Appendix D – Glossary of Common Crane Terms

Many terms are used by crane operators which refer to crane function, assembly, operation and maintenance. The following glossary provides a list and brief definition of fundamental terms used in the crane industry.

Accumulator	A container in which fluid is stored under pressure as a source of hydraulic energy
Annually	Once a year
Anti-Two Block System	A system of electromechanical devices used to prevent the crane operator from two blocking the crane. See Two Block
Audio/Visual Warning System	1. Alarm device that signals the operator of low engine oil pressure, high engine coolant temperature and high hydraulic oil and transmission oil temperature. 2. Device utilizing buzzer and/or lights as a signal of approaching two block and/ or overload condition. See Rated Capacity Indicator.
Auxiliary Lifting Sheave	A unit which connects to the boom head and is used for reeving winch rope for a second hoist line. Also know as an Auxiliary Boom Head or Rooster Sheave.
Backward Stability	Resistance to overturning of the crane in rearward direction.
Bail	A frame equipped with sheaves and connected to the gantry. The bail is used in conjunction with the boom hoist drum and bridle to alter the crane's boom angle.
Base Section	The lower most section of a lattice boom or luffing jib.
Basic Boom	Lattice boom attachment made up of only the base and top sections of the boom.
Basic Jib	Jib attachment made up of only the base and top section of the jib.
Boom Angle	The angle above or below horizontal of the longitudinal axis of the boom.

Boom Angle Indicator	An accessory which measures the angle of the boom relative to horizontal.
Boom Chord	A main corner structural member of a boom.
Boom Foot	Base of boom where it attaches to the upper revolving frame.
Boom Hoist	Rope drum and its drive, or other mechanism, for controlling the angle of a lattice boom crane.
Boom Length	The distance along a straight line through the centreline of the boom foot pin to the centreline of the boom head sheave shaft, measured along the longitudinal axis of the boom.
Boom Section	Individual lattice structures which are pinned together to form the boom attachment. Crane lattice booms are usually in two basic sections, tip and base. Such booms may be lengthened by insertion of one or more additional extension sections.
Bridle	A frame equipped with sheaves and connected to the boom by stationary ropes called pendants. The bridle is used in conjunction with the boom hoist drum and bail to alter the crane's boom angle.
Cantilever	Any unsupported boom or jib section that projects beyond the supporting point.
Capacity Chart	A chart for the crane which gives rated lifting capacities for the crane under different load conditions and setups. Capacity charts are found on the crane or in the Crane Rating Manual.
Carbody	The crawler carrier upon which the revolving upper frame is mounted.
Carrier	The portion of the crane located below the turntable bearing.
Cavitation	A condition where air is induced into a cavity, line, or chamber normally filled with oil. This condition can cause damage to pumps, cylinders, valves, etc.
Check Valve	A valve which permits flow in one direction only.
Chord	A main corner structural member of a lattice boom section.
Clamshell Bucket	A device consisting of two or more similar scoops hinged together and used for digging and moving material.

Closing Line	The rope reeved from hoist drum to control closing of clamshell bucket.
Clutch	A friction, electromagnetic, hydraulic, or pneumatic device for engagement or disengagement of power.
Concrete Bucket	Bucket for handling wet concrete, usually handled on lifting crane for hoisting to dumping location.
Counterweight	Weight used to supplement the weight of the crane in providing stability for lifting loads.
Cracking Pressure	The pressure at which a pressure actuated valve begins to open to allow flow.
Cylinder	A device which converts fluid power into mechanical force and motion. It usually consists of a moveable element such as a piston and a piston rod, which operates within a cylindrical bore.
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Derricking	Operation of changing boom angle in a vertical plane. See Boom Hoist.
Dragline	Machines with dragline attachments are generally used to excavate material from below the grade on which the machine is placed. A dragline bucket is loaded by the drag rope pulling it toward the machine, it is lifted and carried by the hoist rope reeved over the boom point sheave, and is balanced by the dump rope interconnecting the drag and hoist ropes.
Drum Rotation Indicator	A device that is used to indicate winch drum motion and can also be used to monitor speed.
Extension (Boom or Jib)	Sections of the boom or jib which come in various lengths and are used to increase the overall length of the basic boom or jib.
Filter	A device which functions to remove insoluble contaminants from a fluid by a porous media.
Force	Any cause which tends to produce or modify motion. In hydraulics, total force is expressed by the product of pressure (P) and the area of the surface (A) on which the pressure acts (Force = P X A).
Frame	Structure on which either upper or carrier machinery is attached.

Free-Fall	Lowering of the hook and or load without using power. The motion is caused by gravity and must be controlled by a brake.
Friction	The property which tends to resist the relative motion of one surface in contact with another surface. It always exerts a "Drag" in the direction opposite of the motion, thus consumes power.
Function Limiter (Function Lockout, Hydraulic Cutouts)	Devices incorporated into the anti—two block system or rated capacity indicator system which will disable the crane function of winch up, telescope out and or boom down (as applicable) as two block or overload situations approach.
Gradeablity	The slope which a machine can climb expressed as a percentage (45° equals 100% slope).
Ground Pressure	Weight of machine divided by the area of the surface directly supporting the machine.
Hoist	Function of lifting and lowering the loads.
Hoist Drum	A rotating cylindrical spool with side flanges used to wrap the winch rope during the raising and lowering of the load with the winch.
Hoist Rope	The wire rope used to reeve the winch and the attachments for lifting loads.
Hook Block	Block with hook attached used in lifting service. It may have a single sheave for two or three part line, or multiple sheaves for four or more parts of line.
House Assembly	The housing which covers the machinery mounted on the upper revolving frame.
Hydraulic Reservoir (Sump Tank)	The storage tank for hydraulic fluid.
Idler Roller	Rollers of track mechanism which are not power driven but are used to maintain proper tension on the track.
Jib	A pendant supported extension attached to the boom or fly head to provide added boom length for handling specified loads. The jib may be in line with the boom or offset.
Lattice Boom	Lattice structure consisting of multiple sections, pinned together to a specific length and their support system.

Lattice Boom	Boom of open construction with angle or tubular lacing between main corner members (chords) in the form of a truss.
Lifting Capacity	The rated load for any given load radius and boom angle under specified operating conditions and machine configurations.
Line Pull	The rope pull generated off a rope drum or lagging at a specified pitch diameter.
Line Speed	The feet per minute that a load can be raised or lowered.
Live Mast	Frame hinged at or near the boom foot and extending above the cab for use in connection with supporting a boom. Head of mast is usually supported and raised or lowered by the boom hoist ropes.
Load Indicator	A device for measuring and displaying the net load being lifted.
Load Line	Another term for "Hoist Rope". In lifting crane service it refers to the main hoist. The secondary hoist is referred to as a "Whip Line".
Load Moment Indicator	See Rated Load Indicator.
Load Moment Limiter (LML)	A device which aids the operator by automatically sensing the overturning moment on the crane, i.e. load X radius. It compares this lifting condition to the crane's rated capacity, provides an audible visual signal when the loading conditions approach the rated capacity, and when the rated capacity is reached and/or exceeded, it limits crane functions that would result in an overload condition.
Load radius	The horizontal distance from the centreline of rotation of the upper to the centre of gravity of the suspended load.
Luffing Jib	A crane attachment adaptable to a crane boom. The luffing jib can be raised or lowered from the operator’s cab while the main boom is stationary. The luffing jib allows the crane to be set up close to a high building or structure and place an object on the roof of a building while maintaining close proximity to the building.
Mat	Support, usually of timber or wire construction, for supporting pontoons or tracks on soft surfaces to add stability and or distribute machine loads (reduce ground pressure).

Midpoint Suspension	Wire rope pendants used to support the centre portion of a long lattice boom when it is being raised from a horizontal position.
Motor (Hydraulic)	A rotary motion device which changes hydraulic energy into mechanical energy.
Offset Fly	A hydraulic crane fly section that is capable of being pinned at different angles.
Oil Cooler	A heat exchanger used to remove heat from the hydraulic or transmission fluid.
Operational Aid	An accessory that provides information to facilitate operation of a crane or that takes control of particular crane functions without action of the operator when a limiting condition is sensed.
Operator's Cab (Upper Cab)	A housing which covers the operator's station.
Outrigger	An extendable supporting device used to level the crane and increase stability.
Outrigger Beam	The part of the outrigger which extends horizontally and acts as the support for the outrigger jack.
Outrigger Jack	The hydraulic cylinder on the outrigger beam which extends vertically to raise and lower the crane for leveling.
Pawl (dog)	A pivoting locking lever which will permit movement in only one direction. Movement in the opposite direction can be achieved only by manually releasing the mechanism.
Pendant	A supporting rope, which maintains a constant distance between its points of attachment.
Periodic	Time intervals usually determined by crane manufacturer when crane inspections are required.
Pick and Carry	The crane operation of lifting a load and traveling with it suspended.
Pilot Pressure	Hydraulic pressure used to actuate or control hydraulic components.
Pinion	The small gear in a gear train which drives the other gears.

Pitch Diameter	Root diameter of drum, lagging, or sheave, plus the diameter of the rope.
Planetary	A set of gears used to either speed up or slow down the input or the output to gain speed or power whichever is applicable.
Pontoon	The support which attaches to the outrigger jack to increase the supporting area.
Power Take-Off (PTO)	Device used for the transfer or transmission of engine power to the operating functions of the crane.
Pressure	Force per unit of area usually expressed in pounds per square inch (psi) or Kilopascals (kPa)
Pump (Hydraulic)	A device which converts mechanical force and motion into hydraulic fluid flow.
Radius	The horizontal distance from the centerline of rotation of the crane, with no load, to the centre of gravity of the hook or suspended load.
Rated Capacity Indicator (Rated Load Indicator)	A device that automatically monitors radius, load weight, and load rating and warns the crane operator of an overload condition.
Rated Capacity Limiter (RCL)	A device that automatically monitors radius, load weight, and load rating and prevents movements of the crane that would result in an overload condition.
Reeving	Passing of ropes over pulleys and or sheaves.
Relief Valve	A pressure operated valve which by—passes pump delivery to the reservoir, limiting system pressure to a predetermined maximum value.
Reservoir	A container for storage of fluid in a fluid power system.
Shall	The word shall is to be understood as mandatory.
Side Frame	Supporting structure of the track mechanism. Side frames are attached to the crawler carbody and may be extendable.
Sprocket	The driving element of the track mechanism. Receiving power through the drive mechanism, the sprocket meshes with the track to travel the crawler.
Swing (Slew)	The rotation of the upper portion of the crane.

Swing Brake	A brake which is used to resist the rotation of the upper during normal, stationary crane operations.
Swing Lock	A mechanical lock that engages the upper with the lower of the crane. The swing lock is used during a pick & carry operation (moving loads on site).
Swing Motor	Hydraulic device which uses a planetary to rotate the upper on the carrier.
Tailswing	The distance from the centerline of rotation of the upper frame to the extreme rear swing arc of the counterweight.
Third Drum	A third hoist drum, in addition to two main hoist drums, often used in pile driving.
Tip Section	The outermost section of a boom. This section contains the sheave/sheaves for reeving hoist lines.
Torque	Turning or twisting force usually measured in foot-pounds (ft-lb) or Newton meters (Nm).
Track Roller	Rollers of track mechanism which are not power driven, but are used to support the tread member and guide the track along the ground.
Tubular Jib	Multiple section lattice extensions supported by pendants and attached to the main boom head.
Turntable Bearing	A large bearing which attaches the upper to the carrier allowing the upper to rotate on the carrier.
Two Block	The situation when the crane's hook block or hook ball contacts the attachment's head machinery.
Two Block Warning System	A system of electromechanical devices used to warn the crane operator of impending two block condition, also known as an Anti-two block system.
Upper	The portion of the crane located above the turntable bearing.
Upper Revolving Frame	The main structure of the upper section of the crane which serves as mounts for other components of the upper.
Valve	A device for controlling flow rate, flow direction, or pressure of a fluid.

Viscosity	The resistance to flow. High viscosity indicates a high resistance; low viscosity, a low resistance.
Whip Line	Secondary hoist line.
Winch	Function of lifting and lowering loads.
Winch Drum	A rotating cylindrical spool with side flanges used to contain the winch rope during the raising and lowering of the load with the winch.
Winch Rope	The wire rope used to reeve the block and the attachments for lifting loads.

Appendix E – Glossary of Rigging Terms

The following glossary provides a list and brief definition of rigging terms used in the crane industry.

Angle of loading	Inclination of a leg or branch of a sling measured from the horizontal or vertical plane; provided that an angle of loading of five degrees or less from the vertical may be considered a vertical angle of loading.
Basket hitch	Sling configuration whereby the sling is passed under the load and has both ends, end attachments, eyes or handles on the hook or a single master link.
Bridle hitch	Sling composed of multiple legs with the top ends gathered in a fitting that goes over the lifting hook. The bridle can be wire rope, chain or synthetic slings.
Choker hitch	Sling configuration with one end of the sling passing under the load and through an end attachment, handle or eye on the other end of the sling.
Designated	Selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.
Hitch	Sling configuration whereby the sling is fastened to an object or load, either directly to it or around it.
Link	A single ring of a chain.
Master coupling link	Alloy steel welded coupling link used as an intermediate link to join alloy steel chain to master links.
Master link or gathering ring	Forged or welded steel link used to support all members (legs) of an alloy steel chain sling or wire rope sling.
Mechanical coupling link	Non-welded, mechanically closed steel link used to attach master links, hooks, etc., to alloy steel chain.
Proof test	Nondestructive tension test performed by the sling manufacturer or an equivalent entity to verify construction and workmanship of a sling.
Rated capacity or working load limit	Maximum working load permitted by the provisions of a section.

Reach	The effective length of an alloy steel chain sling measured from the top bearing surface of the upper terminal component to the bottom bearing surface of the lower terminal component.
Sling	An assembly which connects the load to the material handling equipment.
Sling manufacturer	Person or organization that assembles sling components into their final form for sale to users.
Strand laid endless sling-mechanical joint	Wire rope sling made endless from one length of rope with the ends joined by one or more metallic fittings.
Strand laid grommet-hand tucked	Endless wire rope sling made from one length of strand wrapped six times around a core formed by hand tucking the ends of the strand inside the six wraps.
Vertical hitch	Method of supporting a load by a single, vertical part or leg of the sling.