training program must cover. Your training program can offer much more but cannot leave out these basics.

The training will provide core entry-level knowledge and skills. Specialized crews will require additional training.

## **2. GENERAL TRAINING REQUIREMENTS**

### **2.1. TRAINING IS COMPETENCY BASED**

Operators who have completed training will be able to demonstrate that they can:

- safely operate a sideboom
- use, care for and maintain the sideboom

### **2.2. TRAINING COMPLIES WITH ALL APPLICABLE REGULATIONS AND STANDARDS**

To meet this standard, all training program materials, methodologies and equipment must comply with the following regulations and standards:

- Applicable federal and provincial occupational health and safety regulations and codes
- American Society for Mechanical Engineers (ASME) 30.14 standard for Side Boom Tractors
- Safety Code on Mobile Cranes CSA Z150.98 (R 2008)
- Operation and Maintenance Manual (OMM)
- Other recognized industry standards

The program must train operators on all regulations and codes that specifically apply to the operation and basic maintenance of a sideboom.

Trainees should become familiar with local, provincial and federal requirements.

### **2.3. COURSE CONTENT MUST COVER**

- The *Alberta Occupational Health and Safety Act*, along with regulations and codes, including Code Part 19 for Powered Mobile Equipment
- Saskatchewan *Occupational Health and Safety Act*, along with regulations and codes
- Worksafe BC
  - Occupational Health and Safety Regulation, Part 4 General Conditions
  - Occupational Health and Safety Regulation, Part 16 Mobile Equipment
- American Society for Mechanical Engineers (ASME) 30.14 standard for Side Boom Tractors
- National Energy Board Act and Regulations
  - Onshore Pipeline Regulations
  - National Energy Board Processing Plant Regulations
- Alberta Energy and Utilities Board Pipeline
- Canada Labour Code on training, including sections 125, 1.2, 14.1, 14.23, 14.24 and 17.6

### **2.4. TRAINEES MUST LEARN:**

- which sections of the legislation, regulations and codes apply
- how to comply with the relevant legislation, regulations and codes
- their right (and obligation) to refuse unsafe work
- fit-for-work requirements and other health and medical requirements set out by the company, Alberta Occupational Health and Safety and the American Society for Mechanical Engineers

**2.5. TRAINING MUST COMPLY WITH ALL COMPANY POLICES, PROCESSES AND PROTOCOLS**

Trainees must learn about the actual job requirements. In addition to this training standard, companies will have their own requirements. Once they are on the job, operators will have to take part in an orientation to the company and its equipment.

They will have to follow company rules, wear proper protective clothing and report incidents and unsafe conditions.

**2.6. TRAINING MUST INVOLVE TRAINEES IN ACTIVE LEARNING AND SKILLS ACQUISITION**

There must be opportunities for trainees to practise and for experts and trainees to demonstrate key sideboom operator skills. Ideally, your program will engage both new and experienced operators.

**2.7. TRAINING MUST INCLUDE CLASSROOM INSTRUCTION AND PRACTICAL TRAINING**

The training program must offer at least:

- 8 hours of theory, which introduces both the regulations and the equipment.
- 32 hours of practical, hands-on training in and around functioning sideboom equipment. That training can include both mechanical and hydraulic sidebooms.

**2.8. TRAINING MATERIALS**

The training program will provide user guides and workbooks, which participants can keep.

All program materials must express weight and measures in both imperial and metric units.

**2.9. CLASS SIZE AND PROGRAM LENGTH**

The maximum class size is six Trainees for each instructor. This ensures all Trainees have the opportunity for one-on-one coaching.

**2.10. TRAINING MUST TAKE PLACE ON SAFE EQUIPMENT**

The practical training must take place on a safe, functional sideboom. There must be at least one piece of equipment for every two trainees.

**2.11. TYPE OF SIDEBOOM**

Trainees must be competent on the type of sideboom they will operate—hydraulic or mechanical—and the training records must identify the type of equipment the trainee is trained to operate.

A single session may include training on mechanical and hydraulic sidebooms. However, an operator trained solely on hydraulic is not qualified to operate mechanical and will need additional training before operating a mechanical sideboom.

**2.12. TRAINING MUST INCLUDE PRE-ASSESSMENT**

Employers must determine the required prerequisites and must be able to demonstrate they have a system to collect and verify participants have these prerequisites.

Trainees will have basic math and communication skills and be able to speak, read and write English, French or other relevant language.

**MEDICAL CLEARANCE**

All trainees must pass a medical that meets American Society for Mechanical Engineers (ASME) 30.14.14-3.1.2 standard.

**FIT FOR DUTY**

With heavy pipeline equipment, there is zero tolerance for drugs and alcohol, which can affect eye-hand co-ordination and the ability to operate equipment. Fatigue adversely affects operator performance, and therefore workers must be well rested.



### **BASIC MECHANICAL APTITUDE**

A sideboom operator must be able to operate equipment and recognize unusual machine movements and sounds.

### **ALERT AND AWARE**

Sideboom operators must be able to work closely with the swampers, who guide the work on the ground. They must understand their relationship with their swamper, know the hand signals and be able to react quickly to non-verbal communication.

### **A SAFE ATTITUDE**

A sideboom operator must always operate the equipment in a safe manner, focusing on the job and taking all necessary safety steps.

### **UNDERSTANDING THE HAZARDS**

A sideboom operator must be able to recognize existing and potential hazards and know how to:

- conduct a field level pre-job hazard analysis
- check the machine for hazards
- assess any task before starting

### **A POSITIVE ATTITUDE**

Operating a sideboom requires teamwork. Eventually, the trainee may work with a series of sidebooms that moves and lays long lengths of pipe. If one operator releases a load too fast or too soon, it can create hazards down the pipeline. Operators need to stay in tune with each other and with the crew on the ground. A safe, professional sideboom operator is an excellent team player who works well with others and knows every action affects other people.

## **2.13. INSTRUCTORS MUST BE COMPETENT**

The instructor providing the training must be experienced as a sideboom operator and fully familiar with the equipment.

The instructor must ensure the training equipment has been inspected and maintained.

The instructor must be knowledgeable in occupational health and safety and be able to prepare and deliver a safety briefing, describing and discussing:

- muster point
- required personal protective equipment (PPE)
- site safety inspection, including:
  - proper site orientation
  - emergency response
  - hazard assessment

### **2.14. THE TRAINING PROGRAM MUST TEST AND CERTIFY OPERATORS**

As per 2:13, a competent sideboom instructor must evaluate the trainees.

All trainees must pass a supervised written exam and demonstrate they can safely operate a sideboom.

### **2.15. THE WRITTEN TEST**

To pass the written exam, trainees must receive a minimum grade of 80 per cent. The written test must measure knowledge of:

- Occupational health and safety requirements
  - applicable provincial and federal regulations for operating sidebooms, as per 2.3
  - employer and worker rights and responsibilities
  - working alone
  - fatigue management
  - personal protective equipment
  - pre-job hazard assessment
  - change-in-work hazard assessment – ground conditions, weather, workers in close proximity, other equipment, etc.
  - necessary proper parking practices,

- Equipment
  - equipment components
  - emergency controls
  - equipment checks and pre-use checklists
  - safety devices – where to find them, what they do, which checks to make, etc.
  - Manufacturers Operating Manual
  - Original Operators Manual (OMM)
  - load limitations and calculations
  - equipment limitations
  - weather considerations
  - the importance of communication including during pre-job planning, and reporting deficiencies

### **2.16. OPERATING THE SIDEBOOM**

Trainees must be able to demonstrate that they can successfully operate the sideboom. They must be able to:

- locate and review the operator's manual and locate the manufacturer's specifications for the specific sideboom
- conduct a pre-use walk around inspection, report and document deficiencies and properly record the inspection
- find and check machine-rated capacities
- demonstrate proper operational control of:
  - access and egress using three-point contact
  - normal start-up and shut down
  - forward and reverse driving
  - left and right steering
  - boom and hoisting techniques
  - parking
    - grade
    - near other equipment
    - around power lines

- emergency shutdown
- operating procedures on adverse terrain
- winter operation
- attachment operations

### **2.17. SIDEBOOM SERVICING**

Trainees must be able to demonstrate knowledge of inspections and servicing, including:

- sideboom controls and components
- applicable documentation (for example log books)
- preventive maintenance and adjustments
- good housekeeping
- machine lubrication

### **2.18. ALL TRAINING MUST BE DOCUMENTED**

All training records must include:

- name of the operator
- date of training and evaluation
- name of instructor(s)
- sideboom(s) used for training
  - type of draw works (mechanical or hydraulic)
  - model number of sideboom(s)

## **3. GENERAL TRAINING CONTENT**

Training must include instruction on safety regulations, manuals, sideboom configuration, pre-use inspection, maintenance and practical use of sideboom.

### **3.1. REGULATIONS AND INDUSTRY STANDARDS**

Trainees must know the regulations and industry standards that apply to sideboom operations.

### **3.2. OPERATING MANUALS**

Trainees must learn how to comply with the operator's manual and manufacturer specifications.

Content must include information on Original Equipment Manufacturing (OEM) manuals. Some manufacturers combine the operator-related operation and maintenance information into one manual called the OMM, short for Operator's (or Operation) Manual.

For the purpose of this standard, OEM manuals for sidebooms include both the OMM and the maintenance manual.

### **3.3. EQUIPMENT CONFIGURATION**

Trainees must identify:

- the type of sideboom
- machine-specific controls, such as finger-tip steering, steering clutches, differential steering
- attachments, such as the stringing stick, jib and winch

They must learn how to interpret capacity chart(s) and identify the rigging required.

The trainee must be able to describe the purpose and function of each component, including all operating levers, brakes, additions and modifications.

Trainees must also understand the capacity of each component and the relationships between the length of the boom, length of cable, cable size and load limits.

**3.4. PRE-USE INSPECTION**

Trainees must be able to conduct pre-operation inspections, following the Original Equipment Manufacturing (OEM) manual, as well as the standards, regulations and codes.

Trainees must be able to identify critical deficiencies and know when to tag out or tie to lockout.

Trainees must know how to document the inspection and complete the necessary documentation.

**3.5. SIDEBOOM TESTING**

The course content must explain the requirement to test the operation of all components.

**3.6. TRAINING MUST INCLUDE INSTRUCTION ON MANEUVERING THE SIDEBOOM**

Trainees must know how weather and operating conditions may affect the sideboom. They must know how grade, slope and other ground conditions can affect the rigging and its stability. A sideboom operator will lay pipe up slopes and around bends and should understand how different conditions affect the equipment and the load.

**3.7. TRAINING MUST INCLUDE INSTRUCTION ON OPERATIONAL HAZARDS**

Trainees must be aware of buried and underground utilities and their markings, as well as:

- ramping
- access
- right-of-way limits
- traffic control

**3.8. TRAINING MUST INCLUDE INSTRUCTION ON WORKING WITH SPECIALIZED CREWS**

Training must include an overview of specialized crews and operations, including:

- multiple tractor operations
- stringing
- bending
- lowering in
- boring and directional drilling
- fabrication and set-up
- setting in tractor
- prep and shack packing
- river crossings
- handling swamp weights
- tie in
- testing
- demobilization and equipment loading
- equipment transporting
- winch and tow-CAT operations

**3.9. TRAINING MUST INCLUDE INSTRUCTION ON OPERATING THE SIDEBOOM**

Trainees must be able to operate all equipment and components. The training must include instruction on the differences between sideboom models.

Trainees must know standard operating practices—how to:

- lift the load
- boom in and out
- travel with the load

**3.10. TRAINING MUST INCLUDE INSTRUCTION ON SIDEBOOM ATTACHMENTS**

Trainees must know how to connect and operate the attachments safely. They must also learn about their limitations.

They must know how to check the rigging below the hook (for example slings and belts) and how to determine if the rigging has the proper configuration and capacity.

**3.11. TRAINING MUST INCLUDE INSTRUCTION ON WORKING WITH PEOPLE ON THE GROUND**

Trainees must be aware of verbal and non-verbal communication (including hand signals) from:

- operator-to-operator
- operator-to-ground personnel
- operator-to-vehicle

They must also be aware of situational hazards, including:

- blind spots and pinch points
- road crossings and power lines
- conflicting right-of-way traffic
- proper use of tag lines



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