



Cranes

A. Hazards

The use of cranes at NNS presents a serious potential hazard to personnel, Government assets, and to NNS and contractor equipment.

B. Reference

The requirements listed here are taken from OSHA Standards and the NNS Crane Program Manual (F-1089), which is the primary NNS reference. These requirements will be updated as necessary when this primary reference is changed.

C. Definitions

Term	Definition	Acronym
Certification of Compliance	<p>Written Contactor certification that the crane, crane operators, riggers and signal persons will comply with the following minimum requirements:</p> <ul style="list-style-type: none"> • Crane meets all applicable OSHA requirements. • A written ODCL will be completed and signed at the beginning of each shift prior to starting work, • Equipment operators and crew meet all regulatory agency requirements. • All equipment and personnel certifications will remain valid while operating at or for Newport News. • All cranes shall be equipped with an anti-two blocking device that when activated, disables all crane functions whose movement can cause two-blocking. • No safety device will be by-passed during lifting and handling operations at or for Newport News. • Rigging gear meets all regulatory agency requirements and will be checked at the start of each shift and prior to use. <p>Any lifting and handling related accident or incident involving contractor cranes or operators will be reported in accordance with Newport News Procedure Y-1046, (Call the Service Desk at (757) 688-9888).</p>	COC
Clearance	The minimum distance from any part of the crane to the point of nearest obstruction.	-----
Competent person	One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate such conditions.	-----

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Newport News Shipbuilding

Term	Definition	Acronym
Crane	A fixed or mobile power operated machine with integral hoisting mechanism. A crane moves a load vertically by means of drums, cables or chains, and single or multi-sheaved blocks, and laterally by means of wheels and/or a rotating boom.	-----
Crane Accident	Refer to NNS Environmental, Health and Safety Contractor Resource Manual and assigned Contractor Coordinator.	-----
Forklift Jib	Lifting device with telescoping or movable parts that can be used in difference positions used with forklifts.	-----
F acilities and W aterfront S upport	-----	FWS
Hoist	A machinery unit that is used for lifting and lowering a load.	-----
I n A ccordance W ith	-----	IAW
Lift	Maximum safe vertical distance through which the hook, magnet, or bucket can move.	-----
L ifting a nd H andling	-----	L&H
Main Hoist	Hoist system used for raising and lowering loads up to maximum rated capacity of the crane.	-----
Mobile Crane	A crane consisting of a rotating superstructure with power plant, operating machinery, and a boom (either fixed or telescoping) capable of being raised and lowered, all mounted on a base or platform equipped with axles and rubber-tired wheels for travel. The base is usually propelled by the engine in the superstructure, but it may be equipped with a separate engine controlled from the superstructure.	-----
Mouse	A method employed to close the throat opening of a hook using a device such as rope, wire, or other suitable means.	-----
O perator's D aily C hecklist	-----	ODCL
O ccupational S afety and H ealth A dministration	-----	OSHA
O riginal E quipment M anufacturer	-----	OEM
Qualified Person	One who, by possession of a recognized of a, training and experience, successfully demonstrated the ability to solve/resolve recognized degree, certificate, or professional standing, or who by extensive knowledge problems relating to the subject matter, the work, or the project.	-----
Shackle	A U-shaped fitting with a pin across the throat used as connection between lengths of a chain or to attach other fittings.	-----

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Term	Definition	Acronym
Shall	As used in this crane manual, means the requirement is mandatory.	-----
Should	As used in this crane manual, means recommended guidance.	-----
Spreader Beam	A beam or bar used for holding apart two or more lifting slings that suspend a load having two or more lifting attachments. A spreader may be suspended from a crane or hoist using one or more lifting attachments.	-----
Third Party Certification	Certification of applicable cranes used in long shoring, shipbuilding, ship repair, or ship breaking operations by an OSHA-approved certification agency.	-----
Travel	The horizontal, usually straight-line motion, of a crane or its parts (such as a trolley).	-----
Vacuum Lifters	A below the hook lifting device for lifting and transporting loads in a fixed attitude using a vacuum as the holding force.	-----

D. Regulations

1. Each contractor owning and/or operating cranes at NNS or supporting off-site work by NNS, shall ensure all of their cranes, crane operators, riggers and signal persons meet applicable OSHA regulations and ANSI/ASME standards incorporated by reference within the OSHA regulations.
2. The OSHA requirements are specified in:
 - a. 29 CFR 1910, General Industry
 - b. 29 CFR 1915, Maritime
 - c. 29 CFR 1926, Construction

E. Contractor Cranes and Certification of Compliance

1. Prior to bringing a crane on NNS property, each contractor whose employees will operate cranes must provide to the NNS Environmental, Health and Safety Department (O27) a copy of their written Crane Safety Program. This document must describe the contractor's program for complying with each element of the applicable OSHA standard(s) and NNS requirements. The contractor shall provide a copy of any changes to NNS O27 on an annual basis. Please note, this is not the same document as the job/site specific document required for each lift executed at or for NNS.
 - a. Contractors shall ensure only properly trained and qualified personnel are permitted to operate a crane at or for NNS. Each contractor operating cranes at NNS or the assigned NNS Field Engineer/Contractor Coordinator, shall provide to NNS Department X36, prior to bringing the crane onto NNS property, a completed copy of the Certification of Compliance, Newport News



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Form NN 9035 (Appendix A in this document). The COC may be faxed to the X36 office (757) 380-7605.

- b. Prior to bringing a crane on-site, the primary contact is Kathy Ross, (757) 380-2809. If you do not reach Kathy Ross, leave a voicemail stating:
 - 1) Your Company's Name
 - 2) Callers name and call back number
 - 3) The Company you will be working for, if you are a sub-contractor
 - 4) Crane Number
 - 5) Where you will be working
 - 6) Arrival and Departure Dates
 2. The completed COC must also be conspicuously displayed in the crane cab at all times while the cranes are on NNS property or working for NNS. The COC must be signed by a responsible company officer of the employer that provides cranes for any lifting and handling work at NNS. By his or her signature on the COC, the employer certifies that:
 - a. The COC is displayed on all cranes at all times while the cranes are on NNS property.
 - b. The crane and crane operators provided by his or her company for work at NNS comply with all applicable OSHA requirements.
 - c. Each person operating cranes at NNS is fully trained and qualified to operate the equipment at NNS.
 - d. Equipment and personnel certifications will remain valid while operating at NNS.
 - e. All cranes are equipped with an anti-two-blocking device that, when activated, disables all crane function whose movement can cause tow-blocking.
 - f. No safety devices will be by-passed during lifting and handling operations at NNS.
 - g. Any lifting and handling related accident or incident involving the employer's cranes or operators will be reported to NNS per the requirements listed in Section N.
 - h. The crane and crane operators provided by his or her company for work at NNS comply with all applicable OSHA requirements.
- F. Mandatory Attendance Requirements for the *Newport News Shipbuilding Contractor's Lifting and Handling (L&H) Operations Briefing***
1. The contractors/sub-contractors shall require crane operators and riggers to attend the L&H Operations briefing prior to operating a crane or conducting rigging operations.



2. Signal persons, L&H foreman and safety professionals are encouraged to attend the NNS L&H Briefing prior to operating a crane or conducting rigging operations.
3. Contractors shall coordinate with their NNS Contractor Coordinator and/or Sponsor to schedule the orientation.

G. Mobile Cranes

1. Load Chart - Mobile cranes shall have a manufacturer's load chart posted in the cab. All operators shall be familiar with the chart and how to use the load chart. No crane shall be operated in excess of the load limits on the manufacturer's load chart for that crane. The weight of all auxiliary handling devices, such as hoist blocks, hooks, and slings shall be considered a part of the load rating.
2. Outriggers - shall be fully extended and used when lifting in other than over the end positions on all mobile cranes except locomotive cranes. All mobile cranes used for personnel handling must have written or documented approval from the manufacturer of the crane. Outriggers shall be used when lifting personnel. All floats/personnel baskets will be checked to ensure that they are structurally safe and have a visible load rating.
3. Accessible areas within the swing radius of the outermost part of the body of a revolving crane shall be guarded to prevent personnel from being struck or crushed by the crane.
4. Mobile cranes shall not travel to/from an NNS job site, or between job sites at NNS without the hook block being secured.

H. Crane Envelope

1. Fouling of a cranes travel path is preventable.
2. Envelope of Operation: The environment around a load handling operation for a L&H operation which includes the:
 - a. Mechanical, electrical, and structural components of the crane(s) involved including structural supports such as ground rails, pilings, columns, etc.
 - b. Rigging gear used to attach the load to the crane,
 - c. Equipment's supporting structure,
 - d. L&H operating team which includes, but is not limited to, the operator, hook-on personnel, lead crane riggers, riggers, crane walker(s), and supervision.
 - e. Load being lifted.
3. If contractors are required to be working near or adjacent to a crane, contact your Contractor Coordinator prior to beginning operations for additional information that provide special envelope clearances that must be adhered to.



4. The crane envelope includes the cranes structure, its travel path, and a 12" buffer encompassing the structure and the travel path. It is important to understand the cranes envelope includes areas above the crane as well as along the sides and any space along the travel path.
5. If a non-crane activity such as installation of new equipment, modification of existing equipment, modification or repair to building structure could possibly foul the crane envelope, the responsible personnel performing the work and the assigned NNS Contractor Coordinator must evaluate the situation to determine if there is a way to avoid breaching the crane envelope. If there is not an alternative to breaching the crane envelope, the cognizant FWS engineering group must be contacted to provide instructions.
 - a. A job specific hazard analysis must be completed when performing work around the structure of a crane and/or the travel path of the crane. These tasks could include:
 - b. Installation or modification of machinery,
 - c. Electrical conduit, lighting and cables,
 - d. Piping systems, components and other tasks not listed here.
 - e. Not only can machinery, equipment or components foul the crane envelope, but vehicles, bicycles, mobile equipment, material and employees can as well. Never park a vehicle, bicycle, or mobile equipment or place material in the crane travel path.

I. Lift Plan

1. Vendors/Contractors working for NNS performing lifting and handling operations are required to develop a job specific rigging and lift plan for each specific crane configuration and location and activity prior to lifting any suspended load.
2. The contractor's lift plan shall, at a minimum, identify the following:
 - a. Weight of the load and how it was determined
 - b. Center of Gravity (CG) location and how it was determined
 - c. Lifting points
 - d. Rigging gear, arrangement and weight of the load, including the rigging gear weight
 - e. Lifting equipment capacity in the configuration used, including sling angles and load angle factor
 - f. Reference sketches and/or calculations as needed
 - g. Roles and responsibilities of the lifting team
 - h. Work zone safety
 - i. Agreed upon methods of communication



J. Other scenarios where a lift plan is required:

1. Using a crane to lift a personnel basket.
 - a. You must comply with 29 CFR 1926.1431- Hoisting Personnel requirements for personnel lifts and a personnel lifting section must be included in the lifting and handling section of your company's approved safety plan
2. Using a forklift with a jib attachment where the load is under the forks.
 - a. Any attachment/jib used must be approved by the forklift manufacturer and a load chart for this attachment must be on site or in the cab of the forklift.
3. Using a backhoe, excavator or front end loader with a manufacturer's approved lifting attachment. This attachment must come with a load/weight rating from the manufacturer.
 - a. If the bucket has an attachment that was not installed by the manufacturer, this attachment must be engineered and a load/weight limit must be given by the pertinent engineer.
4. Using a boom truck to lift or set equipment/material.
5. Using A-Frames to lift or set equipment/material.
6. Rigging from any structure to lift or set a load.

K. Lift Plan Brief

1. The most detailed lift plan is only as effective as the pre-job brief that communicates the details to the entire team. Everyone involved in the lift must be involved in the briefing. A good briefing assumes nothing and covers everything related to the lift.
2. At a minimum all pre-job briefs shall include the following:
 - a. Discuss the crucial information on the lift plan. Examples include the load weight, CG, type and capacity of gear and equipment, lift points.
 - b. Discuss the gear and equipment listed and available.
 - c. Discuss the entire operating envelope. Include the lift site, travel path, landing site, close tolerances - and check that all areas are clear.
 - d. Talk to the team about the risks and hazards of the job and ways to avoid or eliminate them.
 - e. Identify past problems with this type of lift. Look at "lessons learned" from similar lifts.



- f. Review the job and ask open-ended questions to ensure all team members working the job with you understand their responsibilities and how they will accomplish them.
- g. Anticipate problems and discuss the conditions under which the work will **"STOP!"**
- h. If conditions change, STOP, revise the lift plan and re-brief the team.
- i. Each Team member shall initial and date the plan after the brief.

NOTE: Always work your job as it has been detailed in the lift plan. If the plan changes, STOP. Edit and brief the new plan.

L. Non-Operating Crane Pass

1. Contractors that bring boom trucks or other service trucks with permanently mounted cranes onto NNS property that will not be used for lifting shall complete a Non-Operating Crane Access Pass, Newport News Form NN 9239 (Appendix B, in this document), in lieu of a COC prior to being allowed entry. This certificate must be completed and visibly posted in the cab at all times while the truck is on NNS property.
2. By signing the Non-Operating Crane Access Pass, the driver of the vehicle certifies that he or she will ensure no lifts are made with the crane while on NNS property.
3. Any contractor who is found making lifts with a truck mounted crane with a posted Non-Operating Crane Access Pass will be subject to dismissal and may be refused access to future work at NNS.

M. Contractor Crane Variances

1. The following are the requirements for acquiring a variance for a contractor to by-pass or remove a crane's operational safety device(s) to perform pile driving or dredging operations.
2. The contractor must submit a request on their company letterhead to their NNS Contract Coordinator who shall forward the request to O48 CE&Q. The letter requesting a variance shall contain the following:
 - a. The affected device(s) to be by-passed or removed
 - b. Specific operations that requires the variance
 - c. Identify the crane by model, serial number and capacity
 - d. Description of the crane's altered configuration
 - e. Signature of the company's representative
3. Additionally, X36 Engineering must approve the use of:



- a. Natural (manila) or synthetic fiber rope slings, or
 - b. Hand tucked splices in wire rope slings
 - c. The use of multiple lift rigging for steel erection
4. The CE&Q Engineering Supervisor will evaluate the request and, if approved, issue a memo to the Contractor Coordinator to post on the crane that contains the following information:
- a. Address to requesting NNS Contractor Coordinator
 - b. Reference to the contractor's letter requesting the variance
 - c. Identification operation involved

N. Reporting Crane Accidents/Incidents

1. All crane and rigging accidents involving contractor operated cranes servicing work performed at NNS, or supporting off site work by Huntington Ingalls Industries-Newport News must be reported.
2. A crane accident occurs when any one or more of the elements in the envelope of operation fails through commission or omission, to perform correctly during the lifting and handling operation, including operation during maintenance or testing resulting in the following:
 - a. Personnel injury or death. Minor injuries that are inherent in any industrial operation, including strains and repetitive motion related injuries, shall be reported by the normal personnel injury reporting process of the activity in lieu of these requirements.
 - b. Material or equipment damaged
 - c. Dropped load
 - d. Derailment
 - e. Two-blocking
 - f. Overload
 - g. Collision, including unplanned contact between the load, crane, and/or other objects.

Important: Items c, d, e, f, and g are considered crane accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure), is not considered an accident solely due to damage to, or to, this component unless the component failure results in significant damage to other components (e.g., dropped boom, damage to nearby equipment/gear, damage to load, roll over, collision of load, etc.).

3. In the event of a crane accident, the following actions **must** be taken:
 - a. Stop all operations immediately and secure the site. The only authorized actions that can be taken are those required to assist injured personnel and



- stabilize equipment or loads that pose an imminent threat to personnel or equipment.
- b. If there are injuries, notify emergency personnel at (757) 380-2222 and Health and Safety at (757) 688-6967.
 - c. Notify your Supervisor of the event and to report to the jobsite.
 - d. Contact your NNS Contractor Coordinator for awareness and guidance.
 - e. NNS Contractor Coordinator: Call (757) 688-9888 to report the unplanned event to the Facilities Service Desk. The Facilities Service Desk will notify the NNS Lifting and Handling Accident Response Team (L&H ART).
 - f. Make sure that anyone involved in or has knowledge of the accident remains near the area.
 - g. Wait for the L&H ART to arrive. Follow the directions of the NNS L&H ART during accident investigations and ensures the Contractor Supervisor and NNS Contractor Coordinator is available to participate in the investigation.
 - h. Ensure each Contractor employee involved in the incident provides a written witness statement.
4. Following an unplanned, uncontrolled event, the contractor is required to perform a complete investigation of the accident and provide the NNS L&H ART with a written accident report detailing the following information:
- a. Date – date accident occurred.
 - b. Time – time accident occurred (hour and minute).
 - c. Personnel Injury – “YES” if injury occurred, or “NO” if injury did not occur.
 - d. Asset – equipment number or model number
 - e. Asset Description – Mobile Crane, Truck Crane, etc.
 - f. Asset Location – where the crane was working when the accident occurred.
 - g. Accident Cause – what caused the accident?
 - h. Examples:
 - 1) Operator Error,
 - 2) Rigger Error,
 - 3) Design Error,
 - 4) Electrical/Mechanical failure, etc.
 - i. Brief Damage Description – Briefly describe what damage occurred to any equipment or property.
 - j. Employees Involved – provide name, employee NNS badge number, employee’s role on the job, and if the employee was injured.
 - k. Accident Description – describe, in detail, the events occurring before the accident, the accident itself, what happened to cause the accident, and the events that immediately followed the accident.
 - l. Injury Description – provide a description of the injury or injuries which resulted from the accident.
 - m. Immediate Corrective Actions – list the actions taken immediately following the accident, (i.e. securing the load, attending to the injured, notifying the Facilities Service Desk, etc.).



- n. Investigation Findings – list pertinent information gathered from the investigation that are major facts contributing to the accident.
 - o. Apparent Cause – the specific act or action that caused the accident.
 - p. Permanent Corrective Action(s) – specify remedial measures taken or planned to prevent the accident from recurring. The corrective action must be directly related to the “Apparent Cause”.
5. The NNS Lifting and Handling Accident Response Team will also conduct an investigation and will prepare a separate accident report for NNS use.
- a. Acceptable safety measures that are to be taken
 - b. Signature of issuing O48 Engineering Supervisor

O. L&H Observation Program

1. Department X36, Lifting & Handling Program Quality Group, Department O27, Environmental Safety and Health and other Departments:
- a. Performs surveillances of contractor crane activities such as, but not limited to:
 - i. Crane setup, placement, and assembly;
 - ii. Condition and use of handling gear and equipment;
 - iii. Rigging operations;
 - iv. Required documentation (e.g. lift plans, job briefings, COCs) have been completed for involved personnel



Appendix A – Certificate of Compliance, NN9035
Post this certificate on each crane. See forms viewer for latest revision

NN 9035 (REV 2)

CERTIFICATE OF COMPLIANCE

for Contractor Cranes Used at Newport News Shipbuilding (NNS)

MUST BE CONSPICUOUSLY POSTED ON CRANE WHILE ON NEWPORT NEWS PROPERTY

This certificate must be signed by a company officer of the contractor whose company provides cranes for any lifting and handling work at Newport News Shipbuilding, a division of Huntington Ingalls Industries. By his/her signature, the contractor certifies that the crane and crane operators provided by his/her company for work at Newport News comply with the following minimum requirements:

- Crane meets all applicable OSHA requirements.
- A written ODCL will be completed and signed at the beginning of each shift prior to starting work.
- Equipment operators and crews meet all regulatory agency requirements.
- All equipment and personnel certifications will remain valid while operating at Newport News.
- All cranes shall be equipped with an anti-two-blocking device that, when activated, disables all crane functions whose movement can cause two-blocking.
- No safety device will be by-passed during lifting and handling operations at Newport News.
- Rigging gear meets all regulatory agency requirements and will be checked at the start of each shift and prior to use.
- Any lifting and handling related accident or incident involving contractor cranes or operators will be reported in accordance with Newport News Procedure Y-1046 (Call the service desk at 688-9888).

By his/her signature, the contractor also agrees to hold harmless, defend, and indemnify Newport News Shipbuilding, a division of Huntington Ingalls Industries and its affiliates, and their officers, directors, employees, and agents, from any and all claims, suits, and damages arising out of, or incident to, contractor's use or operation of any vehicle, crane, or equipment on Newport News premises, except for claims resulting from the sole negligence of Newport News Shipbuilding or its employees.

Contractor Company Name and Phone Number:		Crane Manufacturer/Type/Capacity:
Contractor Crane Number (Asset, License Number, Etc.)		Crane Operator's Name(s):
Certifying Officer Name/Title:		NNS Purchase Order/Release Number(s):
Certifying Officer Signature:	Date:	NNS Responsible Party Name, Dept., and Phone Number:



Appendix B – Non-Operating Crane Pass, NN9239 (front)

See forms viewer for latest revision

FRONT

NN 9239 (REV2)

NON-OPERATING CRANE ACCESS PASS

***MUST BE CONSPICUOUSLY POSTED IN CAB WHILE ON NEWPORT NEWS
PROPERTY OR WORKING FOR NEWPORT NEWS***

This certificate must be completed and signed by the driver of any truck entering Newport News Shipbuilding with an attached crane that will not be used for lifting and handling on NNS property or working for NNS.

By his or her signature, the driver of this vehicle certifies that he or she will not use the attached crane of NNS property or working for NNS.

If the crane will be used, a Certificate of Compliance must be completed and signed in accordance with the requirements contained in this Chapter.

Company Name and Phone Number:	
Truck Manufacturer/Type/Vehicle License Number:	
Driver's Printed Name:	
Driver's Signature:	Date:

By his/her signature, the contractor also agrees to hold harmless, defend, and indemnify Newport News Shipbuilding and its affiliates, and their officers, directors, employees, and agents, from any and all claims, suits, and damages arising out of, or incident to, contractor's use or operation of any vehicle, crane, or equipment on Newport News premises, except for claims resulting from the sole negligence of Newport News Shipbuilding or its employees.



Appendix B – Non-Operating Crane Pass, NN9239 (back)

See forms viewer for latest revision

BACK

NON-OPERATING CRANE ACCESS PASS

**MUST BE CONSPICUOUSLY POSTED IN CAB
(OPPOSITE SIDE OUTWARD) WHILE ON Newport News
SHIPBUILDING PROPERTY OR WORKING FOR NNS**

- This certificate must be completed and signed by the driver of any truck entering Newport News Shipbuilding or working for NNS with an attached crane that will not be used for lifting and handling on NNS property
- By his or her signature, the driver of this vehicle certifies that he or she will not use the attached crane on NNS property or when working for NNS.
- If the crane will be used, a Certificate of Compliance must be completed and signed.