



Infor Distribution FACTS 9.3.0 Advanced Inventory Management (AIM) Guide

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About this guide

This guide describes workflow, concepts and procedures for using the Infor Distribution FACTS Advanced Inventory Management.

Intended audience

This guide is for FACTS end users, managers, in-house analysts, and trainers who require an understanding of the product and how to use it.

Related documents

You can find the documents in the product documentation section of the Infor Xtreme Support portal, as described in "Contacting Infor" on page 8.

Refer to the contents of the FACTS Version 9.3 & Incrementals folder located at www.inforxtreme.com. Click Search>Browse Documentation>FACTS> Version 9.3 & Incrementals to view a document tree like this.

- *FACTS Version 9.3 & Incrementals*
 - *Installation and Administration Guides*
 - *Installation Guide*
 - *Product Compatibility Matrix*
 - *Hardware Guide*
 - *Release Notes*
 - *9.3.0 Release Overview*
 - *Incremental Release Notes*
 - *Integrations*
 - *Infor Solutions*
 - *Infor Distribution Storefront*
 - *eCommerce*
 - *Credit Card*
 - *CenPOS*

- *WMS*
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- *Document Management*
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- *User Guides*
 - *Implementation Guides*
 - *Standard modules User Guides*

Contacting Infor

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If we update this document after the product release, we will post the new version on this Web site. We recommend that you check this Web site periodically for updated documentation.

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Chapter 1 AIM overview

Introduction

FACTS uses Advanced Inventory Management (AIM) procedures for more effective replenishment and management of purchasing. The AIM model includes differences in how data is stored and maintained, the available parameter controls, and the tools used to do procurement and warehouse transfers.

This implementation guide attempts to organize material in a format that assists those individuals responsible for preparing for and coordinating the implementation of the AIM enhancements. The information in this document is presented in a logical manner to assist in understanding the prerequisites to implementation and the sequence of events required for a successful implementation.

Goals

The purpose of implementing AIM procedures and processes is profitability and customer satisfaction. Previously inventory measurement was based on turns but the turns measurement does not necessarily mean profitability. The precision that comes from AIM processing ensures that your business has the right inventory when your customers want it. The ability to consistently provide customers with inventory when it is needed creates greater customer loyalty and eliminates the 'lowest-price game' by providing reliability as a tangible value.

Implementation

The key to successfully implementing AIM is data integrity. The data used for AIM processing must be accurate and complete. Software is good at math and analysis, but not so good at knowing if the data is right. Buyers must become data experts, or the math the system provides will not yield the correct results

It is recommended that you work with your FACTS business consultant in the process of implementing the AIM functionality. Getting the best results requires a thorough understanding of the many principles of inventory replenishment and the parameters that are available. This

implementation guide can help you analyze your company requirements and select the proper parameter settings; however, your business consultant can provide valuable input and assistance in this process.

Chapter 2 Understanding the numbers

In many ways, the AIM enhancements turn your buyer and inventory managers into data managers. For the calculations to work most effectively, they must have excellent data feeding the replenishment calculations, and it's the responsibility of the entire organization to ensure the data is accurate and complete. The buyer's first job is to review and update the data so it yields the best results.

There are 3 basic numbers that feed the replenishment calculations: Usage, Lead Time, Review Cycle.

Usage

Usage is the starting point of all the replenishment values. A simple definition of usage is sales (or lost sales) to customers that we delivered or expected to deliver out of our stock, and that represent a potentially-repeatable event.

Usage is tracked on all stocked items, even if they're flagged not to be replenished. Nonstocked items always have 0 usage. Usage is recorded at the warehouse that "should" have shipped the goods, affecting its average daily usage (ADU). Then that ADU is "rolled up" to any "distribution center" (DC) warehouses that replenish it.

Each individual transaction/sale/lost sale is individually counted as usage unless it's flagged as an "exceptional sale". This flag is available in order entry, and can be overridden later using the Usage Review program.

When a sale is known not to be a repeatable/normal event, it should be flagged as exceptional so it doesn't feed into the ADU for that warehouse/item. Training sales reps to properly identify and flag exceptional sales during the ordering process will save time and yield the best results. If you determine at a later point that a sale was exceptional, it can be corrected in Usage Review.

It is also important that the usage be recorded on the proper date. Order entry allows the user to override the default usage date (Order Date), and Usage Review allows you to change the usage date on any transaction.

When returns are processed, it's important that the usage be updated (or not updated) correctly. For example, if the user simply bought too many, the amount being returned should be flagged to update

usage (i.e. reduce usage) on the date of the original order, not the date of the return – the goal being for the usage values to reflect what we delivered or expected to deliver from stock.

Another example is if we shipped the wrong item. In this case, the credit should remove the original usage on the original date, and the replacement should update usage for the correct item with a usage date of the original order. Again, the net result is that usage reflects what we delivered or expected to deliver, at the time we should have delivered it.

Another example is if the items were not acceptable to the customer, and they returned them and bought them somewhere else. How usage should be handled in this example depends on what you expect to happen in the future with this customer. If the customer has been lost forever, you may want to credit the usage because you do not expect the sale to be repeatable. If you believe that you can/will win back this customer, you probably do not want to credit the usage on the return.

Lost sales are important to record. They help you understand what you're doing wrong, and they enable you to make adjustments to avoid losing future business. To facilitate recording lost sales, FACTS has Lost Sale Entry on a right-click menu available from most places in FACTS.

Not all lost sales should record usage. Remember that the intent of usage is to capture what you should have shipped and is a repeatable event. If you lose a sale due to pricing, for example, and you don't expect to win future business from this customer, the lost sale should be flagged as exceptional so it does not update usage. However, if you lost it due to a product being unavailable, and you expect to (or hope to) win the business in the future, it should be recorded as a normal (i.e. not exceptional) lost sale.

Another example is if the customer was ordering multiple items and you lost the sale due to one of the products being unavailable, you should enter the lost sales for each of the items they intended to order.

Getting usage right is the first job of your entire organization as usage factors into every one of the replenishment controls. Train everyone to understand the importance and meaning of usage.

Lead time

Lead time is the time between placing an order and when the goods are available to fill orders, and it's an important factor in replenishment.

FACTS will automatically calculate the average lead time for each item from the Ordered date on POs and transfers and the receipt dates. That means that it's important that these dates be accurate.

If you enter a PO but don't send it to your vendor for several days, the ordered date should be updated to reflect the date you sent the order – failing to update the date will result in a lead time that is longer than it should be.

Also, not all POs should be included in the average lead time calculation. For example, if you place an important PO for an item and choose to have it expedited, the lead time on that PO is not an accurate reflection of the vendor's performance for normal replenishment purposes. There is a flag in PO Entry to indicate that the lead time should not be updated by this PO.

If you forget to flag a PO properly to ignore lead time, it can be done after-the-fact by using the Lead Time Review program.

How long it takes to get an item from your vendor becomes a crucial part of determining when to place the order for the item, so it's important to get the data right.

Review cycle

Review Cycle is the expected time in days between replenishment POs for a vendor or warehouse transfer tickets for a distribution center (DC) warehouse. Thought of in another way, it's the number of days' supply of stock you expect to order each time you place a PO.

Review cycles must be setup for each authorized replenishment path (ARP) in FACTS. An ARP is each vendor or DC that replenishes a stocked item in a warehouse.

Review Cycle Setup is the primary program used in FACTS to setup and maintain review cycles.

Longer review cycles mean more time between orders and therefore larger order quantities.

Often, review cycles are set based on how many days it takes to make a buying target. For example, if you on average sold (used) \$100 worth of product from a specific vendor per day (across all items purchased from that vendor), and that vendor offered free shipping on orders over \$1000, you could place an order with them every 10 days and expect to always get free shipping.

Buying targets (explained in detail later in this document) can be used to automatically calculate review cycles during the nightly rebuild. This is applicable to all types of items, but it can be especially helpful with seasonal items, where you may be able to make buying targets more frequently as you go into the high season than during the off season.

From these three basic values (usage, lead time and review cycle), we develop the replenishment controls for each item. These values are updated daily by FACTS background processor programs that you schedule typically to be run after hours. Having these values updated daily allows FACTS to very quickly respond to changing circumstances.

Average daily usage

Average Daily Usage (ADU) is calculated from the usage data discussed above, and represents what we should expect to sell, on average, of the item today.

FACTS supports 3 different methods of calculating ADU, set in Warehouse/Item F/M:

- Backward
- Forward
- Trend

Items which should sell consistently throughout the year, without changes due to changing seasons, should be set as usage type Backward. For these items, we evaluate what has happened in the immediately-preceding time period to determine what we expect to sell today.

If an item's sales are driven by the time of year (e.g. it sells primarily in the spring or fall), it should be set as usage type Trend. For these items, we look at the time period upcoming but 1 year back and apply a trend % to it to determine what we expect to sell today.

Trend Example: If today was May 1, 2013, and we had the following Average Monthly Usage (AMU) values summed from the usage information described above:

Feb 2012	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan 2013	Feb	Mar	Apr
1	6	10	8	1	0	0	0	0	0	0	1	2	15	20

(For this example, we will use a 3-month time period for calculating ADU, but ADU can be calculated on a user-selectable time-period based on the item's rank – more on that later).

Also, while it's useful for us to use examples of months, it is important to remember that FACTS maintains usage on a daily basis - the AMU values are calculated on 30-day blocks going back from yesterday.

In this example of trending, FACTS first looks at the immediate prior 3 months (Feb-Apr 2013) and gets an average monthly usage (AMU) of 12.3 (which is 2+15+20 divided by 3). Then it looks at the same time period a year ago (Feb-Apr 2012) and gets an AMU of 5.67 (which is 1+6+10 divided by 3). Those numbers indicate that we are running at 217% year over year (12.3/5.67) – this is the trend %.

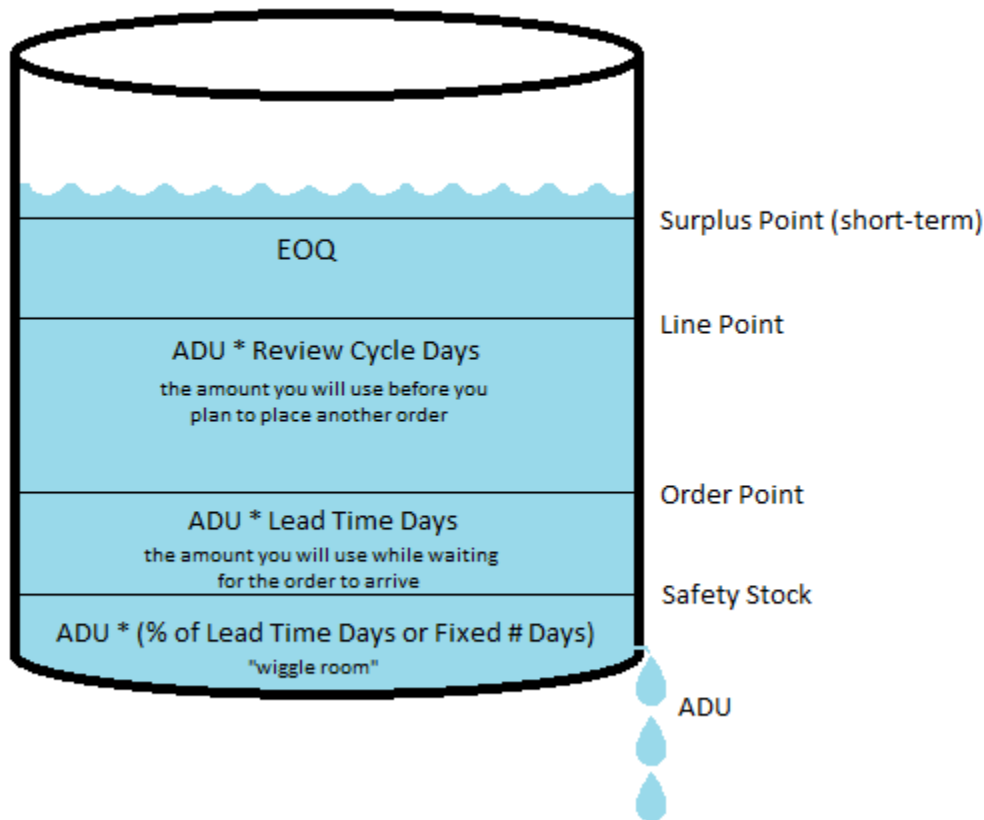
With the trend % in hand, we then look at the period of time we're buying for from the previous year and apply the trend % to it.

So to complete the example, we look at the upcoming 3 months (optionally adjusted out for item's lead time if advance by lead time is turned on) from last year (May – July 2012) and see that its AMU was 3 (which is 8+1+0 divided by 3) then apply the trend % to it. This gives us an AMU of 6.51 (which is 217% of 3). Dividing 6.51 by 30 gives us an ADU of .217.

Note: Seasonal advance by lead time, when enabled, is used to recognize the fact that if I place an order today, I'm not buying for what I need today, but for what I need when the goods arrive. For items with a long lead time, that could be months from now. In the above example, if advance by lead time were enabled, and the lead time was 30 days, instead of comparing May-July 2012, we would move that out 30 days to June-August 2012, because that is the timeframe a current purchase would serve in 2013.

The Usage type of Forward is the same as Trend with a trend % of 100% and no lead time advance - i.e. it doesn't calculate a trend percentage and simply looks at the upcoming timeframe a year ago to determine what we expect to sell today.

To visualize how all of these numbers work together, picture each item in a warehouse as a bucket. The water in the bucket is your inventory. There is a hole in the bottom of the bucket allowing water to escape. The rate at which the water escapes is your average daily usage. The levels in the bucket illustrate the replenishment values:



Safety stock

Safety Stock (SS) is the first, base stock value. It is the amount of stock we want to keep as “wiggle room” to avoid stockouts if we place an order late or the vendor is slow in shipping or if we get an unexpected sale, etc.

FACTS’ replenishment will use the numbers explained above to predict when the right time is to place an order so that the goods arrive before we hit safety stock. But business doesn’t always conform to averages. As a result, it’s normal and expected that you will occasionally use safety stock. However, if you are often stocking out, you likely are not carrying enough safety stock. Similarly, if you are never dipping into safety stock, you are likely carrying too much.

Safety stock is calculated from Safety Stock Days (SSD) and can be established as either a % of lead time or as a fixed number of days supply.

When safety stock is calculated as a %, we calculate a number of days supply (SSD) from the lead time (LT). So if LT is 10 days, and safety stock is 25%, SSD is 25% of 10 days, which is 2.5 days supply for safety stock.

The actual safety stock quantity is then safety stock days (SSD) times ADU.

Safety stock parameters control how much safety stock you keep. Greater consistency generally equates to lower safety needs. It is important to consider the impact of lead time on safety stock. If lead time is overstated, your safety stock will be higher than needed. If lead time is understated, your safety stock will be insufficient, leading to stockouts.

For the safety stock parameters, set generally-acceptable values at the Company or Warehouse level, and override for individual vendors and items as needed.

Better lead time values allow you to reduce safety stock, as does being more proactive with purchasing. When lead times are sporadic, or when you order infrequently causing lead times to be based on old data, or when you are inconsistent or slow placing orders, greater safety stock values will be needed to protect against stock outs.

Order point

The next value above safety stock is Order Point (OP). Basically, Order Point is the stocking level at which, if we place the order the day we reach OP, we should expect to get the inventory before we start using our safety stock. Logically, Order Point is based on the amount we expect to sell during the lead time.

Order Point = Safety Stock + (Lead Time Days * ADU)

As soon as any replenished item from a vendor hits order point, it's time to cut a PO to that vendor, or we risk running out. Order Point is another reason it's important to have accurate lead times.

Note that when any replenished item reaches OP, it's time to place an order, but the order we place will include items that are still above OP. Ordering items that are above OP helps make sure that we make buying targets and aren't constantly placing emergency buys for small quantities. As you will see later, we refer to this as keeping the line in balance.

There are several ways we may adjust order point to achieve better results, but we will cover those later.

Line point

Building from order point, we get to Line Point (LP). Line Point is essentially the target stocking level we want to reach when we place the order and is based on the ARP's Review Cycle (RC). If our review cycle is 14 days, line point will be based on 14 days of usage, or the amount we expect to sell before we plan to place another PO with this vendor.

Line Point = Order Point + (Review Cycle * ADU)

When we do place an order for an item, we order enough to go from current stocking levels up to line point. Line point is why it's important to establish realistic and accurate review cycles for each ARP.

So the three values: Safety Stock, Order Point and Line Point, build on each other. If safety stock changes, it impacts both OP and LP. If OP changes, it also changes LP. If ADU changes, it impacts all of them. If lead time changes, it will potentially impact safety stock, and it will impact OP, which then changes LP. Review cycle only impacts LP.

When issues occur with the calculated replenishment values, it's important to understand the relationship between these numbers so you can determine the best way to address the issues and get the results you want.

For example, if you change ADU, the final impact to LP will be significant because it factors into each of the other values, whereas changing order point will not impact safety stock, and its impact on LP is not compounded.

Hits

Document hits are used to determine rank in the warehouse, and they are used in many of the replenishment parameters. Document hits are an indication of how often an item is touched in the warehouse and does not depend on the value of the item.

Hits are only generated on the first shipment of an item – backorder shipments do not count as a hit because the sales order line represents what should have been a single impact to the warehouse.

Hits always get recorded in the same warehouse that the usage was recorded in.

This matrix identifies when usage and hits are recorded in various types of transactions (note that in sales orders and lost sales, the Update Usage Flag is set by the Exceptional Sale Flag, where Exceptional Sale = Y is the same as Update Usage = N and vice versa):

Doc Type	Shipping Warehouse	Situation	Usage Warehouse	Situation	Update Usage Flag	Record Hit
Sales Order/Lost Sale	Same as Initiating Warehouse	All Scenarios	Shipping Warehouse	1 st Shipment	Y (default)	Y
					N	N
			Subsequent Shipment	Y or N	N	
	Different from Initiating Warehouse	Item is replenished in the Initiating Warehouse	Initiating Warehouse	1 st Shipment	Y (default)	Y

Doc Type	Shipping Warehouse	Situation	Usage Warehouse	Situation	Update Usage Flag	Record Hit
					N	N
				Subsequent Shipment	Y or N	N
		Item is NOT replenished in the Initiating Warehouse	Shipping Warehouse	1 st Shipment	Y (default)	Y
					N	N
				Subsequent Shipment	Y or N	N
	Direct Ship	Item is replenished in the initiating warehouse	Initiating Warehouse	1 st Shipment	Y	Y
					N (default)	N
				Subsequent Shipment	Y or N	N
		Item is not replenished			N	N
Manufacturing Ticket	Entry Warehouse	All Scenarios	Entry Warehouse	All Scenarios	Y (default)	Y
					N	N
Inventory Adjustment	Entry Warehouse	All Scenarios	Entry Warehouse	All Scenarios	Y (default) or N	N
Warehouse Transfer	From Warehouse	All Scenarios	No Usage	All Scenarios	N	Y

Rank

Each item in the warehouse is assigned a rank from A to E to represent that item's relative impact on the warehouse operations. 'A' ranked items have the most activity (i.e. hits, orders, transfers, etc.), and 'E' ranked items the least. All non-replenished items are assigned a rank of E automatically, and are not factored in when determining the ranks for replenished items in the warehouse.

Ranks are calculated and assigned automatically each night, based on parameter settings explained later in this document.

There are many settings and controls that can be adjusted by an item's rank. This allows the system to work more efficiently. We will cover each of the Rank-specific settings later in this document.

Adjusters and fences

There are multiple ways to adjust or limit the values above. Each can be used to address different issues with the calculated values. Most of the values below require expiration dates. It is good practice to set the expiration dates to reasonable lengths of time and to enter memos with each to remind you why the value was originally entered.

T-Min usage adjuster

"T-Min" is a term used to indicate a lower threshold or minimum limit placed on a value. In the case of usage, T-Min is the lowest value we will use when calculating usage. This value is stored as a monthly number, but is used to determine the minimum ADU for an item by dividing it by 30 days.

When FACTS calculates ADU, it then checks to see if a T-Min Usage has been established. If so, and the T-Min is higher than the calculated ADU, ADU is forced up to the T-Min.

This can be especially helpful for newly-established items where there is not sufficient history to calculate a reliable ADU. If your sales team believes they will sell 10 units of a new item per month, setting up a T-Min Usage of 10 will cause FACTS to act (for purchasing purposes) as if you were selling 10 units. However, if sales take off, and you are actually selling 20 per month, the T-Min will be ignored.

Since T-Min Usage changes ADU, it cascades to impact safety stock, order point and line point. As a result, it's not the best way to establish minimum stock levels. It truly causes FACTS to act as if usage was different.

Trending parameters and limits

Trending parameters and limits allow AIM processing to automatically adjust for differences that can be measured year over year. For example, trending parameters and limits are used to calculate ADU for seasonal items. You can use these parameters to establish reasonable limits on what the system is allowed to do without human intervention. The system allows you to set the main limits at Company Level, and override as needed, with expiration date and memo.

Trend % minimum and maximum

When calculating usage for an item with usage type Trend, it's not unusual for the math to calculate extreme values, especially at the beginning or end of a season or when there is minimal data to use. For example, if a very large order (for example 1000 EA) was placed at the very beginning of the season this year, but total orders up to this point last year were only 10 EA, a trend of 10000% would be calculated, and the system would indicate to order unreasonably high quantities.

If the years were reversed, the trend would be 1%, causing FACTS to order far too few.

As the season progressed of course, these numbers would work themselves out to reasonable, accurate numbers, but to avoid unrealistic values, you can establish fences for the minimum and maximum trend %s allowed.

T-Min order point adjuster

In the same way that T-Min Usage props up usage when it falls below the T-Min, T-Min Order Point props up OP when it falls below the T-Min.

When stocking levels drop to order point, it's time to place a new PO, and OP also factors into line point. Setting a T-Min OP can be useful when you want stock levels not to drop below a specific point, for example if you have a customer commitment to keep a minimum quantity on the shelf.

T-Min order point will not change safety stock, and it doesn't change usage, so if the T-Min OP is used, it moves LP up the same amount as it moved OP.

Always establish an expiration date and a memo indicating why you set a T-Min OP. The system will alert you when the T-Min OP is about to expire so you can verify that the reason for it is still valid before extending it.

Average shipment quantity (ASQ) and Five-high order point adjusters

Order Point is a function of usage and lead time, both of which can fluctuate and be unevenly distributed through time. The order point can end up smaller than a normal, large order from a big customer or smaller than the normal average shipment quantity of larger orders. ASQ and Five-High order point adjusters help eliminate this circumstance.

Average shipment quantity (ASQ) order point adjuster

ASQ is an automatic adjuster to order point when it's turned on, and it is calculated by the system.

ASQ is the average of all shipments over a specified time frame. If that average is higher than the calculated order point, order point will be increased to ASQ.

This adjuster is especially helpful when you have an item that sells in large quantities but at fairly large intervals. In that case, the math to calculate OP can result in a stock level that is insufficient to fill your average order. Turning on ASQ will remedy that by increasing order point.

5-Hi ASQ order point adjuster

5-Hi ASQ is similar to ASQ, except that it takes the 5 highest shipment quantities over the specified time period, drops the highest as an outlier, and averages the remaining 4. If the 5-Hi ASQ is greater than the calculated OP, OP will be propped up to the 5-Hi value.

5-Hi ASQ is helpful in cases where you have a few customers who buy in large quantities but many who buy in smaller quantities. In that scenario, basic ASQ will not be high enough to cover the purchases from your large customers.

ASQ and 5-Hi ASQ fences

For both ASQ and 5-Hi ASQ, there is a maximum cost increase setting that helps limit how large of an increase to OP is allowed.

For example, for an item that costs \$10 EA: If the calculated OP is 100, and ASQ is 130, the value of the increase is \$300 (i.e. $30 * \$10$). If you established a maximum increase of \$250, ASQ would not be applied, and an alert would be raised for the user.

This allows for human intervention when ASQ or 5-Hi would require a significant additional inventory investment.

Safety stock days minimum and maximum

For items with very large or very short lead times, the basic math can end up calculating safety stock values that are not reasonable. For example, if lead time were 180 days, and safety stock % was 50%, the system would calculate safety stock as a 90-day supply, causing stocking levels to soar.

It is important to establish reasonable limits on the number of days supply of safety stock the system will calculate and use.

These minimums and maximums can be set differently for items purchased from vendors and those replenished from a DC warehouse.

Average lead time minimum and maximum

Lead time is a measurement of a vendor's (or warehouse's) past performance to predict future performance. For lead time, recent activity is more relevant than old activity because things change over time. Inaccurate lead times cause Line Point (and therefore recommended order quantities) to be unusual or unreasonable.

There are some scenarios in which the normal calculated average lead time should not be used 'as is' when calculating order point. A straight application of lead time assumes that you place an order for the item, and it arrives before you place the next order. For items with long lead times, this may not be the case – you may have several orders in various stages at the same time.

In such cases, for the replenishment math to calculate reasonable order points, you must limit lead time to more reasonable values. For example, if actual lead time is 90 days, but you place orders 30 days apart, you may want to set a maximum lead time to 30.

If the actual lead time is 1 day, order point may be calculated lower than you would like, so establishing a minimum lead time somewhat higher may result in more realistic values.

Minimum and maximum lead time fences can be set differently for items purchased from a vendor and those replenished from a DC warehouse.

T-Min rank for new items

Rank is only calculated on replenished items. Non-replenished items are always assigned a rank of E.

Because items that are newly-established in a warehouse have little or no usage, the automatic ranking would immediately push them down to an E rank, causing the replenishment controls to stop most purchasing activity.

Previously this was countered by "mocking-up" usage for the item (i.e. entering made-up usage numbers for the months prior to taking on the item), but since Rank is now based on document hits, that process will no longer work.

Instead, you can establish a minimum Rank for new items and a number of months since inception that an item should be considered "new". If FACTS calculates a rank lower than the T-Min Rank, it will override it and assign the T-Min. If sales of the item quickly take off, the Rank will increase as warranted.

After the item has been established for more than the specified # months, the T-Min Rank will no longer be applied.

T-Max line point

Where T-Min Order Point is often used to maintain minimum stocking levels, T-Max Line Point is often used to establish maximum stocking levels.

Line point is the value FACTS will attempt to reach when calculating the quantity to order. In some cases, due to EOQ or a high-selling item, line point may be calculated so high that it exceeds your allocated space in the warehouse for that item. T-Max Line Point solves this by limiting the maximum quantity you will order.

When T-Max Line Point is used to limit the purchase quantity, it will naturally cause you to order more frequently at a smaller quantity per order.

Surplus stock

Surplus stock is defined as the quantity over the long and/or short-term surplus points. These points are calculated. The short-term surplus point is calculated based on line point and EOQ. The long-term surplus point is calculated, based on the values in Replenishment Parameter Maintenance (ICF990) for either seasonal or non-seasonal items. For long-term surplus, the usage calculation, number of days' supply over available stock, and the number of days an item must be established to calculate long-term surplus are used to determine the long-term surplus point. The long-term surplus point will never be less than short term surplus point; even if all surplus is short term, long term surplus point will be equal to or greater than short term surplus point.

Short- and long-term surplus points may differ or be the same. Stock quantities may be all short-term surplus, all long-term surplus, or a mixture of both. There may also be no surplus stock at all, if quantities on-hand are below any given surplus point. For example, a surplus point of 10 means, if you have stock quantities of 100, then, starting at quantity 10, the rest is surplus. A quantity of 90 is in surplus even though ICWHSE shows the surplus point 10. It does not mean a quantity of 10 is in surplus.

Chapter 3 Required setup

Now that you have a working understanding of the replenishment values and how they are calculated, we need to move on to getting FACTS replenishment running.

There are many parameters and settings that are relevant to FACTS replenishment, and we will cover all of them in this document, but let's start by focusing on the basic ones required to get underway.

In inventory processing there are always exceptions. The key is to establish the primary rules at as high of a level as possible, then make strategic overrides where needed. Managing these settings becomes one of the primary responsibilities of the buyer.

Buyers

Buyer codes can be assigned in multiple ways, but they refer to a person or group who is responsible for replenishment tasks, including purchasing from vendors, initiating warehouse transfers, and handling returns to vendors.

To setup buyer codes, use Buyer Code F/M on the Purchase Orders, Infrequent File Maintenances menu. You establish a code and a name or description.

As you will see below, buyer codes will be assigned to specific replenishment paths (ARPs) and assigned as default buyers for purchasing that is not related to an established ARP. When FACTS needs to notify someone of replenishment-related information, the relevant ARP is used to find the buyer who should be notified.

If your buyer codes are setup for individuals (as opposed to groups or teams) you can specify the FACTS user code the buyer code belongs to. This will allow FACTS to default the buyer code, and it allows FACTS to find the buyer's email address from their user settings.

You may also specify additional email addresses associated with the buyer code. The email addresses are used to deliver replenishment-related alerts if your system has the Internet Toolkit.

Finally, we haven't discussed the Exception Control Center or alerts specifically yet, but Buyer Code F/M is where you indicate whether replenishment-related alerts will be delivered to the buyer code and whether they will be delivered to the Exception Control Center and/or to email.

Warehouses

Obviously you will have warehouses setup, but for the purposes of replenishment, there is a new set of fields for Default Buyer. Each warehouse should have the default buyer and default review cycle setup. These fields allow FACTS to effectively work with items that are not replenished or that do not have an established ARP.

Choose a buyer code that is regularly used by someone who understands the items in the warehouse.

Note that this is not a substitute for establishing the Review Cycle records for known ARPs.

Vendors

There is no special setup required for vendors, but it is called out here because vendors are a significant part of the replenishment process. There are 2 fields in Vendor F/M that are important to handling customer returns: Default Action and Consolidation Warehouse. If you are implementing the Customer Returns functionality, you should review the settings for these fields.

Items

Item F/M has several important fields that impact FACTS replenishment, including Primary Vendor, Purchasing Line, and Item Type.

Items are presented to the buyers based on the primary vendor setup in Item F/M. Purchasing Line also plays a role but is not required – we will discuss purchasing lines in more detail later in this document.

Item should be reviewed to be sure the Primary Vendor is properly assigned for all items.

Item Type is also important when dealing with normal replenishment. Non-Stocked and Un-inventoried items will not be presented for purchase unless there is a special order. When an item is flagged as Stocked, it will be presented for normal replenishment in warehouses in which the Replenish flag is set.

Warehouse/Items

Warehouse Item F/M contains several very important values that control FACTS replenishment, including the Replenish Flag, Usage Method, and the warehouse/item's ARP.

We have provided several tools for managing these flags, including Warehouse Item F/M, Create Warehouse/Item Records, Transfer/Change Item Codes and Process Warehouse Item Records.

The Replenish Flag must be set if the item's replenishment is to be handled by FACTS. Keeping this flag up to date will ensure that the correct items are presented for replenishment.

Usage Method was discussed earlier and is important to getting good results. The default value is B-Backward, and this setting should be used for all items that are not truly seasonal items. T-Trend should be used for seasonal items. There is little use for F-Forward, but some unique situations may benefit from this setting.

Finally, establishing the correct replenishment paths for each warehouse/item is crucial. If set to 'Direct from Vendor', the ARP will be the primary vendor setup in Item F/M. Otherwise, specify the distribution center warehouse that is responsible for replenishing the item in this warehouse.

Without accurate ARPs, the replenishment processes will not function effectively.

Review Cycles

The review cycle record for each ARP tells FACTS two crucial pieces of information used in the replenishment process: the Buyer Code responsible for each item and the # days in the review cycle. There are other values that can be established, like buying targets, but we will cover those later.

Review Cycle Setup looks at all replenished items in the warehouse and presents the user with all of the valid ARPs in that warehouse. Any missing records will be displayed with asterisks (*) in the columns.

Each ARP displayed shows the number of items in that ARP – this allow the user to easily eliminate invalid ARPs by going to the warehouse/item record and correcting the ARP or to Item F/M and correcting the primary vendor.

For each displayed ARP, setup the buyer code responsible for replenishment from that ARP and the review cycle for that ARP. The review cycle is the number of days you normally have between replenishment orders from that vendor or warehouse.

Setting minimum/maximum review cycle values prevent the calculation of review cycle from coming up with a value that is not reasonable for your business. You don't want a review cycle of 1 day – you would be placing a PO every day, nor a review cycle of 500 days. Refer to the previous section of this document for a more thorough explanation of how the review cycle impacts replenishment values.

You can also establish buying targets, and if you specify a preferred buying target, the review cycle will be calculated during the nightly replenishment calculations based on ADU and the target, within the established minimum and maximums.

Replenishment Parameter F/M

There are many settings available in Replenishment Parameter F/M, and we will explain all of them later in this document. This section describes the basic or required setup that needs to be done.

When you first run Replenishment Parameter F/M, basic default values for all required fields will be created. For reference, the default values are stored in the XML file meta\ICREPL_defaults.xml.

Required setup involves establishing company-wide settings. Later you can return to setup override values at warehouse, vendor, item, etc., levels, but for now, we need to establish adequate company-level values.

The default values are generally acceptable for most systems, but you should review the following:

Rank, Parameters: These settings determine how FACTS calculates and assigns warehouse/item rank. Refer to the detail replenishment parameter section of this document for specifics on the possible values.

Usage, Usage Months for Seasonal and Non-Seasonal: The default values for these are adequate for most situations. This is where the value for the number of months used to calculate AMU and ADU is derived from (see the sample usage calculation in the previous section).

Safety Stock, Vendor ARP and Transfer ARP Parameters: These determine how safety stock is calculated. Refer to the detail replenishment parameter section of this document for specifics on the possible values.

Lead Time, Receipts Used to Calculate Lead Time: When calculating lead time, more recent receipts are more meaningful than older receipts. This setting instructs FACTS how many receipts to use and how far back to look at the receipts.

Replenishment

With the basic setup complete, you can proceed to the basics of replenishment.

Replenishment basically comes down to answering three questions: When should I place an order/transfer for an ARP?, Which items should I order?, and How much of each item should I order?

All of the replenishment controls and values exist to answer these three questions quickly and accurately, and the Buyer's Control Center is the primary place the questions are answered.

Buyer's Control Center screen

The initial screen of the Buyers Control Center (BCC) is referred to as the summary screen. The summary screen is launched from the Purchase Orders, Inventory Control, and Manufacturing Control modules with the appropriate activity code selected. The columns and options differ slightly based on the Activity selected, but the process is very similar.

These six BCC menu options are available in FACTS.

Path	Menu option	Activity code
Purchase Orders>Entry	Buyers Control Center Purchase	Procurement
Purchase Orders>Entry	Buyers Control Center Return	Returns
Inventory Control>Warehouse	Buyers Control Center Transfer	Transfers

Transfers

Manufacturing Control>Bill of Materials	Buyers Control Center BOM	Build Bill of Materials
Manufacturing Control>Formulation	Buyers Control Center FML	Build Formulation

Upon entering the BCC, buyers can specify a buyer code and warehouse to review the current actions.

From the Activity pull down you can choose Procurement, Transfers, Returns, Build Bill of Materials, or Build Formulation to perform. User security must be set in Program Security Maintenance (SMF420) for each user and activity code.

A prioritized summary of each ARP or warehouse activity is displayed.

These activities are available in the BCC:

Procurement

Transfers

Returns

Build Bill of Materials

Build Formulation

The other options at the top of the screen (Warehouse and the Filters) will be discussed later. For now, we will assume the defaults are used, which should be fine for most users.

Each ARP assigned to the selected buyer will be displayed and color coded to indicate the priority of the replenishment activity needed for items in the ARP. The summary data includes three sections: general data, buying targets, and prioritization:

The general data section includes the 'To' warehouse, vendor # and name, the purchasing line and the established review cycle.

The buying targets section includes:

Ach Amt – “Achieved Amount” is the total cost of the current recommended order, and can be presented as either the amount itself or the % of the buying target

Target Amt – this is the buying target for cost as identified in Review Cycle Setup

Ach Weight – “Achieved Weight” is the total weight of the current recommended order, and can be presented as either the amount itself or the % of the buying target. For this value to be accurate, you must have entered and maintained weights for each item and UM in Item F/M, UM F/M.

Target Wgt – this is the buying target for weight as identified in Review Cycle Setup

Ach Cubes – “Achieved Cubes” is the total cubes of the current recommended order, and can be presented as either the amount itself or the % of the buying target. For this value to be accurate, you must have entered and maintained cubes for each item and UM in Item F/M, UM F/M.

Target Cubes – this is the buying target for cubes as identified in Review Cycle Setup

The prioritization section includes information on how the ARPs were prioritized and includes the number of items/lines that fall into the following categories:

(Note: PNA is “Purchasing Net Available” and equals On Hand - Committed - Backordered + On Order)

Spec Ord – Items with existing special orders

For an uninventoried, temporary or catalog item that is backordered, the item will be picked up as a special order in the Buyers Control Center, unless the document is placed on service hold, credit hold or the document is currently in use.

Backorder – Items that have open backorders

Neg PNA – Items where PNA is negative. (i.e. if all open purchase orders arrived now, there would still not be enough to fill current needs)

Critical – Items where PNA is less than order point minus safety stock quantity. (i.e. you have less than you need to meet demand over the lead time to get new supply)

Replenish – Items where PNA is at or below order point

Note: Any item that does not fall within one of the above categories will be color coded white. For example, an item that is above order point but below line point would show up colored white.

In the filters section, the checked prioritization categories indicate the types of orders that are displayed in the Lines browser. Click **Change ARP Buys** to modify what is included (what to buy) in the Lines display for each individual line. These check boxes directly affect all of the detail lines for the ARP determining whether the buy check box is selected when you access in the BCC Detail screen.

For example if you uncheck the Spec Order check box, and set all other check boxes to checked, then all lines on the BCC Detail screen will be set to "buy" except for special orders. As a result, the BCC Detail screen will have "visible" only those lines that are set to "buy".

Note: When a line is recalculated, the ARP filters are reset to the default settings.

Determining When, What and How Much involves some significant data analysis and math. FACTS will look at every item in every ARP assigned to the buyer and use the replenishment controls which were calculated the night before to answer those three questions.

That analysis also looks at current open orders for any backorder or special order needs, so it can take some time, especially on systems with a high number of SKUs, so it is not done automatically when starting the BCC. At least daily, buyers should run the “Recalculate All” option, which performs the analysis on all ARPs and redisplay the prioritized results.

Because the recalculate can be a time-consuming task, some buyers may prefer to have the nightly rebuild automatically perform a BCC ‘recalculate all’ after the replenishment calculations have been completed. This can save time, but it is not best for all buyers. If you regularly have special orders which you want to handle the same day, you will still need to run the recalculate periodically throughout the day.

The BCC detail screen is essentially a working PO or transfer, and the recalculate option establishes what FACTS says that order should contain. If a buyer makes changes or additions to the BCC detail screen, the recalculate will discard those changes and reset them unless the line's override option is selected. This is true for the automatic nightly recalculate as well as the manual recalculate.

The summary screen of the BCC primarily answers the question "When to buy?", though it does also provide the achieved amounts for the recommended order, which combines the "What" and "How Much" questions.

When to place an order

Any ARP that is color-coded on the summary screen should be reviewed for whether an order should be placed. Generally speaking, the higher the ARP appears in the summary screen, the more urgent it is that an order be placed.

Typically, an order should be placed when any "worthy" item in the ARP is at or below order point. There are exceptions, and buyers will sometimes delay placing an order depending on their willingness to risk stock outs of the items in question.

When deciding "When" to place an order, we do not strictly consider where we are in the ARP's review cycle. If we have worthy items that will stock out before the next planned order, we don't want to just let the stock out happen because we didn't expect to place another order this soon. FACTS analyzes all of the items in the ARP and presents needed replenishment activity regardless of where they are in their review cycle.

However, as you will see, review cycle is far more important to answering "What" and "How Much". It's just not as important to determine "When".

What to order

Once it's determined that you should place an order with a vendor or distribution center (remember, that is based on having any worthy items at or below order point), the next question is "which items should I order?"

To answer this question, we need to revisit Line Point.

Line point = order point + (review cycle days x average daily usage), and it is generally considered to be the stocking level we want to order up to, with some possible adjustments like economic order quantity (EOQ) and vendor or transfer rounding (more on that when we get to "How Much").

Normally, when placing an order, we should be ordering all items that are below line point. This keeps the entire line of products for this ARP balanced with each other, making it easier to make buying targets regularly.

At this point, we need to take a closer look at the Buyer's Control Center Detail screen. You get to this screen by double-clicking one of the ARP's on the summary screen.

This screen is essentially a working PO. Each time a recalculate is run for this ARP, the working PO is updated with the new information – quantities can change, new items can appear, and items can be dropped, all based on the current replenishment controls and quantities in the warehouse.

The items that appear in the list by default are the items that “should” be purchased, typically all replenished items in this ARP that are below line point.

The items are prioritized based on the same priority values explained from the summary screen, with the higher priority items appearing first.

You can re-sort the grid by clicking on the column headers.

To change the amount you want to purchase, simply change the value in the green “Purchase” column, but note that manual changes to the purchase quantity will not survive a recalculation unless the “Override” checkbox is selected.

To exclude an item from being purchased, you can either set the purchase quantity to 0, or you can unselect the “Buy” checkbox. This field also will not survive a recalculate unless Override is selected.

You can also manually add items to the working PO by going to the last line in the grid and typing in the item number.

The BCC also has the ability to export the items in the grid to an Excel spreadsheet where you can adjust the purchase quantities and later import them. Access this functionality by right-clicking anywhere in the grid, and be sure to carefully read the on-screen instructions.

Before we go further into explaining how to use this screen, let's look at each column in the grid and explain its purpose. Note that many of the cells are “clickable”, allowing you to drill down to further information about that cell – these cells have a magnifying glass image on them. The column information is defined as follows:

Buy – this checkbox indicates which items will be included on the purchase order when placed.

Override – this checkbox should be used if you make manual changes to the Purchase quantity or the Buy checkbox, and you want to be sure those manual changes remain even after a recalculation. Selecting override can be problematic because there could be important changes as a result of the recalculate, and they will be ignored.

Item and Item Description – you can directly add items by going to the open line at the bottom of the grid and typing the item number or clicking the “...” button to access the item search. You are not allowed to change the item description on this screen, and you cannot change the item number on an existing line.

Notes and Resources buttons – the next two columns provide access to item notes and item resources (Supplemental Resource Manager). The buttons will be yellow if there are existing notes or resources on file.

Special Order – this checkbox indicates whether that line is a special order tie to a sales order, transfer, or customer return. When manually adding an item, you can select this

checkbox to establish a special order tie. For existing special order lines, this cell will be a button with the document number and line number it is tied to. Clicking the button will take you to the appropriate document inquiry and load the document for viewing.

Special order line processing

Special order lines on sales orders should automatically be brought into the Buyers Control Center (BCC) and Buyers Control Center Detail screens for the proper buyer and vendor when a recalculate is performed. Therefore, you are not required to manually add them using the Special Order check box in the Buyers Control Center Detail grid.

Any line that is a special order line cannot have its quantity to purchase changed.

Manually entering a special order line or selecting the Special Order check box restricts quantity changes on the special order. The purchase quantity must be for the entire quantity of the line. The document/line ordered and back-ordered quantities must be the same to allow manual entry/tie for special order.

If you use the special order check box to manually add a special order item to the BCC or BCC Detail grid, there are a number of checks that are performed on the sales order document and line:

if the sales order is in use, it cannot be added.

if the sales order is on hold, it cannot be added.

if the sales order line is shipping from a different warehouse, it cannot be added.

if the special order line is already entered for a different vendor, it will be moved to the current vendor as long as no buyer is currently working on the original vendor and the original BCC line is not set to override.

If the line is added or moved to a different vendor than is entered on the sales order line, the sales order line will be updated to the new vendor.

Deleting special order lines

You can delete special order lines created from a planned special order record (purchase or transfer). This returns the planned special order record back into the POSUGG or the ICSTRN files. During this delete the planned special order record will be updated with the current vendor from Item F/M, and, the special order from which the planned special order record came (and is tied to) will also have the vendor (in SORSOL) updated with the current vendor from the Item F/M. If the special order is due to a customer return line then the delete only takes place if the CRS line is complete. Otherwise trying to delete a CRS special order line from the BCC displays a message that it is tied to CRS and cannot be deleted.

Temporary - This cell in the grid indicates whether that line is a temporary item for a return. When manually adding or editing a temporary item, you can select this to specify or modify the required fields for the temporary item.

Recommended – this is the quantity FACTS replenishment calculated as the value that should be ordered. To see how FACTS arrived at this value, select the “Show Math” button while any cell for the line in question is highlighted.

Net Available – this is the current available quantity in the warehouse. Clicking this cell displays the Open Docs View for this warehouse and item.

Purchase – this is the current value that would be ordered if you were to create the PO. This value defaults to the recommended value, but can be changed.

Qty UM – this is a drop-box with all available buying UMs for the item. This will default to the default buying UM. This value cannot be changed on a special order line, as it must match the UM on the associated document.

Cost, Cost UM and Extension – the cost and cost UM are defaulted based on current costs and cost contracts. You can change the cost as needed. Updated costs will not survive a recalculate unless Override is selected. Extension is simply the total cost based on the quantity in the Purchase column. Clicking on the button in the cost field will display the Cost Search which displays all of the various costs and cost contracts for the item.

Surplus – this is the amount of surplus stock available in alternate warehouses. This column will only be displayed if the “Use Surplus” option is selected in PO Static Control. If a number is displayed, the cell will be yellow, and clicking it will display the warehouses and the amount of surplus stock in each. This screen allows the user to create a warehouse transfer ticket which will in turn reduce the recommended order quantity for this PO.

Lead Time – this is the current average lead time days for this item. Clicking on the cell will display the past receipts for this item and warehouse.

Weight and Ext. Weight – weight is displayed from the item and UM identified, and the extension is the total weight based on the quantity in the Purchase column. Clicking on the Weight cell will display the item’s units of measure.

On Order and Backorder – these are the current quantities on order and backordered for this item in this warehouse. Clicking the On Order cell displays all relevant order documents, and clicking on the Backordered cell displays all open documents for the item.

Order Pt, Line Pt, EOQ – these values are the current calculated replenishment values for this item. Additional details on these values are available on the “Show Math” screen.

AMU – AMU is the current calculated ADU times 30. FACTS calculates usage on a daily basis, but it is easier to understand when displayed as a “monthly” value. Clicking on this cell displays the usage summary view. Additional details about AMU are available on the “Show Math” screen.

Usage Mtd, Rank, Item Class, ARP – these fields are for reference only and display the item’s usage method, rank in the warehouse, item class, and normal ARP (useful if you are purchasing the item from an alternate source).

This Buyer’s Control Center Detail screen presents you with the list of items that “should” be ordered. “Should” of course is based on what you want to accomplish. For example, options at the top of the BCC detail screen allow you to exclude special order lines.

There is also an option for showing “Items Above Line Point” – this option will allow you to see all of the items in this ARP, even if they are not ready to be ordered. Items that are not ready to be ordered will be displayed with a Purchase Quantity of 0, but it can be useful to see all of the items in the ARP, and it allows you to investigate why FACTS is not recommending you purchase an item.

FACTS distinguishes between replenishment POs and emergency buy POs using a flag on the PO header. A replenishment PO is considered the normal buying cycle PO and is used to determine where you are in the review cycle for the vendor.

A PO that is for an emergency buy for select items would not be considered a replenishment PO and would not reset/restart the review cycle.

On the detail screen, we display the last replenishment PO number, its date, and how many days are remaining in the review cycle. Clicking the button beside the field will display the PO in PO Document Inquiry.

Surplus Returns Management

Return surplus management is now available in the Purchase Orders module for stocked, active, warehouse/items that are replenished if the Returns Tracking check box is selected on the Returns view of PO Static Control (POF980). These existing purchasing screens were used: Buyers Control Center Detail (POE405), (POE120), PO Receipt Entry (POE210), and Non-PO Receipt Entry (POE220). Reporting and inquiry options were also added. Long-term and short-term surplus alerts when warehouse/item quantities enter a surplus condition were included in this enhancement.

In the BCC, auto-creation of surplus return records via background processing occurs if the Auto Calculate Nightly for Returns checkboxes are checked in PO Static Control F/M. Otherwise, auto creation of any return surplus records in the BCC can only be initiated by clicking "Recalculate" in the Returns selection.

When any VRS line is created/entered within the BCC, if a free VRS document exists and is not tied to an existing CRS within that document already, then, that existing VRS document is added to rather than create a new VRS document for each VRS line entry.

To return surplus on the BCC Returns Detail (POE405) screen, click Return Surplus to import items from 1 of 6 options:

- 1 buyer long term surplus (buyer specific -always uses displayed buyer/whse/vendor specific)
- 2 buyer short term surplus (buyer specific -always uses displayed buyer/whse/vendor specific)
- 3 vendor long term surplus (not buyer specific -always uses displayed whse/vendor specific)
- 4 vendor short term surplus (not buyer specific -always uses displayed whse/vendor specific)
- 5 whse long term surplus (not buyer nor vendor specific -always uses displayed whse specific)
- 6 whse short term surplus (not buyer nor vendor specific -always uses displayed whse specific)

Click OK to display the Import Program POE151 with the surplus (per the number 1-6 selected) displayed.

Replenishment actions

Replenish Action allows you to select between Line Buy, Emergency Line Buy and Below Order Point Buy. Of these three options, only Line Buy is considered a replenishment PO.

A Line Buy is the default type of buy. When it's determined that it's time to place a PO (because there are worthy items below Order Point), a line buy will select all items that are below line point and recommend an order to bring them all back to line point.

The idea here is that since you're placing a PO anyway, you should go ahead and order anything you know you'll need for the review cycle.

An Emergency Line Buy is used to bring in only those items and quantities you need before it's time to place the next regular PO with this vendor. If the ARP's review cycle is 14 days, and it's been 10 days since the last PO, an emergency line buy will calculate the PO for the remaining 4 days – i.e. what you need to buy to cover the next 4 days.

This option will not be available if you are already past the review cycle for this ARP. It works simply by setting the Adjusted Review Cycle (we will discuss the adjusted review cycle more in the section on making targets) to the number of days remaining in the review cycle, and doing a standard line buy with the new review cycle.

The idea here is to place a small PO to take care of any current crises and avoid interrupting the review cycle. Buying for the remaining time in the review cycle hopefully prevents having to do another emergency buy in a couple of days.

A Below Order Point Buy is another type of emergency buy, but it limits the recommended order to only those items that are currently at or below order point. The downside of this is that an item that is just above order point and is expected to fall below order point tomorrow would be left off the PO, potentially causing you to have to do yet another emergency buy.

How much to order

Once it's determined that we need to order a particular item, the next question is "how much should we order?" The answer to this question brings in many different values and settings.

The BCC will do the math for you and present the recommended order quantity (ROQ) in the green Purchase column. To help you understand how FACTS came up with the ROQ, we have added the "Show Math" option. Click on any cell in the row you want to see the math for, and click the Show Math button. The display will include all of the information FACTS used to determine the amount to order.

It is important to become very familiar with this screen, as it will help reinforce what all the numbers mean and how they impact the final results. Here is a sample of the data that could be displayed in the Show Math screen:

Usage

Usage Method: T - Trend

Rank: A

Approved Replenishment Path (ARP): Vendor -> World Materials Handling Co. (V116)

Costing Method: LIFO

Record Establish Date: 08/06/2011

Usage Months: 6

-

Raw Trend Percent = (Bucket 3 / Bucket 1) * 100

Raw Trend Percent = (595 / 165) * 100

Raw Trend Percent: 360.61%

-

Prior Year Hit Dates: 05/31/2013 - 05/30/2014

Prior Year Hits Required: 2

Current Year Hit Dates: 05/31/2014 - 05/30/2015

Current Year Hits Required: 2

-

Prior and Current Year Hits achieved

Minimum Trend Percent: 10%

Maximum Trend Percent: 300%

-

Trend Dates: (12/01/2013 - 05/30/2014) vs. (12/01/2014 - 05/30/2015)

Trend Usage: 165 EA vs. 595 EA

Trend %: 300.00%

Trend Usage Dates: 05/31/2014 - 11/27/2014

Trend Usage: 390 EA

AMU = (Trend Usage * Trend%) / Usage Months

AMU = (390 * 300.00%) / 6 = 195.000 EA

Warehouse ADU: 6.5 EA

-

No Child Warehouses

-

Warehouse Total ADU: = Warehouse ADU + Accumulated Child Warehouse ADUs

Warehouse Total ADU: = 6.5 + 0

Warehouse Total ADU: 6.5 EA

Warehouse Total AMU = Total ADU * 30

Warehouse Total AMU = 6.5 * 30

Warehouse Total AMU: 195 EA

-

Threshold minimum not enforced

-

Effective ADU: 6.5 EA

Effective AMU: 195 EA

Order Point

Average Lead Time (LT): 81

Safety Stock Percent (SS%): 25

Safety Stock Days Supply (SSD) = LT * (SS% / 100)

SSD = 81 * (25/100) = 20.25 days

Average Daily Usage (ADU): 6.5 EA

-

Safety Stock Quantity (SSQ) = ADU * SSD

SSQ Calculated = 6.5 * 20.25 = 131.625 EA

Safety Stock Minimum Days: 3

Safety Stock Maximum Days: 5

Safety Stock Quantity Minimum = 3 * 6.5 = 20 EA

Safety Stock Quantity Maximum = 5 * 6.5 = 33 EA

Safety Stock Quantity: 33 EA

-

Calc OP = (LT * ADU) + SSQ

Calc OP = (81 * 6.5) + 33

Calc OP = 559.5 EA

-

Insufficient # shipments to utilize ASQ.

-

Insufficient # shipments to calculate 5-Hi ASQ.

-

Selecting Order Point...

Calculated: 560

CALC selected

OP: 560 EA

Line Point

Line Point = Order Point + (Review Cycle * ADU)

Line Point = 559.5 + (21 * 6.5)

Line Point: 696 EA

Economic Order Quantity (EOQ)

Review Cycle: 21 days

Average Daily Usage (ADU): 6.5 EA

Average Monthly Usage (AMU): 195 EA

Product Cost: 2.470/EA

R Cost: 5.000

K Cost%: 30

Calculated EOQ: $\text{sqr}((24 * \text{AMU} * \text{R_Cost}) / ((\text{K_Cost} / 100) * \text{Cost}))$

Calculated EOQ: $\text{sqr}((24 * 195 * 5.000) / ((30 / 100) * 2.470))$

Calculated EOQ: 178 EA

Minimum Days Supply (MinDS): 7

Minimum Supply EOQ = (MinDS * ADU)

Minimum Supply EOQ = (7 * 6.5) = 46 EA

Maximum Days Supply (MaxDS): 180

Maximum Supply EOQ = (MaxDS * ADU)

Maximum Supply EOQ = (180 * 6.5) = 1170 EA

Calculated EOQ: 178 EA

Effective EOQ: 178 EA

-

Recommended Order Quantity (ROQ)

Temp Line Point in use: 696 EA

Net Available: (On Hand - Committed - Backorder + On Order)

Net Available: (0 - 0 - 50 + 0) = -50 EA

Line Point: 696 EA

Up to Line Point: Line Point - Net Available

Up to Line Point = 696 - -50 = 746 EA

Comparing Up To Line Point to EOQ: Up To Line Point selected

Calculated ROQ: 746 EA

Effective ROQ: 746 EA

Rounding to 5 EA

Effective ROQ: 750 EA

Arriving at ROQ

The steps to arriving at the ROQ are:

- 1 calculate the correct usage
- 2 calculate the order point (which could be adjusted with an OP Adjuster)
- 3 calculate a good line point (which is dependent on the review cycle)
- 4 order enough to get to line point
- 5 increase to EOQ (explained below) if applicable
- 6 apply minimum order quantity
- 7 apply rounding

Economic order quantity (EOQ)

Economic order quantity is used to optimize the order quantity based on the cost to place an order (R-Cost) vs. the cost to carry the item (K-Cost). Since storage costs can vary greatly for inventory, K-Cost isn't uniform for all items. For example: a warehouse could hold a thousand times more

'USB flash drives' than it could 'Volkswagen Bug®' automobiles. The Bugs have a higher K-Cost than the flash drives.

EOQ answers the questions: what is mathematically the most cost-effective quantity to buy and should you buy larger quantities less frequently?

EOQ will never reduce the recommended order quantity, but it may increase the order quantity if it determined that it's better to put more on the shelf and order it less frequently.

The EOQ calculation has been established and proven over decades of use, but it requires accurate R-Cost and K-Cost values, which are set in Replenishment Parameter F/M.

EOQ may also be frozen for a warehouse/item, but if the frozen value is less than the calculated ROQ, the frozen EOQ will be ignored just like any EOQ would be ignored.

Minimum order quantity

A minimum order quantity can be established for an item or a warehouse/item and separately for a vendor ARP vs. a warehouse transfer ARP. For example, your vendor may require you buy at least 10 cases, but when transferring between warehouses, you may require a minimum transfer of 1 case.

If it's determined that an order should be placed and the calculated quantity is less than the minimum, it will be increased to the minimum.

Rounding

Rounding is the last step when determining the recommended order quantity. It is used to further optimize the order quantity. Rounding applies to both transfer and purchase orders and increases to the 'next' quantity/UM as needed.

Making buying targets

Buying targets are typically established by a vendor or a purchasing manager, and are used to help secure the lowest costs for shipping, the best pricing discounts, or best use of container space when placing orders. Buying targets are setup in Review Cycle Setup, and can be established for Cost, Weight and/or Cubes.

For buying targets to be used, the proper information must be maintained – i.e. accurate costs, weights and/or cubes must be entered for each item.

Buying targets are displayed in the BCC detail screen. As you make changes to the purchase quantities, etc., the buying targets are updated and displayed.

Making buying targets regularly depends on using proper review cycles and following good procedures. Buyers will often manually increase the purchase quantities of popular items when trying to make a buying target (i.e. "top off the truck"), but this causes a number of problems:

- These popular items are the ones you rely on to make your targets, and when you become overstocked on them, it's more difficult to make target the next time.
- You are ignoring items that are likely to drop below order point sooner than the popular items, making it more likely that you will have to do an emergency buy before the review cycle is through.

Instead of simply guessing what to order more of, use the "Adjusted Review Cycle" field on the BCC detail screen. Increasing the review cycle will recalculate all of the items in the ARP based on the new review cycle (i.e. it will suggest a line buy for more days). This will proportionately increase the quantities of all items in the ARP and potentially bring in items that were not even on the radar at the original review cycle.

Increase the adjusted review cycle until the buying target is reached.

By making targets this way, the next time you need to place an order for this ARP, the line will be balanced, and you will be less likely to need to go back to this vendor for an emergency buy.

Creating the PO

The last two values that you can review or set prior to creating the PO are the RM Contact (if you have Relationship Management) and the Freight amount.

Once you are satisfied with the items and quantities, simply select the Create PO button on the BCC detail screen. The PO will be created, and you will be given the opportunity to view/edit the PO. This allows you to make any additional changes prior to printing.

Chapter 4 Review cycle setup

Review Cycle Setup is used to establish review cycles and buying targets for all ARPs, both vendor and transfer.

This program will analyze all of the replenished items in the selected warehouse, and display all of the ARPs (both vendor and warehouse) represented. The ARP for each item is established in Warehouse/Item F/M.

For each ARP, we display the # of items in the warehouse that are replenished by that ARP, and the review cycle and buying targets established. If no review cycle is setup, an asterisk will appear on that line, indicating that the review cycle should be setup.

To view the items in the replenishment path you can select the Show Items button on the Setup Review Cycle screen or select View>Items in the ARP from the menu.

This program also allows you to establish buying targets for each ARP. Buying targets typically provide some cost benefit, e.g. filling a container or getting free shipping. They are also used for establishing proper review cycles.

Review cycles are automatically calculated nightly based on the preferred buying target and the current ADU for the items in the ARP. Automatically calculating the review cycle is especially beneficial for seasonal items. Leading up to the high season and during the peak of the season, you will be ordering more and are able to make buying targets more frequently, so your review cycle shortens. As the season comes to a close and during the off season, you order less, and it takes longer to make targets, causing the review cycle to lengthen.

The auto-calculation of review cycles only takes place for ARP with a preferred review cycle, and they always honor the minimum and maximum review cycles specified. If FACTS calculates a review cycle but has to use the minimum or maximum instead, an alert will be raised to the buyer.

When you have finished modifying review cycle information, you can select File>Create Missing Review Cycle Records to generate additional review cycles, or you can select File>Update Min/Max Review Cycle to update the review cycle minimum and maximum values based on your changes.

Surplus stock

When surplus stock is available in a warehouse for an item that is being replenished on a PO or a TR for another warehouse, the BCC will make the buyer aware of the presence of the surplus stock by changing the color of the Surplus cell to yellow. If the receiving warehouse already is in a “surplus” state, then the Surplus cell is colored red to indicate that the PO or transfer, if created/completed, would increase the warehouse’s surplus.

If you are not seeing the surplus, look at the “Use Surplus” setting in PO Static Control F/M – it must be selected to activate this functionality.

Clicking on the yellow or red **Surplus** cell presents you with a list of the alternate warehouses that have long- and short-term surplus and the quantities. From any non-highlighted warehouse with surplus, you can select the quantity and create the transfer immediately.

From this screen, you can select a warehouse and enter the quantity you want to be transferred from that warehouse. Once you have indicated the quantity to transfer, you can click the “Create Transfer” button to create the new transfer ticket.

This presents a screen where you can specify the ship via and enter appropriate document notes.

When you exit the screen, the BCC detail screen will be updated to reflect the new on order quantity.

Planned special order purchase orders (POs) and transfers (TRs)

Generally speaking, planned special order POs should no longer be used for stocked/replenished items. The BCC will automatically pick up backordered lines and special orders for both purchase orders and transfers, and the existence of planned special order POs can actually make the replenishment process more cumbersome.

For non-stocked items, planned special order POs can be helpful for some reporting, but are not required for the BCC.

For temporary items, planned special order POs should continue to be used.

It is recommended that you turn off planned special order PO and TR handling in SO Entry Options F/M (SOF915) for Stocked, Nonstocked and Uninventoried items.

Replenishment type planned special order POs and TRs are no longer used in FACTS.

There is one new use of planned special order TRs which are automatic:

- When a customer return must be sent to a consolidation warehouse for return to the vendor, a special order planned special order TR will be created.

Transfers

Warehouse transfers are handled by the BCC in the same way as purchases, with a few differences in the detail screen.

Included on the detail for transfers are some additional columns that can be helpful:

- From Avail – this is the current quantity available in the ‘From’ warehouse.
- From On Ord – this is the current quantity on order in the ‘From’ warehouse – i.e. the amount that should be coming in to the ‘From’ warehouse.
- From BackOrd – this is the current quantity backordered in the ‘From’ warehouse.

These values help you understand what you may be able to get from the DC. However, it’s important to request the amount you actually need, as the presence of backordered amounts in the DC will trigger the purchasers in the DC to order more.

If you reduce your transfer request to match what is available in the DC and lose sales as a result of having inadequate stock, it’s crucial that you record the lost sales – otherwise the DC never gets visibility that they failed to stock enough quantity, and the problem will not be corrected.

Warehouse/Item F/M

Most of the warehouse/item-specific settings are available on the Restocking tab of Warehouse/Item F/M.

The options to freeze controls and the T-Min values, while available here are actually stored in the Replenishment Parameters file and can be maintained from Replenishment Parameter F/M as well.

In general, freezing values should be avoided where possible, as frozen values are inflexible. There are some situations which require frozen values, but when possible, address the need by using T-Mins. When you do freeze a value, always enter a reasonable expiration date (meaning not too far in the future) and a memo explaining the purpose of the freeze.

In the past, it was common to freeze the rank of a new item, but we now have a T-Min Rank for new items which can be set in Replenishment Parameter F/M that will automatically be applied based on the Record Established Date on the Main tab of Warehouse/Item F/M. It is generally preferable to allow that T-Min Rank be applied as opposed to freezing the rank, but it is important that the record established date be accurate.

The usage method can be frozen. This prevents the seasonality analysis alert from analyzing the warehouse/item record. In cases where you are certain that the usage method is correct, it is actually helpful to freeze the usage method.

Safety stock can be set at multiple levels in Replenishment Parameter F/M – for example, it can be set at the vendor, purchase line, or item level – so it should be rare that you need to set it at the warehouse/item level. Before freezing safety stock at the warehouse/item level, seriously consider setting it at a higher level, as it will reduce maintenance tasks and result in more consistent safety stock across all of your items.

Note that you have access to Replenishment Parameter F/M and the Show Math options from the Restocking tab.

The Usage tab shows a monthly summary of the item's usage and provides direct access to Usage Review:

The Receipts tab shows all receipts of all types and provides direct access to Lead Time Review:

The options for T-Max Line Point, minimum order quantity and rounding order quantities are only available from Replenishment Parameter F/M.

There are now many ways to update the warehouse/item settings, including Replenishment Parameter F/M, Process Warehouse Item Records (which utilizes Microsoft Excel) and Transfer/Change Item Codes.

Min/Max technique

The option of using Min/Max instead of OP/LP no longer exists in FACTS.

Min/Max is a static, inflexible approach to replenishment. In cases where you absolutely must lock down stocking quantities, you can simulate Min/Max by setting a T-Min Order Point to the Min and T-Max Line Point to the Max.

We have provided data conversion options when converting from pre-FACTS 7.8, and these options are presented to the user during the data conversion:

- Convert frozen minimums to T-Min Order Point (recommended)
- Convert frozen maximums to frozen Line Point (not recommended)

Lead time review

As discussed earlier, it is crucial that the average lead time (LT) be an accurate representation of the vendor or distribution center's actual performance. The average lead time is calculated by looking at actual receipts, based on the settings in Replenishment Parameter F/M, Receipts Used to Calculate Lead Time, and subject to the minimum and maximums for vendor or transfer ARPs.

Lead Time Review provides access to the receipts for a warehouse/item and allows you to directly impact them in several ways.

"Abnormal" refers to a lead time that was outside established parameters – i.e. it was unusually long or short. FACTS automatically sets the abnormal flag as receipts are processed, and this flag is useful during lead time review to quickly see questionable receipts.

A receipt may be abnormal and also correct. The fact that it's flagged as abnormal is not an automatic indication that it should be changed.

"Ignore" refers to a lead time that is excluded from the average lead time calculation. This flag is never automatically set by FACTS. It can be set by the user when entering or receiving the PO, and it can be set from within lead time review.

When a receipt was intentionally shipped differently than normal (e.g. it was expedited or requested to be delayed), setting it to Ignore is one option to ensure that it doesn't adversely impact the average lead time calculation.

Another option for handling lead times that are not wanted in the LT calculation is to qualify the lead time. When you enter a qualified lead time, you are indicating that FACTS should use the receipt in the LT calculation, but it should use the number of days you specify as the lead time. This can be useful when you have relatively few receipts for this ARP.

Based on the settings in Replenishment Parameter F/M, the average lead time will not use receipts older than a specified number of months, so entering a qualified lead time instead of ignoring it, can help ensure the average LT is being updated.

There are many reasons why actual lead times may be inaccurate, including:

- When a product was shipped using a faster shipping method to expedite delivery on a specific order
- When stock is purchased as a "pre-buy" to take advantage of early purchase discounts, but shipment is delayed
- When stock is received in the system long after it actually showed up in the warehouse (delay in data entry)

Lead Time Review

The “Show Lead Time” drop box limits which receipts are displayed. The default is to show only receipts with abnormal lead times, but you can also select “Ignore” (only show receipts that have been excluded from the LT calculation) or “All”.

Editing a line allows you to change the abnormal, ignore and qualified fields.

Usage review

The initial screen presented by Usage Review is a summary view for the selected warehouse and item. It presents a daily view of usages beginning with the date specified and going back the number of days selected.

This view provides a high-level perspective of the usage, including rolling 30-day usage values and the “normal” range based on the setting in Replenishment Parameter F/M. It allows you to see where spikes or troughs in usage occur.

You cannot edit usage from this summary screen. FACTS maintains usage values at the individual document level, not in monthly or even daily buckets.

To make changes to specific documents, you must proceed to the detail screen by drilling down on one of the lines on the summary screen.

Documents shown in the Usage Review Detail screen can be flagged to not update usage, and you can change the usage date or enter a qualified usage value different from the actual usage.

There are many filter options available to limit which documents are displayed:

Beginning Date defaults to the date you drilled down on from the summary screen. Documents with usage on that date and earlier (for the number of days selected) will be displayed.

The “Show Usage” drop box will limit the display to document with the Update Usage flag set to the same value as the drop box. That can be helpful if you need to find a document that was improperly flagged not to update usage.

Note: there is a flag in order entry and lost sale entry for “Exceptional Sale” – if Exceptional Sale is set to Yes, the Update Usage flag is set to No. If Exceptional Sale is No, Update Usage will be Yes.

The “Type” drop box limits the documents displayed to the selected document type.

To explain the “For Usage Warehouse” drop box, we first need to discuss the concept of “Rolled-Up Usage”.

Rolled-up usage

When a warehouse is a distribution center (DC) and replenishes another warehouse, the DC warehouse must stock for and purchase for itself (if it directly services customers) and for each warehouse it replenishes (and any warehouses those warehouses replenish, and so on). These complex ARPs require FACTS to analyze the usage all the way “down the line”.

The summary screen of Usage Review displays the total “rolled-up” usage for the selected warehouse and all warehouses “down the line” from it.

However, when going to the detail screen, the individual documents are displayed one warehouse at a time. The “For Usage Warehouse” drop box will include all of the warehouses “down the line” and will default to the originally-selected warehouse.

When the DC warehouse is selected in the drop-box, only documents shipped directly from the DC will be displayed. Selecting one of the other warehouses will display the documents that shipped from that warehouse.

Note also that warehouse transfers are never counted as usage and are never displayed in Usage Review.

Average Daily Usage (ADU) and Average Monthly Usage (AMU) are calculated daily by a process that typically runs at night, so changes to the usage values on documents will not be reflected in these numbers until that process is completed. However, you can force these values to be recalculated for the selected warehouse/item by selecting the “Recalculate Usage” button from the summary screen.

Purchasing lines

A purchasing line is a group of items that are purchased together from a vendor.

An example of when a purchasing line (PL) may be required would be a vendor that sells heavy equipment and spare parts for the equipment. The vendor may not allow you to put equipment and parts on the same PO, so they can be separated into different purchasing lines.

Another example could be any vendor with multiple departments which require separate POs.

Purchase Line Entry allows you to setup the purchasing line, assign it to a vendor and add items to it. All of the items on a PL must have the primary vendor assigned to the purchasing line.

You can also put an item on a PL from Item F/M.

Once you have established a purchasing line, it will be available in all of the replenishment activities, including the buyer’s control center, review cycle setup, replenishment parameter F/M, exception control center, and many reports.

Most replenishment parameters can be set at the purchasing line level, allowing you to control the replenishment behavior of items in one purchasing line differently from those in another.

Purchasing lines are not required, and you can have some items from a vendor be in a purchasing line while others from the same vendor are not in any purchasing line.

A recalculate in the BCC will separate purchasing lines, and the results cannot at this time be combined into a single PO, but you are allowed to manually add an item from one PL onto the BCC detail screen for a different PL or even a different vendor. Note that unless the Override checkbox is selected, a subsequent recalculate operation will remove the manually-added item from the BCC detail screen.

Exception Control Center

The Exception Control Center (ECC) is a crucial part of the FACTS inventory management system and must be consistently reviewed by all buyers.

There are a series of alerts that FACTS looks for and notifies buyers about via the ECC, and missing these alerts not only eliminates many of the benefits of the proactive features of FACTS, but it can cause problems in some cases.

In Replenishment Parameter F/M, many of the settings have expiration dates. When those dates pass, the setting is removed. The only way the buyer knows that the expiration date is approaching is via the ECC.

The ECC automatically delivers alerts to buyers based on which ARPs they are responsible for.

Many of the alerts are dependent on settings in Replenishment Parameter F/M or other places (noted in the detailed listing of the available alerts).

Each time the user opens the ECC, all open alerts are validated to be sure they still apply. If the alert is obsolete, it is automatically removed.

Furthermore, most alerts have a pre-established “re-raise” interval. Even if an alert was deleted by the user, if the condition that triggered the alert remains unresolved after the re-raise interval number of days, it will be redisplayed and moved to the top of the list.

Using the ECC is simply a matter of reviewing the alerts and responding to them or deleting them. You should always delete alerts that you have addressed or have acknowledged but do not need to do anything about. Keeping this ECC list clean and small helps ensure that you notice important issues as they arise. If the list gets lengthy, it’s more likely that you will miss something or stop reviewing the list altogether.

The ECC includes a “Close All” button that will close (delete) all of the alerts currently displayed at the time Close All is selected.

The filters at the top of the ECC allow you to limit the results in many ways. Additionally, you can re-sort the list by any of the columns – the “Notice” column is designed to allow sorting in order of severity. By default, the items are sorted by descending date, with the most recent issues appearing at the top of the list.

Buyers should typically spend time in the ECC every day looking for and addressing issues as they arise.

As an alternative to the ECC, buyers can choose to have exceptions delivered via email if they have the Internet Toolkit licensed. Buyer Code F/M has the option to deliver alerts to the ECC, Email or Both.

If a buyer chooses to have exceptions delivered to email, they will lose benefits like automatic removal of obsolete items, filtering, etc., and they will have to organize the exceptions in their email folders. To facilitate organization, all emails generated for alerts have consistent subject lines.

If you have specific alerts that are highly important to you, you can subscribe to them directly via “My Alerts” in Settings off the main FACTS menu. With this approach you can subscribe to a few alerts via email, with all alerts going to the ECC.

Review the details of the available alerts later in this document.

Process Warehouse Item Records

Process Warehouse Item Records is a new way to handle mass updates to settings in warehouse/item F/M. It utilizes an Excel spreadsheet and requires Excel 2010 or higher.

To use Process Warehouse Item Records, the user must have a home directory setup in User Code F/M and have Excel 2010 installed on their workstation.

It is important to understand how process warehouse item records (PWIR) works and what it does, as it is possible to use it improperly and caused unintended problems.

Items are exported to a spreadsheet where they can be edited and then imported back into FACTS. When the import takes place, only values that were changed on the spreadsheet are imported, but if a value was changed in FACTS after the export but before the import, the import will import the value from the spreadsheet, overwriting the change that was made in FACTS.

To limit the possibility of conflicting changes, when an export is done, the spreadsheet should not be edited over long periods of time. The desired changes should be made and re-imported quickly. Furthermore, it is helpful to limit the items exported and imported, for both speed and limiting unwanted changes.

When items are exported to a spreadsheet, they are flagged as pending review, and the user who exported the item is captured. The items will remain flagged as “pending review” until they are imported or the pending flag is cleared.

When exporting items, you can select to only export items that are not in review (see the Review Status drop box). This is intended to limit the possibility of multiple users exporting the same item to different spreadsheets and stepping on each other’s changes.

The options for Action are: Export, Import, and Clear Pending.

When importing, it will import the spreadsheet you currently have open in Excel, and it will only import the visible lines, meaning you can use the Excel filters to only show the lines you want to import.

When exporting and when clearing pending, all of the filters on the PWIR screen are used to determine which items are exported or cleared.

The options for Records are: Only Existing, Only New, and New & Existing

This is a very important field because PWIR can be used to create new warehouse/item records as well as edit existing ones, and you can create new records accidentally if you are not paying attention.

“Only Existing” means export items that are already setup in warehouse/item F/M for the selected warehouse.

“Only New” means export items that are setup in the “Warehouse to check” warehouse but are not in the selected warehouse. These items, when imported, will create NEW warehouse/item records.

All of the other fields except Export File Name and Overwrite are filters for selecting which items to export. All import filtering is done on the spreadsheet itself.

The spreadsheet that is created is a copy of the standard spreadsheet included with FACTS, and it is version controlled. If an export is made to one version of the spreadsheet, and changes are made to the PWIR program that require a newer version, the prior spreadsheet will not be able to be imported.

PO Static Control F/M

PO Static Control has several settings that are important to the implementation of FACTS replenishment.

First is the Use Surplus option on the General tab. Selecting this causes the BCC to automatically look for and display available surplus stock in other warehouses. If you have a single-warehouse implementation, this should be turned off.

The other important set of values is on the Buyers Control Center tab.

The color coding and prioritization of replenishment actions in the BCC is controlled by these settings. The section on the BCC above explains what constitutes Critical, NPNA, etc. Refer to that section for a thorough description of those terms.

When FACTS is doing a “recalculate” function in the BCC, it evaluates each item in the ARP and selects for it the highest value it achieves based on the table above. If the item has some backorders, is also Critical, and is an A-ranked item, its highest category is Backorder, and its value is 80.

The BCC then accumulates the number of items in each category for display on the BCC summary screen, and assigns the highest value of any items in the ARP to the ARP itself. This determines the color coding of the ARP line and the relative position of the line in the list.

On the detail screen, each item’s value is used to determine its position in the grid and its highlight color.

As you can see above, the relative importance of an A-ranked item is greater than a C, D or E-ranked item. This relative importance can be adjusted and tweaked to meet your specific needs.

For example, the chart above indicates that an A-ranked item that is NPNA gets a priority of 70, which is equivalent to a special order C-ranked item. If you considered all special orders of any rank to be the same level of importance, you could change the special order values for C, D and E ranks to 90.

Chapter 5 Replenishment parameters

Overview

Replenishment Parameters F/M encompasses the parameter settings necessary to utilize many of the features of FACTS' advanced inventory management. The inventory and replenishment settings can be established at the company, warehouse, from warehouse, vendor, purchasing line, and/or item levels. When FACTS needs to access one of the parameters, it considers what company, warehouse, from warehouse, vendor, purchasing line and item the parameter is needed for and selects the setting to use based on the most specific one available.

The hierarchy, listed from least to most specific is:

- Company
- Warehouse
- Vendor
- Purchasing Line
- Item
- Warehouse / Item
- From Warehouse (for Transfer Review Cycle only)

It is helpful to set parameters at the least specific hierarchy as possible, as this reduces the maintenance effort required. For example, if you set safety stock at the company level, it will apply to all items in all warehouses, and changing just that parameter changes the safety stock for all items.

If you then determine that a different safety stock setting is needed for the items from a specific vendor, you can create a safety stock parameter for that vendor. In that case, all items from that vendor will get the vendor-specific setting, and all other items will get the company setting.

Not all parameters are allowed to be set at any and all levels. For example, setting a T-Min Order Point is something that can only be done at the most specific, warehouse-item level.

Creating and editing parameters

Replenishment Parameter Maintenance provides access to all of the available parameter settings at all of the hierarchy levels (referred to as the Scope).

Replenishment Parameter Maintenance organizes the available parameters into categories. By default, all categories are displayed. By choosing a specific category in the Category drop box, the display will be limited to only parameters in that category.

The fields for Warehouse, From Whse, Vendor, Purchasing Line and Item are used to control the scope of the parameters entered. Notice the “Scope” section of the line entry and the “Change Scope” button. When editing a parameter, you can set the scope of the parameter by selecting Change Scope. The scopes that are available for any particular parameter are determined by what is valid for the parameter and by which fields (Warehouse, Vendor, etc.) you have entered values for.

For example, if you entered warehouse 01 in the Warehouse field, the parameters that are allowed to be set at the warehouse level will be able to have the warehouse scope selected. If the warehouse field is blank, none of the parameters will allow the warehouse scope to be selected.

When setting company-level parameters, all of the fields can be left blank.

To better explain the relationship between the fields and the scope, consider the situation where warehouse 01 and Item I100 are entered, and we have selected the Safety Stock, Vendor ARP Parameter.

The line values displayed are type percentage, the values are 50, 25, 30, 35, 40 and 45, and that none of the checkboxes under “Scope” are checked. The fact that none of the scope selections are checked indicates that the safety stock parameters displayed are company-level parameters.

Editing the line and clicking the “Scope” button presents the following options: Company, Warehouse, Item and Warehouse/Item. The options are all available because this parameter allows those scopes and because values have been entered for warehouse and item.

If values had been entered for Vendor and Purchasing Line, additional scope options would be available in this window.

Selecting Warehouse for the scope and changing the safety stock parameters creates a new parameter at the warehouse level, leaving the company-level parameters unchanged. Before the record is saved, you will be prompted to verify that you intend to change to a more specific scope.

If the Warehouse scope checkbox is selected, it indicates that the parameters displayed are at the warehouse level.

The “Show” drop box is set to Summary, which tells RPM to display the parameter that would be the effective parameter given the values entered in the fields (in this case warehouse 01 and item I100).

Changing the Show drop box to Detail and clearing the Warehouse and Item fields will display all of the parameters entered for safety stock for any level.

This indicates that there are two parameters entered for safety stock – a company level parameter and an override for warehouse 01.

Using these techniques, you can enter parameters at any of the available scopes and review all of the parameters that are on file. Deleting parameters at various levels is simply a matter of using the delete line option.

Available parameters

We will now review all of the available parameters in the order they are presented in Replenishment Parameter F/M.

Alert on Non-Replenished Items with Hits

The term “hits” refers to an item appearing on a sales order, transfer or other document that drives activity in the warehouse.

If an item is set not to be replenished, it may be important to know that an increased level of activity is occurring with this item so it can be reevaluated. If an increased level of activity is occurring on a non-replenished item, it may be desirable to start stocking the item.

This alert can be set at any of the levels in the replenishment parameter hierarchy other than From Warehouse.

Alert on Non-Replenished Items with Hits	Indicates whether an alert should be generated
Number of Hits	The # of document hits needed for an alert to be raised
Number of Months	The # months back to look for hits
Within Last	The # of days that the last hit must have been within

If an item that is not replenished has the indicated # of document hits in the # months specified (going back from today) and the most recent hit was within the given # of days, an alert will be raised.

Alert on Expiring Parameters

Most of the parameters, when set at a scope that is more specific than company level, will require entry of an expiration date. FACTS will generate an alert to the responsible buyer before the parameter expires, giving the buyer the opportunity to review whether the parameter should be extended, adjusted or allowed to expire.

Once the expiration date has been reached for a parameter, the parameter is removed.

This parameter can only be set at the company level.

Alert on Expiring Parameters	Indicates whether an alert should be raised prior to a parameter expiring
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Days Before Expiration	The number of days prior to the expiration to raise the alert
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Usage alert settings

FACTS flags usage as abnormally high or low based on the setting in this parameter. The summary screen of Usage Review displays whether the 30-day usage is high or low.

The last 30 days of usage is compared to the prior number of months' usage indicated by this parameter. The prior months' usage is then multiplied by the multipliers indicated to determine whether the last 30 days usage should be considered high or low.

Example: if the usage months was 3, high usage multiplier was 1.5 and low usage multiplier was .5, if the current month's usage was higher than the sum of the prior 3 months' usage times 1.5, the current month would be considered hi usage. If it was lower than the prior 3 months times .5, it would be considered low.

Usage Months	The number of months usage to use as the comparison usage
High Usage Multiplier	The value for the multiplier when calculating high usage.
Low Usage Multiplier	The value for the multiplier when calculating low usage.

Alert on Product Arriving Too Early/Too Late

This alert is referred to as the "timeline analysis." It provides the buyer with advance notice that a PO or transfer will not arrive before a stockout is likely to occur or if, when the goods arrive, there will be a serious overstock of the item.

Providing that advance notice gives the buyer options to address the issues before they cause potentially serious consequences like losing customers.

The calculations are based on current stocking levels, average daily usage of the items and expected delivery dates of the PO or transfer.

If, based on those values, the item is expected to be stocked out for "Too Late Days" or more when the PO or transfer arrives, an alert will be generated.

For "Too Early Days", if there will be that many days' supply or more on hand when the PO or transfer arrives, an alert will be raised.

Alert on Product to Arriving Too Early/Too Late	Indicates whether an alert should be raised when a product is expected to arrive too early or late
Too Early Days	The expected number of days' supply that will trigger an alert
Too Late Days	The number of days of expected stockout that will trigger an alert

Alert on Calculated VS. Frozen Order Point / Line Point / EOQ Variance

A warehouse/item can have its Order Point, Line Point and/or EOQ set and frozen with an expiration date for the freeze. Freezes can be dangerous because they are set at a specific point in time, and while the frozen values may have been reasonable at that time, things can change.

For example, key customers may discontinue purchasing an item, but the frozen values have the buyer continuing to stock unnecessarily high quantities. Conversely, sales for an item may accelerate, but the frozen values are stuck at low values causing frequent stockouts.

To help alleviate these issues, you can setup the parameters for this alert.

FACTS automatically recalculates the replenishment controls each day. In the case of items with frozen controls, the calculated values are simply ignored in favor of the frozen values. FACTS will check the calculated values against the frozen values, and if they deviate by more than the limits established in this parameter, an alert will be sent to the responsible buyer so they can evaluate whether the frozen value is still appropriate.

Alert on Variances Exceeding These Limits	Indicates whether an alert should be raised when a variance exceeds the specified limits
<p>Variance Exceeding values can be entered in Units, Cost, and/or Percent.</p> <p>Variance limits can be entered separately for Order Point, Line Point and/or EOQ.</p> <p>If the variance between the Calculated versus Frozen value exceeds any one of the values, an alert will be raised. If a value is left blank, it is ignored for purposes of raising an alert.</p>	
Units	<p>OP, LP and EOQ are all unit quantity references. If the frozen value is higher or lower than the calculated value by the entered number of units, an alert will be raised.</p> <p>Note that frozen values are entered and stored in the item's stocking UM, but the units for the alert are always considered to be in smallest UM.</p>
Percentage	If the frozen value is the entered percentage higher or lower than the calculated value, an alert will be raised.
Cost	The difference in the frozen units and the calculated units will be multiplied by the item's cost, and if the total cost difference is higher than the entered cost, an alert will be raised.

Alert on Unconfirmed Purchase Orders

Many distributors request that the vendor confirm receipt of all purchase orders. This process may create some additional administrative work, but a lost purchase order that isn't discovered for many days can cause stockouts and angry (or lost) customers.

Purchase Order Entry had a field for indicating that the purchase order has been confirmed by the vendor. It is manually updated, and use of it is optional.

If you select this setting, buyers will receive an alert if a PO for a vendor they are responsible for remains unconfirmed after the number of days specified.

This parameter can be set at the company, warehouse, vendor, and/or purchasing line levels.

Alert on Unconfirmed Purchase Orders	Indicates whether an alert should be raised for purchase orders that have not been confirmed in a specified number of days.
Number of Days	If the PO remains unconfirmed this many days after it was printed, an alert will be generated.

Alert for Purchase Orders Past Promise Date

There are many reasons vendor might be late delivering a purchase order, and the sooner your buyer is made aware of the problem, the more likely you will be able to resolve the situation before it becomes a crisis.

This parameter indicates that if a PO is more than the specified number of days past the promise date and has not been received, an alert should be raised to the buyer.

This parameter can be set at the company, warehouse, vendor and/or purchasing line level.

Alert on Purchase Orders Past Promise Date	Indicates whether an alert should be raised for purchase orders that have exceeded their promise date.
Number of Days	The number of days past the promise date for a purchase order to generate an alert.

Seasonality Analysis Alert

Seasonality analysis will look at a full year's activity, and if the activity is concentrated in only a few months, it will be considered seasonal. What the level of concentration is and how many months it is concentrated in are selected in this parameter.

For example, some may consider an item seasonal if 75% of the activity occurs in a 3 month period. Others may consider it seasonal if 80% occurs in a 4 months period.

In either case, items with too few total hits can be excluded from the analysis, as can items that have not been setup in the warehouse for a long enough period of time.

In warehouse/item f/m, the Usage Type is selected and may be frozen. This field can be set to Trend, which is how FACTS flags an item as seasonal.

If seasonality analysis determines that the usage type is set incorrectly, an alert will be generated.

If the usage type is frozen, the item will not be analyzed. If seasonality analysis raises an alert, but you are certain the usage type is correct, simply freeze the usage type so the alert will not be raised in the future.

This parameter can only be set at the company level.

Perform Seasonality Analysis	Whether the analysis should be performed at all.
Percentage of Hits	The percentage of hits that must occur in the specified number of months for the item to be considered seasonal
Months of Hits	The number of months that must contain the entered percentage of hits for the item to be considered seasonal
Months Established Hits	New or “young” items will not have enough history for seasonality analysis to be meaningful. Typically 18 or more months would be required.
Minimum Hits	If an item has very few hits in the past year, the seasonality analysis will not be meaningful.

Vendor or Transfer Review Cycle Outside of Limits Alert

When a review cycle that has a preferred target base of Cost, Weight or Cubes, FACTS automatically recalculates the review cycle. When that calculation is performed, if the calculated review cycle is lower than the minimum or higher than the maximum review cycle by the number of days or by the percentage indicated on this parameter, an alert will be raised. The Review Cycle's preferred target, the target value and the minimum and maximum review cycles are set in Review Cycle Setup (ICE560).

This parameter can be set at the company, warehouse, vendor and/or purchasing line level.

Alert When Review Cycle Exceeds These Limits	Indicates whether to raise an alert when the review cycle value deviates from the minimum and maximums entered for the alert.
Minimum Days	If the calculated review cycle is at least this many days below the minimum review cycle, an alert will be raised.
Maximum Days	If the calculated review cycle is at least this many days above the maximum review cycle, an alert will be raised.
Minimum Percent	If the calculated review cycle is below the minimum review cycle by at least this percentage, an alert will be raised.
Maximum Percent	If the calculated review cycle is above the

	maximum review cycle by at least this percentage, an alert will be raised.
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Threshold Minimum Usage Adjuster

Usage is the most basic measurement in the replenishment process, and having good usage values is crucial. There are several situations in which the actual usage number can produce distorted average usage values, and T-Min Usage is one way these can be addressed.

When new items are setup to be stocked in a warehouse, there is usually an expected or projected sales/usage amount, and a time period in which the item is expected to reach those numbers. During that start-up time, it can be helpful to have the system act as if it had at least that amount of usage.

Also, some items experience very sporadic usage throughout the year. They aren't seasonal items, but the usage is unpredictable and may go months with no sales, then have significant sales. These items can be managed by establishing a T-Min usage.

As described above, a T-Min value will be ignored if the actual usage is higher than it, allowing items that exceed expectations to be unhindered by the T-Min value.

T-Min Usage can only be set at the warehouse/item level.

T-Min Usage Quantity	The quantity to use as the minimum monthly usage.
Expiration Date	All T-Min Usage entries must have an expiration date.

Trending parameters and adjusters

A trend % of 100 means that the current year is exactly the same as last year.

When calculating average usage for a Trend type item, it can be helpful to establish some limits using the values in this parameter set.

Generally, at the beginning and end of the sales season, small differences in transactions from one year to the next can cause unreasonable trends to be calculated.

When either the minimum or maximum trend % is applied, an alert will be raised to the appropriate buyer so they can verify, if desired, that the data is accurate.

The prior and current year hits values must be achieved before a trend % will be applied. This prevents the minimum and maximum trend %'s from being applied when statistically meaningless numbers are being used.

Not applying a trend % is the same as using a trend % of 100.

This parameter can be set at any level.

Apply seasonal trend minimum and maximum	Whether the minimum or maximum should be applied
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Minimum Trend %	The smallest trend % to allow
Maximum Trend %	The largest trend % to allow
Prior Year Hits	The minimum number of hits the item must have in the prior year before any trend % will be applied
Current Year Hits	The minimum number of hits the item must have in the current year before any trend % will be applied

Usage Months for Seasonal and Non Seasonal

When calculating average usage, the time period that is analyzed is set by these two parameters.

When you use fewer months of activity to calculate average usage, your replenishment will respond more quickly to changes in sales. But using too few months will result in statistically questionable results.

So a balance should be struck so you have enough data to make the averages meaningful, but you don't use data that is older than necessary.

To find this balance, we allow the number of months to be based on the item's rank, which is a measure of the relative amount of activity the item experiences.

Typically the fastest-moving items will use 3 months of usage, and the slowest will use 6.

You are also able to use a different number of months for seasonal vs. non-seasonal items.

Both of these parameters can be set at the company and/or warehouse levels.

Rank A	The number of months to analyze when calculating average usage for an A ranked item.
Rank B	The number of months to analyze when calculating average usage for a B ranked item.
Rank C	The number of months to analyze when calculating average usage for a C ranked item.
Rank D	The number of months to analyze when calculating average usage for a D ranked item.
Rank E	The number of months to analyze when calculating average usage for an E ranked item.

Seasonal Lead time Advance for Transfer and Vendor ARPs

Seasonal/trend items follow the math described in an earlier section of this document. A trend % is first determined by analyzing the existing usage values leading up to today for this year vs. last year, then that trend % is applied to last year's usage for the upcoming time period.

For items with long lead times, it is important to offset the “upcoming time period” by the lead time to account for the fact that you are actually buying for the time period when the items would actually be received. This parameter tells FACTS replenishment whether or not to offset by the lead time.

For example, if today was January 1, 2015, and the item had a 30-day lead time and 3-month usage setting: with this parameter NOT set, the trend % would be applied to the usage from January 1, 2014 to March 31, 2014; with this parameter SET, the trend % would be applied to the usage from January 31, 2014 – April 30, 2014.

This parameter only applies to items with usage type = Trend.

Apply	Yes or No to indicate whether to Apply lead time to the usage period start date.
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Rank

Ranking is a method of classifying products based on their relative activity to other products in your warehouse. Activity is measured by document hits - the number of times a product appears on a sales order, warehouse transfer, or lost business transaction, regardless of quantity or cost.

The products with the most activity are ranked as A items, and products with fewer hits are ranked as B, C, D, and E, based on how your ranking levels are defined.

Rank parameters

Rank is calculated based on the rank type and the associated values in this parameter.

The Percentage type will calculate rank by adding up all of the hits for all of the items in the warehouse over the number of months specified. Then ranks are established by establishing break points based on the percentages assigned.

For example, if A is 80%, we would calculate how many hits is 80% of all of the hits for all items. Listing all items, with the most hits at the top and the least at the bottom, we accumulate total hits starting from the top of the list, going down. When the accumulated hits reaches 80% of all hits, all items above that point and any additional items with the same number of hits below that point, will be A items.

That process is continued for the remaining items in the warehouse.

The Hits type is a straight number of hits over the number of months selected. All items with the number of hits or higher are given the indicated rank.

Most companies use the Percentage type calculation for rank.

This parameter can be set at the company and/or warehouse level.

Rank Type	Select Percentage or Hits type ranking
Months Used to Calculate Rank	Number of months of activity analyzed when calculating rank

Rank A	The number of hits or the percentage of hits for an item to be an A ranked item
Rank B	The number of hits or the percentage of hits for an item to be a B ranked item
Rank C	The number of hits or the percentage of hits for an item to be a C ranked item
Rank D	The number of hits or the percentage of hits for an item to be an D ranked item
Rank E	The number of hits or the percentage of hits for an item to be an E ranked item

Threshold Minimum Rank for New Items

This setting applies to all new replenished items setup in a warehouse. Based on the record established date in the warehouse/item f/m, for the first number of months specified in this parameter, the item's rank will not fall below the T-Min rank.

During the first given number of months, if the item's calculated rank is higher than the T-Min, the calculated rank will be used.

This prevents new items with very little usage from falling immediately to an E rank, which would cause replenishment to stop.

After the given number of months, the item's calculated rank will not be subject to the minimum.

This parameter can be set at the company and/or warehouse level.

Minimum Rank	The minimum rank that will be used new replenished items in the warehouse
Number of months	The number of months the minimum rank will be used

Safety Stock

Safety stock, also referred to as safety allowance, is the stock you carry to account for ordering delays, late shipments, unpredictable lead times, slow receiving, etc. Proper safety stock values can protect against stockouts without bloating inventory.

If safety stock is never used, you are likely carrying too much of it. If you are experiencing many stockouts or are frequently having to make emergency buys, safety stock may be too low.

In normal environments, you will occasionally dip into safety stock and will occasionally require emergency buys or have stockouts.

The more consistent you are with placing orders on time, following up with vendors to ensure they received your purchase order, receiving items as they arrive, etc., the more likely you can lower safety stock.

Furthermore, the more accurate you are with recording usage and lost sales, the more accurate your inventory amounts will be, resulting in fewer stockouts.

Vendor and Transfer ARP Safety Stock Parameters

Safety stock parameters can be set separately for items replenished from a vendor (Vendor ARP) and items replenished from a distribution center warehouse (Transfer ARP), reflecting the fact that you have more control over the performance of your own DC than that of your vendors.

Safety stock type controls how safety stock is calculated, and it can be set to either Percentage of Lead Time or Number of Days. Both settings result in a number of days supply of safety stock.

Percentage means to take the average lead time for the item, then take the given % of that lead time. For example, if the lead time is 10 days, and you are using 30%, the safety stock will be calculated at 3 days' supply (ADU) of the item.

These parameters can be set at the company, to warehouse, from warehouse (for Transfer ARP), vendor and/or purchasing line (for Vendor ARP), item, and/or warehouse item levels, allowing you very tight control over safety stock levels.

Safety Stock Type	Indicates either Days or Percentage
Default Value	The default number of days or percentage safety stock if rank is not known
Rank A	The # days or percentage used for A ranked items
Rank B	The # days or percentage used for B ranked items
Rank C	The # days or percentage used for C ranked items
Rank D	The # days or percentage used for D ranked items
Rank E	The # days or percentage used for E ranked items

Vendor and Transfer ARP Safety Stock Adjusters

Because safety stock can be a function of lead time and is based on ADU, unreasonably high or low safety stock values can be calculated. To prevent very large or meaninglessly low safety stock values, you can establish minimum and maximum days of safety stock, by item rank, with these parameters.

These parameters can be set at the company, to warehouse, from warehouse (for Transfer ARP), vendor and/or purchasing line (for Vendor ARP), item, and/or warehouse item levels

Minimum Days (Ranks A – E)	The minimum Safety Stock days
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Maximum Days (Ranks A – E)	The maximum Safety Stock days
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Average Shipment Quantity (ASQ) Order Point Adjuster

ASQ is used to adjust order point to account for some usage/sales patterns which normal usage math fails to address. If you have few customers buying an item infrequently but in large quantities, average usage may calculate an order point that will never put enough stock on the shelf to service your larger orders.

ASQ increases the order point to the average of all your shipments during the specified number of months (in the ASQ / Five Hi Months parameter) to ensure you order enough to fully service your large orders.

5-Hi is a more specific/targeted version of ASQ. When working through challenging sales patterns, try ASQ first, then implement 5-Hi if you are still not getting the order quantities you need to service your larger customers.

ASQ and 5-Hi should typically be implemented at lower levels on the hierarchy to account for usage patterns for specific items or groups of items. These settings are not typically intended to be implemented for an entire warehouse, for example.

Use ASQ	Indicates whether to use the ASQ adjuster
Include Transfers in ASQ	Indicates whether warehouse transfer shipment quantities should be included in the ASQ calculations. For central distribution centers, this should be set to Yes.
ASQ maximum dollar increase	If entered and the cost of the increase in order point for ASQ exceeds this maximum, ASQ will not be used.
ASQ minimum hits	The # of document hits required before ASQ can be calculated

Five-high ASQ order point adjuster

Five Hi is used to adjust order point to account for some usage/sales patterns which normal usage math fails to address. If you have many customers buying an item in relatively low quantities, and very few customers buying that item in very large quantities, average usage may calculate an order point that will never put enough stock on the shelf to service the large orders.

Five Hi increases the order point to the average of the largest single shipments to ensure you order enough to fully service your large orders.

Use 5-Hi	Indicates whether to use the 5-Hi adjuster
Include Transfers in 5-Hi	Indicates whether transfer shipment quantities should be included in the calculation – when using a central distribution center, this should be set to Yes.
5-Hi maximum dollar	If entered and the cost of the increase in order point for 5-Hi ASQ

increase	exceeds this maximum, 5-Hi ASQ will not be used.
5-Hi minimum hits	The # of document hits required before 5-Hi ASQ can be calculated

ASQ/Five hi months (Usage periods for ASQ and five-hi calculations)

If ASQ or Five Hi is in effect for calculating the order point for an item, the number of periods in the ASQ and Five Hi can be entered here. If omitted, the Rank Usage period that corresponds to the item ranking will be utilized for ASQ and Five Hi calculation. By default, 12 periods of usage will be utilized for ASQ and Five Hi calculation.

Months used to calculate ASQ	The number of months to analyze when calculating ASQ.
Months used to calculate 5-Hi	The number of months to analyze when calculating 5-Hi.

Threshold Minimum Order Point

There are some circumstances in which you want to guarantee a specific quantity of an item will be on the shelf, even though usage numbers alone may not justify it. For example, you may have made an agreement with an important customer to keep a minimum quantity on the shelf. The T-Min Order Point establishes the minimum order point for the item. If the calculated order point is lower than the T-Min, it will be increased to the T-min. If the calculated order point is higher than the T-Min, the calculated value will be used.

T-Min Order Point can only be set at the warehouse/item level, and it is also accessible from Warehouse/Item F/M.

Apply a threshold minimum	Indicates whether to apply a T-Min order point
T-Min Order Point	The minimum order point

Threshold Maximum Line Point

There are some circumstances in which you want to limit the amount of stock in the warehouse for a specified item or items. T-Max Line Point establishes the maximum line point allowed for the item in the selected scope. If the calculated line point is higher than the T-Max, the T-Max will be used. If the calculated line point is lower than the T-Max, the calculated value will be used.

T-Max Line Point can be set at the item or warehouse/item level.

Apply a threshold maximum	Indicates whether to apply a T-Max line point
T-Max Line Point	The maximum line point

Order Quantity Method (OQM) Parameters

These parameters can be set separately for Vendor and Transfer ARPs and separately for seasonal (Trend) and non-seasonal items. R-Cost (reorder cost) can certainly be different when ordering from a vendor vs. transferring in from your own distribution center, and you may choose to use EOQ for one vs. the other.

Similarly, K-Cost (cost to carry) can be different for seasonal items, etc.

However you choose to break it down, having accurate K-Cost % and R-Cost \$ is needed if you choose to implement EOQ.

R Cost \$	Reorder cost - the cost to process an order for an item
K Cost %	The annual cost to carry inventory divided by the average inventory value.
Minimum Days Supply	The minimum days supply to use when calculating EOQ
Maximum Days Supply	The maximum days supply to use when calculating EOQ
Use EOQ	Indicates you want to apply the economic order quantity calculation

Minimum Order Quantity for Transfer and Vendor ARPs

Many vendors require that any order for a specific item must have a minimum quantity, and you may want to require transfers between your own warehouses to be at least a minimum quantity as well. This parameter can be set at the item and/or the warehouse/item levels only.

Note that this impacts the recommended order quantity only. Users can override the recommended order quantity and try to purchase a smaller quantity.

Further, this setting does not apply to special orders.

Minimum Order Quantity	This is the smallest quantity of the select item that should be purchased for this ARP.
UM	This is the UM that the quantity is in.

Apply Rounding to Order Quantity

Many vendors refuse to break boxes or pallets of some items. If you have such items that must always be ordered in specific increments, you can activate rounding for purchase orders and/or warehouse transfers by this parameter.

Apply Rounding on Purchase Order	Indicates whether you want PO order quantities to be rounded
Apply Rounding on Transfers	Indicates whether you want Transfer order quantities to be rounded

Rounding Value for ARP Vendor

If rounding is applied to PO order quantities, you can indicate the quantity and UM for a specific item by setting this value.

Round to the next	The amount to round the recommended order quantity to the next multiple of for purchase orders
UM	The unit of measure of the round to quantity

Rounding Value for ARP Transfer

Round to the next	The amount to round the recommended order quantity to the next multiple of for warehouse transfers
UM	The unit of measure of the round to quantity

Abnormal Lead Time Parameters

FACTS will automatically notify the buyer with an alert when a new lead time appears to be unusual. The settings in this parameter are used to determine what is abnormal.

There is a separate setting for lead times on POs and those on transfers, as you may have different standards for what is abnormal for your own distribution center.

% of Average for Too Low	If the new lead time is less than this % of the current average, it will be flagged as abnormal, and an alert will be raised to the buyer
% of Average for Too High	If the new lead time is more than this % of the current average, it will be flagged as abnormal, and an alert will be raised to the buyer

Receipts Used to Calculate Lead Time

When calculating the average lead time, we want recent information, and including too many receipts can allow recent performance to be hidden.

This parameter controls how many receipts to use in the average and how far back the system is allowed to go when looking at receipts.

Documents that are set to Ignore lead time are skipped.

Number of Receipts	This is the maximum number of receipts to use for the calculation
Number of Months	This is the maximum number of months back a receipt can be to be used in the calculation

Vendor ARP and Transfer ARP Lead Time Parameters

Lead Time is part of the calculation for Order Point, and in cases where very long lead times occur, they can cause the order point to grow to unrealistically high levels. Similarly, if average lead time ends up being a very small number, it can lead to meaninglessly small order points.

To prevent either of these situations from occurring, you can establish a minimum and maximum lead time to use in the order point calculations.

Use a Minimum / Maximum Days for Lead Time	Indicates whether to apply a minimum and maximum lead time
Lead Time Minimum Days	Smallest # of days to use for the average lead time
Lead Time Maximum Days	Largest # of days to use for the average lead time

New Item Default Lead Time for ARP Vendors and ARP Transfers

The New Item Default Lead Time for ARP Vendor/Transfer parameters determine the default lead time for new items at the vendor “V” level and at the warehouse transfer “T” level. This value I used if the IC Warehouse average lead time field is blank.

Users are alerted to set up a default lead time when/if desired, at the scope(s) desired, in Replenishment Parameter Maintenance. When new item entry is made in Warehouse Item F/M, if the ARP is from vendor then the ‘vendor’ default is used, if the ARP is from another warehouse then the ‘transfer’ default is used.

New Item Lead Time	The lead time for new items
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Review Cycle

Review Cycles are a crucial part of the replenishment calculations and are required for all established ARPs for replenished items.

Typically review cycles are maintained in Review Cycle Setup, but they can also be maintained in Replenishment Parameter F/M. For details on review cycles, see the section on Review Cycle Setup.

Buyer Code	Buyer code for the ARP
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Review Cycle	The number of days expected between orders for this ARP
Review Cycle Min	Minimum number of days to use when calculating a new review cycle
Review Cycle Max	Maximum number of days to use when calculating a new review cycle
Use Target	You can specify cost, weight or cubes to use as the target for auto-calculating the review cycle or you can specify None if you do not want the review cycle to be automatically recalculated. If you specify a target to use, you also must enter the appropriate target value.
Buying Target \$	The target order amount (optional)
Buying Target Lbs	The target weight (optional)
Buying Target Cubes	The target volume (optional)

Freeze Order Point / Line Point / EOQ

A warehouse/item can have its Order Point, Line Point and/or EOQ set and frozen with an expiration date for the freeze. These values are also available to be maintained from Warehouse/Item F/M.

Order Point	Indicates whether the order point is frozen and the value
Line Point	Indicates whether the line point is frozen and the value
EOQ	Indicates whether the EOQ is frozen and the value

Freeze Rank

A specific item's rank in the warehouse can be set and frozen for a time period. This will prevent the system from automatically recalculating the item's rank until the expiration date is reached. This value can also be maintained from Warehouse/Item F/M.

Freeze Rank	Indicates whether the rank is frozen and the rank
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Freeze Lead Time

The lead time to use for a warehouse/item can be set to a specific value and frozen to prevent the system from recalculating it. This can be useful for new vendors where there is little history from which to calculate an accurate lead time.

This value can also be maintained in Warehouse/Item F/M.

Freeze Lead Time	Indicates whether the lead time is frozen and the value
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Freeze Safety Stock

The safety stock for a warehouse/item can be frozen to prevent the system from recalculating the safety stock value.

This value can also be maintained in Warehouse/Item F/M.

Freeze Safety Stock	Indicates an item's safety stock is frozen
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Surplus Stock

For long-term surplus Seasonal and Non-Seasonal parameters, the usage calculation, number of days' supply over available stock, and the number of days an item must be established to calculate long-term surplus are used to determine the long-term surplus point.

Usage Calculation	Determine how to calculate average daily usage for long term surplus: T-Total Yearly Usage or C-Current Average Daily Usage
# Days Supply	The number of days' supply above which available stock is considered long-term surplus
Skip Items Established Less Than	The number of days an item must be established before calculating long-term surplus

Note: The Replenish check box on the Restock view of Warehouse/Item F/M (ICF920) is one of the controls for calculating surplus. If the Replenish checkbox is unchecked, then this warehouse/item does not have surplus processing and the new long- and short-term surplus fields are "N/A". When changing the Replenish checkbox from unchecked to checked, the new long- and short-term surplus fields are not updated until the continuous background process, S4, is run and calculates the surplus for this now replenished item. You must save the change in Warehouse/Item F/M and exit. Once S4 is run, when you return to Warehouse/Item F/M any noted surplus is displayed.

Chapter 6 Replenishment system alert details

Overview

The following alerts are integral parts of the advanced inventory management system in FACTS. These alerts are automatically delivered to the proper buyer via the Exception Control Center or email, based on the settings in Buyer Code F/M.

To properly use the FACTS replenishment system, you must be familiar with these alerts and be prepared to respond to the issues they represent.

See the section above on how to use the Exception Control Center for more information on how to see and respond to the alerts.

Note that the re-raise intervals are the number of days, after the alert is raised, that the alert will be re-raised to the user if the condition that caused the alert remains. Whether the alert was ignored or deleted, it will be moved back to the top of the list if the condition still exists. This helps prevent alerts being forgotten or overlooked.

The available subscription values are used for subscribing to the alerts outside of the ECC. Alerts will automatically be delivered to the appropriate buyer, so only users who are not established buyers will need to be concerned with the subscription values.

Available system alerts

The available system alerts are described in this section.

IC-5HI 5Hi Max Dollar Increase Exceeded

The cost associated with increasing the calculated order point to the average of the 5 highest shipment quantities exceeded the limits of the increase as established in Replenishment Parameter Maintenance.

When this limit is exceeded, order point is not adjusted at all. Proper responses to this alert could include increasing the limit, setting a T-Min Order Point for the effected item, or making a mental note of the situation and doing nothing.

Available Subscription values: Warehouse, Item

Re-raise interval defaults to 14 days

IC-ABLTPO Abnormal Lead Time on a PO

A new receipt of a PO had a lead time that is abnormally high or low based on the settings in Replenishment Parameter Maintenance.

Proper responses to this alert could include going to Lead Time Review and entering a qualified lead time, setting the lead time to ignore, or doing nothing if the lead time was valid.

Available Subscription values: Warehouse, Vendor

Re-raise interval defaults to 7 days

IC-ABLTTR Abnormal Lead Time on a Transfer

A new receipt of a warehouse transfer had a lead time that is abnormally high or low based on the settings in Replenishment Parameter Maintenance.

Proper responses to this alert could include going to Lead Time Review and entering a qualified lead time, setting the lead time to ignore, or doing nothing if the lead time was valid.

Available Subscription values: To Warehouse, From Warehouse

Re-raise interval defaults to 7 days

IC-ABUSAGE Abnormal Usage

Usage for the last 30 days is abnormally high or low based on the settings in Replenishment Parameter Maintenance.

Proper responses to this alert could include going into Usage Review and verifying whether the usage is accurate, examining why usage is dropping or rising so quickly, adjusting qualified usage or the update usage flag on specific documents, or doing nothing other than making a mental note to keep an eye on the item.

Available Subscription values: Warehouse, Item

Re-raise interval defaults to 14 days

IC-ASQ ASQ Max Dollar Increase Exceeded

The cost associated with increasing the calculated order point to the average shipment quantity exceeded the limits of the increase as established in Replenishment Parameter Maintenance.

When this limit is exceeded, order point is not adjusted at all. Proper responses to this alert could include increasing the limit, setting a T-Min Order Point for the effected item, or making a mental note of the situation and doing nothing.

Available Subscription values: Warehouse, Item

Re-raise interval defaults to 14 days

IC-AVGLTV Average Lead Time Limits Applied to Vendor

A new PO was received, and when the new average lead time was calculated, it was outside the limits established in Replenishment Parameters Maintenance.

Proper responses to this alert could include going to Lead Time Review to investigate whether the recorded lead times are accurate and reviewing the limits you have established in Replenishment Parameter F/M to determine whether they are appropriate.

Available Subscription values: Vendor, Warehouse, Item

Re-raise interval defaults to 14 days

IC-AVGLTW Average Lead Time Limits Applied to Warehouse

A new transfer was received, and when the new average lead time was calculated, it was outside the limits established in Replenishment Parameters Maintenance.

Proper responses to this alert could include going to Lead Time Review to investigate whether the recorded lead times are accurate and reviewing the limits you have established in Replenishment Parameter F/M to determine whether they are appropriate.

Available Subscription values: From Warehouse, To Warehouse, Item

Re-raise interval defaults to 14 days

IC-CALCVAR Calculated Value Deviates from Frozen Value

One of the frozen values (order point, line point or EOQ) on a warehouse/item deviates from the calculated value by more than the limits established in Replenishment Parameter F/M

Proper responses to this alert could include reviewing the frozen values to determine whether they are still valid, should be adjusted, or should be removed altogether.

Available Subscription values: Warehouse, Item

Re-raise interval defaults to 30 days

IC-EXPIRE Replenishment Parameters Expiring or Unfreezing

A parameter in Replenishment Parameter Maintenance is soon to expire or unfreeze and should be evaluated prior to the expiration date.

Proper responses to this alert could include extending the expiration date for the parameter or reviewing the parameter and allowing it to expire.

Available Subscription values: To Warehouse, Vendor, Purchasing Line, From Warehouse, Item

Re-raise interval defaults to 7 days

IC-MAXRCV Max Review Cycle for a Vendor has Been Exceeded

Based on the last purchase order date, it is past time to reorder from this vendor. The maximum review cycle, set in Review Cycle Setup, has been exceeded.

Proper responses to this alert could include checking whether you do need to place a PO for this vendor, changing the Max Review Cycle setting, or simply making a mental note and deleting the alert.

Available Subscription values: To Warehouse, Vendor, Purchasing Line

Re-raise interval defaults to 7 days

IC-MAXRCW Max Review Cycle for a Restocking Warehouse Has Been Exceeded

The last time a transfer was made exceeds the Maximum Review Cycle.

Proper responses to this alert could include checking whether you do need to place a transfer from this warehouse, changing the Max Review Cycle setting, or simply making a mental note and deleting the alert.

Available Subscription values: To Warehouse, From Warehouse

Re-raise interval defaults to 7 days

IC-NRWHITS Non-Replenished Item with Hits

An item that is not being replenished has been experiencing an increased level of activity.

Proper responses to this alert could include evaluating the item for what is driving the increased activity, changing the item to a replenished item, or simply making a mental note and deleting the alert.

Available Subscription values: Warehouse, Item

Re-raise interval defaults to 7 days

IC-PASTPD PO Past Promise Date

An existing purchase order is past the established promised date and has not been received yet.

Proper responses to this alert could include calling the vendor to inquire on the delivery status of the PO.

Available Subscription values: Warehouse, Vendor, Ship From

Re-raise interval defaults to 2 days

IC-POCONF Unconfirmed PO

A purchase order remains unconfirmed after the time limit established in Replenishment Parameter Maintenance.

Proper response to this alert could include calling the vendor to inquire whether they received the PO.

Available Subscription values: Warehouse, Vendor

Re-raise interval defaults to 1 day

IC-POEARLY PO to Arrive Too Early

When this PO arrives, there will already be enough available stock to exceed the # days supply specified in Replenishment Parameter Maintenance.

Proper responses to this alert could include calling the vendor to see if the PO can be cancelled, planning to cross-dock the good when they arrive to send them back to the vendor, determining that you should run a promotion on the item to dump the excess stock, etc.

Available Subscription values: Warehouse, Item

Re-raise interval defaults to 3 days

IC-POLATE PO to Arrive too Late for Demand

By the time the PO arrives, this item will have been stocked out for more than the number of days specified in Replenishment Parameter Maintenance.

Proper responses to this alert could include placing an emergency buy or a warehouse transfer to bring in additional stock before the stockout occurs.

Available Subscription values: Warehouse, Item

Re-raise interval defaults to 3 days

IC-RCTR Missing Warehouse Transfer Review Cycle Record

There are replenished items in this warehouse that are setup to be transferred from another warehouse, but the restocking warehouse has no review cycle record setup in Review Cycle Setup.

Review Cycle records are required for all established ARPs. The proper response to this alert is to go to Review Cycle Setup and create the review cycle record.

Available Subscription values: To Warehouse, From Warehouse

Re-raise interval defaults to 7 days

IC-RCV Missing Vendor Review Cycle Record

There are replenished items in this warehouse for this vendor, but the vendor has no review cycle record setup in Review Cycle Setup.

Review Cycle records are required for all established ARPs. The proper response to this alert is to go to Review Cycle Setup and create the review cycle record.

Available Subscription values: To Warehouse, Vendor, Purchasing Line

Re-raise interval defaults to 7 days

IC-REVCYC Review Cycle out of outside limits

When a review cycle has a preferred target base of Cost, Weight or Cubes, calculates outside of the minimum or maximum review cycle by the values indicated in Replenishment Parameter F/M, an alert will be raised.

Available Subscription values: Type, To Warehouse, Vendor, Purchasing Line, From Warehouse

IC-SEAS Seasonality/Trend Flag Questionable

Seasonality analysis indicates this item's usage method is potentially set incorrectly.

Proper responses to this alert could include evaluating whether the item's usage type is set correctly, changing the usage type in Warehouse/Item F/M and freezing the Usage Type.

Available Subscription values: Warehouse, Item, Usage Method

Re-raise interval defaults to 30 days

IC-STKOUT Item Stock Has Been Exhausted in this Warehouse

A new transaction for this item has caused the available stock in this warehouse to fall to or below zero. Note that the IC-STKOUT alert only applies to replenished items.

Proper responses to this alert could include checking for incoming orders for this item and determining whether an emergency buy should be placed.

Available Subscription values: Warehouse, Item

Re-raise interval defaults to 7 days

IC-STLSPO Planned Special Order PO is Stale

A planned special order PO remains unaddressed (not pulled onto a document) past the allowable number of days setup in SO Static Control F/M. The record which generated the alert could be in the POSUGG file or the Buyers Control Center (Procurements).

Proper responses to this alert could include evaluating whether the planned special order is still valid or placing the PO (performing a recalculate in BCC) to fill the special order.

Available Subscription values: Warehouse, Vendor, Item

Re-raise interval defaults to 1 day

IC-STLSTR Planned Special Order Transfer is Stale

A planned special order transfer remains unaddressed (not pulled onto a document) past the allowable number of days setup in SO Static Control F/M. The record which generated the alert could be in the ICSTRN file or the Buyers Control Center (Transfers).

Proper responses to this alert could include evaluating whether the planned special order transfer is still valid or placing the transfer (performing a recalculate in BCC) to fill the special order.

Available Subscription values: To Warehouse, From Warehouse, Item

Re-raise interval defaults to 1 day

IC-TREARLY Transfer to Arrive Too Early

When this transfer arrives, there will already be enough available stock to exceed the # days supply specified in Replenishment Parameter Maintenance.

Proper responses to this alert could include calling the DC warehouse to see if the transfer can be cancelled, planning to cross-dock the good when they arrive to send them back to the DC, determining that you should run a promotion on the item to dump the excess stock, etc.

Available Subscription values: Warehouse, Item

Re-raise interval defaults to 3 days

IC-TRLATE Transfer to Arrive too Late for Demand

By the time the transfer arrives, this item will have been stocked out for more than the number of days specified in Replenishment Parameter Maintenance

Proper responses to this alert could include placing an emergency transfer to bring in additional stock before the stockout occurs.

Available Subscription values: Warehouse, Item

Re-raise interval defaults to 3 days

IC-TRNDLIM Seasonal Trending Limits Applied

The seasonal trend percentage for this item and warehouse was higher than the maximum allowed percentage or lower than the minimum allowed percentage entered in Replenishment Parameters File Maintenance.

Proper responses to this alert could include simply making a mental note that the limit was applied, checking the usage to determine whether a higher or lower trend % is actually warranted, etc.

Available Subscription values: Warehouse, Item

Re-raise interval defaults to 30 days

IC-VENDCRO Vendor Credit Overdue

Alert for vendor credit overdue is based on a user specified number of days to consider it overdue.

Available Subscription values: Warehouse, Vendor

Re-raise interval defaults to 7 days

IC-VENDRNR Vendor Return not Received

Alert for vendor return not received is based on a user specified number of days to consider it not returned.

Available Subscription values: Warehouse, Vendor

Re-raise interval defaults to 7 days

Auto-Generated Replenishment Alerts

Alerts in this section are raised when a background process automatically attempts to change a replenishment parameter and lines exist in the Buyers Control Center. Auto-generated replenishment alerts can be viewed and dismissed in the Alert Control Center

Review Cycle auto updated in background (ALC140)

The Review Cycle auto updated in background Alert (Alert Code: RwwCycUpd) is called/recorded if Buyers Control Center lines currently exist and the R3 background process, BKC603, updates a review cycle. You can access the Alert Control Center to view and optionally dismiss this alert, or click Respond to Exception for the option to access Replenishment Parameter F/M (ICF990) with default filter values appropriately filled in for the alert in question.

Available Subscription values: Warehouse, Vendor, Item, Purchasing Line, and From Warehouse.