TRAINING OUTLINE

COURSE TITLE: _____ **DATE:** _____ **INSTRUCTOR:** _____

LOCATION: _____ **TIME:** _____ **COMPANY:** _____

Safety training was conducted on the above date by the instructor indicated. The following line items identify the topics covered during the training session.

SUMMARY OF TRAINING

1) Introduction
    a) What is Rigging?
    b) Standards
    c) Why Training
2) Stability
        i. Balance & Leverage
        ii. Leverage
        iii. Rate of Tipping
3) Load Charts
        i. Range Diagram
        ii. Load Capacity
        iii. Crane Reeving
        iv. Area of Operation
        v. Load Deductions
        vi. Jib Capacity
        vii. Load Chart Exercise #1
        viii. Load Chart Exercise #2
        ix. Load Chart Exercise #3
        x. Load Chart Exercise #4
        xi. Load Chart Exercise #5
        xii. Load Chart Exercise #6
        xiii. Load Chart Exercise #7
4) Sling Types
    a) Synthetic Slings
        i. Synthetic Flat Slings
        ii. Synthetic Round Slings
        iii. Synthetic Fiber Rope Slings
        iv. Type of Rope Slings
        v. Safe Working Load
        vi. Knots

- b) Inspecting Slings
  - i. Capacity Tags
  - ii. Punctures and Snags
  - iii. Heat Damage
  - iv. UV Light
  - v. Chafing
  - vi. Inspecting Flat Slings
  - vii. Inspecting Round Slings
  - viii. Inspecting Rope Slings
- c) Wire Rope Slings
  - i. Nominal Strength
  - ii. Eye Splices
  - iii. Wire Mesh Slings
  - iv. Inpsection
  - v. Swage
- d) Chain Slings
  - i. Chain Sling Inspection
  - ii. Record Keeping

5) Hardware
- a) Rigging Card
- b) Shackles
  - i. Shackle Components
  - ii. Anchor Shackles
  - iii. Chain Sling Shackle
  - iv. Synthetic Sling Shackle
  - v. Shackle Pin Types
  - vi. Screw Pin
  - vii. Bolted Type
  - viii. Shackle Identification
  - ix. Rigging Practices
  - x. Applying a Load
- c) Inspecting Shackles
  - i. Heat Damage
  - ii. Shackle Pins
  - iii. Round Pins
- d) Eye Bolts
  - i. Eye Bolt Identification
  - ii. Angles

iii. Placement
iv. Hardware Exercise #1
v. Swivel Hoist Rings
vi. Inspection
vii. Lift Type Weld-On Lugs
viii. Turnbuckles
ix. Wedge Sockets
x. Wire Rope Clip
xi. Master Rings, Links, & Swivels
xii. Loading
xiii. Rigging and Snatch Blocks
xiv. Hardware Exercise #2
xv. Reeving Takle
xvi. Hooks

6) Lifting Devices
   a) Lifting Beams & Spreader Bars
   b) Plate Clamps
   c) Lifting Magnets
   d) Beam Clamps
   e) Pipe Lifters
   f) Drum Clamps
   g) Pallet Forks
   h) Inspection

7) Weight
   a) Weigh It
   b) Volume of a Cube
   c) Area of a Circle
   d) Weight Exercise #3
   e) Volume of a Cylinder
   f) Weight Exercise #4
   g) Volume of a Pipe
   h) Weight Exercise #5
   i) Lifting Out of Water
   j) Weight Exercise #6

8) Angles & Stresses
   a) Single-Vertical Sling Stress
   b) Double-Vertical Sling Stress
   c) Double-Vertical Sling Stress Reduced

d) Load Angle Factors
e) Angles and Stress Exercise #1
f) Slings of Equal Length
g) Angles and Stress Exercise #2
h) Slings of Unequal Length
i) Angles and Stress Exercise #3
j) Drifting a Load
k) Angles & Stress Exercise #4

9) Sling Hitches
   a) Capacity Tags
   b) Vertical Hitches
      i. Single Vertical
   c) Bridle Hitches
      i. Two-Leg Bridle
      ii. Three-Leg Bridle
      iii. Four-Leg Bridle
   d) Choker Hitch
      i. Alternative to Cinching
      ii. Single-Wrap Choker
      iii. Double-Wrap Choker
      iv. Double-Choker Hitch
   e) Basket Hitches
      i. Single Basket Hitch
      ii. Double Basket Hitch
      iii. Basket Hitch Variations
      iv. Basket Hitch Reductions

10) Crane Operations
      i. Weight
      ii. Securing Loads
      iii. Safe Lifting
      iv. Side Loading
      v. Taglines
   b) Center of Gravity
      i. Trial & Error Method
      ii. Inverse Proportion to Distance Formula
      iii. Center of Gravity Exercise #1
      iv. Center of Gravity Exercise #2
      v. Center of Gravity in the Vertical

vi. Equal Loading of Slings
vii. Center of Gravity Exercise #3
viii. Unequal Loading of Slings
ix. Center of Gravity Exercise #4
x. Center of Gravity Exercise #5
xi. Pick Points & the COG

c) Critical Lifts
i. Critical Lift Plans
ii. Pre-Lift Meeting
iii. Tandem Lifts
iv. Center of Gravity
v. Capacities
vi. Rigging
vii. Communication

d) Lifting Personnel
i. Performing the Lift

11) **Crane Safety**
i. Training
ii. Planning
iii. Manual
iv. Pre-Shift Inspection
v. Labels
vi. Ergonomics
vii. Mounting & Dismounting
viii. Seat Belts
ix. ROPS & FOPS
x. Attachment Considerations
xi. Controls
xii. Outriggers & Stabilizers
xiii. Radius
xiv. Crane Limits Exercise
xv. Leveling

b) PPE

12) **Know Your Worksite**
i. Planning
ii. Pedestrians
iii. Traveling
iv. Overhead Hazards

TRAINING OUTLINE

13) Communication
    i. Communication Devices
    ii. Voice Signals
    iii. Hand Signals
    b) General Hand Signals
    c) Crawler Crane Signals
    d) Overhead & Tower Crane Signals
14) Conclusion