

## Objectives: Course CA-107 FUNDAMENTALS OF RIGGING

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### **Terminal Objective**

This course is designed to provide the attendee with the BASIC knowledge and skills to identify unsafe conditions while using rigging hardware with wire rope, chain, synthetic slings, blocks and sheaves in Land Based Energy environments. It also serves as the prerequisite for CA-202 Intermediate Rigging Course.

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### **Enabling Objectives:**

1. Identify the correct definition of working load limit.
2. Recognize the two ASME B30 standards that require training.
3. List at least 5 things that should be included in a rigging plan.
4. Identify when "Rigging Hardware" requires inspection, per ASME B30.26.
5. Identify which OSHA standard addresses rigging for general industry.
6. Identify which OSHA standard addresses rigging for construction.
7. Identify correct sling operating practices per ASME B30.9.
8. Identify protection of sling requirements per ASME B30.9.
9. Recognize the fundamental principles for good load control.
10. Recognize the importance of knowing the weight of the load.
11. Identify which slings carry the greatest share of the load, when multiple legs are attached to a load.
12. Calculate vertical share of the load when center of gravity is in the middle.
13. Recognize basic rigging triangle facts.
14. Recognize where the horizontal sling angles are located in a rigging triangle.
15. Determine how to calculate the load angle multiplier for slings.
16. Calculate sling tension when the center of gravity is in the middle of the load.
17. Recognize proper application of hooks and latches as addressed in ASME B30.10, OSHA and Crosby recommendations.
18. Recognize proper application of screw pin, bolt type shackles, and master links as addressed by ASME B30.26 and Crosby recommendations.
19. Recognize proper application of eyebolts and hoist rings as addressed by ASME B30.26 and Crosby recommendations.
20. Identify the design factor for wire rope, chain and synthetic slings per ASME B30.9.

21. Identify maximum size object in the eye of a wire rope sling and synthetic webbing sling per ASME B30.9.
22. Recognize the capacity of wire rope, chain and synthetic slings when used as choker and basket hitches.
23. Recognize the minimum D/d ratio for wire rope and chain basket hitches per ASME B30.9.
24. Identify the correct chain recommended by OSHA and ASME for overhead lifting.
25. Determine the efficiency and correct installation of Crosby wire rope end fittings including wire rope clips, wedge sockets, swage and spelter sockets.
26. Determine minimum sling capacity of vertical, choker and basket hitches using wire rope, chain and synthetic slings.
27. Recognize basic Land Based Energy drilling and well servicing nomenclature when rigging loads for material moving activities.

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*End of Objective List*