

Included in Package:

- C-31-2012 (Signal Person CD (Video Clips Demonstrating Hand Signals))
- Protocol for Signaling Written Test and Practical Evaluations
- Roster
- Qualified Rigger/Signal Person Application
- Rigger/Signal Person Evaluator Qualification Verification Form
- Signal Person Evaluation
- OSHA Fact Sheet
- Signal Person Written Exam and Evaluation Score Sheet
- Signal Person Evaluations "A" and "B"
- Signal Person Written Exam 010, Written Answer Key, Key Test
- Signal Person Written Exam 020, Written Answer Key, Key Test

Additional Materials Available Upon Request:

- M-51-2010 (Cranes and Derricks in Construction - Final Rule (29 CFR 1926 Subpart CC))
- M-53-2012 (Slings Rigging Equipment for Material Handling)
- M-54-2011 (Small Entity Compliance Guide for Cranes and Derricks in Construction)

INSTRUCTIONS:

DO NOT SEND the tests to the National HAZMAT Program.

All paperwork must be filled out completely and must be legible.

The following paperwork is required for any card requests:

- Rigger Package Cover Sheet with checklist and address information
- Roster of applicants with pass/fail report
- Qualified Rigger/Signal Person Application

Please submit all required paperwork to:

IUOE NTF - National HAZMAT Program
1293 Airport Road
Beaver, WV 25813
(304) 253-8674
hazmat@iuoehazmat.org

Please list below the address where cards are to be sent:

Class ID Funding Grant Class Code

Protocol for Signaling Written Test and Practical Evaluations “A” & “B”

Evaluators:

After the applicants’ successful completion of the written evaluation and practical tests:

Maintain Written Exam & Evaluation Score Sheet for your records.

Do not send the score sheet to the National HAZMAT Program.

The following paperwork is required for any card requests.

1. Roster of applicants with pass/fail report
2. Qualified Rigger/Signal Person Application

All paperwork must be filled out completely and must be legible.

Sent to: The National HAZMAT Program
 1293 Airport Rd
 Beaver, WV 25813

Requests for cards with any missing paperwork will not be processed.

Scoring Protocol for Signaling Written Test and Practical Evaluations “A” & “B”

Written Evaluation

Passing score - 80% = 80 points

Each question is worth 4 points.

25 Questions @ 4 points each = 100 points

Practical Evaluations “A” & “B” (Tests “A” & “B”)

Combine the point totals.

Possible points “A” - 10 points

Possible points “B” - 20 points

Total possible “A”&“B” - 30 points

Passing score: 80% = 24 points

Total Elapsed Time is the combined time for Practical Tests “A” & “B”.

Task Score is the combined points for Practical Test “A” & “B”.

Practical Test “A”

Five different standard crane hand signals from OSHA 29 CFR 1926 Subpart CC Appendix A. (Evaluator will choose the signals the applicant is to perform)

Each hand signal is worth 2 points.

No points are awarded for the:

- Incorrect demonstration of the hand signal requested,
- Performing the wrong hand signal,
- Not responding promptly with the correct hand signal,
- or
- No response with a hand signal.

Practical Test “B”

Four basic tasks, signal a certified crane operator during the operation of a crane.

Each signaling task is worth 5 points, use TSP performance evaluation scoring for each task.

5 - “Top-Hand”, Far above average:

Excellent performance in communicating a hand signal to the crane operator

4 - “Above average journeyman”:

Minor deficiencies in communicating a complicated hand signal to the crane operator

3 – “Average journeyman”, minimum standard for referral as journeyman.

Performance adequate in communicating a hand signal to the crane operator

2 - “Below average journeyman”

Has trouble communicating the correct hand signal to the crane operator
Confuses hand signals

1 – Far Below Average

Does not know or cannot communicate a hand signal to the operator without assistance

Roster

Please check all which apply:

Rigger Signal Person

Please PRINT and SIGN your full name.

Instructor Use

	Full Name	Signature	Pass	Fail
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

Approved by: _____
(Instructor)

(Instructor's Qualification #)

Date: ____/____/____

Qualified Rigger/Signal Person Application

Please check all for which you are applying:

Rigger - Rigger qualification will conform to OSHA regulation 29 CFR 1926.1401;1404;1425.

Testing will consist of a written or oral evaluation.

Signal Person - Signal person qualification will conform to OSHA regulation 29 CFR 1926.1401;1419;1422;1428. Testing will consist of a written or oral evaluation and a practical evaluation.

Please PRINT all information clearly.

Date: ____ / ____ / ____

Qualification #: _____ (Note: If you are a new applicant leave blank)

Register #: _____

Name: _____
(Last) (First) (Middle) (Nickname) (Suffix)

Male Female

Address: _____

City: _____ State: _____ Zip Code: _____

Local: _____

Telephone (Work): _____

Telephone (Home): _____

Telephone (Cell): _____

Fax: _____

Birthdate (optional): ____ / ____ / ____

Email: _____

I have approximately _____ hours of signal person experience.

I have approximately _____ hours of rigger experience.

(Applicant's signature)

Accepted by: _____
(Instructor)

(Instructor's Qualification #) Date: ____ / ____ / ____

Rigger/Signal Person Evaluator Qualification Verification Form

Please PRINT all information clearly.

Date: ____/____/____

Qualification #: _____ (Note: If you are a new applicant leave blank)

Register #: _____

Name: _____
(Last) (First) (Middle) (Nickname) (Suffix)

Male Female

Address: _____

City: _____ State: _____ Zip Code: _____

Local: _____

Telephone (Work): _____

Telephone (Home): _____

Telephone (Cell): _____

Fax: _____

Birthdate (optional): ____/____/____

Email: _____

Please check all for which you are applying. You should make sure you meet all criteria before having your Training Director sign to verify that you meet the qualification criteria.

Rigger Evaluator

1. Must have 5 years in crane related experience.
2. Must have 1 or more years teaching crane operation or crane certification
****OR**** a combination totaling 6 years of both 1 & 2 with at least 1 year of crane operation.
3. Must possess an OSHA 10 hour Construction Outreach course card or better.
4. Must have a general awareness of the new OSHA crane regulation 29 CFR 1926 Subpart CC.

In addition, the Qualified Evaluator must:

1. Have the signature of his/her Training Director or equivalent title verify that all criteria are met.
2. Agree to use NTF rigging safety course materials. May use additional local materials to supplement the course.
3. Agree to use NTF testing protocols.

Signal Person Evaluator

General Construction Industry
 Pipeline

1. Must have 5 years in crane related experience.
2. Must have 1 or more years teaching crane operation or crane certification
**** OR**** a combination totaling 6 years of both 1 & 2 with at least 1 year of crane operation.
3. Must possess an OSHA 10 hour Construction Outreach course card or better.
4. Must have a general awareness of the new OSHA crane regulation 29 CFR 1926 Subpart CC.

Evaluator:

(Print Name)

(Signature)

____/____/____
(Date)

Training Director (or equivalent title):

(Print Name)

(Signature)

____/____/____
(Date)

National Training Fund



SIGNAL PERSON EVALUATION

SIGNAL PERSON

PURPOSE	Page 1
APPLICATION	Page 1
HAND OUTS	Page 1
EVALUATOR QUALIFICATION	Page 1
HANDOUTS	Page 1
WRITTEN EVALUATION	Page 2
PRACTICAL TEST “A”	Page 2
PRACTICAL TEST “B”	Page 2
SCORING AND RATING SCALE	Page 3
SAMPLE LAY OUT DRAWING	Page 5

PURPOSE

The purpose for this testing is to evaluate proper crane signaling skills. These skills are necessary to the safety and wellbeing of all construction personnel. Basic knowledge crane reaction before, during, and after a lift is critical and will be addressed in these evaluations.

APPLICATION

The application is a request for signal person testing and must be fully completed and signed by the evaluator. This document along with the Signaling Exam & Score Sheet, are used to identify the qualified signal person that passed the evaluation. An identification card will be returned to the signal person with their name, name and local of evaluator and completion date on the card. *All information will be held in the strictest of confidence in a data base held in Beckley, WV. (Proposed)* These cards may be distributed from your local.

EVALUATOR QUALIFICATION

Criteria for an Individual within the IUOE Training Programs to Administer Testing for Qualified Signal Person:

1. Must have 5 years in crane related experience.
2. Must have 1 or more years teaching crane operation or crane certification.
*OR a combination totaling 6 years of both 1 & 2 with at least 1 year of crane operation.
3. Must possess an OSHA 10-hour or 30-hour OSHA Construction Industry Safety and Health card or be an OSHA Construction Outreach Authorized Instructor.
4. Must have a general awareness of the new OSHA crane rule 29 CFR 1926 Subpart CC

HANDOUTS

The evaluator will distribute and review with the applicants:

- information contained in the OSHA Standard, 29 CFR 1926. 1419 – 1422)
- information contained in 29 CFR 1926.1406 - 1411 (Power line Safety and Dedicated Spotter).

29 CFR 1926 Subpart CC Appendix A (Standard Method Hand Signals)

- audible signals as a group

AUDIBLE TRAVEL SIGNALS:

1. **STOP** / One short audible signal
2. **GO AHEAD** / Two short audible signals
3. **BACK UP** / Three short audible signal

WRITTEN EVALUATION (45 minutes)

The test may be administered either written, with the applicant answering the questions on the answer sheet; or it may be administered orally, with the questions being read aloud to the applicant and answers recorded by the evaluator.

A review of all questions will follow.

PRACTICAL TEST “A” (15 minutes)

Practical test “A” can only be given to an individual who passed the written evaluation with a 92% or better. (23 out of 25) Passing score for practical test “A” is 100%

The evaluator will instruct each signal person applicant to perform five (5) different standard hand signals. (one at a time) using the OSHA 29 CFR 1926 Subpart CC Appendix A – Standard Hand Signals Chart.

The evaluator **MUST** be one-on-one with the signal person applicant. The correct signal must be demonstrated in a reasonable amount of time. Each signal is worth two (2) points. No points will be given for the wrong signal, not responding promptly, or no response. The evaluator will print on the practical evaluation test sheet, the title of the signal that they want the signal person applicant to perform under “Hand Signal” with their score.

PRACTICAL TEST “B” (30 minutes)

Note: Evaluator must designate a certified crane operator competent in the operation of the crane to be used.

The evaluator must keep a continuous line of sight between the crane operator and signal person applicant.

Practical Test “B” consists of 4 basic tasks. The signal course can be laid out similar to the one found in this material. Special instructions must be used for task 2.

- the crane used with the test weight must have at least 10” of boom deflection when the test weight is connected and hoisted clear of the ground
- the radius of the crane must extend at least 10” from the original radius with an unloaded boom after hoisting the test weight

- attach 30 inches of chain attached to the bottom of the test weight. **NOTE** Do not under any circumstance configure the crane or load as to pose a hazard such as crane tipping or crane damage when setting up for this task. *Crane boom length and the load's weight will vary for the specific make and model of crane to allow for boom deflection of at least 10 inches.*
- the test weight should be in a circle consisting of pylons or cones placed around the test weight within 10 inches of the diameter of the test weight.

TASKS:

- Task 1: requires the signal person applicant to signal the hook over to the test weight and connect.
- Task 2a: (Static deflection) requires the signal person applicant to signal the crane operator to hoist the test weight at least two (2) feet from the ground by means of booming and or hoisting signals as to not disturb the surrounding cones. Movement of any cone will result in an automatic failure.
- Task 2b: **MUST PASS TASK 2 PRIOR TO PROCEEDING.** Upon passing task 2, signals will be given to move the test weight to the start circle and land on the ground within the circle. (see drawing)
- Task 3 (10 minutes maximum) requires that the operator's view be blocked from the zig zag or "S" corridor. The corridor is to be 26 feet in length with a continuous opening of 36 inches larger than the test weight through the entire course. Example: test weight diameter is 24 inches; corridor should be 60 inches wide throughout. The corridor will be lined with pylons or cones on each side, spaced 18 inches apart. The crane operator will have a clear view of the signal person applicant. Timing will start when the signal person applicant via hand signals, hoists the test weight, 6 to 12 inches from the ground and guides the test weight, dragging the chain through the corridor with hand signals only. If the chain is completely lifted from the ground or the test weight hits the ground, points will be deducted from their score. Upon landing the test weight in the stop circle timing will stop.
- Task 4 (10 minutes maximum) will require 2 hand-held, two-way-radios. Timing will start when the signal person applicant via voice signals to the crane operator to hoist the test weight 6 to 12 inches from the ground and guides the test weight back through the corridor by voice signals only. Timing will stop when the test weight is landed in the start circle.

SCORING

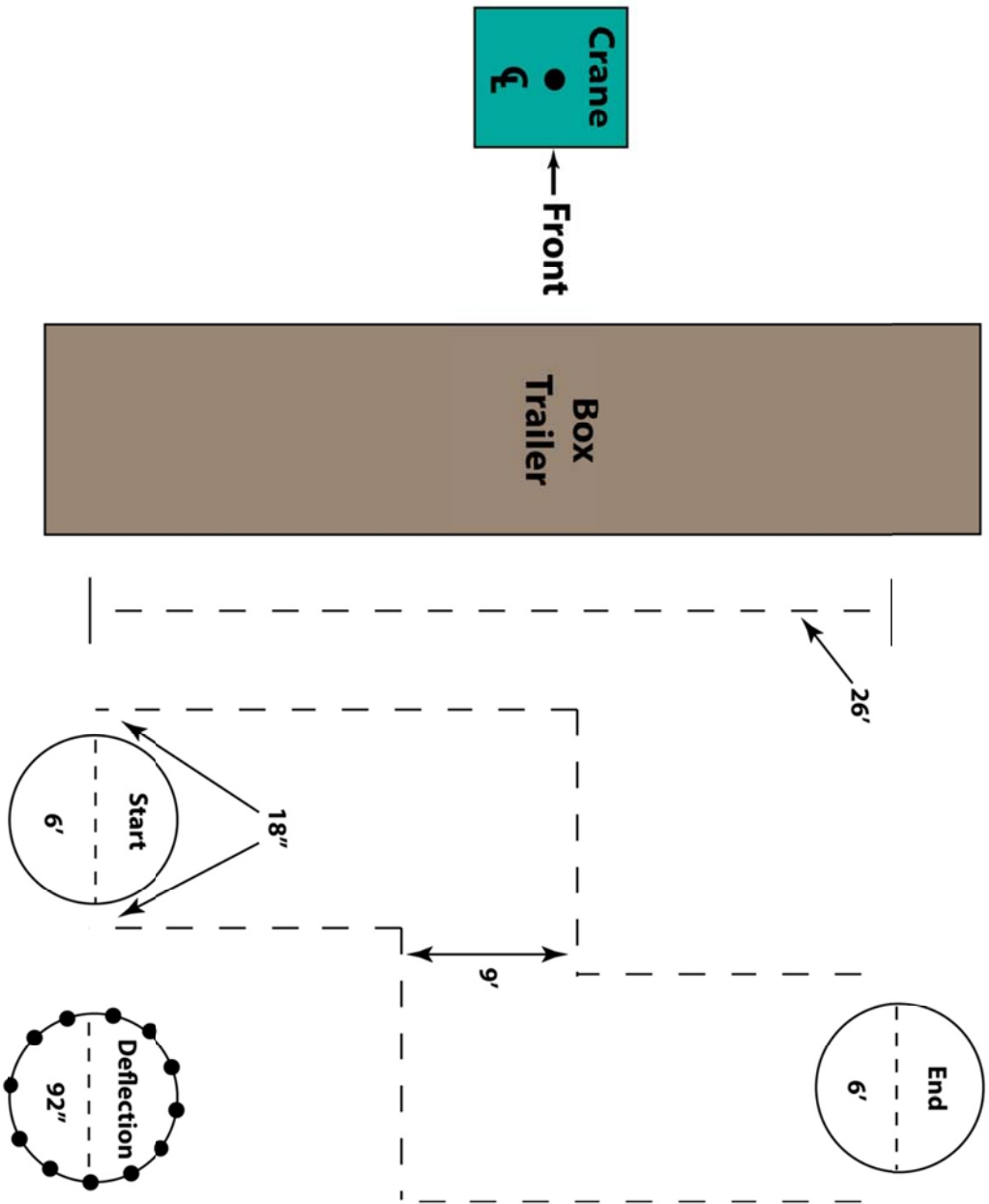
Scoring for practical test "B" will use the TSP performance evaluation scoring. A rating of 5 denotes far above average and a rating of 1 is far below average. The rating of a 3 starts the minimum qualification for referral.

RATING SCALE FOR QUALITY OF PERFORMANCE AND PRODUCT

- 1** Very poor.
Far below average.
Less than adequate.
Could not hold a job.
Work will usually need follow-up.
- 2** Below average.
Could not hold a job as a journeyperson, but meets minimum requirements to be referred as an apprentice or trainee.
Work will often need follow-up.
- 3** Meets minimum standards for referral as a journeyperson; performance is adequate to hold a job.
Work may sometimes need follow-up on more difficult assignments.
An "average" journeyperson is a "middle" three.
- 4** Above average journeyperson.
More than adequate on all but the most difficult tasks.
Work rarely needs follow-up, only on difficult tasks.
- 5** A "top hand."
Far above average.
Work will never need follow-up by a more skilled operator.
Excellent performance on all tasks.

* Note that each number represents a range of skill; e.g. the rating 3 starts at the minimum qualification for referral as a journeyperson, but also includes "average" journeyperson.

SAMPLE CRANE LAY-OUT FOR PRACTICAL TEST “B”



OSHA[®] FactSheet

Subpart CC – Cranes and Derricks in Construction: Signal Person Qualification

This fact sheet describes the signal person qualification requirements of subpart CC – Cranes and Derricks in Construction, as specified in 29 CFR 1926.1419 and 1926.1428. Other requirements related to signal persons can be found at 29 CFR 1926.1404, 1926.1430, 1926.1431, and 1926.1441. These provisions are effective November 8, 2010.

When is a signal person required?

A signal person is required when:

- The point of operation is not in full view of the operator (1926.1419(a)).
- The operator's view is obstructed in the direction the equipment is traveling.
- Either the operator or the person handling the load determines that a signal person is needed because of site-specific safety concerns.

What does a signal person need to know?

The signal person is considered qualified if he or she:

- Knows and understands the type of signals used at the worksite.
- Is competent in using these signals.
- Understands the operations and limitations of the equipment, including the crane dynamics involved in swinging, raising, lowering and stopping loads and in boom deflection from hoisting loads.
- Knows and understands the relevant signal person qualification requirements specified in subpart CC (1926.1419-1926.1422; 1926.1428).
- Passes an oral or written test and a practical test.

How does a signal person become qualified?

Employers must use one of the following options to ensure that a signal person is qualified (see 1926.1428).

1. *Third party qualified evaluator.* The signal person has documentation from a third party qualified evaluator showing that he or she meets the qualification requirements.
2. *Employer's qualified evaluator* (not a third party). The *employer's qualified evaluator* assesses the individual, determines the individual meets the qualification requirements, and provides documentation of that determination. This assessment may not be relied on by other employers.

Refer to 1926.1401 for definitions of qualified evaluators.

How will an employer show that a signal person is appropriately qualified?

Employers must make the documentation of the signal person's qualifications available at the worksite, either in paper form or electronically. The documentation must specify each type of signaling (e.g., hand signals, radio signals, etc.) for which the signal person is qualified under the requirements of the standard.

When are signal persons required to be qualified?

The qualification requirements for signal persons go into effect on November 8, 2010.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For more complete information:



U.S. Department of Labor

www.osha.gov

(800) 321-OSHA

DOC 10/2010

Signal Person Written Exam & Evaluation Score Sheet

Please PRINT all information clearly.

Date: ____ / ____ / ____

Qualification #: _____ (Note: If you are a new applicant leave blank)

Register #: _____

Name: _____
(Last) (First) (Middle) (Nickname) (Suffix)

Local: _____

Written Exam: #010 #020

Evaluator _____

Using pencil, please fill in the circle with the right answer.

1. (a) (b) (c) (d)

2. (a) (b) (c) (d)

3. (a) (b) (c) (d)

4. (a) (b) (c) (d)

5. (a) (b) (c) (d)

6. (a) (b) (c) (d)

7. (a) (b) (c) (d)

8. (a) (b) (c) (d)

9. (a) (b) (c) (d)

10. (a) (b) (c) (d)

11. (a) (b) (c) (d)

12. (a) (b) (c) (d)

13. (a) (b) (c) (d)

14. (a) (b) (c) (d)

15. (a) (b) (c) (d)

16. (a) (b) (c) (d)

17. (a) (b) (c) (d)

18. (a) (b) (c) (d)

19. (a) (b) (c) (d)

20. (a) (b) (c) (d)

21. (a) (b) (c) (d)

22. (a) (b) (c) (d)

23. (a) (b) (c) (d)

24. (a) (b) (c) (d)

25. (a) (b) (c) (d)

TOTAL SCORE _____

Signal Person Evaluations "A" & "B"

Score Sheet "A"

1 st Attempt		2 nd Attempt	
Hand Signal	2 points or zero (0)	Hand Signal	2 points or zero (0)
1.		1.	
2.		2.	
3.		3.	
4.		4.	
5.		5.	

Total Points _____

Score Sheet "B"

Task # 1

Center headache ball over load using hand signals (Not timed)

Score _____

Comments _____

Task # 2

Boom Deflection (Not timed)

Score _____

Comments _____

Task # 3

Hand Signal load through corridor (Optimum time 10 min.)

Score _____

Elapsed time _____

Comments _____

Task # 4

Guide load through corridor using Voice Communications (Optimum time 10 min.)

Score _____

Elapsed time _____

Comments _____

Total elapsed time _____

Task Score _____

Written Score _____

Pass _____ **Fail** _____

Evaluator:

(Print Name)

(Signature)

(Local #)

____/____/____
(Date)

Signal Person Written Exam 010

DO NOT WRITE ON THIS TEST BOOKLET

1. All signal persons must signal cranes from the operator's _____.
 - a. Manual
 - b. Perspective
 - c. Left side
 - d. Right side

2. A qualified signal person must have knowledge of standard signals along with a basic understanding of the crane's _____.
 - a. Design
 - b. Limitations
 - c. Engineering
 - d. Manufacturing

3. To control drifting of the load, signal persons should?
 - a. Keep the boom tip over the load
 - b. Touch the load on the ground
 - c. Employ extra ground personnel
 - d. Factor in wind direction

4. Who shall observe clearance when the equipment could get closer than the minimum approach distance of the power line, permitted under Table A?
 - a. Appointed spotter
 - b. Appointed rigger
 - c. Dedicated spotter
 - d. Dedicated rigger

5. When signaling a mobile crane to boom down, the crane's capacity will:?
 - a. Increase.
 - b. Decrease.
 - c. Increase for boom truck cranes and decrease for crawler cranes.
 - d. Will not change.

6. How many people at a time **SHOULD** signal the crane?
 - a. One (1).
 - b. Two (2).
 - c. Three (3), as long as they are qualified and documentation is available on site.
 - d. One (1) when signaling a mobile crane, two (2) when signaling a tower crane, and three (3) when signaling an overhead crane.

7. What **MUST** be done prior to using Non-Standard Hand Signals?
 - a. Non-standard hand signals are not allowed to be used.
 - b. The signal person and operator must contact each other and agree on the non-standard hand signals that will be used.
 - c. The signal person must document the non-standard hand signal and keep it available on the jobsite.
 - d. The signal person and operator must notify the riggers.

8. What **MUST** be done before radio, telephone, or other electronic transmission are used to communicate crane signals to the operator?
 - a. Tested on site before beginning operations to ensure that the signal transmission is effective, clear, and reliable.
 - b. Tested by an approved laboratory to ensure that the signal transmission is effective, clear, and reliable.
 - c. Approved by Underwriters Laboratories® and be water resistant
 - d. Approved by Underwriters Laboratories®, be water resistant, non-conductive, and have a frequency between 300 GHz – 3kHz.

9. The signal person **MUST** assume that all power lines are energized unless:
 - a. The utility owner confirms that the power line has been and continues to be de-energized and visibly grounded at the worksite.
 - b. The utility owner/operator is on-site and observing the cranes movement.
 - c. The power line is installed with protective coverings to prevent accidental contact with the lines.
 - d. The crane operator instructs the signal person otherwise.

10. What does the term “two blocking” mean?
 - a. A single sheave block with two parts of line
 - b. A four sheave block using only two sheaves
 - c. Load handling device contacting the upper sheaves
 - d. Two blocks lifting at the same time

11. According to ASME B30.5, if the operator sounds one short audible signal while moving the crane, he/she intends to:
 - a. Stop
 - b. Go ahead
 - c. Back up
 - d. Shut down

12. OSHA states in 1926.1422 that a hand signal chart must be posted:
 - a. In the vicinity of the hoisting operation
 - b. On the crane
 - c. Conspicuously
 - d. All of the above

13. OSHA states that crane signal communications shall be maintained:
- Periodically
 - Continuously
 - According to job site condition
 - According to job site supervisor
14. Side loading on the boom may be caused by:
- Swinging the crane rapidly
 - Lowering the load rapidly
 - Raising the boom rapidly
 - Telescoping the boom rapidly
15. When is a Dedicated Spotter required?
- Any time a signal is given to an operator.
 - Intentionally working closer than Table A's minimum clearance distances for power lines.
 - When using voice signals or audible signals in the blind.
 - When using non-standard hand signals for attachments that are not covered in the standard method.
16. Which of the following describes the OSHA Standard Method hand signal to lower the hook?
- One fist in front of chest, thumb pointing outward and heel of fist tapping chest.
 - Arm extended, fingers closed, thumb pointing downward.
 - With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.
 - With arm extended downward, index finger pointing down, move hand in small horizontal circle.
17. When signaling a personnel platform, direct communication must be maintained between the signal person and _____.
- Project Manager
 - Lift director
 - Crane Operator
 - Qualified Rigger
18. According to ASME B30.5, if the operator sounds two short audible signals, he/she intends to:
- Stop
 - Go ahead
 - Back up
 - Shut down

19. Where must a hand signal chart be posted according to ASME B30.23 (personnel lifting systems) while lifting a personnel platform?
- In the crane
 - In the trailer
 - In the shop
 - In the platform

20. Which three elements **MUST** voice signals contain?
- Operator's name, function, and speed.
 - Crane (Grove, Manitowoc, Liebherr, etc.), direction, and speed.
 - Weight of load minus rigging, function (such as hoist, boom, etc.), and distance.
 - Function (such as hoist, boom, etc.), direction; distance and/or speed; function, stop command.

21. Identify the pictured signal.

- Hoist
- Extend Telescoping Boom
- Swing
- Dog Everything



22. Identify the pictured signal.

- Lower
- Swing
- Lower Boom
- Emergency Stop



23. Identify the pictured signal.

- Hoist
- Swing
- Raise Boom
- Emergency Stop



24. Identify the pictured signal.

- Dog Everything
- Use Main Hoist
- Move Slowly (Hoist Slowly)
- Raise Boom



25. Identify the pictured signal.

- Swing
- Raise Hoist
- Trolley Travel
- Dog Everything



Signal Person Written Exam 010 - KEY

DO NOT WRITE ON THIS TEST BOOKLET

1. All signal persons must signal cranes from the operator's _____.
 - a. Manual
 - b. Perspective
 - c. Left side
 - d. Right side

2. A qualified signal person must have knowledge of standard signals along with a basic understanding of the crane's _____.
 - a. Design
 - b. Limitations
 - c. Engineering
 - d. Manufacturing

3. To control drifting of the load, signal persons should?
 - a. Keep the boom tip over the load
 - b. Touch the load on the ground
 - c. Employ extra ground personnel
 - d. Factor in wind direction

4. Who shall observe clearance when the equipment could get closer than the minimum approach distance of the power line, permitted under Table A?
 - a. Appointed spotter
 - b. Appointed rigger
 - c. Dedicated spotter
 - d. Dedicated rigger

5. When signaling a mobile crane to boom down, the crane's capacity will:?
 - a. Increase.
 - b. Decrease.
 - c. Increase for boom truck cranes and decrease for crawler cranes.
 - d. Will not change.

6. How many people at a time **SHOULD** signal the crane?
 - a. One (1).
 - b. Two (2).
 - c. Three (3), as long as they are qualified and documentation is available on site.
 - d. One (1) when signaling a mobile crane, two (2) when signaling a tower crane, and three (3) when signaling an overhead crane.

7. What **MUST** be done prior to using Non-Standard Hand Signals?
 - a. Non-standard hand signals are not allowed to be used.
 - b. The signal person and operator must contact each other and agree on the non-standard hand signals that will be used.
 - c. The signal person must document the non-standard hand signal and keep it available on the jobsite.
 - d. The signal person and operator must notify the riggers.

8. What **MUST** be done before radio, telephone, or other electronic transmission are used to communicate crane signals to the operator?
 - a. Tested on site before beginning operations to ensure that the signal transmission is effective, clear, and reliable.
 - b. Tested by an approved laboratory to ensure that the signal transmission is effective, clear, and reliable.
 - c. Approved by Underwriters Laboratories® and be water resistant
 - d. Approved by Underwriters Laboratories®, be water resistant, non-conductive, and have a frequency between 300 GHz – 3kHz.

9. The signal person **MUST** assume that all power lines are energized unless:
 - a. The utility owner confirms that the power line has been and continues to be de-energized and visibly grounded at the worksite.
 - b. The utility owner/operator is on-site and observing the cranes movement.
 - c. The power line is installed with protective coverings to prevent accidental contact with the lines.
 - d. The crane operator instructs the signal person otherwise.

10. What does the term “two blocking” mean?
 - a. A single sheave block with two parts of line
 - b. A four sheave block using only two sheaves
 - c. Load handling device contacting the upper sheaves
 - d. Two blocks lifting at the same time

11. According to ASME B30.5, if the operator sounds one short audible signal while moving the crane, he/she intends to:
 - a. Stop
 - b. Go ahead
 - c. Back up
 - d. Shut down

12. OSHA states in 1926.1422 that a hand signal must be posted:
 - a. In the vicinity of the hoisting operation
 - b. On the crane
 - c. Conspicuously
 - d. All of the above

13. OSHA states that crane signal communications shall be maintained:
- Periodically
 - Continuously
 - According to job site condition
 - According to job site supervisor
14. Side loading on the boom may be caused by:
- Swinging the crane rapidly
 - Lowering the load rapidly
 - Raising the boom rapidly
 - Telescoping the boom rapidly
15. When is a Dedicated Spotter required?
- Any time a signal is given to an operator.
 - Intentionally working closer than Table A's minimum clearance distances for power lines.
 - When using voice signals or audible signals in the blind.
 - When using non-standard hand signals for attachments that are not covered in the standard method.
16. Which of the following describes the OSHA Standard Method hand signal to lower the hook?
- One fist in front of chest, thumb pointing outward and heel of fist tapping chest.
 - Arm extended, fingers closed, thumb pointing downward.
 - With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.
 - With arm extended downward, index finger pointing down, move hand in small horizontal circle.
17. When signaling a personnel platform, direct communication must be maintained between the signal person and _____.
- Project Manager
 - Lift director
 - Crane Operator
 - Qualified Rigger
18. According to ASME B30.5, if the operator sounds two short audible signals, he/she intends to:
- Stop
 - Go ahead
 - Back up
 - Shut down

19. Where must a hand signal chart be posted according to ASME B30.23 (personnel lifting systems) while lifting a personnel platform?

- a. In the crane
- b. In the trailer
- c. In the shop
- d. In the platform

20. Which three elements **MUST** voice signals contain?

- a. Operator's name, function, and speed.
- b. Crane (Grove, Manitowoc, Liebherr, etc.), direction, and speed.
- c. Weight of load minus rigging, function (such as hoist, boom, etc.), and distance.
- d. Function (such as hoist, boom, etc.), direction; distance and/or speed; function, stop command.

21. Identify the pictured signal.

- a. Hoist
- b. Extend Telescoping Boom
- c. Swing
- d. Dog Everything



22. Identify the pictured signal.

- a. Lower
- b. Swing
- c. Lower Boom
- d. Emergency Stop



23. Identify the pictured signal.

- a. Hoist
- b. Swing
- c. Raise Boom
- d. Emergency Stop



24. Identify the pictured signal.

- a. Dog Everything
- b. Use Main Hoist
- c. Move Slowly (Hoist Slowly)
- d. Raise Boom



25. Identify the pictured signal.

- a. Swing
- b. Raise Hoist
- c. Trolley Travel
- d. Dog Everything



Signal Person Written Exam – KEY Test #010

Please PRINT all information clearly.

Date: ____ / ____ / ____

Qualification #: _____ (Note: If you are a new applicant leave blank)

Register #: _____

Name: _____
(Last) (First) (Middle) (Nickname) (Suffix)

Local: _____

Written Exam: #010 #020

Evaluator _____

Using pencil, please fill in the circle with the right answer.

1. (a) (b) (c) (d)

2. (a) (b) (c) (d)

3. (a) (b) (c) (d)

4. (a) (b) (c) (d)

5. (a) (b) (c) (d)

6. (a) (b) (c) (d)

7. (a) (b) (c) (d)

8. (a) (b) (c) (d)

9. (a) (b) (c) (d)

10. (a) (b) (c) (d)

11. (a) (b) (c) (d)

12. (a) (b) (c) (d)

13. (a) (b) (c) (d)

14. (a) (b) (c) (d)

15. (a) (b) (c) (d)

16. (a) (b) (c) (d)

17. (a) (b) (c) (d)

18. (a) (b) (c) (d)

19. (a) (b) (c) (d)

20. (a) (b) (c) (d)

21. (a) (b) (c) (d)

22. (a) (b) (c) (d)

23. (a) (b) (c) (d)

24. (a) (b) (c) (d)

25. (a) (b) (c) (d)

TOTAL SCORE _____

Signal Person Written Exam 020

DO NOT WRITE ON THIS TEST BOOKLET

1. The signal person **MUST** assume that all power lines are energized unless:
 - a. The utility owner confirms that the power line has been and continues to be de-energized and visibly grounded at the worksite.
 - b. The utility owner/operator is on-site and observing the cranes movement.
 - c. The power line is installed with protective coverings to prevent accidental contact with the lines.
 - d. The crane operator instructs the signal person otherwise.

2. A qualified signal person must have knowledge of standard signals along with a basic understanding of the crane's _____.
 - a. Design
 - b. Limitations
 - c. Engineering
 - d. Manufacturing

3. To control drifting of the load, signalpersons should?
 - a. Keep the boom tip over the load
 - b. Touch the load on the ground
 - c. Employ extra ground personnel
 - d. Factor in wind direction

4. Side loading on the boom may be caused by:
 - a. Raising the boom rapidly
 - b. Lowering the load rapidly
 - c. Swinging the crane rapidly
 - d. Telescoping the boom rapidly

5. When signaling a mobile crane to boom down, the crane's capacity will:
 - a. Increase.
 - b. Decrease.
 - c. Increase for boom truck cranes and decrease for crawler cranes.
 - d. Will not change.

6. How many people at a time **SHOULD** signal the crane?
 - a. Two (2).
 - b. One (1).
 - c. Three (3), as long as they are qualified and documentation is available on site.
 - d. One (1) when signaling a mobile crane, two (2) when signaling a tower crane, and three (3) when signaling an overhead crane.

7. What **MUST** be done prior to using Non-Standard Hand Signals?
 - a. Non-standard hand signals are not allowed to be used.
 - b. The signal person and operator must contact each other and agree on the non-standard hand signals that will be used.
 - c. The signal person must document the non-standard hand signal and keep it available on the jobsite.
 - d. The signal person and operator must notify the riggers.

8. What **MUST** be done before radio, telephone, or other electronic transmission are used to communicate crane signals to the operator?
 - a. Tested on site before beginning operations to ensure that the signal transmission is effective, clear, and reliable.
 - b. Tested by an approved laboratory to ensure that the signal transmission is effective, clear, and reliable.
 - c. Approved by Underwriters Laboratories® and be water resistant
 - d. Approved by Underwriters Laboratories®, be water resistant, non-conductive, and have a frequency between 300 GHz – 3kHz.

9. All signalpersons must signal cranes from the operator's _____.
 - a. Left side
 - b. Manual
 - c. Perspective
 - d. Right side

10. What does the term “two blocking” mean?
 - a. A single sheave block with two parts of line
 - b. A four sheave block using only two sheaves
 - c. Load handling device contacting the upper sheaves
 - d. Two blocks lifting at the same time

11. According to OSHA, when using a dedicated spotter in Option # 3 conditions, what is the allowable distance between any part of the load, rigging or crane and energized power lines rated at 300 Kv?
 - a. 10 feet
 - b. 15 feet
 - c. 20 feet
 - d. 25 feet

12. According to OSHA, employees working as dedicated spotters near transmitter / communication towers capable of inducing an electrical charge must:
 - a. Ensure that non-conductive rigging is being used
 - b. Post electrocution warnings
 - c. Communicate with employer and utility owner
 - d. Be trained to effectively perform their task

13. OSHA states that crane signal communications shall be maintained:
- Periodically
 - According to job site condition
 - Continuously
 - According to job site supervisor
14. When signaling a personnel platform, direct communication must be maintained between the signalperson and _____.
- Project Manager
 - Lift director
 - Crane Operator
 - Qualified Rigger
15. Who shall observe clearance when the equipment could get closer than the minimum approach distance of the power line, permitted under Table A?
- Appointed spotter
 - Appointed rigger
 - Dedicated spotter
 - Dedicated rigger
16. Which of the following describes the OSHA Standard Method hand signal to lower the hook?
- One fist in front of chest, thumb pointing outward and heel of fist tapping chest.
 - Arm extended, fingers closed, thumb pointing downward.
 - With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.
 - With arm extended downward, index finger pointing down, move hand in small horizontal circle.
17. When is a Dedicated Spotter required?
- Any time a signal is given to an operator.
 - When the crane is intentionally working closer than Table A's minimum clearance distances for power lines.
 - When using voice signals or audible signals in the blind.
 - When using non-standard hand signals for attachments that are not covered in the standard method.
18. According to ASME B30.5, if the operator sounds two short audible signals, he/she intends to:
- Stop
 - Go ahead
 - Back up
 - Shut down

19. Where must a hand signal chart be posted according to ASME B30.23 (personnel lifting systems) while lifting a personnel platform?
- In the crane
 - In the trailer
 - In the shop
 - In the platform

20. Which three elements **MUST** voice signals contain?
- Operator's name, function, and speed.
 - Function (such as hoist, boom, etc.), direction; distance and/or speed; function, stop command.
 - Crane (Grove, Manitowoc, Liebherr, etc.), direction, and speed.
 - Weight of load minus rigging, function (such as hoist, boom, etc.), and distance.

21. Identify the pictured signal.

- Hoist
- Extend Telescoping Boom
- Swing
- Dog Everything



22. Identify the pictured signal.

- Lower
- Swing
- Lower Boom
- Emergency Stop



23. Identify the pictured signal.

- Hoist
- Swing
- Lower Boom
- Emergency Stop



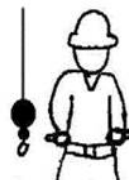
24. Identify the pictured signal.

- Dog Everything
- Use Main Hoist
- Move Slowly (Hoist Slowly)
- Raise Boom



25. Identify the pictured signal.

- Swing
- Raise Hoist
- Extend Telescopic Boom
- Dog Everything



Signal Person Written Exam 020 - **KEY**

DO NOT WRITE ON THIS TEST BOOKLET

1. The signal person **MUST** assume that all power lines are energized unless:
 - a. The utility owner confirms that the power line has been and continues to be de-energized and visibly grounded at the worksite.
 - b. The utility owner/operator is on-site and observing the cranes movement.
 - c. The power line is installed with protective coverings to prevent accidental contact with the lines.
 - d. The crane operator instructs the signal person otherwise.

2. A qualified signal person must have knowledge of standard signals along with a basic understanding of the crane's _____.
 - a. Design
 - b. Limitations
 - c. Engineering
 - d. Manufacturing

3. To control drifting of the load, signal persons should?
 - a. Keep the boom tip over the load
 - b. Touch the load on the ground
 - c. Employ extra ground personnel
 - d. Factor in wind direction

4. Side loading on the boom may be caused by:
 - a. Raising the boom rapidly
 - b. Lowering the load rapidly
 - c. Swinging the crane rapidly
 - d. Telescoping the boom rapidly

5. When signaling a mobile crane to boom down, the crane's capacity will:
 - a. Increase.
 - b. Decrease.
 - c. Increase for boom truck cranes and decrease for crawler cranes.
 - d. Will not change.

6. How many people at a time **SHOULD** signal the crane?
 - a. Two (2).
 - b. One (1).
 - c. Three (3), as long as they are qualified and documentation is available on site.
 - d. One (1) when signaling a mobile crane, two (2) when signaling a tower crane, and three (3) when signaling an overhead crane.

7. What **MUST** be done prior to using Non-Standard Hand Signals?
 - a. Non-standard hand signals are not allowed to be used.
 - b. The signal person and operator must contact each other and agree on the non-standard hand signals that will be used.
 - c. The signal person must document the non-standard hand signal and keep it available on the jobsite.
 - d. The signal person and operator must notify the riggers.

8. What **MUST** be done before radio, telephone, or other electronic transmission are used to communicate crane signals to the operator?
 - a. Tested on site before beginning operations to ensure that the signal transmission is effective, clear, and reliable.
 - b. Tested by an approved laboratory to ensure that the signal transmission is effective, clear, and reliable.
 - c. Approved by Underwriters Laboratories® and be water resistant
 - d. Approved by Underwriters Laboratories®, be water resistant, non-conductive, and have a frequency between 300 GHz – 3kHz.

9. All signal persons must signal cranes from the operator's _____.
 - a. Left side
 - b. Manual
 - c. Perspective
 - d. Right side

10. What does the term “two blocking” mean?
 - a. A single sheave block with two parts of line
 - b. A four sheave block using only two sheaves
 - c. Load handling device contacting the upper sheaves
 - d. Two blocks lifting at the same time

11. According to OSHA, when using a dedicated spotter in Option # 3 conditions, what is the allowable distance between any part of the load, rigging or crane and energized power lines rated at 300 Kv?
 - a.) 10 feet
 - b.) 15 feet
 - c.) 20 feet 1926.1408 Table A
 - d.) 25 feet

12. According to OSHA, employees working as dedicated spotters near transmitter / communication towers capable of inducing an electrical charge must:
 - a. Ensure that non-conductive rigging is being used
 - b. Post electrocution warnings
 - c. Communicate with employer and utility owner
 - d. Be trained to effectively perform their task 1926.1408(g)(2)

13. OSHA states that crane signal communications shall be maintained:
- Periodically
 - According to job site condition
 - Continuously
 - According to job site supervisor
14. When signaling a personnel platform, direct communication must be maintained between the signal person and _____.
- Project Manager
 - Lift director
 - Crane Operator
 - Qualified Rigger
15. Who shall observe clearance when the equipment could get closer than the minimum approach distance of the power line, permitted under Table A?
- Appointed spotter
 - Appointed rigger
 - Dedicated spotter
 - Dedicated rigger
16. Which of the following describes the OSHA Standard Method hand signal to lower the hook?
- One fist in front of chest, thumb pointing outward and heel of fist tapping chest.
 - Arm extended, fingers closed, thumb pointing downward.
 - With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.
 - With arm extended downward, index finger pointing down, move hand in small horizontal circle.
17. When is a Dedicated Spotter required?
- Any time a signal is given to an operator.
 - When the crane is Intentionally working closer than Table A's minimum clearance distances for power lines.
 - When using voice signals or audible signals in the blind.
 - When using non-standard hand signals for attachments that are not covered in the standard method.
18. According to ASME B30.5, if the operator sounds two short audible signals, he/she intends to:
- Stop
 - Go ahead
 - Back up
 - Shut down

19. Where must a hand signal chart be posted according to ASME B30.23 (personnel lifting systems) while lifting a personnel platform?

- a. In the crane
- b. In the trailer
- c. In the shop
- d. In the platform

20. Which three elements **MUST** voice signals contain?

- a. Operator's name, function, and speed.
- b. Function (such as hoist, boom, etc.), direction; distance and/or speed; function, stop command.
- c. Crane (Grove, Manitowoc, Liebherr, etc.), direction, and speed.
- d. Weight of load minus rigging, function (such as hoist, boom, etc.), and distance.

21. Identify the pictured signal.

- a. Hoist
- b. Extend Telescoping Boom
- c. Swing
- d. Dog Everything



22. Identify the pictured signal.

- a. Lower
- b. Swing
- c. Lower Boom
- d. Emergency Stop



23. Identify the pictured signal.

- a. Hoist
- b. Swing
- c. Lower Boom
- d. Emergency Stop



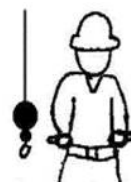
24. Identify the pictured signal.

- a. Dog Everything
- b. Use Main Hoist
- c. Move Slowly (Hoist Slowly)
- d. Raise Boom



25. Identify the pictured signal.

- a. Swing
- b. Raise Hoist
- c. Extend Telescopic Boom
- d. Dog Everything



Signal Person Written Exam – KEY Test #020

Please PRINT all information clearly.

Date: ____ / ____ / ____

Qualification #: _____ (Note: If you are a new applicant leave blank)

Register #: _____

Name: _____
(Last) (First) (Middle) (Nickname) (Suffix)

Local: _____

Written Exam: #010 #020

Evaluator _____

Using pencil, please fill in the circle with the right answer.

1. (a) (b) (c) (d)

2. (a) (b) (c) (d)

3. (a) (b) (c) (d)

4. (a) (b) (c) (d)

5. (a) (b) (c) (d)

6. (a) (b) (c) (d)

7. (a) (b) (c) (d)

8. (a) (b) (c) (d)

9. (a) (b) (c) (d)

10. (a) (b) (c) (d)

11. (a) (b) (c) (d)

12. (a) (b) (c) (d)

13. (a) (b) (c) (d)

14. (a) (b) (c) (d)

15. (a) (b) (c) (d)

16. (a) (b) (c) (d)

17. (a) (b) (c) (d)

18. (a) (b) (c) (d)

19. (a) (b) (c) (d)

20. (a) (b) (c) (d)

21. (a) (b) (c) (d)

22. (a) (b) (c) (d)

23. (a) (b) (c) (d)

24. (a) (b) (c) (d)

25. (a) (b) (c) (d)

TOTAL SCORE _____