

Cake and Bake

Orbital Review Script

Outlines the business process activities that could be undertaken to manage the commercial relationship with a small chain of fictional tea rooms purchasing cakes from this equally fictitious member of their supply chain.

Cake and Bake source ingredients and manufacture the product (all cakes in this instance) and this will involve the following headline actions:

- **Record individual tea room requirements (sales order entry)**
- **Review ingredient availability**
- **Place supply chain orders for required ingredients and receive items into stock**
- **Raise appropriate production orders**
- **Confirm production and reflect changes in ingredient inventory**
- **Despatch tea room requirements and raise invoices**

This document provides guidance on each of these functional activities and suggests the manner in which they might be reviewed.

Further broader business activities that are not covered in this script include:

- **Identify product range (i.e. cakes)**
- **Definition of product ingredients and recipe**
- **Consolidate shipment details for a composite sales invoice.**
- **Process and confirm supply chain invoices for items received**
- **Identify payments received from customers and made to suppliers**
- **Review product costings**

Summary

This document outlines a number of activities that could be completed to enable you to arrive at a decision whether the **FREE** version of **Orbitall** that is available from the **Orbitall** website is of interest or use to your business.

It is far from comprehensive in attempting to introduce the full range of features and concepts that are implemented in this software.

However it is, hopefully, sufficient to establish whether the use of your time and effort to download, install and review this application might represent a worthwhile investment on your part.

You may have any number of questions that might arise before, during or after any potential investment of your time and effort and it is our intention to provide any answers or guidance that we can to address any such enquiries.

Please make contact using any of the following:

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mobile: 07760 371877

telephone: 024 7698 0606 (Skype Number)
Please leave message if necessary

website: <https://www.orbitall.co.uk>

online enquiry: https://www.orbitall.co.uk/main/request_support

There are various resources that are available from the website including any number of discussion forums and video content that will also cover topics covered in this script.

Cake and Bake Database

The website makes a number of different database files available that would assist with a review.

On a general note the software relies upon three separate Microsoft Access files, only one of which might be described as containing the business database.

IWR.mdb	Replacement for very historic use of Windows Registry as repository for software control settings.
project.mdb	Records user related configuration for various windows and their content
orbitall.mdb	The repository for business relevant data

Variations on the third of these files (*orbitall.mdb*) are available to reflect the following:

- A completely empty version (of use if you want to review the options available to import data and would almost certainly be the starting point when creating your own business specific database).
- A version populated with core tables populated (generally reflecting "coded" entries defining aspects such as product category, appropriate unit-of-measure and related conversion factors as well as country codes, currency codes, tax codes, tax rates plus identifiable warehouse locations which are relevant across the breadth of functionality).
- Core tables plus product, customer and supplier data relating to this Cake and Bake script – this is the version most suitable for this review.
- A number of increasingly densely populated versions reflecting the different stages of business activity covered in this script.

Moving between different versions should easily be achieved by copying the relevant *orbitall.mdb* file into the "base" folder (*C:\orbitall_foc* or *C:\orbitall_cab*) that you can identify in the software startup settings file (*OAL_static.ini*). That latter file is found in the Windows "Program Files\Priory Consultants" folder.

As a point of information if you create multiple files with the prefix *OAL_static...* and alter the database pointers in each then **Orbitall** will prompt you, at startup, to identify which file contains the entries relevant to the session (i.e. business) you wish to work with.

The remainder of this document is based upon the assumption that you have obtained and are working with a version of the database that includes core table plus the product, customer and supplier data.

That version identifies two suppliers, six customers (identified as tea rooms in various locations within Warwickshire in the UK) and more than a hundred identified products encompassing cakes made by the company and the wide range of ingredients required. The step by step instructions and specific list of ingredients for each individual cake are also included.

Record Tea Room Orders

The table below represents the individual demand for a range of cakes at each of the different tea rooms all of which are required for delivery on the same date.

Cake/Tea Room	TR_CV08	TR_CV11	TR_CV12	TR_CV32	TR_CV34	TR_CV37
BATTENBERG-BBC	2	1	1	2	2	4
CARROT-CAKE-BBC	3	2	1	3	4	4
COFFEE-WALNUT-BBC	3	2	2	3	4	4
CUP-CAKE-BBC-COCOA	18	18	24	48	48	36
CUP-CAKE-BBC-LEMON	32	24	24	48	48	48
CUP-CAKE-BBC-VANILLA	24	18	24	48	36	36
SPONGE-CAKE-BBC	4	5	4	8	8	4

These represent the first sales orders that will be recorded in the database and the first step in this review is to complete that data entry activity.

There are a number of different methods that could be used to enter a customer sales order and we suggest that, for the purpose of this review, the following actions be taken:

1. Select the *Sales/Customer List* menu option to display a list of sales ledger (customer or account) entries.
2. In the displayed window select the cell entry *TR_CV08* in the *Customer* column – the cell background colour will alter to reflect the selection.
3. Position the cursor in that cell and either *Double-Click* or *Right-Click* on the entry. A scrollable list of actions that you might elect to evoke for the selected customer is displayed.
4. *Double-Click* on the *Sales Orders* entry in that list – the *Sales Order List* window is displayed with a filter setting (confirmed in the upper segment of the window) restricting content to sales orders for account *TR_CV08*. As there are no current sales orders recorded, the list will be empty but as an identifiable customer can be established an empty line is displayed.
5. Executing a *Double-Click* in the cell, on that empty line, that is headed *SO Number* results in a sales order being added to the database for customer *TR_CV08* with the related date being today.
6. The lower segment of this window is used to enter the details of individual items the customer is ordering and a blank line is displayed to facilitate that.
7. Executing a *Double-Click* in the cell, on that blank line, that is under the column headed *Req. Date* directs the user to a date selector that enables the user to identify the date on which they are requesting delivery of a product. If the user selects a date the identified cell will be populated with that value.
8. Positioning the cursor in the cell, on that same blank line, headed *Product* enables the user to enter the relevant product code. Partial entry (3 or 4 characters defined by a configuration setting) results in a drop down list of products matching the partial code entered. The user may proceed to extend the product code until a single item is identified in the list of products or may alternatively elect to *Click* on an entry in the drop down list.
9. When a product is identified the remaining cells in the blank line will be populated with entries under the *UOM* and *Price* columns being set to product related values (see *Product Edit* facility) and the *Balance* cell defaulting to an order quantity of a single unit. Positioning the cursor in individual cells will allow the user to alter values to reflect the customer sales order content for this product.
10. Repeat steps 7 to 9 for each product on the customer sales order to complete data entry.

If you have followed these instructions then you should have successfully entered the first sales order in the database, and you may follow the same steps outlined above to enter an order for another customer.

You must, however, amend the window related filter condition to restrict the displayed content to this second sales ledger by performing the following actions:

1. Select the *Filter Condition* button (magnifying glass icon) located in the upper segment of the window on the extreme left hand side and adjacent to the text entry that identifies the current filter criteria.
2. This will result in some additional data entry fields being displayed in the top right hand segment of the window. A drop-down list of filter identifiers, a data entry field immediately below for the user to enter a relevant value and the *Clear Filter Entry* button to the immediate right of this.
3. Select the *Account* filter item from the upper drop down list.
4. Enter the relevant sales ledger identifier (perhaps *TR_CV11* for the second tea room sales order) in the data entry field. A valid selection will be reflected in a change to the text displayed to the immediate right of the *Define/Apply Filter* button.
5. Select the *Define/Apply Filter* button for a second time and respond to any prompt issued.

Having completed that latter action the window content will be refreshed to reflect the changes made.

You might wish to follow these suggested steps multiple times to provide you with familiarity of the features involved, but like any other "tool" that is used alternatives exist that may be usefully employed.

Some of these alternatives involve an entirely different functional approach e.g. telesales, where data entry is based around past trading activity and may be driven by customer defined telesales day, or day/cash sale which combines data entry with confirmation of despatch.

The latter require detailed explanation in their own right and are outside the scope of this document, but there are two options that **Orbitall** offers with respect to a sales order as an "*object*" that is of importance to the business.

Those options are the ability for the user to either *Repeat* or *Replicate* an existing sales order and to complete that action the user will utilise the "*object*" related "*action list*" that is an underlying global feature of **Orbitall**. This latter feature was illustrated above when the user elected to request the display of sales orders for sales ledger *TR_CV08* by selecting the *Sales Orders* entry in the "*action list*" that was presented when the user performed a *Double-Click* or *Right-Click* on that sales ledger (another "*object*" of relevance to the business) identifier in the window displaying those entries.

Having completed data entry for the first sales order the user could perform the following steps:

1. Remove the filter condition restricting the window content to sales orders associated with the identified sales ledger (*TR_CV08*). This is achieved by following steps 1 to 3 outlined above to alter the window filter condition and then selecting the *Clear Filter Entry* button.
2. Select the *Define/Apply Filter* button for a second time and respond to any prompt issued. The window content will be refreshed although the blank line will be removed as **Orbitall** is no longer capable of identifying a single sales ledger that should be associated with any new sales order.
3. In the displayed window select the cell containing the first sales order number (*SO Number* column) and the cell background colour will alter to reflect that selection.
4. Position the cursor in that cell and either *Double-Click* or *Right-Click* on the entry to display a scrollable list of actions that you might elect to evoke for the selected sales order.

5. *Double-Click* on either the *Repeat* or *Replicate* entry in that list and observe that a further sales order has been added to the database for the same sales ledger and having matching sales order lines as the selected sales order.
6. Select the cell containing this new sales order number (*SO Number* column) and the cell background colour will alter to reflect that selection.
7. Position the cursor in that cell and either *Double-Click* or *Right-Click* on the entry to display a scrollable list of actions that you might elect to evoke for the selected sales order.
8. *Double-Click* on the *Change Customer* entry in the list and select the sales ledger identifier (*TR_CV11* perhaps for the second sales order) that you wish to associate with this newly added sales order.
9. Revise the *Balance* entries for each order line in turn to reflect the correct quantities required.

The actions *Repeat* and *Replicate* differ in relation to the sales order date that will be associated with the sales order that will be added. *Repeat* will record today's date whilst *Replicate* will retain the same date as the sales order that has been selected. The relevance of this feature is based upon the fact that individual sales order line request dates will retain the same lead-time as the sales order that is being effectively cloned.

Review Ingredient Requirements and Availability

To review ingredient requirements and availability may seem partially unnecessary as, being a new database, there is no recorded inventory and, therefore, all requirements will be need to be sourced.

This makes the evaluation relatively simple, but only for this relatively limited review. In a real world situation there would most likely be the necessity to establish an initial inventory position (most likely using data import functions) that would impact upon this process.

The main functional area that is involved in this particular task relates to features relating to a *Production Plan* that is effectively just a list of finished items (product that have a defined bill-of-material but are not included in any other product's bill-of-material) and/or sub-assemblies (product that have a defined bill-of-material and are included in another product's bill-of-material) along with an associated planned quantity.

Orbitall analysis of a *Production Plan* involves the following:

- Decision regarding net/gross calculation (the former taking account of finished item inventory and the latter ignoring inventory).
- Planned sub-assembly production will be treated as additional to any current inventory and will not be reflect in any finished item requirement calculations.
- Bill-of-material cascading requirement calculation takes account of current sub-assembly inventory with lower level adjustments being made within the limits of that holding.

After completing data entry for all sales orders the user may select the *Sales/Sales Order Book* menu option to display a consolidated list of products that are requested by a specified date (*Horizon Date*).

Selecting the *Export Data* button, located in the bottom left corner of the window creates a comma separated value (CSV) text file containing product, unit-of-measure and quantity that reflects the displayed window content. The entries in this file represent the *Production Plan* that is necessary to meet the sales orders that have been recorded.

Selecting the *Actions/Import Functions* menu option will display a dialogue box with two drop-down lists. The upper identifies the relevant *Action Engine* (*Import Engine* in this case) whilst the lower identifies a specific task, related to the *Action Engine*, that the user wishes to perform.

From the lower drop-down list select the *Production Plan CSV* entry and then select the *Execute* button to the right of that entry – you will be prompted to enter a suitable description that describes the *Production Plan* that will be created.

To review the *Production Plan* and proceed further select the *Manufacturing/Production Plans* menu option to display the list of entries that are recorded – just the one at this point.

The displayed window is another split list with the upper segment showing the plans recorded in the database and the lower segment, similar to *Sales Order List*, showing the production plan lines listing the product identifiers, unit-of-measure planned quantity.

To perform an analysis of the plan complete the following actions:

1. Select the cell containing the production plan number (*Plan Number* column) and the cell background colour will alter to reflect that selection.
2. Position the cursor in that cell and either *Double-Click* or *Right-Click* on the entry to display a scrollable *action list* that you might elect to evoke for the selected production plan.

3. *Double-Click* on the *Analyse Gross Requirements* entry in that list and when prompted take the option to continue with the requested analysis. A second prompt will permit you to capture details of the underlying calculations for later review if that is something that you might find useful.
4. A confirmatory message will be issued when the analysis has been completed.

The user may then review the results of the underlying calculations by producing any number of the various reports that should now be accessible using the *Report* option that is now included in the *action list* (see steps 1 and 2 above) for the *Production Plan*.

Selecting that action directs the user to a further dialogue window that permits identification of the particular report that they wish to produce:

- Purchase Items – identifies all ingredients required to produce all of the items that are included in the Production Plan. This may be produced using the ingredient production unit-of-measure or default purchase unit-of-measure.
- Details – basically a list of items included in the production plan.
- Requirements – details of items that require production orders to be issued (i.e. internal manufacturing process) with an option to restrict content to those that represent intermediate (as opposed to final) production stage.

The primary report that it is suggested you may focus on in the first instance is that identified as *PPCURALL*, and you may wish to review that in both inventory and purchase unit-of-measure.

Purchase/Receive Ingredients

Using the reports produced from the previous procedures as source material one or more purchase orders can be raised to ensure that all ingredients are available.

This involves functional areas of **Orbitall** that are quite similar to those relating to *Sales Order* processing.

The method used to enter a supplier purchase order requires the following actions be taken:

1. Select the *Purchasing/Supplier List* menu option to display a list of purchase ledger (supplier or account) entries.
2. In the displayed window select the cell entry *BRAKES* in the *Supplier* column – the cell background colour will alter to reflect the selection.
3. Position the cursor in that cell and either *Double-Click* or *Right-Click* on the entry. A scrollable list of actions that you might elect to evoke for the selected supplier is displayed.
4. *Double-Click* on the *Purchase Orders* entry in that list – the *Purchase Order List* window is displayed with a filter setting (confirmed in the upper segment of the window) restricting content to purchase orders for account *BRAKES*. As there are no current purchase orders recorded, the list will be empty but as an identifiable supplier can be established an empty line is displayed.
5. Executing a *Double-Click* in the cell, on that empty line, that is headed *PO Number* results in a purchase order being added to the database for supplier *BRAKES* with the related date being today.
6. The lower segment of this window is used to enter the details of individual items that you require the supplier to deliver and a blank line is displayed to facilitate that.
7. Executing a *Double-Click* in the cell, on that blank line, that is under the column headed *Date* directs the user to a date selector that enables the user to identify the date on which they are requesting delivery of a product. If the user selects a date the identified cell will be populated with that value.
8. Positioning the cursor in the cell, on that same blank line, headed *Product* enables the user to enter the relevant product code. Partial entry (3 or 4 characters defined by a configuration setting) results in a drop down list of products matching the partial code entered. The user may proceed to extend the product code until a single item is identified in the list of products or may alternatively elect to *Click* on an entry in the drop down list.
9. When a product is identified the remaining cells in the blank line will be populated with entries under the *UOM* and *Price* columns being set to product related values (see *Product Edit* facility) and the *Balance* cell defaulting to an order quantity of a single unit. Positioning the cursor in individual cells will allow the user to alter values to reflect the purchase order content for this product.
10. Repeat steps 7 to 9 for product included in the production plan requirements report to complete data entry.

If you have followed these instructions then you should have successfully entered the first purchase order in the database, and you may follow the same steps outlined above to enter any number of purchase orders until you have exhausted the requirements stated in the report. Obviously more purchase orders simply provides greater exposure to this functional activity and will be a matter for personal preference.

Having created relevant purchase orders the obvious next step is to record the receipt of items ordered, ready for the production of the various items that are required to meet the sales order book commitment.

The receipt of goods is an action that is related to the underlying *Purchase Order* and involves the following actions:

1. Select the *Purchasing/Purchase Orders* menu option to display a list of purchase orders.
2. In the displayed window select the cell entry in the *PO Number* column – the cell background colour will alter to reflect the selection.
3. Position the cursor in that cell and either *Double-Click* or *Right-Click* on the entry. A scrollable list of actions that you might elect to evoke for the selected purchase order is displayed.
4. *Double-Click* on the *Receive* entry in that list to be directed to the relevant window that will enable the user to identify items being delivered.

Product is identified as being traced at one of three levels:

- Untraced – no requirement to monitor source and use made of the item
- Supply Chain – monitoring of source and use for each supply chain source.
- Batch – monitoring by batch identifier (this can be established as individual purchase order, receipt or even supplier defined identification).

It should be noted that the example database identifies all items as being traced at the highest level (i.e. batch level).

You may wish to review this feature further and to do so you could undertake the following actions, for one or more selected products, from the window displaying the list of purchase orders you entered:

1. Select the relevant cell entry in the *Product* column – the cell background colour will alter to reflect the selection.
2. Position the cursor in that cell and either *Double-Click* or *Right-Click* on the entry. A scrollable list of actions that you might elect to evoke for the selected product is displayed.
3. *Double-Click* on the *Edit* entry in that list to be directed to the window that will enable the user to alter the *Level of Traceability* setting, amongst other product related attributes.

The window displayed as a result of selecting the *Receive* option identifies all purchase order lines that have a positive *Balance* due. The *Receipt* column in that window will either contain zero or reflect the *Balance* due quantity (based upon the Y/N entry shown in the *Auto* column for the selected purchase order). The *Auto* value for any purchase order can be toggled between Y/N by performing a *Double-Click* on the relevant cell.

The *GRN/Date* entries must be provided, although you will note that the latter will default to today's date.

The *Batch* value associated with each potential receipt line contains a default value (based upon a configuration setting that permits flexibility) and positioning the cursor in the *Receipt* cell for any given line will permit the user to enter a revised quantity.

If the entry in the *Batch* column is altered (perhaps to reflect a supplier defined entry) an additional receipt line is added for the product to permit an additional receipt for a separate *Batch* identifier.

Select the *Save* button, located in the bottom right corner of the window, once the entries for a receipt have been completed. This will result in the following:

- A *Receipt* being recorded in the database (review available using the *Purchasing/Receipts* menu option).
- A number of inventory transactions and related cost records being added to the inventory audit trail.
- Inventory positions being updated for the defined product/unit-of-measure/batch and designated location.

Items on a single purchase order may be the subject of multiple receipts and it may be useful to reflect that in the processing undertaken as part of this review. It may also be useful to revisit the previous topic once certain items have been received and inventory positions established. Doing so will enable you to request that the action to *Reanalyse Gross/Net Requirements* for the relevant *Production Plan* and confirm the impact that inventory has in relation to the underlying calculations and subsequent reporting.

Raise Production Requests and Produce Cakes

Select the *Manufacturing/Production Plans* menu option to display the list of production plans that are recorded and, if more than one has been created, select the entry relating to the imported sales order book requirements.

In the lower segment of the displayed window complete the following actions:

1. Select the cell containing the product identifier (*Product* column) and the cell background colour will alter to reflect that selection.
2. Position the cursor in that cell and either *Double-Click* or *Right-Click* on the entry to display a scrollable *action list* that you might elect to evoke for the selected product.
3. *Double-Click* on the *BOM Engine Inventory* entry in that list to be directed to a window that, driven by the internal bill-of-material module, displays the lower level build elements for the selected product along with details about inventory.

This window contains two elements, *Explode* and *STRIP* that impact upon the content of the upper *Component* list that is displayed.

Explode defines the manner in which the bill-of-material is processed to arrive at a working list of *Components* and *STRIP* identifies a number of options that identify which items will then be discarded to establish those *Components* that will be displayed in this upper list segment.

Entries for *Explode* are:

- A: cascade through all levels and include every element in the working list.
- P: cascade through all levels and identify only those elements that are designated as a *Phantom* in the working list.
- S: cascade through all levels and identify just sub-assemblies (products with a bill-of-material that are also identified as a *Component* for another product).
- 1: only include components in the first level of build for the identified product.

The *STRIP* settings identify further processing of the working list whereby designated items will be removed before the content of the *Component* upper list segment is populated.

The initial default settings for these entries results in a list of all purchased ingredients that would be needed to produce the selected cake. Selecting the cell containing product identifiers, under the *Component* column heading, refreshes the content of the lower list segment to display details of inventory that is recorded for that selected item.

As an example the suggestion is that you might elect to review *BOM Engine Inventory* for the product *CARROT-CAKE-BBC* – this is based on the fact that the bill-of-material for this item includes two sub-assemblies; *CREAM-CHEESE* and *TOPPING-ICING-10*.

To include these latter two items in the list of *Components* you should uncheck the *STRIP Sub-Assembly* checkbox after selecting the *BOM Engine Inventory* action for the *CARROT-CAKE-BBC* product.

Note that the caption for the *BOM Engine Inventory* window incorporates the selected product identifier as you may wish to execute this same action for any one, or more, of the components displayed. The various window captions will enable you to keep track of the details you are reviewing and distinguish between your individual actions.

In the upper list segment two traffic light visuals provide a clear indication of the bill-of-material status for a component (*BOM* column) and the position regarding ingredient requirement (*Quantity* and *UOM* column) and current available inventory.

As a general rule traffic light visuals are one of four values:

- Red - indicates a "negative" status.
- Amber - indicates a "neutral" status.
- Green: - indicates a "positive" status.
- Blue - indicates an "unknown" status.

Interpretation for visuals in the *BOM* column are:

- Red – *Component* is an ingredient that has no bill-of-material.
- Green – will not be encountered as this would indicate that *Component* is a "finished" item that has a bill-of-material but does not appear in the bill-of-material for any other item.
- Amber - *Component* is a "sub-assembly" item that has a bill-of-material and also appears in the bill-of-material for another item.
- Blue – *Component* is not classified as either Red, Amber or Green.

Interpretation for visuals in the Inventory column are:

- Red – no inventory available.
- Green – sufficient inventory is available (may not be in build stated unit-of-measure).
- Amber – some inventory available but not sufficient for full production.
- Blue – may indicate a problem with the component inventory record status.

The user may raise production orders for product listed in either the *Production Plan* list window or components listed in the *BOM Engine Inventory* window in the following way:

1. Select the cell containing the product identifier (*Product* column or *Component* column) and the cell background colour will alter to reflect that selection.
2. Position the cursor in that cell and either *Double-Click* or *Right-Click* on the entry to display a scrollable *action list* that you might elect to evoke for the selected product.
3. Scroll to the *Raise Works Order* action in the displayed list and *Double-Click* on that entry to be directed to a window that permits the user to record a production request and optionally request that a copy be printed.

The printed production order, like all other documents produced using **Orbitall**, is based upon a model *Microsoft Word* document that is populated with the product process instructions and bill-of-material details. This is regularly used as the production control paperwork that accompanies a "batch" of production through the various stages of manufacture.

Rather than produce physical documents it may be useful to use a PDF writer to generate digital output, and this is the approach we take during testing and development. We are aware that many client sites have made use of a free resource available at the cutepdf.com website – this should not be taken as any form of recommendation

To review the list of production orders select the *Manufacturing/Works Order List* menu option.

Production - Adjust Inventory

Two principal inventory activities flow from the creation of a production order – receipt of the product being made and the need to reduce inventory for the ingredients required and used in the manufacturing process.

Receipt of partial or complete production is undertaken through actions (*Record Production* and *Record Production & Close* respectively) can be selected for a defined production order displayed in window that is accessed using the *Manufacturing/Works Order List* menu option.

Issuing ingredient inventory is completed using further actions that are available for a selected production order using that same menu option. There are presently, however, two alternative methods that are available that reflect individual requirements:

- *BOM Engine Trace* - manual issue involving a review of the bill-of-material and user data entry.
- *BOM Engine Issue* - automated issue of components based upon the consolidated list of products identified through cascading through all levels of the bill-of-material.

Using the second automated option does presently require relevant inventory to be held in a defined, specific location (*PRODUCTION* in the example database) with a matching unit-of-measure identifier to that which the ingredient requirement is stated in the bill-of-material.

In many instances the bill-of-material unit-of-measure may differ from the purchase unit-of-measure with the former reflecting a business convention (e.g. recipes state measurements in units of gram or tablespoon rather than the bulk units such as kilogram, tub or jar). This results in purchase orders being issued for ingredient product that once received will require conversion to an alternative unit-of-measure to enable subsequent allocation in relation to manufacturing activity. **Orbitall** incorporates an internal inventory conversion algorithm that incorporates features to deal with complications between any defined unit-of-measure values. That algorithm takes account of the following factors:

- Global, universally recognised ratios e.g. 1 gallon equals 8 pints, 1 metre equals 100 centimetres and numerous others.
- Product specific ratios e.g. a jar of one product may contain 150 grams whilst a jar of another different product may contain 300 grams.
- Identification of a multi-step logical "route" for conversion e.g. if the algorithm is "aware" that 1 kilogram equals 1,000 grams, 1 pound weight equals 16 ounces and 1 ounce equals 0.03527396 grams then it is possible to convert 1 kilogram to ounces or pounds by a composite calculation, that could incorporate both global and product specific ratios i.e. a jar of product could be converted to ounces.

In order to undertake any form of automated component/ingredient issue for a production order the user may use the *BOM Engine Inventory* action for a *Product* and elect to convert items of inventory, listed in the lower segment of the displayed window, to an appropriate unit-of-measure or move inventory to the *PRODUCTION* location.

Both of these latter actions are options accessible using the familiar *Double-Click* or *Right-Click* convention after the cursor has been positioned in the *Available* cell entry, in the lower segment of this window which displays elements of inventory, associated with the *Component* selected in the upper segment list.

Note that the manual *BOM Engine Trace* action remains available for a *Works Order* at all times, thus permitting excess allocation of bill-of-material ingredient inventory (possible allowance for errors or incidents) and also the issue of any product that is not in the defined bill-of-material (possibly for cost allocation as a consequence of errors or incidents).

The implication of that last comment regarding cost is a reflection of entirely new features incorporated in this free version of **Orbitall** that attempt to manage actual costs relevant to inventory on a FIFO basis. This is has been tested within the development process but is still subject to ongoing stress testing with respect to an actual working implementation.

Despatch Goods

Confirmation of completion of any production process through the *Works Order Record Production* action will result in the "finished" product being recorded as an element of inventory.

This is the natural precursor to the step involved in identifying items that may be despatched against individual sales orders. It is, depending upon site configuration, not a mandatory requirement and various settings may be altered to permit the despatch of items without relevant inventory being available.

Orbitall imposes a relationship that does not permit the association of sales order lines from more than a single sales order with an identified despatch.

Each recorded despatch has historically maintained a one-to-one relationship to a sales invoice, but this free version of **Orbitall** should enable complete or individual elements of multiple despatches to be linked together and identify a single sales invoice that could be submitted to a customer.

Selecting the *Sales/Sales Orders* menu option to display the current customer sales orders that are recorded is the starting point for the despatch process.

From the window displayed the use of the familiar *Double-Click* or *Right-Click* convention for an entry in the *SO Number* column and selecting the *Ship* action from those that are displayed will direct the user to the relevant window that permits confirmation of the items despatched.

Depending upon the Y/N value displayed in the *Auto* column for the selected sales order the resultant despatch window will have the *Ship* column entry for each sales order line populated with the *Balance* due or zero.

The user should identify the *Deliver To* address, *Ship & Tax Dates*, any despatch *Reference*, *Carriage* charge and amend the *Ship* and/or *FOC* entries for each sales order line.

Before selecting the *Ship* button, located in the bottom right hand corner of the window, to confirm data entry the *PRINT* checkboxes for *Invoice* and/or *Advice* may be altered to have these documents produced.

Successful completion of this despatch process will be followed by individual prompts, for each sales order line that has been included in the despatch, that permit the user to confirm which elements of product inventory are related to this despatch. This may be identified or abandoned at this stage and if the latter option is taken this action may be completed at some later stage when reviewing the list of shipments that have been recorded using the *Sales/Shipments/Invoices* menu option.