

CATERPILLAR 793 HAUL TRUCK GLOSSARY

A

Abrasion Material erosion by rubbing of coarse, hard, or sharp materials.

Accelerator A device for increasing the speed of a machine.

Acre Unit for measuring land, equal to 43,560 square feet, 4,840 square yards, or 160 square rods.

Adhesion The ability of soil to stick to buckets, blades, and other parts of excavators.

Aftercooler Any device which cools air after it is compressed.

Air Receiver The air storage tank associated with an air compressor.

Ampere The intensity of electric current produced by one volt acting through a resistance of one ohm.

Angling Dozer A bulldozer with a blade which can be pivoted on a vertical center pin so as to cast its load to either side.

Articulate To swivel or bend where the piece of equipment's front and rear are joined together.

Attachment An accessory to a machine. An alternate designation for the equipment added to the basic tractor, normally including the blade and a ripper or winch.

B

Back Brace The back braces are jointed, tubular, steel supports that retain the blast hole drill mast in the vertical or angle drilling position.

Back Brace Locks The back brace collars lock the knee joints of the blast hole drill's back braces when the mast is raised to the drilling position.

Back Slope The sloping side of a ridge.

Backfill The material used in refilling a ditch or other excavation, or the process of such refilling.

Backhoe A hoe or pull shovel.

Bail A yoke or spreader, hinged to the sides of the shovel dipper, on which a hoist rope equalizer is mounted. Hoist ropes pass through the equalizer for hoisting the dipper.

Ballast Heavy material, such as water, sand, or iron, which has no function in a machine except to increase weight.

Bank Specifically, a mass of soil rising above a digging or trucking level. Generally, any soil which is to be dug from its natural position.

Bench A working level or step in a cut which is made in several layers.

Berm An artificial ridge of earth.

Bit Air System The blast hole drill's bit air system that flushes drilling debris from the bottom of the drill hole.

Blade Specifically, the cutting edge of an implement; generally, the entire attachment such as the blade on a grader or dozer.

Blast To loosen or move rock or dirt by means of explosives or an explosion.

Blue Tops Grade stakes whose tops indicate finish grade level.

Body The load carrying part of a truck or scraper.

Boom A beam hinged in the deck front, supported by cables or hydraulic cylinders.

Boom Jack A boom whose function is to support sheaves that carry lines to a working boom.

Borrow Pit An excavation from which material is taken to a nearby job.

Bowl The bucket or body of a carrying scraper.

Brake A device for slowing, stopping, and holding an object.

Brake, Disc A brake which utilizes friction between fixed and rotating discs, or between discs and shoes.

Brake, Friction A brake operating by friction between two surfaces rotating or sliding on each other.

Brake Horsepower The horsepower output of an engine or mechanical device measured at the flywheel or belt usually by some form of mechanical brake.

Breakout Wrench The breakout wrench is a tool used to loosen pipe, stabilizer, and drill bit joints on the (blast hole) drills.

Bucket A part of an excavator or loader which digs, lifts, and carries dirt. Also may be called the dipper.

Bulldozer A tractor equipped with a front pusher blade.

Burden The volume of rock to be moved by the explosive in a drill hole.

C

Car Body The traveling base upon which the shovel's upper and side frames are mounted.

C-Frame An angling dozer lift and push frame.

Cab Guard On a dump truck, a heavy metal shield extending up from the front wall of the body and forward over the cab.

Cable Rope made of steel wire.

Carryall Trade name for LeTourneau-Westinghouse scrapers.

Cat A trademarked designation for any machine made by the Caterpillar Tractor Company. Widely used to indicate a crawler tractor or mounting of any make.

Catskinner Operator of a crawler tractor.

Center Line A line marked in a roadway to indicate the center axis of the road.

Center Shift Pin Steel pin that must be removed to allow blade circle on a grader to be shifted sideways.

Chain A series of links joined together.

Cherry Picker A small derrick made up of a sheave on an A-frame, a winch and a winch line, and a hook, or a hydraulically operated robotic arm with man basket. Usually mounted on a truck.

Chock A block used under and against an object to prevent it from rolling or sliding.

Choker A chain or cable so fastened that it tightens on its load as it is pulled.

Circle In a grader, the rotary table which supports the blade and regulates its angle.

Circle Reverse The mechanism that changes the angle of a grader blade.

Clevis A shackle.

Collaring Collaring is a procedure used to start a new drill hole. The hole is drilled to a preferred depth at slow speed to minimize material breakout and fall-in.

Compaction Reduction in bulk of fill by rolling, tamping, or soaking.

Compressor A machine which compresses air.

Corrosion The wear or dissolving away of a material through chemical action, as by rusting, for example.

Counterweight A *dead* or nonworking load attached to one end or side of a machine to balance weight carried on the opposite end.

Crab Steering Position in which the front section and rear section of a motor grader are placed at an angle to the centerline.

Crane A mobile machine used for lifting and moving loads without the use of a bucket.

Crawler The crawlers are the track assemblies on which the machine rests and travels. One of a pair of roller chain tracks used to support and propel a machine, or any machine mounted on such tracks.

Crawler Belt An series of individual links (shoes) connected with link pins to form a continuous belt upon which a machine is propelled.

Creep Very slow travel of a machine or a part.

Crowd Outward movement of the dipper handle in relation to the dipper handle axis (shipper shaft pinions) on the boom. The process of forcing a bucket or dipper into the digging or the mechanism which does the forcing. Used chiefly in reference to machines which dig by pushing away from themselves.

Culvert A pipe or small bridge for drainage under a road or structure.

Cushion Hitch Assembly Unit between tractor frame and gooseneck that when activated transfers the load from the tractor hitch to the nitrogen cylinders, allowing for a smooth ride.

Cutting Excavating, lowering a grade.

Cutting Edge Replaceable steel plate mounted to the moldboard of a motor grader that contacts the ground.

D

Decelerator Control which decreases engine rpm when activated.

Detent Mechanical stop in a throttle or accelerator control at which point fuel is shut off to the engine.

Dewatering Removing water by pumping, drainage, or evaporation.

Dieseling In a compressor, explosions of mixtures of air and lubricating oil in the compression chambers or other part of the air system.

Differential A device that drives two axles and allows them to turn at different speeds to adjust to varying resistance.

Differential Lock Mechanism that when engaged does not allow one side of the drive axle to spin.

Dipper A digging bucket rigidly attached to a stick, arm, or dipper handle.

Dipper Handle A name for the standard revolving shovel (dipper shovel), and for the straight shaft or shafts which connects the bucket (dipper) with the boom. See also *Dipper Stick*.

Dipper Stick A name for the standard revolving shovel (dipper shovel), and for the straight shaft or shafts which connects the bucket (dipper) with the boom. See also *Dipper Handle*.

Dipper Trip A device that unlatches the door of a shovel bucket to dump the load.

Ditch A drainage course, generally following a natural contour.

Dog A heavy-duty latch.

Dozer Abbreviation for bulldozer or shovel dozer.

Draft Arm On a scraper, the steel framework mounted on one end to the draft tube, with the opposite end mounted to the scraper bowl that allows the bowl to be towed, and allows movement (raise or lower) of the scraper bowl.

Draft Tube Round steel tube connecting gooseneck to draft arms of a scraper.

Drawbar In a tractor, a fixed or hinged bar extending to the rear used as a fastening for lines and towed machines or loads. In a grader, the connection between the circle and the front of the frame.

Drawbar Horsepower A tractor's flywheel horsepower minus friction and slippage losses in the drive mechanism and the tracks or tires.

Drawbar Pull The pull a tractor can exert on a load attached to the drawbar. Depends on power, weight, and traction.

Drill Bit The rotary drill bit is a rotating tool that is used to penetrate rock formations. It consists of a body, threaded at the top for attachment to the drill pipe, with three bearing-mounted rolling cones at the bottom.

Drill Pipe The drill pipe is a section of steel pipe, threaded on both ends, on which the drill bit is mounted.

Drill String The combination of drill pipe and the drill bit components comprise the drill string.

Drum A rotating cylinder with side flanges, used for winding in and releasing the cable.

Dust Curtain As used on the blast hole drill, the dust curtain encloses the area around the drill string immediately below the drilling platform, and restricts the travel of flying rock chips and dust resulting from the drilling operation.

E

Ejector A clean-out device, usually a sliding plate.

Elevator A vertical reciprocating conveyor, used on a scraper to move material into the bowl.

End Bits End portions of the cutting edge on a grader.

F

Face The more or less vertical surface of rock exposed by blasting or excavating, or the cutting end of a drill hole.

Fairlead A device which lines up cable so that it will wind smoothly onto a drum.

Feather To blend the edge of new material smoothly into the old surface.

Fill An earth or broken rock structure or embankment.

Final Drive A set of reduction gearing close to or inside of a drive wheel.

Flights Replaceable steel bars mounted to the scraper elevator which contact the material and move it into the bowl.

Float In reference to a dozer or grader blade, to rest by its own weight or to be held from digging by upward pressure of a load of dirt against its moldboard.

Friction Resistance to motion when one body is sliding or tending to slide over another.

Front The working attachment of a shovel, as a dragline, hoe, or dipper stick. The front of the blast hole drill is the end opposite the operator's cab.

Front-End Loader A tractor loader with a bucket attachment at the front end of the tractor.

Frost Frozen soil.

Frost Line The greatest depth to which ground may be expected to freeze.

G

Gantry An overhead structure that supports machines or operating parts. An upward extension of a shovel revolving frame that holds the boom line sheaves.

Gear A toothed machine part that meshes with another toothed part to transmit motion or to change speed or direction.

Gooseneck An arched connection usually between a tractor and a trailer.

Governor A feedback device on a machine or an engine that is used to provide automatic control, as of speed, pressure, or temperature.

Grade The rate of incline or decline in terms of degrees from the horizontal.

Grade Stake A stake indicating the amount of cut or fill required to bring the ground to a specified level.

Grader A machine with a centrally located blade that can be angled to cast to either side, with independent hoist control on each side.

Grid A set of surveyor's closely spaced reference lines laid out at right angles with elevations taken at line intersections.

Grizzly A coarse screen of iron beams welded into a grid shape used to remove oversize pieces from earth or blasted rock.

Grouser A ridge or cleat across a track shoe which improves its grip on the ground.

Grubbing Digging out roots.

H

Hand Level A sighting level that does not have a tripod, base, or telescope.

Hardpan Hard, tight soil.

Heap The soil carried above the sides of a body or bucket.

Heel A floor brace or socket for wall-bracing timbers. The trailing edge of an angled blade.

High Wall A face which is being excavated, as distinguished from spoil piles. Undisturbed soil or rock bordering a cut.

Hoe A shovel that digs by pulling a boom-and-stick mounted bucket toward itself (backhoe, pullshovel).

Hoist To lift, or a machine that lifts an object.

Horsepower A measurement of power that includes the factors of weight, distance, and speed. The force required to lift 33,000 pounds one foot in one minute.

Hub The strengthened inner part or mounting of a wheel or gear.

I

Idler A wheel or gear which changes the direction of rotation of shafts, or the direction of movement of a chain or belt. A roller or set of rollers that carries a conveyor belt.

Injector In a diesel engine, the unit that sprays fuel into the combustion chamber.

Inslope Portion of a slope that extends from the edge of the shoulder of a road to the bottom of the slope or the ditch that parallels the road.

J

Jack Pad The jack pad is a metal plate attached to the lower end of each leveling jack assembly, as on the blast hole drill. The jack pad provides a large surface area on which the leveling jack can rest.

K

Kill Cut off electric current from a circuit. Stop an engine.

L

Leaning Wheels Front wheels of a grader which can be moved to either side from a vertical position to assist in turning or grading.

Left Side Left side of the shovel is to the operator's left when the operator is seated at the controls and is facing forward with the attachment over the front of the lower frame.

Level To make level or to cause to conform to a specified grade.

Leveling Jacks Leveling jacks (four) are used to stabilize and level the blast hole drill prior to the start of drilling operation. See also *jack pad*.

Loader, Paddle A belt loader equipped with chain driven paddles that move loose material to the belt.

Loam A soft, easily worked soil containing sand, silt, and clay.

Lock Control Locking device used to lock the center pin on a grader.

Lower The portion of the shovel on which the upper is mounted. It includes the car body, crawlers, swing gear, roller circle, and center gudgeon.

Lug Bolts Bolts that hold the wheel to the hub.

Lower Machine Front End of shovel's lower, opposite end which mounts the propel machinery.

Lower Machine Rear End of shovel's lower which mounts the propel machinery.

M

Machinery Deck Part of shovel's upper frame on which hoist and swing transmissions and major electrical cabinets mount.

Machinery House The machinery house is the enclosed room in which the main drive(s), air system(s), hydraulic system(s), control cabinets, and lubrication system(s) are located.

Mast The mast of the blast hole drill is a welded structural steel assembly that supports and guides the rotary head. The pipe racks and auxiliary winch, breakout wrench, and pipe positioners are also secured to and supported by the mast.

Mast Anchor Pins The mast anchor pins are hydraulically operated locking pins used to secure the mast in the vertical drilling position.

Mast Crown The mast crown, located at the top of the mast, ties the mast legs together. It also supports the auxiliary winch sheaves.

Mast Raising The sequence of tasks required to raise the mast from the horizontal position to the vertical or angle drilling position.

Mast-Raising Cylinders Hydraulic cylinders used to raise and lower the mast to and from its drilling position.

Mast Pivot Pins The mast pivot pins are the points about which the mast rotates when it is being raised or lowered.

Mining Usually removal of soil or rock having value because of its chemical composition.

Moldboard A curved surface of a plow, dozer, grader blade, or other dirt mover, which gives dirt moving over it a rotary, spiral, or twisting movement.

N

O

Open-Cut A method of excavation in which the working area is kept open to the sky. Used to distinguish from cut-and-cover and underground workings.

Operator's Cab The operator's cab is an enclosed room in which the operating controls, indicators, and gauges are located. The machine's operation is controlled from this location.

Ore Pad An area designated to stockpile various grades of minerals prior to crushing or processing through a mill.

Ore Rock Earth containing workable quantities of a mineral or minerals of commercial value.

Outrigger An outward extension of a frame which is supported by a jack or block used to increase stability.

Overbreak Moving or loosening of rock as a result of a blast beyond the intended line of cut.

Overburden Soil or rock lying on top of a formation.

Overhang Projecting parts of a face or bank.

P

Pad Ground contact part of a crawler-type track (shoe or plate).

Pass A working trip or passage of an excavating or grading machine.

Petcock A small drain valve.

Pioneering The first working over of rough or overgrown areas.

Pioneer Road A primitive, temporary road built along the route of a job to provide means for moving equipment and men.

Pipe Sling The pipe sling is a permanent frame mounted part way up the mast to prevent a pipe section from falling if it should inadvertently become uncoupled from the rotary head.

Pit Any mine, quarry, or excavation area worked by the open-cut method to obtain material of value.

Pivoting Floor Hydraulically activated base of a scraper bowl that allows material to be held or expelled from the bowl.

Power Supply Cable See *tail cable*.

Power Train All moving parts connecting an engine with the point or points where work is accomplished. (All except unit rig.)

Pumping Mechanical transfer of fluids, alternately raising and lowering a digging edge to increase the volume of dirt being transported.

Pusher A tractor that pushes a scraper to help it pick up a load.

Q

Quarter Line Survey line in which land is divided into four parts.

Quarry A rock pit.

R

Reeving Threading or placement of a working line.

Retarder Device used to slow the movement of a vehicle.

Retract The mechanism by which a dipper shovel bucket, crane boom or similar equipment is pulled out of the digging or pulled within itself.

Right Side Right side of shovel is to operator's right when operator is seated at controls and is facing forward with attachment over front of lower frame.

Ripper An accessory mounted on the rear of a dozer or grader used to loosen soil and soft rock.

Rock The hard, firm, and stable parts of the earth's crust. Any material which requires blasting before it can be dug by available equipment.

Rule of Thumb A statement or formula that is not exactly correct, but is accurate enough for use in rough figuring.

S

Saddle Block In a dipper shovel, the boom swivel block through which the stick slides when crowded or retracted.

Sand Loose granular, gritty particles or worn or disintegrated rock, finer than gravel and coarser than dust.

Scarifier An accessory on a grader, roller or other machine, used chiefly for shallow loosening of road surfaces.

Scarifying Method of breaking hard soil.

Scraper A digging, hauling, and grading machine having a cutting edge, a carrying bowl, a moveable front wall (apron), and a dumping or ejecting mechanism. (Carrying scraper; pan scraper.)

Scraper, Self-Powered A scraper built into a single unit with a tractor.

Side Frame Frame that attaches to the shovel's car body and mounts under crawler belts and crawler roller assemblies.

Shale A fissile rock composed of laminated layers of clay-like, fine-grained sediments.

Shank The body portion of a bit above its cutting edge or tooth.

Sheave A grooved wheel used to support a cable or belt or change its direction of travel. (Pronounced *shiv*.)

Sheave Block A pulley and a case provided with the means to anchor it.

Shift A work period.

Shift, Graveyard The work period from midnight to 8.00 A.M., also called the *night shift*.

Shift, Swing The work period from 4.00 P.M. to midnight, also called the *afternoon shift*.

Shipper Shaft In a dipper shovel, the hinge on which the stick pivots when the bucket is hoisted.

Shoe A ground plate forming a link of a track or bolted to a track link. A support for a bulldozer blade or other digging edge to prevent cutting down.

Shoot Blast.

Shoulder The graded part of a road on each side of the road base or pavement.

Shovel A digging and loading machine or tool.

Shovel, Dipper A revolving shovel that has a push-type bucket rigidly fastened to a stick that slides on a pivot in the boom.

Shovel, Revolving A digging machine that has the machinery deck and attachment on a vertical pivot so that it can swing independently of its base.

Side Bits Replaceable steel plates, mounted on the forward outside edge of a scraper bowl or excavator bucket.

Side Hill A slope that crosses the line of work.

Side Shift Process or device used to move the circle to either side of a grader.

Slew To turn on an axis; rotate; pivot.

Sliding Moldboard Hydraulically activated portion of a grader moldboard that can be moved along its axis.

Snatch Block A pulley in a case which can be easily fastened to lines or objects by means of a hook, ring, or shackle.

Spooling To wind in a winch cable. The movable part of a slide-type hydraulic valve.

Soft Spot Section of road that is soft due to excess moisture or unstable base material.

Soil The loose surface material of the earth's crust.

Sprocket A toothed wheel that meshes with a chain or a crawler track.

Spot To direct the exact loading or dumping place.

Spotter In truck use, the man who directs the driver into a loading or dumping position.

Steering Brake A brake which slows or stops one side of a tractor.

Steering Clutch A clutch which can disconnect power from one side of a tractor.

Stick On a shovel or backhoe, a rigid bar hinged to the boom and fastened to the bucket. See also dipper handle.

Strip Remove overburden or thin layers of material.

Stripping Removal of a surface layer or deposit, usually for the purpose of excavating other material under it.

Subbing Method of removing sublevel material from a road bed, usually in a soft spot.
(With support equipment.)

Subgrade The natural ground below a road.

Swell (Growth) Increase of bulk, or volume, in soil or rock when it is dug or blasted.

Swing In revolving shovels, function of rotating upper frame with respect to lower frame either to the right or left.

Swing Angle The distance in degrees which a shovel must swing between digging and dumping points.

T

Tail A) The rear of a machine or vehicle. B) Material that is left when the shovel has reached as far as it can.

Tail Cable The power conductor located between the machine (shovel, drill, etc.) and the power supply substation. All electrical energy supplied to the machine is supplied via this cable.

Tandem A double axle drive unit for a truck or grader.

Telescope To slide one piece inside another.

Tilting Dozer A bulldozer whose blade can be pivoted to cut low on either side.

Toe The projection of the bottom of a face beyond the top.

Toe of Slope The base of an inclined surface of a hill.

Tool Bar Steel accessory bar mounted on a grader, used to hold ripper shanks or scarifier shanks.

Tooth A projection on a tool used to provide cutting action. The power-transmitting part of a sprocket or gear.

Track A crawler track.

Track, Crawler One of a pair of roller chains used to support and propel a machine. It has an upper surface which provides a track to carry the wheels of the machine, and a lower surface providing continuous ground contact.

Track Frame In a crawler mounting, a side frame to which the track roller and idler are attached. (Truck frame.)

Track Roller In a crawler machine, the small wheels that are under the track frame and rest on the track.

Traction The total amount of driving push of a vehicle on a given surface.

Tractor A motor vehicle on tracks or wheels used for towing or operating vehicles or equipment.

Tractor Loader A tractor equipped with a bucket which can be used to dig and to elevate to dump at truck height.

Transmission Modulator Pedal Mechanism that, when engaged, disengages power from the engine to the transmission.

U

Upper The portion of the shovel which is mounted on the lower. It includes the revolving frame, machinery cab, operators coop, and all machinery mounted within the machinery cab.

Upper Machine Front The front of the upper is the attachment end.

Upper Machine Rear The rear end of the upper is where the counterweight is located.

V

V-Ditch A vee-shaped ditch, usually cut on both sides of a road bed to allow drainage.

W

Winch A drum that can be rotated so as to exert a strong pull while winding in a line.

Windrow A ridge of soil pushed up by a grader.

Working cycle A complete set of operations. In an excavator, it usually includes loading, moving, dumping and returning to the loading point.

X

Y

Z