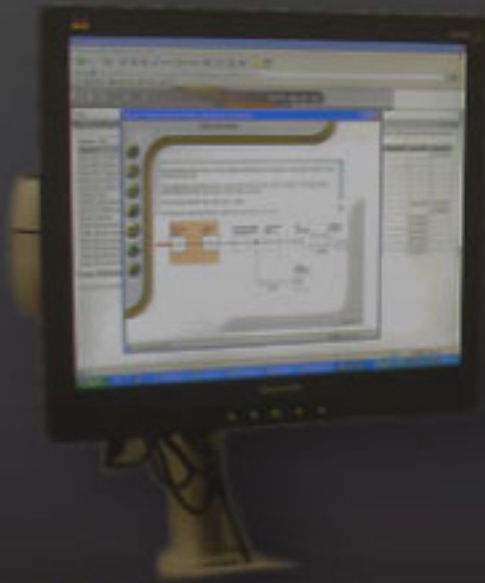


**Shovel Operator
eLearning Course
Catalog**

P&H



Peak Services

eLearning



P&H Knowledge and Development Department is proud to announce the availability of Online eLearning content. eLearning is the delivery of self paced learning, training, or educational content, by electronic means. P&H Peak Services eLearning can be accessed by P&H employees through our MineNet website by clicking on Learning Center or by end customers through a website link provided by P&H Peak Services.

Lesson Duration:

Each Lesson within a module is designed with a 45-minute duration in mind. However, eLearning is self-paced instruction; actual lesson duration will vary per student.

Target Audience:

Shovel Operators, Technicians, and Engineers who will operate and service all aspects of a P&H Mining Shovel.

Description:

eLearning is the delivery of self paced learning, training, or educational content, by electronic means. It's also a means of providing follow-up training to our online Needs Analysis Assessment. eLearning provides several advantages over traditional training methods:

- Ideal for situations where people are in various locations, and a large amount of people need to be trained on consistent information.
- Improved retention of materials.
- Correct equipment usage.
- Available anywhere to vital information.
- Self paced.
- Quicker productivity.
- Reduced overall costs.
- Consistent content delivery.

Prerequisites:

Students should have a basic working knowledge of computers, and fundamental understanding of Electronics and Electrical Systems.

These Lessons were designed to be taken in order. The Operator must successfully complete Lesson 1.1 - 1.3 in order to complete 1.4. If this training is for a Centurion Shovel, then Lessons 3.4 and 9.5 need to be completed before as well.

Lesson Location:

eLearning can be accessed on any computer that has internet access.

Main Concepts:

- Module 1, Shovel Operator
- Module 3, Product Overview (Centurion Shovels only)
- Module 9, HMI Devices (Centurion Shovels only)

Technological Requirements:

- Internet Explorer 6.0 or better
- Java 1.5 or better
- Flash Player 7 or better
- Windows Media Player



Index of eLearning

Module 1

- Lesson 1.1 Shovel Orientation
- Lesson 1.2 Qualifications and Conduct of a Shovel Operator
- Lesson 1.3 Operator Functional Checks
- Lesson 1.4 Shovel Operation

Module 3 CENTURION SHOVELS ONLY

- Lesson 3.4 Centurion Control Systems – Touch Panels

Module 9 CENTURION SHOVELS ONLY

- Lesson 9.5 TNAC

Lesson 1.1 Shovel Orientation

Course Description

This Lesson provides the Operator or Maintenance Technician with a complete overview of the Shovel Exterior, Interior, and Cab Components of past and current production model P&H Mining Shovels.

Objectives

Upon completion of this Lesson the Student will:

- Understand the purpose and function of the exterior components associated with P&H Mining Shovels.
- Understand the purpose and function of the interior components associated with P&H mining Shovels.
- Understand the purpose and function of the major components and controls associated with the Operator Cab on P&H Mining Shovels.

Lesson Outline

- Topic 1.1.1 Exterior Component Overview
- Review Topic 1.1.1 Exterior Components
- Topic 1.1.2 Interior Component Overview
- Review Topic 1.1.2 Interior Components
- Topic 1.1.3 Operator Cab Overview
 - Subtopic 1.1.3.1 Older Style Operator Cab
 - Review Topic 1.1.3.1 Older Style Operator Cab
 - Subtopic 1.1.3.2 Loading Control Center
 - Review Topic 1.1.3.2 Loading Control Center

Lesson 1.2 Qualifications and Conduct of a Shovel Operator

Course Description

The following P&H Mining Equipment recommendations are presented for the purpose of reducing the possibility of personal injury, either to the Operator, or to those who work on or in the area adjacent to the Shovel. This Lesson is general in nature, and your Shovel may not be equipped with all devices mentioned.

However, it is impossible to foresee all such conditions, and it must remain the responsibility of the Mining Company and the Shovel Operator to anticipate and avoid any unsafe conditions not described in detail in this Lesson. It is understood that safety rules within individual Mining Companies vary, and that, if a conflict exists, the rules of the Mining Company take precedence over the suggestions contained herein.

Objectives

Upon completion of this Lesson the Student will:

- Understand the basic qualifications, as recommended by P&H Mining Equipment, for an Electric Mining Shovel Operator.
- Have a basic understanding of the proper conduct for an Operator of a P&H Electric Mining Shovel.
- Have a basic understanding of the Functional Checks required of the Operator before starting and Operating a P&H Electric Mining Shovel.
- Understand some basic guidelines and suggestions, do's and don'ts, for operating a P&H Electric Mining Shovel.
- Have a basic understanding of the responsibilities of crew members performing a job on or near an Electric Mining Shovel.
- Have a basic understanding of the importance of planning a job.

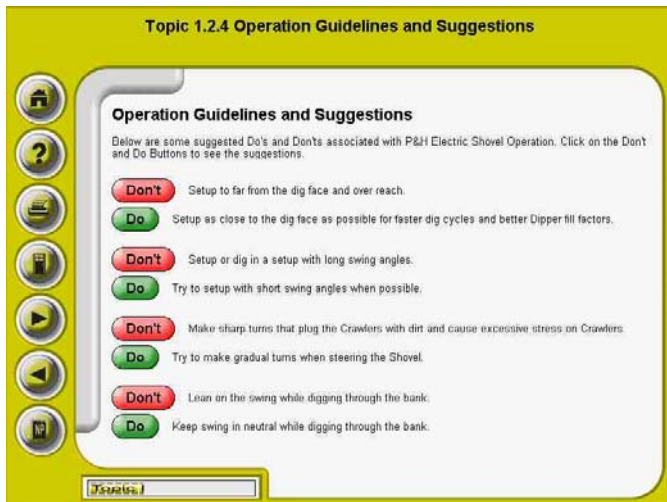
Lesson Outline

- Topic 1.2.1 Operator Qualifications
- Topic 1.2.2 Operator Conduct
- Review Topics 1.2.1 and 1.2.2

Lesson 1.2 Qualifications and Conduct of a Shovel Operator (cont.)

Lesson Outline (cont.)

- Topic 1.2.3 Operator Functional Checks
- Topic 1.2.4 Operation Guidelines and Suggestions
- Topic 1.2.5 Crew Member Responsibilities
- Topic 1.2.6 Planning a Job
- Review Topics 1.2.3 through 1.2.6



Lesson 1.3 Operator Functional Checks

Course Description

This Lesson provides information for the Operator to make Pre-Start, Startup, and Shutdown checks of the Electric Mining Shovel.

Objectives

Upon completion of this Lesson the Student will:

- Have a thorough understanding of the Ground Level Inspection required prior to starting the Shovel.
- Have a thorough understanding of the On-Board Inspection required prior to starting the Shovel.
- Have a thorough understanding of the Operator Station Inspection required prior to starting the Shovel.
- Have a thorough understanding of the steps required to properly startup a Shovel.
- Have a thorough understanding of the steps required to properly shutdown a Shovel under normal conditions and the extra steps required for extended period shutdowns.

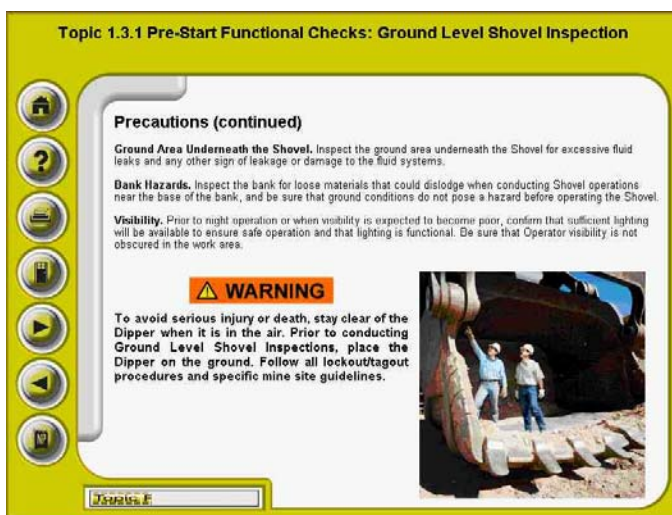
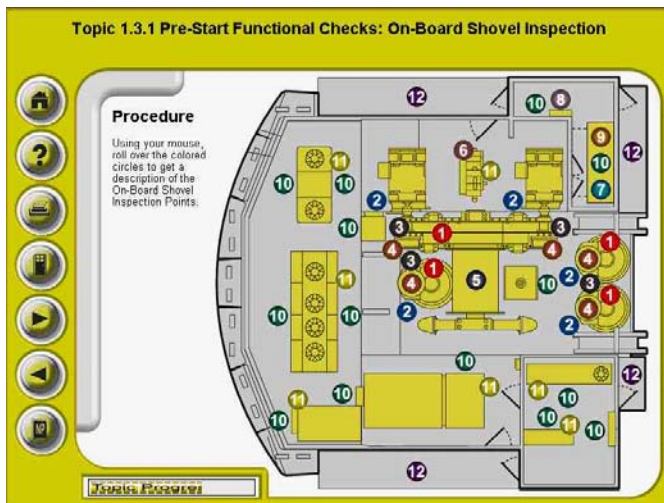
Lesson Outline

- Topic 1.3.1 Pre-Start Functional Checks
 - Ground Level Shovel Inspection
 - On Board Shovel Inspection
 - Operator Station Inspection
 - Checklist
- Review Topic 1.3.1
- Topic 1.3.2 Startup Functional Checks
 - Older Style Operator Cab
 - Loading Control Center
- Review Topic 1.3.2

Lesson 1.3 Operator Functional Checks (cont.)

Lesson Outline (cont.)

- Topic 1.3.3 Shutdown Functional Checks
 - Older Style Operator Cab
 - Loading Control Center
- Review Topic 1.3.3



Lesson 1.4 Shovel Operation

Course Description

The purpose of this Lesson is to describe the operation of the individual motion controls and include some recommended operating procedures and practices that will aid the Operator in the safe, smooth and efficient operation of P&H Electric Mining Shovels.

It is important to understand that this Lesson is not complete without follow-up hands on skills based training. This Lesson can provide the knowledge of the controls and functions of the P&H Electric Mining Shovel. It is this knowledge portion, combined with the skills training from a P&H Factory Authorized Operator Trainer, that will increase the competence of the Shovel Operator Trainee.

Objectives

Upon completion of this Lesson the Student will:

- Have a thorough understanding of the steps required to properly operate the Shovel Hoist motion.
- Have a thorough understanding of the steps required to properly operate the Shovel Swing motion.
- Have a thorough understanding of the steps required to properly operate the Shovel Crowd motion.
- Have a thorough understanding of the steps required to properly operate the Shovel Propel motion.
- Have a basic understanding of Dig Forces and how it affects the Shovel.
- Have a basic understanding of Dipper Fill Factors.
- Have a thorough understanding of the 4 Phases required to properly operate the Shovel through a complete Dig Cycle.
 - Phase 1 Digging
 - Phase 2 Swinging to the Truck
 - Phase 3 Dumping
 - Phase 4 Returning to the Bank

Lesson 1.4 Shovel Operation (cont.)

Objectives (cont.)

- Have a thorough understanding of the steps required to reposition the Shovel for optimal digging.
- Have a thorough understanding of the steps required to safely relocate the Shovel.
- Understand the purpose of the Emergency Stop.
- Understand how to recognize a 30 Second Delayed Shutdown alarm and what to do in case it happens on the Shovel during operations.

Lesson Outline

- Introduction
- Topic 1.4.1 Procedures for Individual Motions
 - Older Style Operator Cab
 - Hoist
 - Review Topic 1.4.1 Hoist
 - Swing
 - Review Topic 1.4.1 Swing
 - Crowd
 - Review Topic 1.4.1 Crowd
 - Propel
 - Review Topic 1.4.1. Propel
 - Loading Control Center
 - Hoist
 - Review Topic 1.4.1 Hoist
 - Swing
 - Review Topic 1.4.1 Swing
 - Crowd
 - Review Topic 1.4.1 Crowd

Lesson 1.4 Shovel Operation (cont.)

Lesson Outline (cont.)

- Propel
- Review Topic 1.4.1 Propel
- Topic 1.4.2 Dig Cycle
 - Phase 1 Digging
 - Review Topic 1.4.2 Phase 1
 - Phase 2 Swinging to the Truck
 - Review Topic 1.4.2 Phase 2
 - Phase 3 Dumping
 - Review Topic 1.4.2 Phase 3
 - Phase 4 Returning to the Bank
 - Review Topic 1.4.2 Phase 4
- Topic 1.4.3 Propelling Operational Guidelines
 - Older Style Operator Cab
 - Review Topic 1.4.3 Older Style Operator Cab
 - Loading Control Center
 - Review Topic 1.4.3 Loading Control Center
- Topic 1.4.4 Emergency Stops
- Topic 1.4.5 30-Second Delayed Shutdowns
- Review Topics 1.4.4 and 1.4.5



Lesson 3.4 Centurion Control System

Note

This Lesson is only required for the Centurion Shovel Operator and must be taken after Lesson 1.3 Operator Functional Checks.

Course Description

In this Lesson you will learn about the new Operator interface, or Touch Panel, associated with the Centurion Control System.

Objectives

Upon completion of this Lesson the Student will:

- Upon completion of this lesson the student will be able to explain and identify the different parts of the Centurion Control System Touch Panel.
- Upon completion of this lesson the student will be able to identify and navigate through the various Operational Screens associated with the Centurion Control System Touch Panel.
- Upon completion of this lesson the student will be able to identify and navigate through the various Diagnostic Screens associated with the Centurion Control System Touch Panel.
- Upon completion of this lesson the student will be able to identify and navigate through the various Setup Screens associated with the Centurion Control System Touch Panel.
- Upon completion of this lesson the student will be able to identify and navigate through the various Activity Screens associated with the Centurion Control System Touch Panel.
- Upon completion of this lesson the student will be able to identify and navigate through the various Help Screens associated with the Centurion Control System Touch Panel.

Lesson Outline


- Topic 3.4.1 Touch Panel Basics
- Topic 3.4.1 Touch Panel Basics Review
- Topic 3.4.2 Operation Screens
- Topic 3.4.2 Operation Screens Review

Lesson 3.4 Centurion Control System (cont.)

Lesson Outline (cont.)

- Topic 3.4.3 Diagnostic Screens
- Topic 3.4.3 Diagnostic Screens Review
- Topic 3.4.4 Setup Screens
- Topic 3.4.4 Setup Screens Review
- Topic 3.4.5 Activity Screens
- Topic 3.4.5 Activity Screens Review
- Topic 3.4.6 Help Screens
- Topic 3.4.6 Help Screens Review

Touch Panel Screens Categories



The screens on a Centurion Control System Shovel have been redesigned to eliminate large amounts of text. These screens can be broken down into the following categories:

- Operation Screens
- Diagnostics Screens
- Setup Screens
- Activity Screens
- Help Screens

Certain functions can only be accessed when in the correct mode. For example, Maintenance Setup can only be done while in the Setup or Maintenance Mode. When in the Operation Mode, these Setup screens can not be accessed.

Page 3 of 11

Lesson 9.5 TNAC

Note

This Lesson is only required for the Centurion Shovel Operator and must be taken after Lesson 3.4 P&H Centurion Control System - Touch Panels.

Course Description

This tutorial provides the electrical maintenance technician or end-user of P&H Mining Equipment with the necessary knowledge and working skills to understand the Touch Screen System.

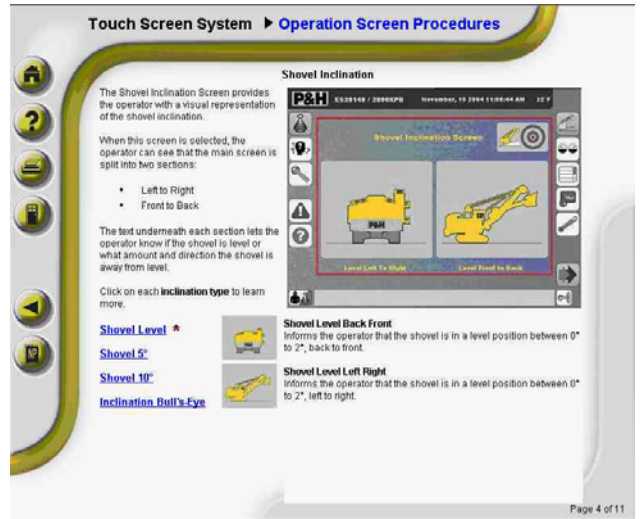
Objectives

Upon completion of this Lesson the Student will:

- Identify/explain the purpose of the Touch Screen System.
- Locate and identify the hardware components of the Touch Screen System.
- Identify/explain the function of each hardware component of the Touch Screen System.
- Identify/explain the functions available in the Touch Screen System.
- Identify/explain the Touch Screen troubleshooting procedures and corrective actions.

Lesson Outline

- Theory of Operation
- Hardware Overview
- Procedures Overview
- Operation Screen Procedures
- Diagnostic Screen Procedures
- Setup Screen Procedures
- Activity Screen Procedures
- Help Screen Procedures
- Troubleshooting



Terms and conditions

- eLearning is the primary delivery method for knowledge based training.
- The eLearning provided by Peak Services is Competency Based.
- eLearning content is available to the learner 24 hours a day, 7 days a week, 365 days per year.
- All lessons will be provided via the Internet from the P&H Learning Center.
- eLearning Lessons can be purchased for 90 and 365 Day periods.
- Peak Services highly recommends pre and post-assessments.

Pre-Assessments:

Are used to determine the knowledge gaps and assign individual training plans.

Post-Assessments:

Are used to determine the effectiveness of the training.

- eLearning is available for Shovel and Drill Operator, Electrical, and Mechanical systems, and can be accessed in either English and Spanish, with many also available in Russian, Chinese, or Bahasa Indonesian. Other languages can be made available upon request.
- Each registered student will be provided a user ID and password to access their learning plan.
- Printable Lesson Guides are available for each eLearning Lesson.
- Reports are included with each eLearning Subscription.

Pre and Post-Assessment Reports:

Individual and group results are provided.

Monthly Progress Report:

Individual eLearning reports include Lesson completion status, scores, times, and dates.

- For pricing information contact your local MinePro Account Manager or Sales office.



P&H MinePro Services
1-888-MINEPRO
Outside the U.S. and Canada
Phone: (414) 671-4400
Fax: (414) 671-7306

www.phmining.com