



InventoryOps Dictionary / Glossary

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Below are some of the terms, acronyms, and abbreviations you may run into on this site and others on the web relating to inventory operations. The definitions are based on my understanding of the terms and may differ from others opinions. If you disagree with a definition or have additional definitions to submit please email me at email@inventoryops.com.

[\[ABC\]](#) [\[DEF\]](#) [\[GHI\]](#) [\[JKL\]](#) [\[MNO\]](#) [\[PQR\]](#) [\[STU\]](#) [\[VWXYZ\]](#)

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[Additional On-line Glossaries](#)

ABC, Activity based costing. Usually refers to costing method that breaks down overhead costs into specific activities (cost drivers) in order to more accurately distribute the costs in product costing. Has also been applied to customer and vendor management.

ABC stratification. Method used to categorize inventory into groups based upon certain activity characteristics. Examples of ABC stratifications would include ABC by velocity (times sold), ABC by sales dollars, ABC by quantity sold / consumed, ABC by average inventory investment, ABC by margin. ABC stratifications are used to develop inventory planning policies, set count frequencies for cycle counting, slot inventory for optimized order picking, and other inventory management activities.

ADC, Automated data collection a.k.a. Automated data capture, AIDC, Automatic identification & data collection. Systems of hardware and software used to process transactions in warehouses and manufacturing operations. Data collection systems may consist of fixed terminals, portable terminals and computers, Radio frequency (RF) terminals, and various types of bar code scanners. Read my article [ADC Basics](#).

AGV, AGVS, Automated guided vehicle system. Describes vehicles that can be programmed to automatically drive to designated points and perform preprogrammed functions. Guidance system may consist of a wire embedded in the floor, optical system or other types of guidance. More info on [Automated Equipment Pics Page](#).

Allocations Allocations in inventory management refer to actual demand created by sales orders or work orders against a specific item. The terminology and the actual processing that controls allocations will vary from one software system to another. A **standard allocation** is an aggregate quantity of demand against a specific item in a specific facility, I have heard standard allocations referred to as normal allocations, soft allocations, soft commitments, regular allocations. Standard allocations do not specify that specific units will go to specific orders. A **firm allocation** is an allocation against specific units within a facility, such as an allocation against a specific location, lot, or serial number. Firm allocations are also referred to as specific allocations, frozen allocations, hard allocations, hard commitments, holds, reserved inventory. Standard allocations simply show that there is demand while firm allocations reserve or hold the inventory for the specific order designated.

APS, Advanced planning and scheduling. Software system designed to integrate with ERP and MRP systems to enhance the short term production planning and scheduling systems that are notoriously inadequate in MRP systems. APS systems have extensive programming logic that allows them to be more effective in dealing with rapidly changing customer demands.

ASN, Advanced shipment notification. Advanced shipment notifications are used to notify a customer of a shipment. ASNs will often include PO numbers, SKU numbers, lot numbers, quantity, pallet or container number, carton number. ASNs may be paper-based, however, electronic notification is preferred. Advanced shipment notification systems are usually combined with bar-coded compliance labeling which allows the customer to receive the shipment into inventory through the use of bar-code scanners and automated data collection systems.

ASRS, Automated storage and retrieval systems. A system of rows of rack, each row having a dedicated retrieval unit that moves vertically and horizontally along the rack picking and putting away loads. a.k.a. Unit-load ASRS and Mini-load ASRS. More info on [Automated Equipment Pics Page](#).

ASP, Application service provider. A recent twist in software marketing in which the software licenses are owned by the ASP and reside on their system while the client rents the rights to use the software. The ASP may be the software manufacturer or a third party business. The benefits to an using an ASP are lower upfront costs, quicker implementations, and the reduction of the need for internal IS personnel and mainframe/server hardware. It is hoped that ASPs will allow small to midsize businesses greater access to technology than was previously available.

Autodiscrimination. The functionality of a bar-code reader to recognize the bar-code symbology being scanned, thus allowing a reader to read several different symbologies consecutively. Read my article [ADC Basics](#)

Available. Refers to the status of inventory as it relates to its ability to be sold or consumed. Availability calculations are used to determine this status. Availability calculations vary from system to system but basically subtract any current allocations of holds on inventory from the current on-hand balance. An example of an availability calculation would be: [Quantity Available] = [Quantity On Hand] - [Quantity On Hold] - [Quantity Allocated To Sales Orders] - [Quantity Allocated to Production Orders].

Available to promise. Available to promise takes the simple availability calculation, adds time phasing and takes into account future scheduled receipts. Available to promise may be calculated for each day or broken down into larger time buckets. The first time period will take on-hand inventory and add any scheduled receipts for that period. It will then deduct any allocations scheduled prior to the next scheduled receipt (which may be several periods in the future). Subsequent periods without any scheduled receipts will have the same available to promise as the previous period. Subsequent periods with scheduled receipts will generally start with a fresh calculation, ignoring any remaining available to promise from previous periods. There are many variations on exactly how available to promise is calculated and it is also important to note that available to promise often works independently of allocation systems. This can sometimes create conflicts. See also Available, Allocations.

Backflush Method for issuing (reducing on-hand quantities) materials to a manufacturing order. With backflushing, the material is issued automatically when production is posted against an operation. The backflushing program will use the quantity completed to calculate through the bill of material the quantities of the components used, and reduce on-hand balances by this amount. There are usually options during the backflush process to report scrap. In operations using backflushing it is advisable to set up specific machine locations and have materials transferred from storage locations to machine locations when they are physically picked for production. The backflush operation will then issue the material from the machine locations. Read my article on [Backflushing](#).

Batch picking. Order picking method where orders are grouped into small batches, an order picker will pick all orders within the batch in one pass. Batch picking is usually associated with pickers with multi-tiered picking carts moving up and down aisles picking batches of usually 4 to 12 orders, however, batch picking is also very common when working with automated material handling equipment such as carousels. See also Zone picking, Wave picking. Article [Order Picking](#)

Blind counts. Describes method used in cycle counting and physical inventories where you provide your counters with item number and location but no quantity information. See article on [Cycle Counting](#), also check out [My book](#) on inventory accuracy.

BOM, Bill of material. Lists materials (components or ingredients) required to produce an item. Multilevel BOMs also show subassemblies and their components. Other information such as scrap factors may also be included in the BOM for use in materials planning and costing.

Cantilever Rack. Racking system in which the shelving supports are connected to vertical supports at the rear of the rack. There are no vertical supports on the face of the rack allowing for storage of very long pieces of material such as piping and lumber. Also see [Racking Pics Page](#).

Carousel. Type of automated material handling equipment generally used for high-volume small-parts order-picking operations. **Horizontal carousels** are a version of the same equipment used by dry cleaners to store and retrieve clothing. They have racks hanging from them that can be configured to accommodate various size storage bins. **Vertical carousels** consist of a series of horizontal trays on a vertical carousel. Vertical carousels are frequently used in laboratories and specialty manufacturing operations. More info on carousels on [Automated Equipment Pics Page](#). See article on [Order Picking](#).

Carrying cost. Also called holding cost, carrying cost is the cost associated with having inventory on hand. It is primarily made up of the costs associated with the inventory investment and storage cost. For the purpose of EOQ calculations, if the cost does not change based upon the quantity of inventory on hand it should not be included in carrying cost. See article on [EOQ](#) for more detailed info on carrying cost.

Carton clamp. Lift truck attachment that operates like a paper roll clamp except the clamping surface is flat rather than circular.

CCD, Charged coupled device. Used to describe a type of barcode scanner that acts like a small digital camera taking a digital image of the barcode as opposed to the standard barcode scanner that uses a laser. CCD scanners are a low cost option for scanning barcodes at a short distance (usually within a few inches).

Compliance labels. Standardized label formats used by trading partners. Compliance labels are used as shipping labels, container/pallet labels, carton labels, or piece labels, and usually contain bar codes. Many bar-code labeling software products now have the more common compliance label standards set up as templates.

Commodity. In inventory management, the term Commodity has a couple of definitions. Standard products commonly available from various sources are often called "commodity items". Specialized or custom products not widely available or proprietary products only available from a small number of sources would not be considered commodity items. The term Commodity is also used to describe classifications of inventory. In this case, "commodity codes" are used to distinguish groups of inventory items to be used for reporting and analysis. Note that commodity classifications can be used to describe any inventory item and are not limited to items that fall under the previous definition of commodity items.

Configuration processing. Software functionality that allows a product to be defined by a selecting various pre-defined options, rather than having every possible combination of options pre-defined as specific SKUs. Placing an order for a computer and specifying hard drive, processor, memory, graphics card, sound card, etc. would be an example of configuration processing.

Consignment inventory. Inventory that is in the possession of the customer, but is still owned by the supplier. Consignment inventory is used as a marketing tool to make it easier for a customer to stock a specific supplier's inventory. The customer pays for the inventory only after it is resold or consumed.

Consumer goods. Products sold to non-business end users. Clothing, food, Music CDs, are examples of consumer goods.

CPG, Consumer Packaged Goods Describes inventory that is in such a form that is ready for sale to consumers (end-users).

Container. Although a container can be anything designed to hold (contain) materials for storage or transport, the most common definition for Container in logistics refers to the specific types of containers used for intermodal transportation, often referred to as "Ocean Containers". Standard external dimensions for containers are width of 8', height of 8' 6" or 9' 6" (High Cube), and lengths of 20', 40', 45' (deduct 4" from width, 9" from height and 7" to 9" from length to determine inside demensions). More specs and info on containers at [Seaboard Marine](#), [Maersk Sealand](#), and a nice independent site [The Intermodal Container FAQ](#) put out by a commercial photographer.

Containerization. From the JIT movement in manufacturing, containerization refers to using standardized containers for the storage and transport of materials within a manufacturing facility as well as between vendors and manufacturers. Materials are ordered in multiples of the container quantity often using Kanban. The benefits of containerization include reduced product damage, reduced waste (by using reusable containers), less handling, and greater levels of inventory accuracy by simplifying counting processes.

Contract warehouse. A contract warehouse is a business that handles shipping, receiving, and storage of products on a contract basis. Contract warehouses will generally require a client to commit to a specific period of time (generally in years) for the services. Contracts may or may not require clients to purchase or subsidize storage and material-handling equipment. Fees for contract warehouses may be transaction and storage based, fixed, cost plus, or any combination. Also see **Public Warehouse** and **3PL**.

Coproduct. The term coproduct is used to describe multiple items that are produced simultaneously during a production run. Coproducts are often used to increase yields in cutting operations, such as die cutting or sawing, when it is found that scrap can be reduced by combining multiple sized products in a single production run. Coproducts are also used to reduce the frequency of machine setups required in these same types of operations. Coproducts, also known as byproducts, are also common in process manufacturing such as in chemical plants. Although the concept of coproducts is fairly simple, the programming logic required to provide for planning and processing of coproducts is very complicated and most off-the-shelf manufacturing software will have problems with coproduct processing.

COGS, Cost of goods sold. Accounting term used to describe the total value (cost) of products sold during a specific time period. Since inventory is an asset, it is not expensed when it is purchased or produced. It instead goes into an asset account (usually called Inventory). When product is sold, the value of the product (the cost, not the sell price) is moved form the asset account to an expense account called *cost of goods sold* or COGS. COGS appears on the profit-and-loss statement and is also used for calculating inventory turns.

Cross-belt sorter. Conveyor sorting system that uses a series of devices (carriers) mounted on a conveyor to sort materials. Each device has a small belt conveyor mounted on top of it that runs perpendicular to the direction of the main conveyor. When it arrives at a sort point, the conveyor on the carrier will spin, moving the materials to the side of the main conveyor (usually onto another conveyor, dropping down a chute, or into a container).

Cross-docking In its purest form cross-docking is the action of unloading materials from an incoming trailer or rail car and immediately loading these materials in outbound trailers or rail cars, thus eliminating the need for warehousing (storage). In reality, pure cross-docking is rare outside of transportation hubs and hub-and-spoke type distribution networks. Many "cross-docking" operations require large staging areas where inbound materials are sorted, consolidated, and stored until the outbound shipment is complete and ready to ship. This staging may take hours, days, or even weeks in which case the "staging area" is essentially a "warehouse".

CRP, Capacity requirements planning. Process for determining amount of machine and labor resources required to meet production.

Cube utilization. Term used in Warehouse Management Systems. Cube logic is often incorporated but seldom used in WMS systems because of its tendency to treat your product as liquid (fitting a round peg in a square hole). See article on [Warehouse Management Systems](#).

Cycle count. Refers to process of regularly scheduled inventory counts (usually daily) that "cycles" through your inventory. User determines how often certain items/locations are counted. Read my article on [Cycle Counting](#) and check out [my book on cycle counting](#).

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Data collection. See Automated Data Collection (ADC)

DC. Distribution Center

Demand. The need for a specific item in a specific quantity. See Dependent Demand and Independent Demand.

Dependent demand. Demand generated from scheduled production of other items.

Dimensional weight. a.k.a. **Dim weight.** Formula used to determine freight charges when the minimum weight to volume ratio has not been met. Actual weight and dim weight are compared, and the larger weight is used for the freight calculation. Dim weight is calculated by: $\text{Dim weight} = (\text{Length} \times \text{Width} \times \text{Height}) / 194$. All dimensional measurements are in inches.

Discrete manufacturing. Describes manufacturing of distinct items (items you can easily count, touch, see) such as a pencil, a light bulb, a telephone, a bicycle, a fuel pump, etc. Discrete as apposed to Process manufacturing. Also see Process Manufacturing.

Distribution. Describes the process of storing, shipping, and transporting goods. Also describes the facilities (distribution operations, distribution centers) that conduct these activities. In statistical analysis, describes the measurement of a group of events or occurrences (see Normal distribution).

Dock leveler. Device that provides a bridge to the trailer as well as a ramp to facilitate the transition in height from dock to trailer. Dock levelers are rated by weight capacity and by the service range. The service range, also known as the height differential, rates the safe range above and below dock level you can use the leveler to transition to the trailer height. See also article [Dock Safety](#)

DRP, Distribution requirements planning. Process for determining inventory requirements in a multiple plant/warehouse environment. DRP may be used for both distribution and manufacturing. In manufacturing, DRP will work directly with MRP. DRP may also be defined as Distribution Resource Planning which also includes determining labor, equipment, and warehouse space requirements.

Drive-in rack. Racking system designed to allow a lift truck to drive into the bay creating very high density storage for non-stackable loads. Useful for operations with limited SKUs and high quantities of pallets per SKU. FIFO is difficult to maintain in drive-in racking systems. a.k.a. **Drive-thru Rack.** Also see [Racking Pics Page](#).

Drum-handling attachments. Describes the various designs of lift-truck attachment used to handle 55 gallon drums. Some are smaller versions of a paper roll clamp while others may engage the upper rim of the drum, or the lower rings. Some drum attachments are capable of picking up multiple drums at the same time.

Dunnage. Fill material. Types of dunnage include loose fill (packing peanuts), paper, bubble wrap, foam, and air pillows.

Dynamic slotting. This is a term sometimes used by WMS providers to describe a higher level of slotting functionality. Unfortunately, there is not a standard definition for this, but it usually refers to the ability to change slotting recommendations as item profiles, order profiles, or other operational characteristics change.

EOQ, Economic order quantity. Result of a calculation that determines the most cost effective quantity to order (purchased items) or produce (manufactured items). The formula basically finds the point at which the combination of order cost and carrying cost is the least. The standard formula is $EOQ = \text{Square Root} [2 * (\text{Annual Usage}) * (\text{Order Cost}) / (\text{Annual Carrying Cost/unit})]$. The difficult part of implementing the formula is getting accurate values for order cost and carrying cost. See my article [Optimizing EOQ](#) for more info.

EPC, Electronic product code. EPC is the RFID version of the UPC barcode. EPC is intended to be used for specific product identification. However, EPC goes beyond UPC by not only identifying the product as an SKU, but also providing access to additional data about the origin and history of the specific units. The EPC tag itself identifies the manufacturer, product, version, and serial number. It's the serial number that takes EPC to the next level. This is the key to data related to specific lots/batches as well as potentially tracking the specific unit's history as it moves through the supply chain. This data is stored somewhere else (the internet or other network) but a standardized architecture allows you to access the data much like you would access a web page (though this would be happening automatically behind the scenes). See my [article on RFID](#) for more info.

ERP, Enterprise resource planning. Describes software systems designed to manage most or all aspects of a manufacturing or distribution enterprise (an expanded version of MRP systems). ERP systems are usually broken down into modules such as Financials, Sales, Purchasing, Inventory Management, Manufacturing, MRP, DRP. The modules are designed to work seamlessly with the rest of the system and should provide a consistent user interface between them. These systems usually have extensive set-up options that allow you to customize their functionality to your specific business needs. Unfortunately, in the real world, ERP systems rarely are sufficient to meet all business needs and a myriad of other software packages such as Customer Relationship Management (CRM), Manufacturing Execution Systems (MES), Advanced Planning and Scheduling (APS), Warehouse Management Systems (WMS) and Transportation Management Systems (TMS) are being sold to make up for these deficiencies.

ESFR, Early suppression fast response. Sprinkler system technology that executes faster and with a substantially greater volume of water. ESFR sprinklers may eliminate the need for in-rack sprinkler systems in many warehouses, thus reducing the cost of installation and, more importantly, the risk of water damage caused by damage to in-rack sprinklers. Retrofitting ESFR into older warehouses is not always feasible due to limited water pressure in old systems.

Event management. Term used to describe software functionality that triggers specific actions based upon the occurrence of a specific event or combination of events. This is another one of those terms used primarily by software vendors and consultants to push "new" technology. In reality, business software has been providing event-management functionality for years. If inventory dropping below a predetermined level (reorder point) triggers a message to a planner (or even a listing on a reorder report), this is essentially event management.

Explosion-proof lift trucks. Lift trucks designed to work in hazardous environments where highly combustible materials are present. Vehicles are designed to avoid sparks and components reaching combustible temperatures. Special electrical systems and materials are used to achieve this.

FIFO First-in-first-out. In warehousing describes the method of rotating inventory to used oldest product first. Actually an accounting term used to describe an inventory costing method. See **LIFO**

Fill rate. Sales order processing measurement that quantifies the ability to fill orders. There are various ways of measuring fill rate. **Line fill** compares the number of line items shipped complete to the total number of lines ordered (95 line items shipped complete out of 100 lines ordered would result in a 95% line fill rate). **Order fill** compares the number of orders shipped complete to the total number of orders shipped. Other examples of fill rates would include **dollar fill rate** (comparing dollars shipped to dollars ordered), **unit fill rate** (comparing units shipped to units ordered). In fulfillment operations and some distribution operations where orders are generally shipped within 24 hours of receipt of order, fill rates reflect the ability to immediately ship from stock. In manufacturing operations and distribution operations that have lead-times for products, fill rates reflect the ability to ship to an agreed-to date. In these environments fill rate measurements are sometimes called On-time-and-Complete (OTC) measurement. Tolerances are sometimes used in fill rate measurements to allow lines or orders that are not

shipped complete but are within the tolerance to be considered as "shipped complete". The tolerances may be based on units, dollars, lines, or dates (shipped within certain tolerance of required date).

Flex conveyor. Portable conveyor that can be expanded, contracted, and flexed around curves. See [Conveyer Pics](#).

Flow rack. Racking system that incorporates sections of conveyor to allow the cartons or pallets to flow to the face of the rack. Stocking is performed from the rear of the rack. Also see [Racking Pics Page](#).

Flue space. See **Longitudinal flue space** and **Transverse flue space**.

FMCG, Fast Moving Consumer Goods Description of common high volume products such as food, hygiene product, or cleaning supplies. These would be products that the average consumer would frequently purchase such as soda, toothpaste, or dish soap.

Forecast A Forecast is an estimation of future demand. Most forecasts use historical demand to calculate future demand. Adjustments for seasonality and trend are often necessary.

Forecast consumption Forecast Consumption describes the method(s) your inventory management software uses to reduce forecasted demand by the actual demand that occurs during the forecast period. Incorrectly set up forecast consumption parameters or lack of functionality related to forecast consumption can often create serious problems with planning systems.

Forecast error. The difference between the forecast quantity for a period and the actual demand experienced during that period. Forecast error is calculated after the period has passed and is used to evaluate the forecast and make adjustments.

Fork Lift. a.k.a. **Forklift.** See **Lift Trucks**.

Fork positioner. Fork positioners are lift truck attachments that allow the operator to adjust the distance between the forks without getting off of the truck. Used primarily in high volume operations where there is a great variety of pallet and crate sizes handled.

Fulfillment. Describes the activity of processing customer shipments. Though most manufacturing and warehouse operations will process customer shipments, this term usually refers to operations that ship many small orders (usually parcels) to end users as opposed to operations that process larger shipments to other manufacturers, wholesalers, or resellers. Examples of fulfillment operations would include operations that process shipments for mail-order catalogs, internet stores, or repair parts.

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Gaylord. A large corrugated container usually sized to match the length and width dimensions of a pallet. Gaylord is actually a trade name that has become synonymous with this specific type of container. Alright Beavis, you can stop snickering now.

Guidance systems. Guidance systems are used to guide automated guided vehicles through plants, guide lift trucks in very-narrow-aisle storage areas. Wire-guided and Rail-guided tend to be the most common guidance systems, but others including laser and optical systems are also available. See also Wire-guided, Rail-guided, Laser-guided, Optical-guided.

Gravity conveyor. Types of conveyor that use gravity to move materials. Skatewheel conveyor and roller conveyor are the most common types of gravity conveyor used, however, even a simple steel chute is essentially a gravity conveyor.

High-density storage. Describes storage methods where unitized loads are stored more than one unit deep and/or high. Stacked bulk floor storage, drive-in/drive-thru rack, push-back rack, flow rack, and, to a lesser extent, double-deep rack, are examples of high-density storage.

High-piled combustible storage. Term used in fire codes to refer to codes relating to floor or racked storage exceeding 12 feet in height or high-hazard commodity storage exceeding 6 feet in height. See article [Warehouse Fire Safety](#),

Honeycombing. Honeycombing refers to the unused pallet positions in high-density storage that result when the number of unit-loads for an item does not completely fill the storage lane. Since mixing SKUs in high-density storage is normally not done, these unused pallet positions are not available to store other materials.

Independent Demand. Demand generated from forecasts, customer orders or service parts.

Intermodal. Transportation term describing the use of multiple modes of transportation for a shipment. Ocean containers that are picked up by a truck, delivered to port, transported by ship, and then picked up by another truck are a common example of intermodal transportation. In the trucking industry, intermodal usually refers to the combination of trucking and rail transportation.

Inventory Turn. Number of times inventory turns during a one year period. Generally calculated by dividing the average inventory level (or current inventory level) into the annual inventory usage (annual Cost of Goods Sold).

Item. See SKU

Item Profile. Data that describes the characteristics of an item. May include physical characteristics such as size and weight, transactional characteristics such as times sold/consumed and units sold/consumed, or group characteristics such as sales channel, commodity, hazardous classification, etc. Item profiles are used in warehouse design and slotting.

JIT, Just-in-time. Term usually thought of as describing inventory arriving or being produced just in time for the shipment or next process. Actually, JIT is a process for optimizing manufacturing processes by eliminating all process waste including wasted steps, wasted material, excess inventory, etc.

Jackpot Line. This is one of those funky terms that has somehow achieved widespread acceptance in the material handling industry. Usually used with automated systems such as automated conveyor systems, a Jackpot Line refers to an area where exceptions are routed. Exceptions may include orders that could not be completed (shortages or WMS error), orders requiring special processing, or weight or size exceptions. The terms Jackpot Lane, or Jackpot Area are also used to describe similar exception areas.

Kanban. Used as part of a Just-In-Time production operation where components and sub-assemblies are produced based upon notification of demand from a subsequent operation. Historically, Kanban has been a physical notification such as a card

(kanban cards) or even an empty hopper or tote sent up the line to the previous operation. Kanban is actually a simplistic means of both signaling the need for inventory as well as controlling the inventory levels (by limiting kanban cards or containers).

Laser-guided. Guidance system used with AGVs that uses a rotating laser (mounted on top of the vehicle) to determine the vehicles location. Reflective targets need to be strategically placed along the vehicle's route. Must always maintain clear line-of-site to reflective targets for the system to work properly.

Laser scanner. Device that uses a moving laser to read bar codes. Devices can be portable hand-held units, or fixed units.

Lead time. Amount of time required for an item to be available for use from the time it is ordered. Lead time should include purchase order processing time, vendor processing time, in transit time, receiving, inspection, and any prepack times.

Lead-time demand. Forecasted demand during the lead-time period. For example, if your forecasted demand is 3 units per day and your lead time is 12 days, your lead-time demand would be 36 units.

Lean manufacturing. Alternate term used to describe the philosophies and techniques associated with Just-in-time (JIT) manufacturing.

LIFO, Last-in-first-out. In warehousing, describes the method for using the newest inventory first (I've never seen an operation that uses this). In accounting, it's a term used to describe an inventory costing method. See FIFO

Lift truck. Describes vehicles used to lift, move, stack, rack, or otherwise manipulate loads. Material handling workers use a lot of terms to describe lift trucks; some terms describe specific types of vehicles, others are slang terms or trade names that people often mistakenly use to describe trucks. Terms include, industrial truck, forklift, reach truck, motorized pallet trucks, turret trucks, counterbalanced forklift, walkie, rider, walkie rider, walkie stacker, straddle lift, side loader, order pickers, high lift, cherry picker, Jeep, Towmotor, Yale, Crown, Hyster, Raymond, Clark, Drexel. See [Lift Truck Pics](#) and articles on [Lift Truck Basics](#) and [Lift Truck Safety](#) for more info.

Lights-out warehouse. a.k.a. Lights-out facility. Describes fully-automated facilities. The idea being that if the facility requires no human operators, you can run it with no lights. Use of AS/RS units, AGVs, automated conveyors, robots, etc makes this possible.

Line item. A single detail record. The term line item is most commonly used to describe the detail (each line that reflects an item and a quantity) on sales orders or purchase orders. For example, if a customer orders 20 red pens, 50 black pens, and 10 green pens, this equates to an order with three line items.

Load. In manufacturing, describes the amount of production scheduled against a plant or machine. In warehousing, describes the materials being handled by a piece of equipment. In transportation, describes the materials being transported.

Load locks. a.k.a **Load bars, Cargo bars.** Load locks are adjustable support bars used inside trailers to prevent movement of the load.

Locator system. a.k.a. **Location system, Bin locations.** Locator systems are inventory-tracking systems that allow you to assign locations to your inventory to facilitate greater tracking and the ability to store product randomly. Prior to locator systems, warehouses needed to store product in some logical manner in order to be able to find it (stored in item number sequence, by vendor, by product description, etc.) By using locator systems you can increase space utilization by slotting your product by matching the physical characteristics of the product to a location whose physical characteristics match that of the product. You can also increase productivity by locating fast moving product to closer, more accessible locations, and increase accuracy by separating similar items. Location functionality in software can range from a simple text field attached to an item that notes a single location, to systems that allow multiple locations per item and track inventory quantities by location. Warehouse management systems (WMS) take locator systems to the next level by adding functionality to direct the movement between locations. See article on [Warehouse Management Systems](#), also check out [My book](#) on inventory accuracy which covers locator systems in more detail.

Longitudinal flue space. Term used by fire codes to describe the space between the rows of back-to-back racking. Flue spaces allow the water from an overhead sprinkler system to reach lower levels of the rack. Normally a longitudinal flue space of at least 6 inches is required. It is important to note that the flue space is measured as the distance between the loads, not the distance between the racks. Also see Transverse Flue Space See article [Warehouse Fire Safety](#),

LTL, Less-than-truckload Transportation term that describes shipments that are less than a trailer load in size. LTL also is used to describe the carriers that handle these loads. LTL carriers generally use strategically placed hubs to sort and consolidate LTL shipments into full-truck-load shipments.

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Man-up. Term used to describe lift trucks designed to raise the operator with the load. Order selectors and turret trucks are the most common types of man-up vehicles.

MES, Manufacturing execution system. Software systems designed to integrate with enterprise systems to enhance the shop-floor-control functionality that is usually inadequate in ERP systems. MES provides for shop floor scheduling, production and labor reporting, integration with computerized manufacturing systems such as automatic data collection and computerized machinery.

Mezzanine. A tiered structure within a building used to provide worker access to various levels. Mezzanines can be free-standing structures supported by posts and trusses, or can be a series of walkways supported by storage equipment (rack-supported mezzanine).

Milk run. I've encountered many variations on the definition of this term but basically a milk run consists of a pickup and/or delivery route where several stops are made. Usually it refers to a regularly run route, but it may also refer to a one-time run where several stops are made. Some consider a milk run to mean a route where shipments are delivered and inbound materials picked up in the same run.

Min-max. A simplistic inventory system in which a minimum quantity and maximum quantity are set for an item. When the

quantity drops below Min you order up to the Max.

Motorized pallet truck. a.k.a. Walkie, Walkie-rider, Rider.. Motorized pallet trucks are the motorized version of the pallet jack. They come in "Walkie" versions or "Rider" versions. As you would expect, the walkie is designed for the operator to walk along with the truck as they move loads, while the rider has a small platform that the operator stands on. The riders work great for frequent moving of loads over extended distances within warehouses and manufacturing operations. Also see [Lift Truck Pics](#) and [Lift Truck Basics](#) for more info

MPS, Master production schedule. Production schedule specifying specific items, quantities, and dates at which production is expected to take place.

MRP/MRP II, Manufacturing resource planning. Process for determining material, labor and machine requirements in a manufacturing environment. MRP II is the consolidation of Material Requirements Planning (MRP), Capacity Requirements Planning (CRP), and Master Production Scheduling (MPS). MRP was originally designed for materials planning only. When labor and machine (resources) planning were incorporated it became known as MRP II. Today the definition of MRP II is generally associated with MRP systems.

MRP generation. Term used to describe the running of the programs that convert demand into planned orders. Depending on the operation, MRP Generation may be run daily, weekly, or even monthly. Since this processing requires a lot of system resources it is generally confined to off hours or weekend processing.

MRO, Maintenance, repair, and operating inventory. Term used to describe inventory used to maintain equipment as well as miscellaneous supplies such as office cleaning supplies.

Narrow aisle (NA). Describes lift trucks that operate in aisles of 8' to 10'. Narrow-aisle trucks are generally stand-up vehicles such as reach trucks. Also see Vary Narrow Aisle (VNA) and read article [The Aisle Width Decision](#)

Negative inventory. An inventory system (computer) condition whereby the on-hand inventory balance is listed as a quantity less than zero. Check out my article on [negative inventory](#)

Normal distribution. Term used in statistical analysis to describe a distribution of numbers in which the probability of an occurrence, if graphed, would follow the form of a bell shaped curve. This is the most popular distribution model for determining probability and has been found to work well in predicting demand variability based upon historical data.

Operation. I use the term operation frequently in my writings with two very distinct meanings. At a general level, an operation is the overall work environment that includes the facility(s) and all activities that occur within it. When discussing MRP and related topics, an operation is a specific step that exists in the *routing* of a manufacturing process.

Optional replenishment. Term used to describe the action of ordering or producing up to the Max in a Min-Max system even though inventory has not reached the Min. May be used to avoid down time on machines etc.

Optical-guided. Guidance system that uses a special strip (taped or painted) on the floor to guide an AGV.

Order cost. Also known as purchase cost or set up cost, order cost is the sum of the fixed costs that are incurred each time an item is ordered. These costs are not associated with the quantity ordered but primarily with physical activities required to process the order. For purchased items, these would include the cost to enter the purchase order and/or requisition, any approval steps, the cost to process the receipt, incoming inspection, invoice processing and vendor payment, and in some cases a portion of the inbound freight may also be included in order cost. In manufacturing, the order cost would include the time to initiate the work order, time associated with picking and issuing components excluding time associated with counting and handling specific quantities, all production scheduling time, machine set up time, and inspection time. Order cost is used as part of most cost-based order quantity/lot sizing calculations. See article on [EOQ](#) for more detailed info on order cost.

Order cycle. Also called replenishment cycle, order cycle refers to the time between orders of a specific item. Most easily calculated by dividing the order quantity by the annual demand and multiplying by the number of days in the year.

Order profile. Data describing the characteristics of inbound, outbound, or internal orders (outbound is most common). Examples of characteristics incorporated into an order profile could include: line items per order, pieces per order, weight per order, cube per order, time of day, destination, shipment method, order type, etc. Characteristics are often broken into logical groups such as breaking line items per order into groups of 1 line item, 2-4 line items, 5-10 line items, 11- 25, 26+.

Order selector a.k.a. Order Picker. Lift truck designed specifically for manual handling of less than pallet load quantities in racking. Man-up design has fixed forks attached to a platform that elevates the load and the operator to facilitate manual loading and unloading from racking. Order selectors are very-narrow-aisles vehicles that operate in aisles of less than 6' Also see [Lift Truck Pics](#), [Lift Truck Basics](#), and [The Aisle Decision](#) for more info.

Outside operation. Term describing a step in the manufacturing process that is performed by an outside vendor. System setup for outside operations can get fairly complicated and generally requires linking a purchase order for the outside processing to a specific operation in the routing. The integration of the purchase order process and the work order process to ensure accounting, production planning, and inventory management's needs are met can be confusing and is often problematic

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Paperless. When referring to processing in the warehouse (paperless picking, paperless receiving) or on the shop floor, paperless generally suggests that the direction of tasks and execution of transactions are conducted electronically without the use of paper documents. This is usually accomplished through the use of fixed or portable computers, bar code scanners, RFID readers, light-signaling technology (pick-to-light), or voice technology. Or maybe it just means you ran out of paper.

Paper-roll clamp. Designed specifically for the handling of large paper rolls, the paper roll clamp is a lift truck attachment that clamps around the roll and also allows for a full 360 degree rotation.

Pallet inverter. A type of stationary equipment used to transfer product between different types of pallets such as transferring

from wood to plastic pallets, or from pallets to slipsheets. A load on a pallet is placed in the pallet inverter and the entire load is rotated 180 degrees allowing you to remove the original pallet and replace it with another.

Physical inventory. Refers to the process of counting all inventory in a warehouse or plant. Operations are usually shut down during a physical inventory. See [physical inventory page](#) at [accuracybook.com](#) for more information, also read my article on [physical inventories](#).

Pick-and-pass. See **Zone Picking**

Pick-to-clear. Method often used in warehouse management systems that directs picking to the locations with the smallest quantities on hand.

Pick-to-carton. For parcel shippers, pick-to-carton logic uses item dimensions/weights to select the shipping carton prior to the order picking process. Items are then picked directly into the shipping carton. When picking is complete, dunnage is added and the carton sealed eliminating a formal packing operation. This logic works best when picking/packing products with similar size/weight characteristics. In operations with a very diverse product mix it's much more difficult to get this type of logic to work effectively.

Pick-to-light. Pick-to light systems consist of lights and LED displays for each pick location. The system uses software to light the next pick and display the quantity to pick. Pick-to-light systems have the advantage of not only increasing accuracy, but also increasing productivity. Since hardware is required for each pick location, pick-to-light systems are easier to cost justify where very high picks per SKU occur. Carton flow rack and horizontal carousels are good applications for pick to light. In batch picking, put-to-light is also incorporated into the cart or rack that holds the cartons or totes that you are picking into. The light will designate which order you should be placing the picked items in. See article on [Order Picking](#), also check out [My book](#) on inventory accuracy.

Pinwheel or pinwheeling refers to a method for loading trailers where you alter the direction of every other pallet. Basically you use pinwheeling to load more pallets on a trailer when the depth of the pallet is longer than half the trailer width, but the depth plus the width is less than the trailer width. You can also use it as a productivity/space utilization compromise or to reduce load shifting when loading pallets where the depth of the pallet is less than half the trailer width. See article on [Trailer Loading Techniques](#).

PLC, Programmable logic controller Computerized device used to control functions of machines. PLCs are used in automation of manufacturing equipment and material handling equipment such as automated conveyor systems.

Planned order. Term used within MRP and DRP systems for system-generated planned order quantities. Planned orders only exist within the computer system and serve multiple functions. One function is to notify the materials/planner or buyer to produce or order materials, which is done by converting a planned order into an purchase order, shop order, or transfer order. Another function is used by the MRP or DRP system to show demand which is used by subsequent MRP and DRP programs to generate additional planned orders. (MRP/DRP systems sometimes run several programs in a specific sequence to generate all planned orders, one program may convert forecasts or customer orders into planned orders which creates the demand the next program uses this demand to create additional planned orders).

Plugging. Plugging is used with electric industrial vehicles to reduce speed, stop, or change direction, without using the brake. Most commonly used with vehicles with hand throttles such as motorized pallet trucks and order selectors, the operator simply switches between forward and reverse to control speed. Though this sounds like something you shouldn't be doing, many electric trucks are designed to allow for this.

Pop-up sorter. Sorting equipment integrated into conveyor to move materials off of conveyor at fixed points. Pop-up sorters are installed in fixed positions and may consist of a series of wheel or small belts that are normally located slightly below the conveyor rollers. The wheels or belts are momentarily raised (pop up) to enable diverting materials off of the conveyor.

Postponement. A Manufacturing / Distribution strategy where specific operations associated with a product are delayed until just prior to shipping. Storing product in a generic state and then applying custom labels or packaging before shipping is an example of postponement.

Powered industrial truck According to OSHA, a "powered industrial truck is defined as a mobile, power-driven vehicle used to carry, push, pull, lift, stack, or tier material". Pretty much covers any type of lift truck as well as vehicles used to tow materials. See **Lift Truck**

Process manufacturing. Type of manufacturing where a product is produced or transformed through mixing, chemical reactions, etc. Examples of process manufacturing would be refining crude oil into gasoline, extracting copper from ore, combining materials to make paint. Process as opposed to discrete manufacturing. Also see **Discrete manufacturing**.

Production plan. Generally used to describe a long-term plan of what will be produced at a family level.

Program generator a.k.a. Code generator, Development tools . Program generators are software programs that generally provide graphical user interfaces and tools that allow a user to create a program without having to write actual computer code. Currently these programs are more frequently referred to as "Development Tools" and are usually designed to write code for specific applications such as data-collection programs for portable computers. While a user does not need to be a programmer to use this software, the user does need to have a higher level of technical skills than that of most standard software users.

Purchase order. A document used to approve, track, and process purchased items. A purchase order is used to communicate a purchase to a supplier. It is also used as an authorization to purchase. A purchase order will state quantities, costs, and delivery dates. The purchase order is also used to process and track receipts and supplier invoices/payments associated with the purchase..

Push-back rack. Racking system that incorporates a carriage or other sliding device to allow you to feed multiple pallets into the same location "pushing back" the previous pallet. Also see [Racking Pics Page](#).

Push sorter. A very simple fixed-position sorting device used with conveyor systems. A push sorter may use a swinging arm or a simple piston-type pushing device to push materials across the conveyor.

Put-to-light. Technology similar to pick-to-light, however, the light modules are used to direct which tote, bin, or carton, the item is to be picked into, rather than directing which locations to pick from.

Public warehouse. A public warehouse is a business that provides short or long-term storage to a variety of businesses, usually on a month-to-month basis. A public warehouse will generally use their own equipment and staff, however, agreements may be made where the client either buys or subsidizes equipment. Public warehouse fees are usually a combination of storage fees (per pallet or actual sq. footage) and transaction fees (inbound and outbound). Public warehouses are most often used to supplement space requirements of a private warehouse. Also see **Contract Warehouse** and **3PL**

Queue time. Amount of time a job waits at an operation prior to set up or processing. Part of manufacturing lead time.

Rack-supported building. Warehouse design that uses structural pallet rack to support the roof of a building, eliminating the need for posts. Rack-supported buildings are usually designed for AS/RS systems or turret truck systems where racking is 40 to 100 ft in height.

Radio frequency (RF). In warehousing refers to the portable data collection devices that use radio frequency to transmit data to host system.

Rail-guided. Guidance system used with *very-narrow-aisle* vehicles such as order selectors and turret trucks. A steel rail is mounded on each side of the aisle, and rollers are mounted on the lift truck to guide it between the rails.

Random location storage. Refers to storage method where a product may be stored in any location. Random storage has higher space utilization and generally lower accuracy than fixed location storage

Reach truck. a.k.a. Stand-up reach, Straddle reach, Double-deep reach. The reach truck is a *narrow-aisle* (8'-10') lift truck designed specifically for racked pallet storage. It consists of outriggers in front and telescoping forks that use a hydraulic scissors-type mechanism that allow you to pick up the load and retract it over the outriggers reducing the overall truck and load length, allowing you to turn in a narrower aisle. Double-deep reach trucks use an extended reach mechanism that allows you to store pallets two-deep in specially designed double-deep rack. Reach trucks are designed for racking areas only and do not work for loading trucks or quickly moving loads over distances. Also see [Lift Truck Pics](#) and [Lift Truck Basics](#) for more info

Reorder point. The inventory level set to trigger reorder of a specific item. Reorder point is generally calculated as the expected usage (demand) during the lead time plus safety stock.

Replenishment cycle. See Order Cycle

Reverse logistics. Fancy term for Returns. Reverse Logistics covers activities related to returned product, returned pallets and containers, returned materials for disposal or recycling.

RFID, Radio frequency identification. Refers to devices attached to an object that transmit data to an RFID receiver. These devices can be large pieces of hardware the size of a small book, like those attached to ocean containers, or very small devices inserted into a label on a package. RFID has advantages over barcodes, such as the ability to hold more data, the ability to change the stored data as processing occurs, does not require line-of-site to transfer data and is very effective in harsh environments where bar code labels won't work. Read my articles [ADC Basics](#) and [RFID Update](#), also check out [My book](#) on inventory accuracy and its related [RFID Updates](#) and [RFID Links](#).

Roller conveyor. Type of conveyor that uses rollers to move materials. Roller conveyor may be automated (live roller) or simply use gravity (gravity roller) to move materials. See [Conveyor Pics](#).

Rough-cut capacity. Used to determine estimated load on key pieces of equipment or resources. May use production plan or master production schedule. Rough-cut capacity is used as a check to verify that manufacturing resources are adequate to execute the production plan.

Routing. Used in conjunction with the bill of material in manufacturing operations. While the BOM contains the material requirements, the routing will contain the specific steps required to produce the finished items. Each step in the routing is called an operation, each operation generally consists of machine and labor requirements.

RTLS, Real-time locator system. A real-time locator system uses RFID technology that provides the objects they are attached to the ability to transmit their current location. System requires some type of RFID tag to be attached to each object that needs to be tracked, and RF transmitters/receivers located throughout the facility to determine the location and send information to computerized tracking system. While it sounds like a great way to eliminate "lost" inventory, the systems are still too costly for most inventory tracking operations and are more likely to be used to track more valuable assets.

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Safety stock. Quantity of inventory used in inventory management systems to allow for deviations in demand or supply. Safety stock calculations will take into account historic deviations and use a required service level multiplier to determine the optimal safety stock level. See article on [safety stock](#).

Safety lead time. Safety lead time is a way to represent your safety stock as a number of days demand. Safety lead time can be beneficial when you want to "pad" your lead-time to compensate for supplier variability, transportation variability, or internal process variability. For example, if can take 2 or 3 days to get incoming materials processed through your receiving process, you may want to set your safety lead time to 2 or 3 days. This will calculate the requested dates for your purchase orders 2 or 3 days earlier than actual need. This is much cleaner than adding the 2 to 3 days to the suppliers lead time (which can be confusing when the supplier's stated lead-time is different from what is in your system).

Screen mapping. a.k.a. **Screen scraping** Software that provides the functionality to change the arrangement of data fields on a computer screen that accesses a mainframe computer program. Screen Mapping is frequently used in combination with terminal emulation software to "Remap" data fields from a standard mainframe program to be used on the smaller screen of a portable handheld device.

Service factor. Factor used as a multiplier with the *Standard Deviation* to calculate a specific quantity to meet the specified

service level. See article on [safety stock](#) for more information on service factor

Shipping manifest system. Software used to associate shipments with carrier, service, rate, etc. Shipping manifest systems will produce a report (physical or electronic) that is sent to the carrier to be used for billing purposes. Shipping systems will usually produce shipping documents such as compliance shipping labels, bill of lading, Export documents, and Hazmat documentation. They may also have functionality related to rate shopping, freight policy execution, freight cost management. Also see **Transportation Management System**.

Sideshift. A very common lift truck attachment, the sideshift device allows the fork carriage to slide left and right to allow more accurate placement of the load. Sideshifts will increase productivity and safety as well as reduce product damage by allowing the operator more flexibility in load placement.

Skatowheel conveyor. Type of conveyor that uses small wheels (usually made of steel) to move materials. See [Conveyor Pics](#).

SKU, Stock keeping unit. Referring to a specific item in a specific unit of measure. For example, if you distributed thirty-weight motor oil in both quarts and gallons you would maintain the inventory as two SKUs even though they are both thirty-weight motor oil. Also refers to the identification# assigned to each SKU.

Slide-shoe sorter. Type of conveyor sorting equipment that uses a series of sliding shoes to move materials off of the conveyor. The sliding shoes are part of the conveyor and travel with the materials, when the sorting point is reached, a several shoes will slide across the conveyor, pushing the materials onto another conveyor or down a chute.

Slip-sheet attachment. Lift truck attachment used where slip sheets (a sheet of cardboard, paperboard, or plastic) are used rather than pallets. The slip-sheet attachment has a push/pull mechanism that clamps onto the slip sheet and pulls the load onto a thin platform and then pushes the load off of the platform when the truck reaches the destination.

Slotting. Slotting describes the activities associated with optimizing product placement in pick locations in a warehouse. There are software packages designed just for slotting, and many WMS packages will also have slotting functionality. Slotting software will generally use item velocity (times picked), cube usage, and minimum pick face dimensions to determine best location.

Speech-based technology. Speech-based technology, also known as voice technology is really composed of two technologies: **Voice directed**, which converts computer data into audible commands, and **Speech recognition**, which allows user voice input to be converted into data. Portable voice systems consist of a headset with a microphone and a wearable computer. See article on [ADC](#) for more info, also check out [My book](#) on inventory accuracy which provides greater detail on speech-based systems..

Standard deviation. Used to describe the spread of the distribution of numbers. Standard deviation is calculated by the following steps:

1. determine the mean (average) of a set of numbers.
2. determine the difference of each number and the mean
3. square each difference
4. calculate the average of the squares
5. calculate the square root of the average.

You can also use Excel function STDEVPA to calculate standard deviation. In safety stock calculations the forecast quantity is often used instead of the mean in determining standard deviation

Structural pallet rack. Racking system that uses bolts or other mechanical fasteners (as apposed to Boltless Pallet rack). Structural Pallet Rack is sometimes used to support the roof of the structure (Rack-supported buildings), eliminating the need for posts.

Task interleaving. Term used in describing functionality of Warehouse Management Systems to mix tasks to reduce travel time. Sending a forklift driver to put away a pallet on his way to his next pick is an example of task interleaving.

Terminal emulation. Software used on desktop and portable computers that allows the computer to act like a terminal connected to a mainframe system. If you have a networked desktop PC and are accessing mainframe programs (a.k.a. green screen programs) you are using terminal emulation. Terminal emulation is also a common method used to connect portable computers (as in warehouse bar code data collection systems) to mainframe software. Also see **Screen Mapping**

3PL, Third-party logistics. Describes businesses that provide one or many of a variety of logistics-related services. Types of services would include public warehousing, contract warehousing, transportation management, distribution management, freight consolidation. A 3PL provider may take over all receiving, storage, value added, shipping, and transportation responsibilities for a client and conduct them in the 3PL's warehouse using the 3PL's equipment and employees, or may manage one or all of these functions in the client's facility using the client's equipment, or any combination of the above. Another term, **4PL** is sometimes used to describe businesses that manage a variety of logistics related services for clients by using 3PLs. Also see **Public Warehouse** and **Contract Warehouse** or visit [International Warehouse Logistics Association \(IWLA\)](#) site.

Tilt-tray sorter. a.k.a. **Tilt-tray conveyor.** Conveyor sorting system that uses a series of tilting devices (carriers) to sort materials. Each tilting carrier has a tray and is mounted on a conveyor, as the carrier passes the drop-off point, it will tilt allowing the materials to fall onto another conveyor, down a chute, or into some type of container.

Time fence. Period of time prior to the scheduled production date beyond which changes can be made without significant adverse effects.

Towline Conveyor. Material handling system that uses a towline (usually a chain) recessed beneath the floor to pull wheeled carts along a fixed path. Towline conveyors have been used for more than 50 years in manufacturing facilities.

Trailer a.k.a. Semi Trailer, Tractor Trailer. Generally describes enclosed trailers used to transport materials between locations. Standard lengths for trailers are 45', 48', and 53, with standard internal width of 98" to 99" and internal height of 105" to 110". Refrigerated trailers, also known as "reefers," have smaller internal widths of between 90" and 96" and heights of 96" to 100". Other types of trailers include flatbeds, low boys, and container chassis. Also see **Container**

Trailer creep No, this isn't referring to the strange dude that lives in the trailer park or the guy that hangs around truck stops. Trailer creep (also known as trailer walk, dock walk) occurs when the lateral and vertical forces exerted each time a lift truck enters and exits the trailer cause the trailer to slowly move away from the dock resulting in separation from the dock leveler. Factors that affect trailer creep are the weight and speed of the lift truck and load, the grade of the drive the trailer is parked on, the softness of the suspension, the type of transition (dock levelers, dock boards) being used, and whether the trailer has been dropped off (spotted) or if it is still connected to the tractor. Read my article on [Dock Safety](#).

TMS, Transportation management system. Category of operations software that may include products for shipment manifesting, rate shopping, routing, fleet management, yard management, carrier management, freight cost management. Also see **Shipping Manifest System**.

Transverse flue space. Term used by fire codes to describe the space to either side of pallet in racked storage. Flue spaces allow the water from an overhead sprinkler system to reach lower levels of the rack. Normally a transverse flue space of at least 3 inches is required. Also see Longitudinal Flue Space. See article [Warehouse Fire Safety](#),

Turret truck Turret trucks are a man-up lift truck similar to an order selector with the exception that rather than fixed forks the forks are mounted on an additional mast and carriage that operates as a turret, turning 90 degrees in either direction facilitating picking and stocking on either side of the aisle. The man-up design makes it easier to handle loads in very tall racking. *Very-narrow-aisle* trucks are generally recommended to be used in conjunction with a guidance system (wire, rails, optical) within the aisles to increase safety and reduce property damage. Also Turret Trucks require that the floor be perfectly flat and level to operate correctly. Also see [Lift Truck Pics](#) , [Lift Truck Basics](#), and [The Aisle Width Decision](#) for more info.

Unit load a.k.a. **unitized load**. Material handling term that describes any configuration of materials that allow it to be moved by material handling equipment as a single unit. While smaller manually handled configurations could be considered unit loads, the term generally defines larger configurations that would be moved by a lift truck such as palletized loads, crates, bales, etc.

Unit of measure. (U/M) The unit of measure describes how the quantity of an item is tracked in your inventory system. The most common unit of measure is "eaches" (EA), which simply means that each individual item is considered one unit. An item that uses "cases" (CA or CS) as the unit of measure would be tracked by the number of cases rather than by the actual piece quantity. Other examples of units of measure would include pallets (PL), pounds (LB), ounces (OZ), linear feet (LF), square feet (SF), cubic feet (CF), gallons , thousands, hundreds, pairs, dozens. Also see Unit-of-measure Conversion.

Unit-of-measure conversions. A unit-of-measure conversion is needed whenever you work with multiple units of measure. For example, if you purchased an item in cases (meaning that your purchase order stated a number of cases rather than a number of pieces) and then stocked the item in eaches, you would require a conversion to allow your system to calculate how many eaches are represented by a quantity of cases. This way, when you received the cases, your system would automatically convert the case quantity into an each quantity.

Vehicle restraint systems Devices that prevent trailers from moving away from the loading dock. One of the most popular is the ICC bar type restraint system. These systems incorporated a device that engages the ICC bar (rear impact guard) on the rear of the trailer preventing it from moving away from the dock. These devices may be mechanically or hydraulically operated and may vary in design and functionality from one manufacturer to another. There are also other types of restraints such as those that automatically engage the rear wheels of the trailer. As with the ICC bar restraints, the wheel engagement restraints also vary significantly from one manufacturer to another. There is not a one-system-fits-all solution for vehicle restraints, ICC bar systems may not work with damaged ICC bars, lift gates, and low-boy trailers. Wheel engagement systems are more expensive and may have problems in northern climates due to snow or ice. See article on [Dock Safety](#) and [Dock Equipment Pics](#) for more info.

Very narrow aisle (VNA). Lift trucks that operate in aisles less than six feet and often use guidance systems (wire, rail, or optical) to travel within the aisles. Types of VNA trucks include order selectors, swing mast, pivot, mast, and turret trucks. See also article [The Aisle Width Decision](#)

Vendor-managed inventory. Phrase used to describe the process of a supplier managing the inventory levels and purchases of the materials he supplies. This process can be very low tech, such as an office supplies supplier or maintenance supplies supplier coming into your facility once per week to visually check stock levels and place a re-supply order, or high tech, such as an electronic component supplier having remote access to your inventory management and MRP system and producing and automatically shipping to meet your production schedule. Vendor-managed inventory reduces internal costs associated with planning and procuring materials and enables the vendor to better manage his inventory through higher visibility to the supply chain. Vendor-managed inventory may be owned by the vendor (consignment inventory) or the customer.

Voice directed. See **Speech-based technology**

Walkie or Walkie-rider. see Motorized Pallet Truck

Wave picking. A variation on zone picking where rather than orders moving from one zone to the next for picking, all zones are picked at the same time and the items are later sorted and consolidated into individual orders/shipments. Wave picking is the quickest method for picking multi item orders however the sorting and consolidation process can be tricky. Picking waves are often designed to isolate shipments to specific carriers, routes, etc. See also batch picking, zone picking See article on [Order Picking](#).

WIP, Work-in-process. Generally describes inventory that is currently being processed in an operation, or inventory that has been processed through one operation and are awaiting another operation. WIP is actually an inventory account that represents the value of materials, labor, and overhead that has been issued to manufacturing but has not yet produced a stockable item. Depending on how your accounting and inventory systems are set up, it may also include components picked for production

usage or finished products awaiting final inspection.

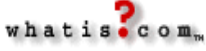
Wire-guided. Term used to describe vehicles that use a wire embedded in the floor to guide the vehicles. Wire guidance systems are frequently used with order selectors and turret trucks in very narrow aisle applications. They are also used with automated guided vehicles.

WMS, Warehouse management system. Computer software designed specifically for managing the movement and storage of materials throughout the warehouse. WMS functionality is generally broken down into the following three operations: Putaway, Replenishment, and Picking. The key to these systems is the logic to direct these operations to specific locations based on user defined criteria. WMSs are often set up to integrate with data-collection systems. Read my article on [Warehouse Management Systems](#).

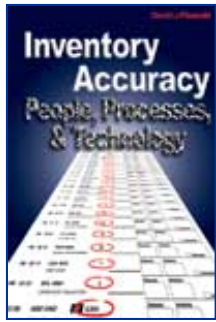
Zone picking. Order picking method where a warehouse is divided into several pick zones, order pickers are assigned to a specific zone and only pick the items in that zone, orders are moved from one zone to the next (usually on conveyor systems) as they are picked (also known as "pick-and-pass"). See also batch picking, wave picking See article on [Order Picking](#).

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Additional On-line Dictionaries / Glossaries

	Source for definitions of technology terms.
Glossary of Supply Chain & Materials Management	Provided by the Institute of Logistics & Transport.
Glossary of Purchasing and Warehouse Inventory Terms	Provided by the Florida Department of Management Services' State Purchasing Office.
Logistics/wireless/bar code Dictionary	Provided by Best Way Technologies
Inventory Accuracy Glossary	From my book Inventory Accuracy: People, Processes, and Technology
Quality Glossary	From the American Society for Quality (ASQ)
MHIA's Material Handling Glossary	Provided by the Material Handling Industry of America (MHIA)
Material Handling Glossary	Provided by Bastian Material Handling
Freight/transportation Glossary	Provided by Yellow Freight
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[Inventory Accuracy: People, Processes, & Technology](#)

Inventory Accuracy: People, Processes, & Technology is a comprehensive treatment of Inventory Accuracy and Cycle Counting in distribution, fulfillment, and manufacturing environments. I have long known that many businesses struggle with accuracy and are often unclear as to what they should be doing to improve operations. The interest I have received on the articles I have written related to inventory accuracy inspired me to write what I like to refer to as "**the ultimate resource on inventory accuracy.**" Rather than just writing a little book on cycle counting or bar coding, I decided to write a book that not only comprehensively covers these topics, but also goes beyond bar codes and cycle counts to cover many other key facets of accuracy.

For more detailed information, sample pages, and ordering information go to www.accuracybook.com.

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