Glossary of Rigging Terms

aluminum truss. A structural framework based on a triangular system used to span, reinforce, or support materials or equipment.

anchor. A central source of support or stability.

basket. A cradle or U-shaped form.

bend. In reference, to knots, to fasten two ropes together.

batten. A length of pipe (or lumber or other material) suspended over the set and used to support overhead lighting and grip equipment.

bight. A curve in the rope.

block. A unit housing one or multiple freely rotating, grooved pulleys.

block and tackle. A system creating mechanical advantage by employing rope and multiple blocks for hoisting, lowering, and shifting objects or materials.

breaking strength. The tensile force at which a material will fail. Also called ultimate tensile strength.

bridle. Slings attached to multiple points on a load to spread the force of tension or position a load between support points.

carabiner. An oblong or D-shaped metal link used as a means of connection.

cast. To form (an object) into a particular shape by pouring metal, plaster, etc., in a fluid state into a mold and letting it harden.

center of gravity (CG). The point in an object around which its weight is evenly distributed. The weight of the object may be considered to be concentrated at the CG, and an object supported at its CG will not tilt or rotate from the force of gravity alone.

center point load (CPL). A localized force acting at midspan of a member.

chain motor. An electric motor-driven machine used to hoist and suspend a unit.

compression. Pushing or compacting type of force. Generally applied to vertical supporting posts or legs, cribbing, walls, bracing, etc.

compression sleeve. An oval sleeve used to form an eye or to connect two wire ropes.

core. The central, innermost, or most essential part of a unit.

crimp. To press or draw together.

critical lift. A lift in which a failure would result in property damage, serious injury, or death.

cross sectional area. Section formed by a plane cutting through an object, usually at a right angle to its axis.

D/d ratio. A method used for estimating the strength efficiency of a rope as it passes over a bend. “D” is the diameter of the object about which the rope is being bent (sheave, connecting hardware, or load), and “d” is the diameter of the rope.

deflection. The amount of sag experienced by a load-carrying beam after a load is applied.

design factor. The multiplier used in design to ensure the rated or allowable capacity provides the desired level of safety against failure. Often called a safety factor or factor of safety.

diameter. The width of a circular or cylindrical object.

dynamic load. A load in motion.

elasticity. Tendency of material to return to its original shape after being deformed.

eye. A loop, ring, or hole through which something is attached, inserted, or passed through.

eyebolt. A threaded bolt with a forged hole at one end to allow anchorage.

fiber rope. A cord made of fiber strands that are twisted or braided together.

fleet angle. The angle between two offset blocks that causes the line to rub against the body of the block.

force. An influence causing a body to undergo change in its velocity, direction of travel, shape, or any combination of these effects. In rigging, a force is often simply a push or pull on an object.

forge. To form (an object) by heating and hammering; beat into shape.

friction. The surface force acting opposite to the relative motion of materials or objects sliding against each other.

galvanize. To coat with zinc.

hitch (noun). The connection between a load and anchor point.

hitch (verb). To fasten or tie.

horizontal force. A force perpendicular to the direction of gravity.

I-beam. A member made up of flanges and a web configured such that the overall cross section resembles a capital letter “I”.

inertia. Tendency of an object at rest to remain at rest, or an object in motion to continue moving in a straight line at constant velocity. Inertia can be thought of as an object’s resistance to any change to its motion, including its direction.

knot. Fastening formed by looping and tying a rope upon itself, another rope, or object.

lang-lay rope. The strands and the individual wires run in the same direction.

lay. To twist or turn into a certain position or direction.

left-lay rope. The strands are twisted to the left around the core.

load. In rigging, the object to be hoisted or moved.

load cell. Device that can measure the actual weight of an object hanging from a point. Also known as an in-line electronic dynamometer.

loop. In knot-making, it is formed by crossing the running end over or under the standing part, forming a ring, or circle in the rope.

lumber. The wood of trees cut and prepared for use as building material.

mousing. A method to prevent the slipping, unfastening, or turning of a device.

overhand (turn or loop). Made when the running end passes over the standing part.

pipe. A hollow cylinder, often metal, used for conveyance of water, gas, steam, etc., that can also be used as a structural member.

plasticity. Tendency of a material to retain its deformed shape after the applied force(s) has been removed.

proof test. A means of positive testing for the reliability of a unit, object, material, etc.

Pythagorean theorem. The theorem that the sum of the squares of the lengths of the sides of a right triangle is equal to the square of the length of the hypotenuse.

qualified person, attendant, or operator. A person designated by the employer who by reason of training, experience or instruction has demonstrated the ability to safely perform all assigned duties, and when required, is properly licensed in accordance with federal, state, or local laws and regulations. (Cal/OSHA definition. See page 2 for Fed/OSHA definition.)

rated capacity. Maximum allowable force that a unit can safely support. Also known as working load limit (WLL).

reeving. Running, weaving, moving, sliding rope through or around a hole or object.

regular-lay rope. The strands and the individual wires run in opposite directions.

resultant force. A single force that would produce the same external effect on a body if it were to replace the original group of forces.

rigging. Ropes, chains, and other associated hardware forming a system used to support, position, and control equipment and/or materials.

rigging hook. A curved piece of metal for pulling, holding, or suspending a unit.

right-lay rope. The strands are twisted to the right around the core.

round turn. A modified turn, with the running end leaving the circle in the same general direction as the standing part.

running end. The free or working end of a rope.

saddle. The grooved, forged steel body of a wire rope clip that is made to fit wire rope and U-bolt.

shackle. A strong U-shaped metal piece made of drop forged steel with holes in each end through which a pin is run to close it, used as a fastening device.

shear. A force that acts parallel to the cross-section being loaded. It can be said that shear produces a sliding failure along the plane parallel to the force.

shock load. The force from an object suddenly accelerating or decelerating, as when a fall is arrested or a hoist is jerked (bumped).

shouldered. A sharp change in the contour of an object to oppose or limit motion along it or for an abutment.

sling. A looped rope, strap, or chain for supporting, cradling, or hoisting a unit.

sling angle. The smaller angle formed between the sling leg and horizontal.

splice. To join together or unite.

square stock. Metal bar that is square shaped.

stake. A somewhat sharpened post used to be driven into the ground.

standing part. The rest of the rope excluding the running end.

static equilibrium. The summation of forces acting on a body are equal to zero.

static load. A force applied slowly to a body and remaining constant once its maximum value is reached.

strength efficiency. The ratio of usable strength to the full capacity of the wire rope, usually expressed as a percentage.

stress. Internal distributed force of a body, expressed in force per area (e.g., pounds per square inch).

tackle. See block and tackle.

tail. The end of the standing part of a line that is unusable.

tensile strength. See breaking strength.

tension. Pulling or stretching type of force, generally applied to rope, slings, bolts, etc.

termination. The end place or part where something is bound or limited spatially.

thimble. An oblong metal ring with a concave groove used to make an eye loop at the end of a wire rope.

torsion. Torsion is a twisting force. The internal stress in the object will be shear.

tubing. Extruded hollow structural members. May be round or rectangular.

turn. The placing of a loop around a specific object (such as a post, ring, or rail) with the running end continuing in a direction opposite to the standing part.

turnbuckle. A coupling device consisting of a metal body internally threaded at both ends—one lefthanded and one right-handed—to accept threaded end fittings.

underhand loop. Made when the running end passes under the standing part.

uniformly distributed load (UDL). A dispersed force applied along a load bearing member.

vertical force. A force acting parallel to the direction of gravity.

whipping. A method to prevent the unraveling of rope ends.

wire rope. Made of multiple wires twisted together forming a strand and the strands twisted or layed around an inner core.

wire rope clip. A clamp consisting of a U-shaped bolt, a forged saddle, and two nuts.

working load limit (WLL). See rated capacity.