Task Title: Calculating Working Load Limit for Hoisting and Rigging

OALCF Cover Sheet – Learner Copy

Learner Name: _____

Date Started (m/d/yyyy): _____

Date Completed (m/d/yyyy): _____

Task Description: Millwrights must understand how to use calculations to locate the correct sizes used in lifting and for each piece of equipment used in the lift.

Please note that some tasks within this task set are above a Level 3.

Competency: A: Find and Use Information C: Understand and Use Numbers

Task Groups: Task Group(s):

A1: Read continuous text A2: Interpret documents C3: Use measures

Level Indicators:

- A1.2: Read texts to locate and connect ideas and information Interpret
- A2.2: simple documents to locate and connect information
- C3.3: Use measures to make multi-step calculations; use specialized measuring tools

Materials Required:

- Attached document - Understanding Working Load Limits for Hoisting and Rigging
- Pen and paper or digitized task
- Scientific Calculator

Learner Information

Millwrights determine the angle for the sling, calculate the force of load for each point of the lift, and locate the correct eyebolts, slings and shackles using charts available through the manufacturer or employer. Look at the attached document, **Understanding Working Load Limits for Hoisting and Rigging**.

There are several loads that need to be lifted.

Work Sheet

Task 1: Locate and name all the components related to a lift.

Answer:

Task 2: Calculate the force of load for each component of the lift for the following loads.

Answer:

A) Load 1 – 3600 lbs - single lifting point

Part Name	Load
Sling	
Eyebolts	
Shackles	

B) Load 2 – 5500 lbs - 2 leg bridle hitch 60° sling and a 45° eyebolt

Part Name	Load
Sling	
Eyebolts	
Shackles	

C) Load 3 – 4200 lbs -4 leg bridle hitch 60° sling and a 45° eyebolt

Part Name	Load
Sling	
Eyebolts	
Shackles	

Task 3: Locate and list the correct sizes for each piece of rigging equipment used in Task 2. Use the tables provided in the example

Answer:

A) Load 1 – 3600 lbs - single lifting point

Part Name	Load
Sling	
Eyebolts	
Shackles	

B) Load 2 – 5500 lbs - 2 leg bridle hitch 60° sling and a 45° eyebolt

Part Name	Load
Sling	
Eyebolts	
Shackles	

C) Load 3 – 4200 lbs -4 leg bridle hitch 60° sling and a 45° eyebolt

Part Name	Load
Sling	
Eyebolts	
Shackles	

Task 4: Calculate the force of load on each leg of the sling using 60°, 45° and 30° angles. The total load weight is 7500 lbs. Explain which angle is better to use for this load.

Answer: