

# PALLETMANAGER - Getting Started.

## 1. Installation.

If you are carrying out a TRIAL of PALLETMANAGER then the CD will contain a fully functional version of the software which will function for a limited time period - up to 21 days. [Those who have purchased a license should follow the installation instructions provided with their licensed CD].

Trial copies (**only**) **MUST be installed LOCALLY on your computer (e.g. C: drive)**. After installation is complete Exit from the CD menu system. The application can then be run by selecting **Start / Programs / PALLETMANAGER / runpm** . The rest of this very brief guide should help get you going. A **full manual** and also the option to **change to Imperial measurements** can be accessed from the opening screen.

## 2. What you will be able to do.

Whilst **PALLETMANAGER** can 'simply' be used to produce optimal pallet layouts for an existing case on a pallet, this is just one element within a highly sophisticated modular product! Fitting more of an existing (fixed) case size on to a pallet may save you a great deal of money (£25,000 / year on **one** product alone for one SME user), and you can purchase just this module. However if you have any control over case sizing, case design, packaging material selection or product design then even greater savings are possible as we describe later.

Although the word 'simply' was used above, even the problem of fitting a given case size onto a pallet in an **OPTIMAL** way, whilst apparently easy, is in fact very complex. Some competitor products do NOT maximise pallet fill!. GOAL staff have been at the forefront of international research in this area for over 30 years. Thus we can rightly claim that we produce **Unique, Powerful and Innovative Software**.


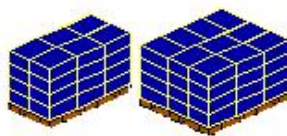

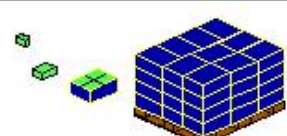

**HOWEVER YOU DO NOT NEED PALLETMANAGER** if you can confirm **ALL** the following points:

- That all pallet layouts you use make **100% use** of the pallet board area – without any wasted space in the centre or at the edges of the pallet layout, and they all utilise **all** the available loading height.
- Trays or tote boxes likewise are fully loaded with no side gaps and no free headspace.
- You have **fully** investigated the implications of alternative case designs (material choice, strength, alternate collation arrangements etc) on pallet fill and packaging and distribution costs.
- There are **no opportunities** for further case rationalisation / standardisation within your supply chain?
- You have **fully** investigated all possible minor changes in product dimensions or case specification on your distribution and packaging costs?

### 3. Getting Started.

- Start PALLETMANAGER from the **Start / Programs / PALLETMANAGER** entry. After an introductory screen the Opening Menu Screen (Screen 0) is shown. On this occasion, as on most occasions, select **New Run** from this menu.

Other entries on the Opening Menu provide access to database facilities (or the online manual) and will be described later. When **New Run** is selected the **Mode Selection Screen (Screen 1) is displayed** as shown below:

<p><b>Palletise Mode:</b> Pack an existing case or product or drum in the most efficient way into a give load space [pallet, tray etc] taking account of the constraints placed by the user.</p>		<input type="button" value="Palletise"/>
<p><b>Palletise Comparison Mode:</b> Pack an existing case in the most efficient way onto each of two pallet sizes - for example a 1200*1000 and 1200*800 in order to compare utilisation.</p>		<input type="button" value="Pallet Comp"/>
<p><b>Collation Mode:</b> Combine together a number of primary units so as to form a 'case'. All possible collations of the primary are examined and then palletised.</p>		<input type="button" value="Collation"/>
<p><b>Tertiary Mode:</b> This takes Collation mode analysis a stage further. Sub-primaries are collated to form primary sizes and then are collated once again before being palletised.</p>		<input type="button" value="Tertiary"/>
<p><b>Cube Mode:</b> Here identical units are packed into cuboid outer(s) (e.g. shipper/container packing) using <b>any</b> mix of layers in the allowable orientations.</p>		<input type="button" value="Cube"/>

The text and graphics illustrate the basic functions of each operating mode. Below we illustrate the simplest of these - **Palletise** (which now includes **Pallet Compare**) - but summarise first the other modes:

**Collation mode** allows you to collate together products to form case/shrink wrap units, select appropriate packaging material, palletise all possible case designs in an **optimal** manner and rank these solutions based on handling and material costs. Optimal layouts for the chosen case design can then be browsed and selected before printing a series of detailed reports, or emailing these to clients.

**Tertiary mode** collates sub-primary units before entering Collation thus providing for 2 stage collation of products.

**Cube mode** is used to maximise loading in a container / shipper or to select which case / shipper / tray / container is most suited to transporting a given product.

**4. A Brief Example** - Examine the optimal pallet layouts available for a case of size 230 \* 125 \*100 on a pallet of size 1200 \*1000 \* 1620.

**Solution:** From the opening menu select **New Run** and then from the Mode Selection screen select **Palletise**. Enter case details for the problem as below:

Please enter CASE / Product details:  
 (Use Tab or Enter or the Mouse to move between entries - once entry complete select the Continue button)

Code (14 characters):

Description (30 characters):

External Dimensions :                      Dimn.1                      Dimn.2                      Dimn.3  
     mm                       mm                       mm

Permitted orientations -  
 Must this dimension be vertical?       Yes                       Yes                       Yes

Weight:     kg

Primaries per Case:                             

Annual Case Volume 000s:                     

Code and Description entries are your identifiers, primaries / case and case volume values are default values (Used for costing movements if required). Select **Continue** to display Pallet Default values which happen to match the problem definition. Normally you will configure the Pallet Database (see manual [Section 4](#))

**Pallet/Load Space Details:** [Edit as required or select Database]

Pallet/Load Space longer side                       mm.

Pallet/Load Space shorter side                       mm.

Max. Product loading height (Excluding pallet board ht.)                       mm.

Pallet board height (Typically 145-165mm )                       mm.

Max. Total Height (Sum of Product + Pallet as entered above)                      1775 mm.

Max. loading weight (Excluding pallet board wt.)                       Kg.

Total O/H or U/H (-) changing longer dimension                       mm.

Total O/H or U/H (-) changing shorter dimension                       mm.

Gap between each unit                                       mm.

Tick here if you are packing a cylinder                       Yes

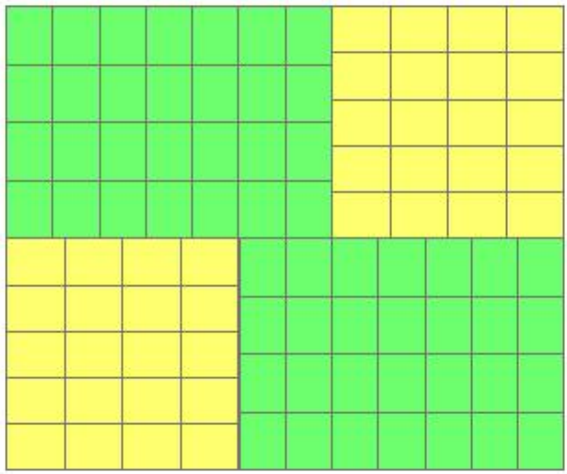
The above load space details may be used  
 or edited for this run or alternatively  
 the Pallet/Load Space Database can be accessed here:

Select **Pack** and the optimal solutions for this problem will be calculated.

We allowed any case dimension to be vertical thus 3 optimal solutions:

Ref No	Extnl Case Dimensions			Colln	CASE Matl Wt.		TOTAL Cases	Layer	Area	% Fill	+Layer Vol	Ht.	Wt.	Cost Total
1	125	100	230	N/A	N/A	0.1	672	7x 96	100	99	220			0.045
2	230	125	100	N/A	N/A	0.1	640	16x 40	95	94	80			0.047
3	230	100	125	N/A	N/A	0.1	612	12x 51	97	90	5			0.049

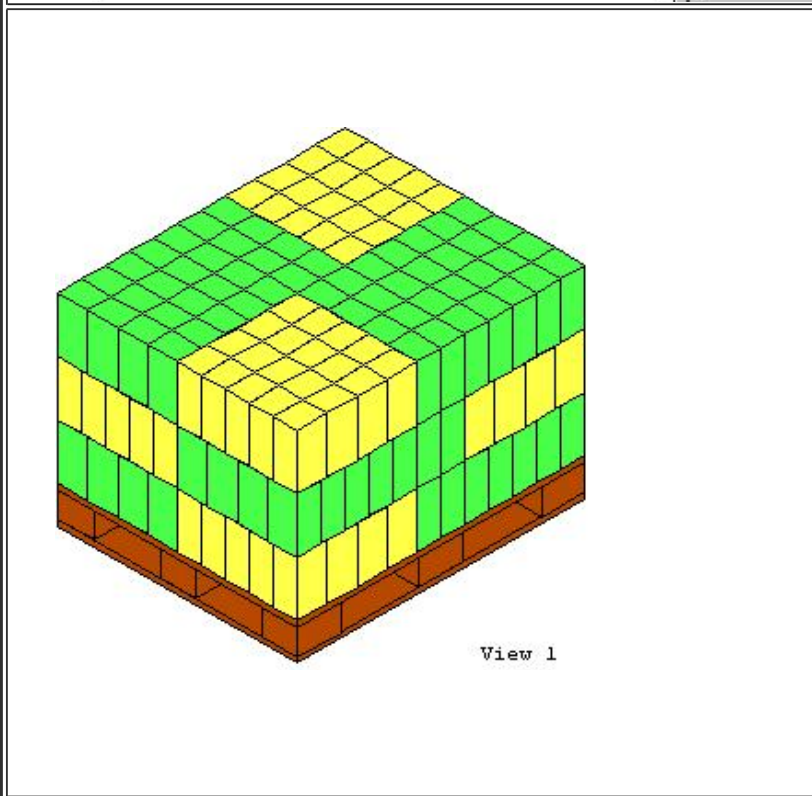
We highlight Solution 1 (the best) and then select **layout**. The first of 46 optimal pallet layouts for this case size is shown. The + / - **Pattern** buttons allow us to browse.



**Viewing patterns:**

**Movement of boxes in layout:**

**Build up pallet stack:**



After viewing the patterns available the one most suitable for creating the 3D pallet stack is selected and (here) 'Stack Mirror' is selected to produce the picture shown here.

Assuming this is acceptable you select **Print / View** to generate screen / printer / email reports.

Any (or all) screen graphics can be [cut to the Windows clipboard](#) and pasted into Windows applications. The software also has an inbuilt **Store** database.

The above example provides a very quick and basic overview of operations. In practice it will usually be necessary to investigate the problem rather more thoroughly using some of the powerful analysis features of the software.

As well as using unique and powerful optimisation techniques **PALLETMANAGER** has unique and very powerful features for investigating the influence of (small) dimensional changes in the product or packaging on distribution costs. It also has its own inbuilt databases for storage and recall of specifications (STORE and Webbase), and an **e-PALLET** PDF specification mailing system.

In **Collation** and **Tertiary** modes an inbuilt user-configurable **Style Database** allows you to both select appropriate case designs and investigate the suitability (case strength) of different styles for a particular problem. A typical Style database screen is shown below:

**Style Database Entry:** 1 of 30 (29/30 are temporary entries)

Description [2*23]	B flute case with flaps		top and bottom.
Thickness	3		
Weight (Kg/Sq.M)	0.4		
Cost per Sq.M	0.75	Tray Height	0
Matl Thicknesses - Pack Length	2	Height Allowances - Headspace	0
Matl Thicknesses - Pack Width	2	Ht Allowance - Each Layer Pad	0
Matl Thicknesses - Pack Height	4	Type of Pack / Case (020 )	1
Gap between each Item (Length)	1	Max. Tiers in Collation	3
Gap between each Item (Width )	1	Maximum Pack Dimension	600
Gap Constant (Length)	1	Maximum Pack Height	9999
Gap Constant (Width )	1	Ht/Base Stability	6
S/W End Seal (Length)	0	Conveyor Working Width (or 0)	0
S/W End Seal (Width )	0	Conveyor Inner Radius (or 0)	0

Buttons: Allow Editing, View Styles, Previous Style, Next Style, Use this Style

### 5. Advanced Functions.

During data input (immediately prior to packing) an '**Advanced**' function button will allow you to automatically investigate such things as:

- The packing / collation of cylindrical and 'flower pot' shaped items.
- The use of alternate collation quantities - specify various collation quantity values or specify a range of values.
- Examine whether minor dimensional changes to the product or a change of packaging could improve palletisation efficiency and/or reduce costs.

After solutions have been calculated a '**Do Better**' function provides a further unique and powerful tool to answer what-if questions such as:

- What is the minimum change in case / product dimensions which would enable more product to fit on the pallet?
- What improvement can I get if I allow a 1% change in any / all of the case dimensions?

Whilst a further '**Advanced**' function button allows you to investigate the suitability of the case material selected in terms of Case Strength, and to make modifications to the number of layers used on the pallet, and even reduce the number of units / pallet if this is a requirement.

## 6. Improving Solutions.

In order to fully appreciate how **PALLETMANAGER** can be used to provide logistics cost savings one does need to study the user manual in more detail - especially [Section 3](#) where many of the features are illustrated in some detail. Our website (www.packyourpallet.com) provides examples of how existing customers benefit from using our software. We would stress that a very broad spectrum of users - from SME's to multi-nationals - can make major savings using our software.

When tackling a given problem a number of additional considerations may be of relevance in obtaining the best possible solution and a few of these can be found in the following tables taken from the end of Section 3 of the on-disk user manual. When viewed on screen the hyperlinks direct the user to the section of the manual describing the suggested solution approach.

**Height and Weight Limits?:** Any pallet stack produced by PALLETMANAGER will be restricted by the pallet loading height and weight entered on the data entry screens. The Tabular Results Screen (Screen 5) shows you directly what change in these values would enable you to improve pallet utilisation. If this change is possible (perhaps just an extra 5mm or 5Kg is needed), go **Back** to adjust constraint and re-solve. Alternatively use the **Advanced** functions described in [Section 5](#).

**Poor pallet area utilisation?:** Could a very small amount of overhang be used? (2mm might be enough). To investigate go **Back** and add (say) 25mm to the (zero) overhang values on Screen 3 and re-solve. Both the overhang and non-overhang solutions will be shown - see [Section 5](#).

**Dimension changes?:** Is there any scope for *minor* dimensional changes to primary or case dimensions. Two unique and powerful modules - **Do Better** ([Section 15](#)) and **Fixed Volume** ([Section 7](#)) - can help you improve pallet utilisation through small dimensional changes in a manner which would be impossible using trial and error or stepwise examinations. Perhaps just a reduction of 1mm or less might result in more product / layer - **Do Better** tells you!

**Pallet top layer?:** Could the top pallet layer consist of the same cases as the rest of the stack but in another orientation? This could enable an extra layer to be accommodated. If so select the **Top-Layer** option from Screen 4 as described in [Section 11](#).

**Unstable stacks?:** Are the optimal pallet patterns produced unable to be stacked in a suitably stable manner? Usually the ability to move and centralise layouts will provide the solution (See [Section 5](#)), but in extreme instances you may need to select totally different layouts (of the same case size) to achieve a stable stack (see [Section 11](#)). In extreme instances the software can reduce the cases / layer.

<p><b>Too complex?:</b> Perhaps the optimal layouts are too complex and you need something simpler. You can reduce the number / layer to a lower value from the Results Summary Screen using the <b>Advanced</b> options (See <a href="#">Section 5</a>). This might also be appropriate with a very heavy product where the stack height is limited by weight. Reducing the number/layer by one could allow an extra layer can be fitted.</p>
<p><b>Cube Packing?:</b> If packing cases on a pallet could a solution be used with (say) all 3 case orientations used to create the stack. In such situations the <b>Cube</b> mode of operation is appropriate (see <a href="#">Section 8</a>).</p>
<p><b>Cylindrical product?:</b> If so have you examined the section relating to all aspects of cylindrical packing (see <a href="#">Section 10</a>). The Advanced Options during data entry allow you to indicate the cylindrical nature of the products (e.g. drum or 'flowerpot') you are dealing with.</p>
<p><b>Tray or Tote Packing?:</b> The software is ideal for solving packing problems for trays or tote boxes using Palletise or Cube modes. <a href="#">Section 16</a> provides an overview of this.</p>
<p><b>Saving Solutions?:</b> Do you need to save solutions for future use either locally or on an Intranet. If so the <a href="#">STORE module</a> and the <a href="#">Webbase</a> modules provide two complementary solutions. At any time you can re-call the solutions, re-print or email the solution, or make changes to the solution and save it away again.</p>
<p><b>Need to email specifications?:</b> e-pallet enables you to automatically launch your email software with the palletisation specification already attached (in Adobe PDF format). Just enter the recipient and go!</p>
<p><b>In Collation / Tertiary Modes, in addition to all the above, the following may be of assistance:</b></p>
<p><b>Case Material:</b> Are the amounts allowed for case material sufficient or excessive? The 'stackability' of different case designs / materials can be examined using the <b>Case Strength</b> module described in <a href="#">Section 6</a>.</p>
<p><b>Case Costs:</b> Are the cost entries for case materials appropriate. As illustrated in <a href="#">Example 2</a> tackled earlier in this section solutions with the highest pallet utilisation are not necessarily the most cost effective.</p>
<p><b>Case rationalisation:</b> Do you need to consider whether any existing case designs are similar in size to those generated? If so the <b>case rationalisation</b> facility can be used (see <a href="#">Section 13</a>).</p>
<p><b>Nesting:</b> Do the products nest. If so see <a href="#">Section 6</a>.</p>

**Gower Optimal Algorithms Ltd** have over 30 years experience in providing companies worldwide with palletisation & design software. Our unique, powerful and reliable windows software meets both the demands of the packaging professional, and has behind it an unrivalled research basis (see our website for further information) giving you OPTIMAL solutions.

**Please see overleaf for contact details - and for a breakdown of the modules which form PALLETMANAGER.**

## **PALLETMANAGER Modules.**

The highly modular nature of PALLETMANAGER does mean that we can closely tailor PALLETMANAGER to meet YOUR needs. Unlike some products PALLETMANAGER always maximise the number of cases fitted / pallet! The GOAL website details the International expertise of our staff in this area. The modules:

**PALLETISE:** The 'base' module - part of all installations. Optimal palletisation of existing case sizes (or drums) onto a pallet, optimal packing of trays with product, and facilities to manipulate the layouts produced, examine the influence of adding / reducing layers, reducing the number of cases / layer and investigation of the influence of overhang / underhang. Outputs four comprehensive reports for on-screen / printer output or for saving using STORE or Webase or emailing using e-pallet (see below). Now includes the **PALLET COMPARE** module - which does what it says!

**COLLATION:** Allows the development of cases from primary products and the automatic investigation of alternate collation arrangements on packaging and distribution costs. Includes the analysis of packaging material suitability (strength) for a particular problem. Includes a 'case match' facility to identify existing cases similar to that being generated for a new product. Following on from this the full range of PALLETISE functions are available.

**TERTIARY:** Takes the analysis of collation one stage further back - collating a number of products together to form a sales unit, and then collating this again to form a case.

**CUBE:** Considers the packing of boxes / totes with product, including the identification of which existing boxes / tote (from an inbuilt user defined database) is most suited to holding a given product.

**DO BETTER:** A unique and powerful tool enabling you to see how minor dimensional changes could improve your load fill.

**FIXED VOLUME:** Automatically vary your case dimensions to automatically answer 'what-if' / 'how can I' questions.

**STORE:** A database facility which holds user specifications for re-call / re-printing of specifications or re-calculation in the light of product / packaging changes.

**WEBBASE:** Allows you to store all your palletisation specifications on a web / intranet server or CD for access by yourself and anyone else with just a web browser.

**E-PALLET:** Extends the output options of any of the above to include the production of Adobe PDF reports and linking this to standard (MAPI) email systems (e.g. Outlook).

Please contact us to discuss your business requirements and we will be pleased to advise you on your software needs.

**Gower Optimal Algorithms Ltd**

<http://www.packyourpallet.com/>

email@: [support@goweralg.co.uk](mailto:support@goweralg.co.uk)

44 (0)1792 368413

**GOAL**