

**WORKER CRUSHED WHILE OPERATING  
KNUCKLE BOOM PICKER**

Type of Incident:      Fatality

Date of Incident:      October 16, 2010

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**SECTION 1.0          DATE AND TIME OF INCIDENT**

- 1.1      The incident occurred on October 16, 2010 at approximately 9:00 a.m.

**SECTION 2.0          NAME AND ADDRESS OF PRINCIPAL PARTIES**

**2.1      Owner(s)**

- 2.1.1   Bearing Oilfield Services Ltd.  
         P.O. Box 1014  
         4725 Railway Avenue  
         Elk Point, Alberta  
         T0A 1A0

**2.2      Employer(s)**

- 2.2.1   Bearing Oilfield Services Ltd.  
         P.O. Box 1014  
         4725 Railway Avenue  
         Elk Point, Alberta  
         T0A 1A0

**2.3      Worker(s)**

- 2.3.1   Apprentice Boom Truck Operator (            /)  
         P.O. Box 1120  
         Elk Point, Alberta  
         T0A 1A0

- 2.3.2   Swamper                            /)  
         Box 234  
         Elkpoint, Alberta  
         T0A 1A0

**2.4      Yard Lessee**

- 2.4.1   Tuboscope Canada  
         P.O. Box 6458  
         7401-50 Avenue  
         Bonnyville, Alberta  
         T9N 2L5

## **SECTION 3.0            DESCRIPTION OF PRINCIPAL PARTIES**

### **3.1      Owner**

- 3.1.1 Bearing Oilfield Services Ltd. is located in Elkpoint, Alberta and provides specialty services to the oil and gas sector in Alberta, British Columbia and Saskatchewan. Specialty services include pipeline and facility construction, site maintenance, fabrication, welding and quality control.

### **3.2      Employer**

- 3.2.1 Bearing Oilfield Services Ltd. is located in Elkpoint, Alberta and provides specialty services to the oil and gas sector in Alberta, British Columbia and Saskatchewan. Specialty services include pipeline and facility construction, site maintenance, fabrication, welding and quality control.

### **3.3      Yard lessee**

- 3.3.1 Tuboscope Canada is an oil and gas service company providing services to the oil and gas industry in inspection, machining services, inventory management and corrosion control with oil and gas equipment.

## **SECTION 4.0            LOCATION OF INCIDENT**

- 4.1 Tuboscope Canada is located at 7401-50 Avenue in Bonnyville, Alberta. (Attachment A – Map).

## **SECTION 5.0            EQUIPMENT, MATERIAL AND OBSERVATIONS**

### **5.1      Equipment and Material**

#### **5.1.1    Conventional truck**

- 5.1.1.1 2008 Western Sterling Conventional truck, Unit 803.

#### **5.1.2    Tri-axle trailer mounted with knuckle boom picker.**

- 5.1.2.1 2005 Roughneck 10 m long tri-axle flat deck trailer, Unit T09.

- 5.1.2.2 AutoGRU PM S.p.A. knuckle boom picker Unit T-09, Model Series 10, Serial Number GA052110.

### 5.1.3 Tubing and sucker rods

#### 5.1.3.1 Various lengths of 8 cm diameter tubing and sucker rods.

## 5.2 Observations

- 5.2.1 At the time of the investigation following the incident, the scene was disturbed in order to attempt to perform first aid on the Apprentice Boom Truck Operator ( ). The knuckle boom picker controls on the passenger side were activated, releasing Apprentice Boom Truck Operator ( ) from between the boom and outrigger. When Emergency Medical Services arrived they identified that Apprentice Boom Truck Operator ( ) was fatally injured. The Bonnyville Royal Canadian Mounted Police then secured the scene until Occupational Health and Safety arrived.
- 5.2.2 Upon the arrival of Occupational Health and Safety it was observed the driver's side outrigger was not engaged and the passenger side outrigger arm was only partially extended. (Attachment C – Photograph 1). The knuckle boom picker was positioned on the passenger side with the boom partially extended placing the boom at the front of the trailer. (Refer to Attachment C – Photograph 2).
- 5.2.3 The Apprentice Boom Truck Operator ( ) had over 10 years of oil and gas experience, including operating heavy equipment. At the time of the incident the Apprentice Boom Truck Operator ( ) had completed 6 weeks of classroom instruction, and approximately 450 hours of field experience operating a boom truck.
- 5.2.4 The Apprentice Boom Truck Operator ( ) had access to a Journeyman Boom Truck Operator ( ), Bearing Oilfield Services Ltd.'s owner, for the operation of the knuckle boom picker.
- 5.2.5 The Apprentice Boom Truck Operator ( ) had access to the operator's manual for the AutoGRU PM S.p.A. knuckle boom picker for operational instructions.
- 5.2.6 A hazard assessment was completed by the Apprentice Boom Truck Operator ( ) and Swamper ( ) identifying existing and potential hazards.
- 5.2.7 The manufacturer's design of the operating controls for the PM S.p.A. knuckle boom picker Unit T-09, Model Series 10 are reversed from left to right between the driver's side and the passenger's side. (Attachment B – Diagram 1 and 2)



## **SECTION 6.0 NARRATIVE DESCRIPTION OF THE INCIDENT**

- 6.1 At approximately 7:50 a.m. Apprentice Boom Truck Operator ( ) and Swamper ( ) commenced their scheduled shift at the Bearing Oilfield Services Ltd. yard.
- 6.2 At approximately 8:00 a.m. Apprentice Boom Truck Operator ( ) and Swamper ( ) were preparing to deliver 8 cm diameter tubing and sucker rods which were previously loaded onto the trailer from the Bearing Oilfield Services Ltd. yard to the Tuboscope yard. It was determined by the Apprentice Boom Truck Operator ( ) and Swamper ( ) they must first remove a slider from the trailer before leaving the Bearing Oilfield Services Ltd. yard.
- 6.3 The Apprentice Boom Truck Operator ( ) and Swamper ( ) removed the slider by following the Bearing Oilfield Services Ltd. safe work procedures which included, fully extending the outriggers and safely operating the hoisting equipment. Once removing the slider, Apprentice Boom Truck Operator ( ) retracted the boom and secured the outriggers and then proceeded to travel to the Tuboscope Canada yard.
- 6.4 At approximately 9:15 a.m. Apprentice Boom Truck Operator ( ) and Swamper ( ) arrived at the Tuboscope Canada yard. At that time Apprentice Boom Truck Operator ( ) and Swamper ( ) on Proskiw) were advised by the Tuboscope Canada representative to drive to the east side of the building to offload the tubing and sucker rod.
- 6.5 The Apprentice Boom Truck Operator ( ) drove to the east side of the building and proceeded to position the trailer facing south (Attachment C – Photograph 3).
- 6.6 The Apprentice Boom Truck Operator ( ) and Swamper ( ) exited the cab and proceeded to prepare for the offloading of the tubing and sucker rods.
- 6.7 The Apprentice Boom Truck Operator ( ) walked from under the driver's side of the trailer to the passenger side. The Swamper ( ) walked to the trailer and started to undo the straps from the front of the trailer to the back, and then walked around the back to front continuing to undo the straps.

- 6.8 The Apprentice Boom Truck Operator ( ) then returned to the driver's side of the trailer to the knuckle boom controls. The Swamper ( ) informed Apprentice Boom Truck Operator ( ) the outrigger was not pulled out and engaged. The Swamper ( ) then proceeded to collect and roll-up the straps on the driver's side.
- 6.9 While the Swamper ( v) was rolling up the straps from the driver's side, he heard the Apprentice Boom Truck Operator ( ) let out a scream from the passenger side. When the Swamper ( ) attended to the scream he observed Apprentice Boom Truck Operator's ( ) head caught between the outrigger and the knuckle boom. The Swamper ( ) immediately operated the controls to release the Apprentice Boom Truck Operator's ( ) head from being pinched between the outrigger and the knuckle boom. (Attachment C – Photograph 4) Upon releasing the controls, Apprentice Boom Truck Operator ( ) fell to the ground under the trailer. (Attachment C – Photograph 4).
- 6.10 Swamper ( ) immediately contacted Tuboscope Canada personnel for medical attention. Upon the arrival of RCMP and Emergency Medical Services, Apprentice Boom Truck Operators ( ) was pronounced deceased at the scene.

## **SECTION 7.0 ANALYSIS**

### **7.1 Direct Cause**

- 7.1.1 The direct cause of the Apprentice Boom Truck Operator's ( ) fatal injuries occurred as a result of being crushed between the AutoGRU PM S.p.A. knuckle picker boom and the outrigger on the passenger side while operating the controls to boom out the mast.

### **7.2 Contributing Factors**

- 7.2.1 During the Occupational Health and Safety investigation it was identified no witnesses were present to observe the fatal incident.
- 7.2.2 Apprentice Boom Truck Operator ( ) operated the knuckle picker boom controls on the passenger side. This placed him between the outrigger and the boom.
- 7.2.3 Apprentice Boom Truck Operator ( ) did not follow the operator's manual and operated the controls from the opposite side of where the knuckle picker boom picker was being boomed out.



- 7.2.4 The manufacturer's design of the AutoGRU PM S.p.A. passenger side controls are in opposite order from the driver's side controls. (Attachment B – Diagram 1)
- 7.2.5 Apprentice Boom Truck Operator ( ) had followed directions given to offload material at the Bearing Oilfield yard prior to commencement of offloading the tubing and sucker rod at the Tuboscope Canada yard.

## **SECTION 8.0 FOLLOW-UP/ACTION TAKEN**

### **8.1 Employment and Immigration; Occupational Health and Safety**

- 8.1.1 Occupational Health and Safety issued a stop use order on the PMAutoGRU knuckle boom picker. Occupational Health and Safety obtained inspection services to complete a functional inspection on the AutoGRU PM S.p.A. knuckle picker. The inspection identified that the deficiencies did not relate to the operation of the controls that caused the fatal incident.
- 8.1.2 Occupational Health and Safety requested Bearing Oilfield Services Ltd. to provide an incident investigation.

### **8.2 Industry**

- 8.2.1 Bearing Oilfield Services Ltd. complied with all the orders and requests issued to them.
- 8.2.2 Bearing Oilfield Services Ltd. completed repairs on the AutoGRU PM S.p.A. knuckle boom picker.

### **8.3 Additional Measures**

- 8.3.1 Government of Alberta, Advanced Education and Technology, Apprenticeship and Industry Training granted Apprentice Boom Truck Operator ( ) with his Journeyman Boom Truck Operator certification after the fatality by identifying that the Apprentice Boom Truck Operator ( ) was within 50 hours of obtaining his Journeyman Boom Truck Operator certification.



**SECTION 9.0      SIGNATURES**

\_\_\_\_\_  
Melanie Eyben, Lead Investigator

\_\_\_\_\_  
Date

\_\_\_\_\_  
Francisco Hirang, Investigator

\_\_\_\_\_  
Date

\_\_\_\_\_  
Gerry Wagner, Manager

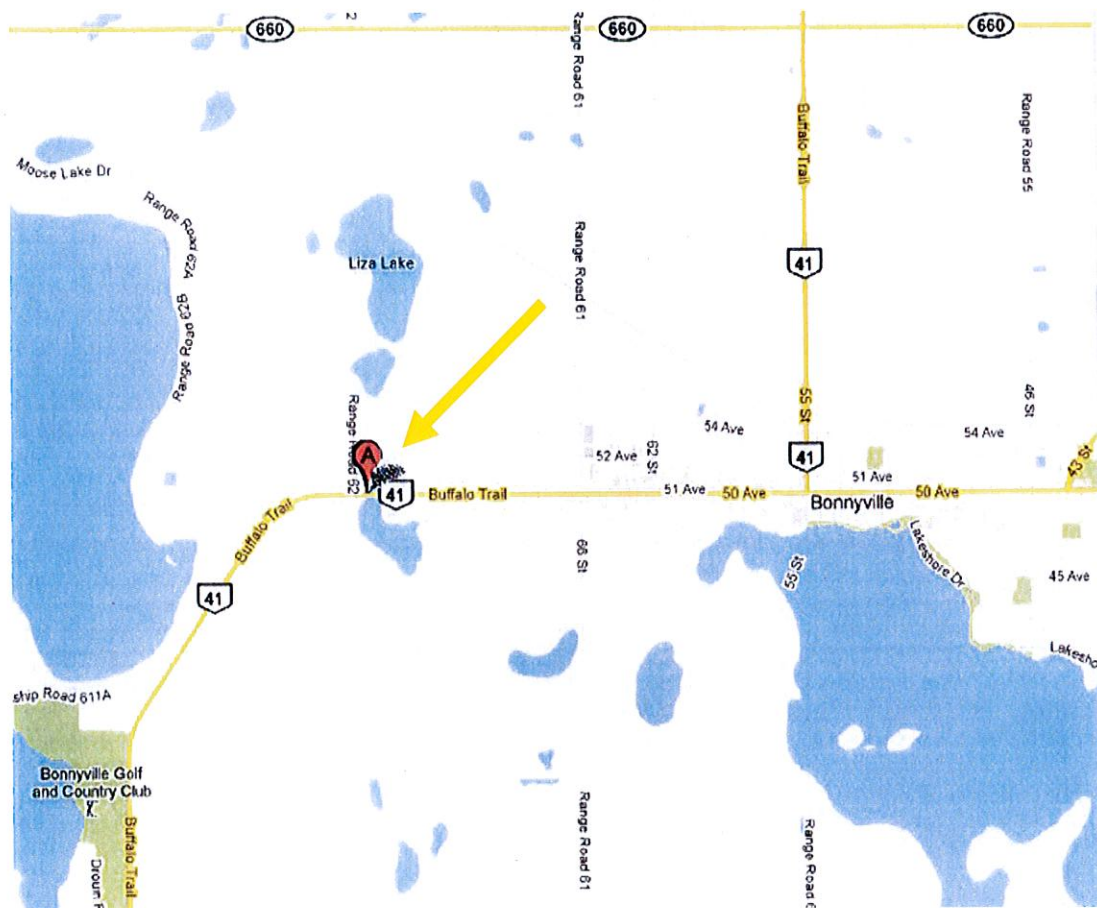
\_\_\_\_\_  
Date

\_\_\_\_\_  
Joanne Garton, Director, Central Region

\_\_\_\_\_  
Date

**SECTION 10.0      ATTACHMENTS:**

Attachment A	Map
Attachment B	Diagrams
Attachment C	Photographs



Map #1

Location of incident at the Tuboscope Canada Yard  
7401-50 Avenue, Bonnyville, Alberta.

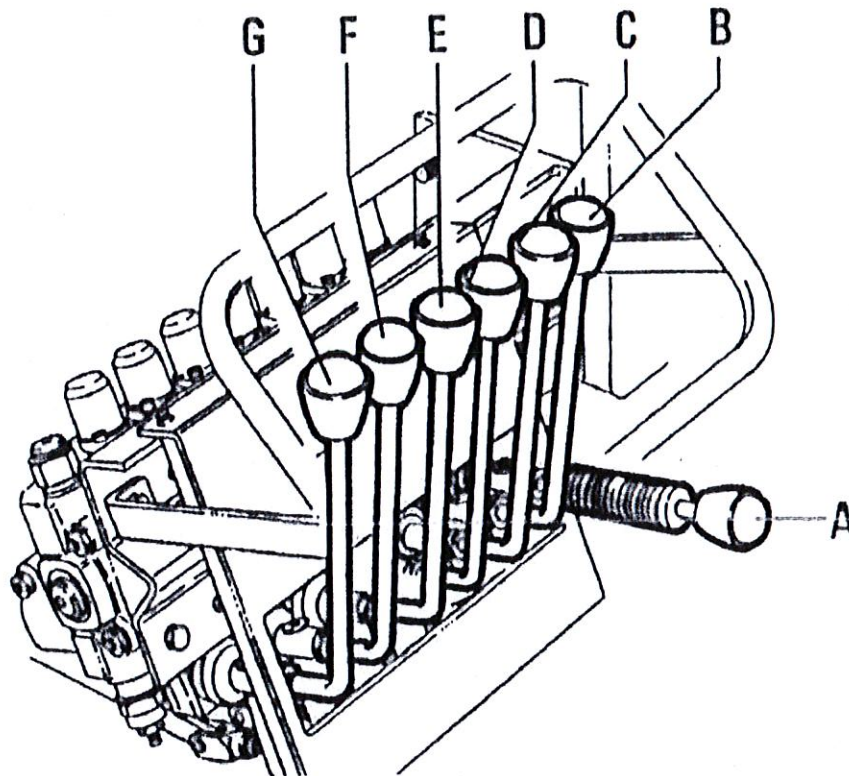


Diagram #1

Placement of controls on driver's side of AutoGRU PM S.p.A. knuckle boom picker, Model Series 10. Controls from left to right are;

- G – 2<sup>nd</sup> Activation control lever
- F – 1<sup>st</sup> Activation control lever
- E – Boom extension cylinder control lever
- D – Main boom cylinder control lever
- C – Column cylinder control lever
- B – Rotation control lever
- A – Crane outrigger control lever



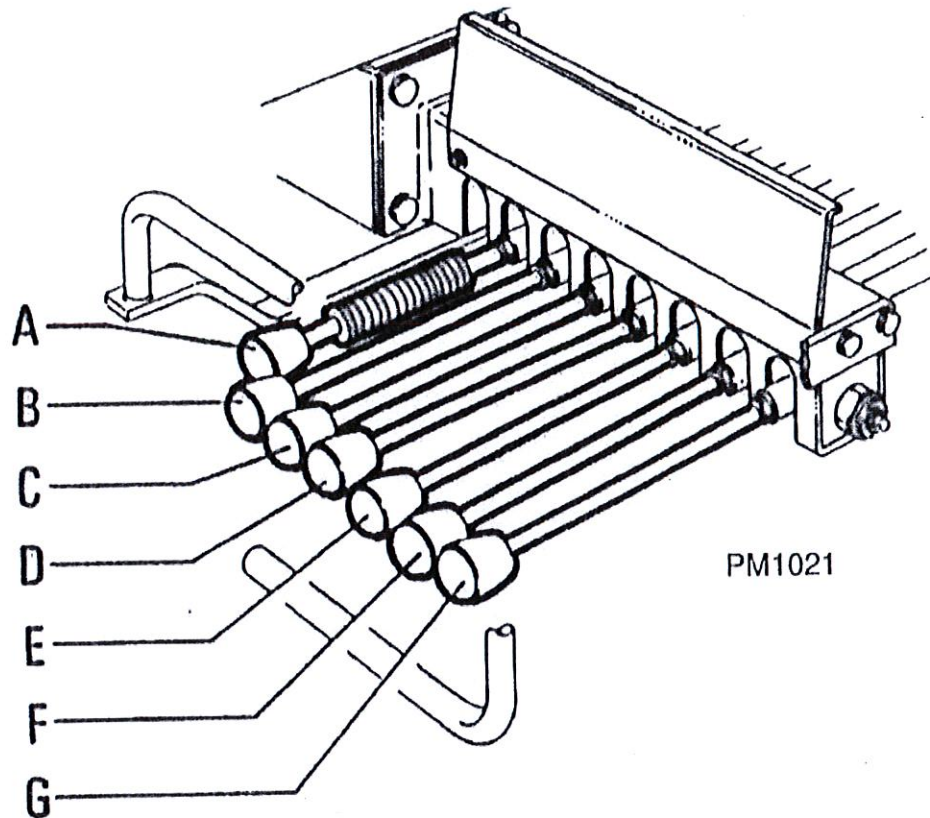


Diagram #2

Placement of controls on passenger side of AutoGRU  
PM S.p.A. knuckle boom picker, Model Series 10.

Controls from left to right are;

A – Crane outrigger control lever

B – Rotation control lever

C – Column cylinder control lever

D – Main boom cylinder control lever

E – Boom extension cylinder control lever

F – 1<sup>st</sup> Activation control lever

G – 2<sup>nd</sup> Activation control lever



Photograph #1 Western Sterling conventional truck and AutoGRU PM S.p.A. knuckle boom picker showing that the driver side outrigger was not engaged. The arrow indicates the passenger side outrigger partially engaged. See Photograph #2.





Photograph #2      The arrow shows the boom partially extended placing the boom at the front of the trailer and ahead of the outrigger by the controls. See Photograph #4.





Photograph #3 Shows the Western Sterling Conventional Truck and Roughneck Tri-axle trailer with AutoGRU PM S.p.A. knuckle boom picker positioned on the east side of the Tuboscope Canada building facing south.





Photograph #4      Top view of knuckle boom picker controls, outrigger and boom positioned from the passenger side.