Resource Manager *for Excel*
12 Steps to Success

1. Introduction & Installation

Thank you for your interest in Resource Manager for *Excel* -- the only MS Excel based low-cost, planning and scheduling software solution that works for all manufacturing enterprises. Either as standalone to gain valuable training for any ERP system for bigger companies or perfect for smaller-medium sized companies who can benefit from more efficient production scheduling.

We also have a new trail available for Resource Manager - DB, an elegant database solution, along with EDGEBI (Enhanced Drag-n-drop Graphical Environment). These combined offerings provide you unsurpassed flexibility for leveraging Excel on local PCs and sharing data across a network. Finally, you can achieve your goals of an affordable planning and scheduling solution that quickly adapts to your needs.

These *12 Steps to Success* instructions, along with the sample trial file and free tech support as needed will enable you to quickly evaluate some of the key features of Resource Manager. In addition, we invite you to call us at (248) 486-1934 for a walkthrough focused on your needs. On the last page, you will find an order form for a ***risk-free*** evaluation.

System Requirements

1. Excel 97 or greater installed and working on standalone PC or Network.
2. Have a Basic working knowledge of your spreadsheet: (Entering data into cells, file retrieving and saving, selecting and printing spreadsheet ranges).
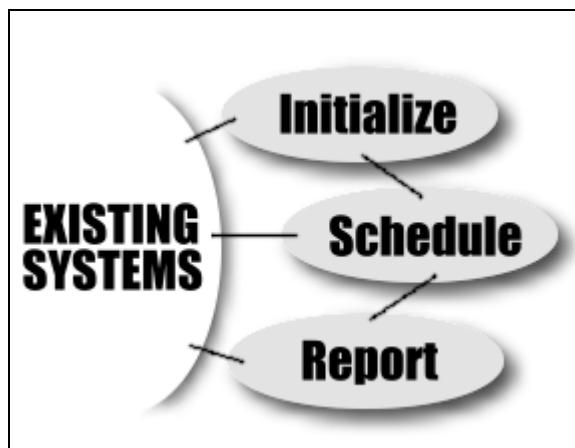
No Rules – No Limits

In contrast to other shop control, MRP or manufacturing software offerings, Resource Manager does not have a rigid, standard procedure for every application to follow. Rather, Resource Manager is designed to adapt to *your* requirements. You will NOT have to change the way you work today to recognize significant benefits with Resource Manager. Since Resource Manager is based in Excel – all the flexibility for managing data in Excel is inherent in Resource Manager. Exporting, importing, formatting, graphing, custom reports -- there are no limits for customizing Resource Manager for your application.

Just call US about how to configure and run Resource Manager for your needs. We are committed to your success and would love to hear from you.

12 Steps to Success Overview

There is a simple three-step process for basic running of Resource Manager for Excel:

The remainder of this *12 Steps to Success* will give you a tour through each of these areas: Initialize, Schedule, Report. As the system diagram shows, you can exchange data with other systems at any point in the Process.

Installation

Please note where you downloaded (saved) the RMX2023D.xlsm file from demo download section on web site or from e-mail.

After downloading and moving to desired directory, using windows, right click on file, choose properties, and UNBLOCK if checked at bottom of form.

You might also need to go to Excel File, Options, and add Developer to ribbon. Then, click on Developer Macro Security and enable macros.

Now start Excel and click on File, Open, RMX2023D.xlsm.

If you are prompted to enable macros, click **[enable macros].**

Important

1. Screens are sized for 600X800 resolution. If you have a higher resolution, you will see more of the spreadsheet.
2. To move over columns use the cursor keys or mouse (Tab Key is reserved to move full screen).
3. For now, DO NOT 'space' or type over cells with data to edit or delete data (use Purge, add new, error checking and other standard RM commands).
4. When transferring data from outside RM to inside RM use Edit, Paste Special, Values.
5. DO NOT use the Print Icon on the main Toolbar. Use the RM Print Buttons, OR, File, Print, Selection.

UP AND RUNNING

There are several resources to ensure a successful start, including:

1. Call *US* at (248) 486-1934 for a "walkthrough" based on your requirements. Due to the flexibility of the product, there may be more than one way to address your application. This is why we encourage you to give US a call and let us summarize how to run Resource Manager to meet your specific needs.

2. Follow these 12 Steps to Success w/ Sample Data.

3. Printed manual

4. Full manual help link on first page.

5. Quick Tips: Throughout the program, a red triangle in the corner of a cell indicates a quick tip comment. Simply run your cursor over this cell to read the Quick Tip.

[ACTION STEPS]: Throughout this 12 Steps to Success, there will be *Action Steps* that you can use to get a feel for the system. The Action steps include actual RM commands in **[bold square brackets].**
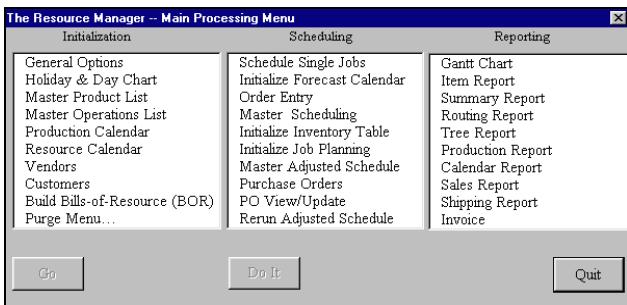
Note: When you enter data into a cell – sometimes you need to click outside the cell before you can process data.

Action Step: Run your cursor over the Quick Tips (red triangle in the corner of cells).
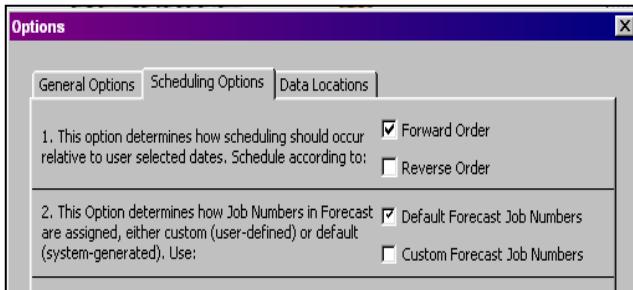
2. NAVIGATION & GENERAL OPTIONS

The best way to start with Resource Manager is to run the system from the Main Menu via the F4 key, or Menu Buttons found throughout the program. From this Main Menu, you can select section to view by pressing the **[Go]** button, or double click in menu, or single click and by pressing the **[Do It]** button.

Action Step: Press [F4 - General Options- Do It] and click on the Scheduling Options Tab.

Note item 1 on the Scheduling Options Tab - Schedule according to Forward or Reverse Order. Forward Order indicates that when scheduling your products, jobs, etc. you

will be providing a start date, and RM will calculate the finish dates (subject to capacity restraints, inventory levels, job priority, etc.). Reverse Order indicates that you will provide a finish date, and RM will calculate the start dates. All these options may be adjusted as you find necessary; the defaults are the most popular to start with. These options may also be changed at any time, with the changes being applied to the NEXT schedule processed. This allows for virtually any combination (i.e., estimated Jobs entered as Forward, firm orders as reverse) to co-exist in the system.

Action Step: Press [Cancel] to close options screen.

3. DAYCHART

For capacity planning and scheduling according to workcenter hours, you need to tell the system what hours you normally work per day and a list of holidays when no work will be performed. This is done in the Holiday & Day Chart portion of the program.

Action Step: Press [F4 - Holiday & Day Chart - GO] to review/edit Holiday & Day Chart. Click in the cells and directly edit Sat-Sun hours to equal 0.
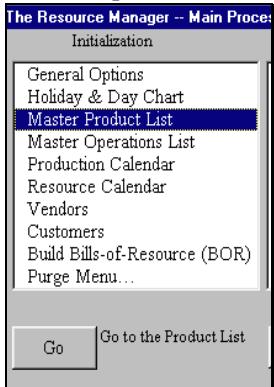
This chart, like the rest of the configuration options throughout Resource Manager, may be changed at any time, with the updates being applied to the NEXT schedule processed. This enables you to schedule a mix of options (hours available, forward or reverse, resources available, etc.) for different Jobs.

Note to Job Shops, Make-to-order manufacturers, contract manufacturers, etc. The remainder of this *12 Steps to Success* uses sample data for a standard product (a common ball point pen). This is just for an example of how to touch on each part of the system – and not how you would necessarily set-up and run Resource Manager for your operation. For example, you can start directly with your existing custom spreadsheet, or data from any other system, and paste directly into Resource Manager. For now**, please follow through this example and then call *US*** and we can figure out the best method of setting up and running Resource Manager for your needs.

4. Master Products & Ops. List

Action Step: Press [F4 - Master Product List - GO]

Master Item List Products	Master Item List Operations

Bill-Of-Material + Routing = Bill-Of-Resource		

Products and Operations lists are right next to each other. The Product List contains raw materials, other vendor related items, sub-assembly, and end product listings. The connection between a listing for a sub-assembly or end product and its Bill-Of-Resource is found in column AD (the red format indicates System Maintained column only).

Action Step: Run your cursor over the red triangles to view a brief description of each column, and its function.

Action Step: Press [F4 – Master Products List - Go]. In the first blank row, of the Product List enter - 10Pack Pen - in the Product Number Column. Press Enter or simply click outside cell. We will leave the rest of the columns as they are, and RM will assume a default of 0 or blank for the empty cells.

PRODUCT NUMBER	PRODUCT NAME
P#1USPEN	Ball Point Pen
P#234Spring	Pen Spring
P#Ink_1000	Ink Cartridge
P#Lower_Barrel	Pen Lower Barrel
P#Ring_101	Barrel Ring
P#Upper_Barrel	Pen Upper Barrel
10Pack Pen	

Anytime new

MASTER ITEM LIST — 6 Entries — I. PRODUCTS

PRODUCT NUMBER	PRODUCT NAME	LEAD TIME	UNIT COST	VENDOR ITEM ID	VENDOR NUMBER	STOCK FLAG	BIN LOC	P-List Usr1 Bor & Inv	P-List Usr2 Bor & Inv	P-List Usr3 PList Only	1ST JOB NUMBER
P#1USPEN	Ball Point Pen	1	$8.12								J001_10700
P#234Spring	Pen Spring	3	$0.05		V#Central						
P#Ink_1000	Ink Cartridge	1	$0.15		V#Acme I						
P#Lower_Barrel	Pen Lower Barrel	2	$0.05	11	V#Plastics						
P#Ring_101	Barrel Ring		$0.01		V#Ace Rir						
P#Upper_Barrel	Pen Upper Barrel	2	$0.05	10	V#Plastics						

MASTER ITEM LIST — 2 Entries — II. OPERATIONS

OPERATIONS NUMBER	OPERATIONS NAME	SET-UP TIME(HRS)	UNIT COST	RESOURCE MULT
O#Inspection	Inspect the Pen		$15.00	1
O#Assembly	Assemble the I	0.5	$15.00	2

Action Step: Press [F4 - Master Operations List - Go] to view the Master Item List – Operations.

The Operations list contains resources that consume hours and will be scheduled *subject to the hours per day available, and hours required.* The RESOURCE MULT column is how many of that resource you have. This number (which can be less than one) is multiplied by the hours in the day chart, to configure the initial available capacity for each workcenter. In our example, we have 16 hours (Res. Mult. =2 X 8 hrs./day) available for Assembly and 8 hours for Inspection. The initial available capacity is displayed in the Resources Sheet and can be edited directly for individual workcenter calendar definition.

NOTE: You just LIST items (products & workcenters) here in the Master Item Lists, you put them together (BOR, JOB, BOM, PROJECT, PRODUCT, BATCH, etc.) later (see diagram).

There are several ways to enter data into the Master Item Lists, including the Add/Edit button provided, and direct entry. For this evaluation, we will directly enter an item into the Product List.

Products or Operations are added to the Master Item Lists, you MUST error check the lists. Error checking formats the data in RM, and puts a P# in front of Product Numbers, O# in front of Operation Numbers, V# in front of Vendor Numbers, and replaces the '/, \, *, (slash, back slash, asterisk, decimal)and space characters with an underscore.

Action Step: Error checks the Master Item Lists by pressing [F4 - Master Product List - Do It]. (Notice when selecting either Product/Operations Lists, the [Do It] button will error check BOTH Lists). Answer [YES] to the reinitialize the Production Calendars prompt, [YES] to the default start date, [OK], [OK].
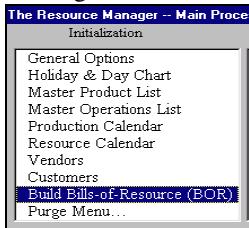
Action Step: View the Master Item Product List. Notice that there is now a P# in front of the new data, as well as an underscore where there was a space character.

5. Build Bills-Of-Resource (BOR)

P#Ring_101	Barrel Ring	0	$0.01		V#Ace Ring
P#Upper_Barrel	Pen Upper Barrel	2	$0.05	10	V#Plastics World
P#10Pack_Pen		0			

The Bill-of-Resource (BOR) is the configuration of the Products and Operations, that make up your finished product, Job, or project. To create a BOR simply select components off of the Master Item Lists, connecting Products and Operations

however you wish, allowing for concurrent scheduling of Workcenters and Materials. Building a BOR for your particular product configuration is easily done with the complete production version of Resource Manager. We recommend that you call US today to answer any questions that you may have about constructing a BOR that accurately models your processes. For this tour, we will just view an existing Bill-Of-Resource (BOR) for a Ball Point Pen.

The Resource Manager -- Main Proces
Initialization
General Options
Holiday & Day Chart
Master Product List
Master Operations List
Production Calendar
Resource Calendar
Vendors
Customers
Build Bills-of-Resource (BOR)
Purge Menu…
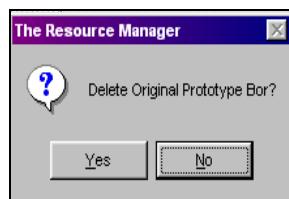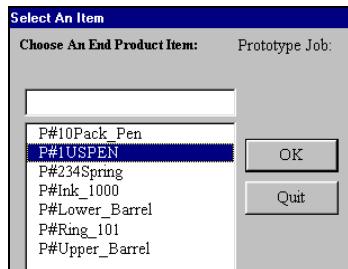
Building/Editing BORs
Action Step: Press [F4 - Build Bills of Resource (BOR) - DO IT], select P#1USPEN [OK], [NO] to Delete Original Prototype BOR, [OK].

Resource Manager allows you to schedule a BOR as it is built. Building and scheduling one at a time is a good option for Job Shops and custom manufacturers. For this tour we will just review an existing BOR and schedule it in the next section.

** The Bill-Of-Resource Table*

The BOR Table is comprised of three sections:

I. The header area, which contains Check, Clear, Print, and Save buttons for working with current BOR.

Select An Item

Choose An End Product Item: Prototype Job:

P#10Pack_Pen
P#1USPEN
P#234Spring
P#Ink_1000
P#Lower_Barrel
P#Ring_101
P#Upper_Barrel

OK   Quit

II. The End Item & Job Input area, which contains important summary information about the current BOR. The JOB NUM identifies the BOR, and by default, is assigned by the system. When scheduling a BOR, you can assign your own Job Number, Work Order number, etc. The JOB COST is a total of all subcomponent costs. The DATES are used for scheduling the current BOR (we will schedule all BORs in the next section). The END PRODUCT NUMBER and NAME are the top-level identifier. COMPL TARGET is how many 24-hour days it will take to manufacturer the End Item. This will be adjusted by all capacity restraints when scheduled. The LEAD TIME is extra days added for final processing (shipping, etc.) once all subcomponents are done. You can double click on the CUSTOMER NUMBER to assign a customer with this end product. NUM RQR'D, is how many of End Item you are building the BOR for (default is one). COST/ITEM is the JOB COST divided by NUM REQR'D.

III. Subproduct & Resource Inputs area, which contains a list of all the products and operations that go into making the End Item. The *Next In Sequence* Number is what the Product goes into, or what follows after an Operation.

For example, in the diagram above, all the products on the left have Assembly as the *Next In Sequence*, while Assembly has Inspection as *Next In Sequence*, and finally, Inspection has the end product – Ball Point Pen – as the *Next In Sequence*.

Barrel Ring			
Ink Cartridge			
Pen Spring	→ Assembly	→ Inspection	→ Ball Point Pen
Pen Lower Barrel			
Pen Upper Barrel			

The Resource Manager

? Delete Original Prototype Bor?

Yes   No

Bill of Resource (BOR) Table					System formulas::			USER
					36826	36826.022		FORMULAS:
Check	8.1225	**Clear**	**Print**	**Save**	7	8.1225	3.02 4.022	
					#N/A	#N/A	#N/A #N/A	

I. End Item & Job Inputs								
JOB NUM	JOB COST	START DATE:	10/23/00	END DATE:	10/27/00			
J005_102300	$8.12							

END PRODUCT NUMBER	END PRODUCT NAME	COMPL. TARGET	LEAD TIME	CUSTOMER NUMBER	NUM. RQR'D	NO OF STEPS	COST/ ITEM	ORDER: START	ORDER: END	USER COLUMN
P#1USPEN	Ball Point Pen	4.022	1		1	7	$8.12	3.02	4.022	

III. Subproduct & Resource Inputs										
To sort Subproducts, double-click on any column (B thru O) in the			*To sort, double-click on any column (B thru L)*							
Product or Operation Number	Product or Operation Name	Next in Sequence	Lead\Set up Time	Unit Cost	Num Rqr'd	Net Rqr'd	Extended Cost	Order: Start	Order: End	User Column
O#Inspection	Inspect the Pen	P#1USPEN	0	$15.00	0.0167	0.0167	$0.25	3.02	3.022	7
O#Assembly	Assemble the Pen	O#Inspection	0.5	$15.00	0.0042	0.0042	$7.56	3	3.021	6
P#Ring_101	Barrel Ring	O#Assembly	0	$0.01	1	1	$0.01	3	3	1
P#Ink_1000	Ink Cartridge	O#Assembly	1	$0.15	1	1	$0.15	2	3	2
P#Lower_Barrel	Pen Lower Barrel	O#Assembly	2	$0.05	1	1	$0.05	1	3	3
P#234Spring	Pen Spring	O#Assembly	3	$0.05	1	1	$0.05	0	3	4
P#Upper_Barrel	Pen Upper Barrel	O#Assembly	2	$0.05	1	1	$0.05	1	3	5

BOR Table - Subproduct & Resource Inputs (continued)

Lead Time for P#Products is how many calendar days it takes to process (order - receive). Set-up times, for O#Operations is constant hours that are added to runtime and is used in scheduling according to all capacity restraints. Unit Cost can be pulled from Item Lists or entered directly and saved unique to each BOR. Num Reqr'd, for Products, is how many of that sub you need. Num Reqr'd, for Operations, is the cycle time, or run time, in hours. Net Reqr'd is simply Num Reqr'd times quantity scheduled. Extended cost is Unit Cost times Net Reqr'd and includes the set-up time for Operations.

The User Column, as you notice, contains a sequence of numbers from 1-7. This allows you to organize the visual appearance of the BOR to a desired format. For example, a traditional multi-level BOM can easily be displayed as follows:

You can make direct edits to the BOR, even reading in complete BOR structures from other systems. This is a truly unique feature of Resource Manager and one that you may want to try out with the production version. You can enter data, copy-and-paste from other systems, etc., directly into the BOR table. When you do this, and error check, Resource Manager will check all entered components against the Product and Operations table. If the numbers do not exist, the system will automatically prompt you whether to add new products or operations to the appropriate list.

END PRODUCT NUMBER
TOP
III. Subproduct & I
Product or Operation Number
SubAssembly1
SubProduct1-1
SubProduct1-2
SubProduct1-2
SubAssembly2
SubProduct2-1
SubProduct2-2
SubProduct2-3

Note: There is a special utility available that enables you to integrate Resource Manager with any outside system. This allows you to read in all the data (BOMs, Routings, Sales Orders, etc.) with a single click and instantly be able to schedule and report from Resource Manager. Call US for more details.

Action Step: Edit the Num Reqr'd for the End Item - click on cell G33, and press F2, then change the number required from 1 to 1000. Click outside of the cell, and observe the Net Reqr'd column results. These quantities, for products, will be generated when scheduled, and for Operations, they will be added to set-up time and used for capacity scheduling. In this example, O#Assembly needs .5 + 4.16 hours and O#Inspection needs 16.7 hours.

6. SCHEDULING: Order Entry

Well Done! We have now covered the key parts of initialization and are ready to deliver the core benefits – scheduling and reporting.

After BORs have been defined, the Forecast sheet is ideal for order entry, master planning, generating 'what-if' scenarios, and maintaining the master schedule.
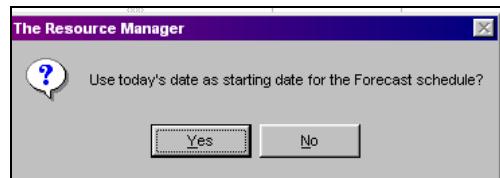
Action Step: Press [F4 - Initialize Forecast Calendar – DO IT].
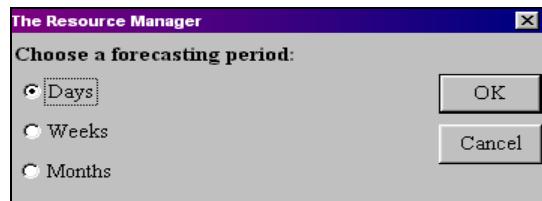

Select [Yes] to default of today's date as start date.

*[Days - OK] as forecasting period, and*
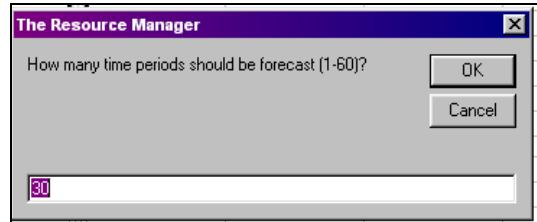
default of [30 - OK] as number of time periods [OK].

All products, jobs, etc., that have a BOR will be listed under Product Number and Name columns. Note the series of dates

(up to 185 time periods -- days, weeks, or months) running across the top of the scheduling matrix.

Forecast Calendar						
INPUT TOP LEVEL DEMAND		Sort	Optional: Row Mfg.	Report	Print	1 entries
Clear	Find	Import		Order Entry	Graph >>	30
PRODUCT NUMBER	PRODUCT NAME		Transfer Size	Monday 3/26/01	Tuesday 3/27/01	Wednesday 3/28/01
Power Hints	Error Hints					
P#1USPEN	Ball Point Pen			1000	1500	2000

Action Step: Enter schedule quantities of 1000, 1500, and 2000 for the Ball Point Pen in the first few cells. (Note that since the dates are different, the screen capture examples, from here on out, may not match exactly with your data).

Very Important! The Forecast Input Table is THE most important part of Resource Manager. From this ONE screen, you can drive your complete schedule. All your orders, when due or when to start, can be scheduled and/or rescheduled based on changing conditions, at any time. In addition to quantities, you can also enter a custom Job Number, Work Order Number, or Sales Order Number, etc. (check general options). You can even import in the demand schedule from outside systems (import button) and prioritize jobs (sort button).

In addition to filling out the Forecast Calendar, as above, where all products can be scheduled in a batch, RM also supports a very powerful Order Entry function that manages multiple line items for a particular customer. This is accessed via the Order Entry function and, in combination with the Sales Report, provides covers orders from entry to shipping.

The ability to manage your entire operation, from a simple top-level approach, is what sets Resource Manager apart from all other manufacturing software offerings. You can truly run things in Cruise Control fashion and realize the quickest benefits.

Got changes? Make them at the top level, on one screen. Instantly generate a new schedule. No longer do you have to be a slave to a rigid manufacturing system.
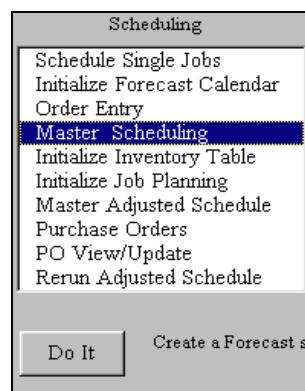
With Resource Manager Cruise Control Software, you will always stay in control!

Call US today to order the production version and let US prove it to you.

7. Master Schedule
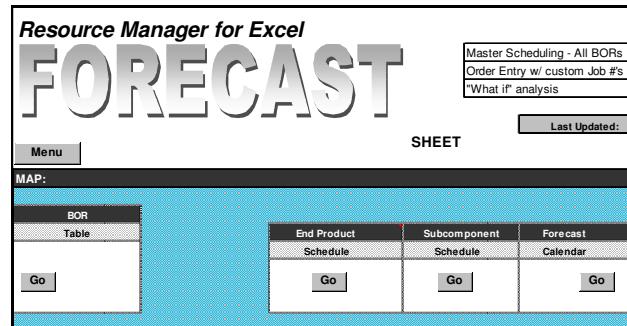
Once you have entered your demand, you are ready to generate a schedule.

Action Step: Press [F4 - Master Scheduling – DO IT] and [No] to print BORs, then [OK].

Resource Manager will sequentially read in each BOR, perform the explosion (quantities, chained lead times, etc.) and add to the master production schedule. When finished, you are left at the Home Position of the Forecast Sheet. Note the GO buttons, which allow you to quickly navigate to the specified key areas of the program.

Many applications can run their entire operation from the Top level in Forecast -- rolling up results in Reports. You can

prioritize the Jobs, add to schedule, rerun the entire schedule, mix forward and reverse, use your own Job Numbers, customize your order entry requirements, integrate to outside systems, and more – all from ONE screen!

You can even track actual production of finished goods and generate balance remaining – again all from ONE screen.
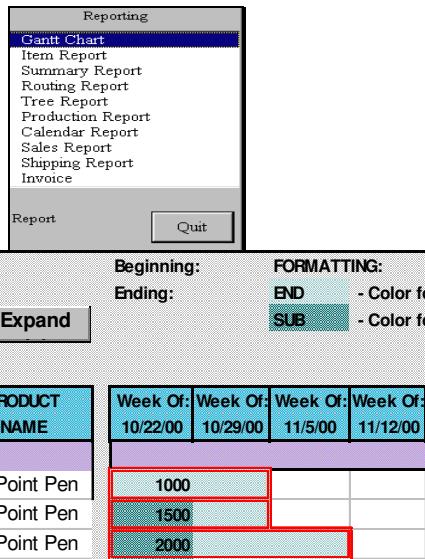
The Forecast function considers all capacity constraints, but not detailed inventory considerations. We recommend that you try the production version to continue with the inventory adjustments, ordering, receiving, and detailed tracking of master schedule.

8. Reporting: Gantt

The Gantt Report is the perfect, top-level report. It shows all of the Jobs in the schedule, when they started, how many were scheduled, and when finished. The Gantt chart is helpful to spot bottlenecks – as you can glance at the overall cycle time
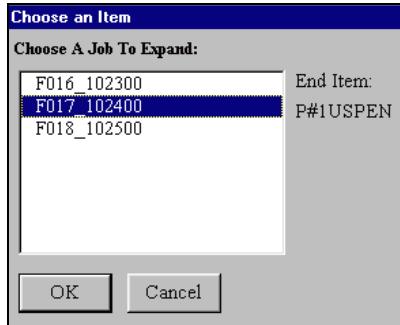
for any Job and then drill down to discover which workcenters are causing the delays.

Action Step: Press [F4 - Gantt Chart - Do It], [Yes] to start and end date defaults. Choose [Weeks] [OK] for reporting period then [NO] to split window.

Reporting

Gantt Chart
Item Report
Summary Report
Routing Report
Tree Report
Production Report
Calendar Report
Sales Report
Shipping Report
Invoice

Report   [Quit]

GANTT CHART FOR END PRODUCTS			Beginning:	FORMATTING:			
Based On FORECAST -			Ending:	END - Color f			
[Clear]	[ ]	[Expand]		SUB - Color f			
[Print]	3 Entries						
JOB NUMBER	**PRODUCT NUMBER**	**PRODUCT NAME**	**Week Of: 10/22/00**	**Week Of: 10/29/00**	**Week Of: 11/5/00**	**Week Of: 11/12/00**	
F016_102300	P#1USPEN	Ball Point Pen	1000				
F017_102400	P#1USPEN	Ball Point Pen	1500				
F018_102500	P#1USPEN	Ball Point Pen	2000				

Since we had forward scheduling set all of our jobs appear to start in the same time frame. They finish at different times based on the capacity restraints.

Action Step: View the report, notice how even though we scheduled all Jobs to start in the same week, the later Jobs are being pushed out. Observe the Job Number for the 1500 Ball Point Pens. Click [Expand] and
select the Job where we had scheduled 1500 Ball Point Pens [OK] to drill down. [Yes] to split window for viewing.

Choose an Item

Choose A Job To Expand:

F016_102300
F017_102400
F018_102500

End Item:
P#1USPEN

[OK]   [Cancel]

Action Step: View Gantt Expansion, notice how the 25 hours for O#Inspection is the variable that is causing the Jobs to be pushed out farther and farther. The cross hatched format means the Workcenter is in use and can't start yet. It is taking this Workcenter over a week to fit in 25 hours.

SINGLE JOB EXPANSION:			FORMATTING:								
F017_102400 P#1USPEN Ball Point Pen			END - Format for End Ite END - Format for Actuals End Item Bars								
[Print] 9 Entries: [Clear]			SUB - Format for Subco SUB - Format for Actuals Subcomponent Bars								
JOB	**Product Number**	**Product Name**	**Tuesday 10/24/00**	**Wednesda 10/25/00**	**Thursday 10/26/00**	**Friday 10/27/00**	**Saturday 10/28/00**	**Sunday 10/29/00**	**Monday 10/30/00**	**Tuesday 10/31/00**	**Wednesday 11/1/00**
F017_102400	P#234Spring	Pen Spring	1500								
	P#Lower_Bar	Pen Lower Barrel		1500							
	P#Upper_Bar	Pen Upper Barrel		1500							
	P#Ink_1000	Ink Cartridge			1500						
	P#Ring_101	Barrel Ring				1500					
	O#Assembly	Assemble the Pen				6.75					
	O#Inspection	Inspect the Pen				25					
	P#1USPEN	Ball Point Pen									1500

So, by running a quick schedule, and the Gantt Chart, we can see what our reasonable finish dates can be. But what if the system-generated schedule times are not good enough?

In the next section, we will increase the hours available per day, and add a Saturday, and see what the new dates are. We can also change the number of resources that are working, change priority of how Jobs are scheduled, change from forward to reverse scheduling, all from the single forecast screen. Then generate a new schedule and report as well.

9. Production/Resource Calendar

The Production Calendar, which is located on the Production sheet, summarizes inventory tracking when the schedule is run through PLAN. The Resource Calendar is located on the Resources Sheet, and provides a dynamic view of all Workcenter hours, summarized by day, required for active schedule. In addition, the Resource Calendar allows for individual workcenter calendar edits, secondary constraint definition, as well as other valuable load reports.

RESOURCE CALENDAR												
Home	Verify											
	2 Entries	Find										
Refresh	Graph >>	Sort										
Operation - Workcenter Number	Operation - Workcenter Name\Description	Res Mult		Thursday 3/29/01	Friday 3/30/01	Saturday 3/31/01	Sunday 4/1/01	Monday 4/2/01	Tuesday 4/3/01	Wednesday 4/4/01	Thursday 4/5/01	Friday 4/6/01
Resources 1 : Resource Loading												
O#Inspection	Inspect the Pen	1		5.7	8.0			8.0	8.0	8.0	8.0	8.0
O#Assembly	Assemble the Pen	2		4.66	6.74			8.83				

Action Step: Click on Resource Sheet Tab and scroll to the right until you see data. If you are at the Home Position, click the Resource Calendar1 GO Button.

Cells in the Resource Calendar which are "full" (no more processing can be added for that resource on that day) will be formatted with the total in red. This makes it very easy to visually spot bottlenecks.

Action Step: View the resulting load, screen above, and when capacity is maxed out (red). See the string of red cells, indicating a bottleneck in O#Inspection!

Try This!

Let's try to alleviate our problem bottlenecks.

Action Steps: press [F4 - Holiday and Day Chart - Go]. Increase the hours per day from 8 to 12 and add 8 hours for Saturday.
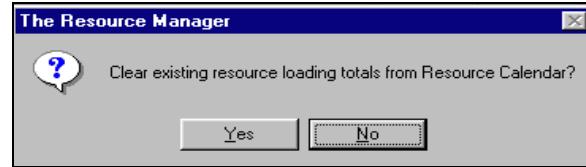
*Action Step: press [F4 - Master Operations List - Go], and change the Resource Mult. for Inspection, from 1 to 2.*

Day	Hrs
Sunday	0
Monday	12
Tuesday	12
Wednesday	12
Thursday	12

MASTER ITEM LIST

	2 Entries			
II. OPERATIONS				
	Add/Edit	Find	Sort	Print
OPERATIONS NUMBER	OPERATIONS NAME	SET-UP TIME(HRS)	UNIT COST	RESOURCE MULT
O#Inspection	Inspect the Pen	0	$15.00	2
O#Assembly	Assemble the Pen	0.5	$15.00	2

Any time that you make changes to the Day Chart, or to the Master Items Lists, you MUST reinitialize the Production/Resource Calendars, in order to reflect the updates in the schedule.

Action Step: press [F4 – Resource Calendar - Do It] answer

The Resource Manager

Clear existing resource loading totals from Resource Calendar?

[Yes]   [No]

[Yes] for start date prompt, Then, [YES] to Clear existing resource loading from Resource Calendar, and [YES] for refresh availability prompt, and [OK].

Action Step: [F4 - Master Scheduling - Go] press [Clear] to clear existing schedule [Yes] [OK].

Action Step: Press [F4 - Master Scheduling - Do It], [No] to print BORs, [OK]. Now, we have generated new schedule.

Action Step: Press [F4 - Gantt Chart - Do It], [Yes] to start and end date defaults. Choose [Weeks] [OK] for reporting period then [NO] to split window.

Notice new, earlier, finish dates!

Compare this report with the one previously run. Notice how we have shaved a week off the delivery on several Jobs.

Congratulations! You've just configured an Advanced Planning and Scheduling system, analyzed a schedule, made adjustments, and found an efficient plan. **All in a few minutes, all in familiar Excel, and for less than any other system**.

Now, imagine how valuable this kind of 'what-if' and reporting will be to help your operation get better control of managing

key resources and then call US today to order the complete version to test your data!

We look forward to working with you and helping you succeed with Resource Manager for Excel.

ROUTING REPORT

Job Number	Operation Number	Operation Name	Start Date/Time	End Date	Adj Hrs	Actual Start Date	Actual Start Time	Actual End Date	Actual End Time	Act Hrs	Rem Pieces	Rem Hrs	Rem Pieces	End Item Number/Name
F022_32601	O#Assembly	Assemble the Pen	3/29/01 8:00 AM	3/29/01 10:19 AM	4.667									P#1USPEN/Ball Point Pen
F022_32601	O#Inspection	Inspect the Pen	3/29/01 10:19 AM	3/29/01 6:39 PM	16.67									P#1USPEN/Ball Point Pen
F023_32701	O#Assembly	Assemble the Pen	3/30/01 8:00 AM	3/30/01 11:22 AM	6.75									P#1USPEN/Ball Point Pen
F023_32701	O#Inspection	Inspect the Pen	3/30/01 11:22 AM	3/31/01 3:52 AM	25									P#1USPEN/Ball Point Pen
F024_32801	O#Assembly	Assemble the Pen	3/31/01 12:00 AM	3/31/01 4:24 AM	8.833									P#1USPEN/Ball Point Pen
F024_32801	O#Inspection	Inspect the Pen	3/31/01 4:24 AM	4/3/01 9:05 AM	33.33									P#1USPEN/Ball Point Pen

Routing Report — Clear, Sort, Tree, Export, Import, Apply, Print, Reset — Export-Import — 6 Entries

10. More Reporting:

* Item

Action Step: Press [F4 - Item Report- Do It], Report from Forecast [OK] [OK].

This sheet organizes the schedule and lays out all transactions, by Product and Operation, in an easy-to-read block format. A simple report for time-phased purchasing or for Workcenter to-do reports. Read as is, paging down to find product\operation of interest or click on the ITEM Button and print out, graph, and or view instantly. Each block lists item requirements, Job number, dates (including time-of-day start times and end times) for all entries in the schedule. The Item button allows you to view, graph, or print out data on any one of the products shown in the item report.

* MRP Summary

Action Step: Press [F4 - Summary Report- Do It], Report from Forecast [OK], Report on both End Items and Sub-components [OK], Report on Start Date [OK], [Yes] to start and end date defaults, choose Weeks [OK] as reporting period, [No] to split window.

This sheet is a popular tool to efficiently summarize the schedules. The Summary sheet has the same format as the Forecast sheet, listing products down one column with a 250 time bucket window which extends to the right. Each time bucket will display a total of requirements, for all jobs\orders, for that particular product, scheduled for that particular time frame.

* Routing & Tree

Action Step: Press [F4 - Routing Report- Do It], Report from Forecast [OK], select [ALL], [OK], [NO] to split.
This reports on any one or more Jobs with Routings (Operations steps). When run from PLAN SCHEDULE (described later – now our schedule is in FORECAST) the report also contains easy update-to-actual fields for all operations – including piece counts and hours. This report is easy to export over network, then updated directly, and imported back in.

ITEM REPORT - Products   FORECAST

I. Product Items — End Items — Formats — Subcomponents

Report for Product:
P#1USPEN   Ball Point Pen

Job	Qty	Start	End
F007_32000	1000	3/24/00	3/25/00
F008_32100	1500	3/27/00	3/28/00
F009_32200	2000	3/30/00	3/31/00

Report for Product:
P#234Spring   Pen Spring

Job	Qty	Start	End
F007_32000	1000	3/20/00	3/23/00
F008_32100	1500	3/21/00	3/24/00

ITEM REPORT - Operations

II. Operations — Clear — Item...

Report for Operation:
O#Assembly   Assemble the Pen

F007_32000	4.666666667	3/23/00 8:00 AM	3/23/00 10:21 AM
F008_32100	6.75	3/24/00 8:00 AM	3/24/00 11:21 AM
F009_32200	8.833333333	3/25/00 8:00 AM	3/25/00 12:24 PM

Report for Operation:
O#Inspection   Inspect the Pen

F007_32000	16.66666667	3/23/00 10:21 AM	3/24/00 3:06 PM
F008_32100	25	3/24/00 3:06 PM	3/27/00 12:00 AM
F009_32200	33.33333333	3/28/00 8:00 AM	3/30/00 5:18 PM

The Tree button instantly runs the Tree Report, which recreates entire BOR in an easy to read, tree structure. *Action Step: Press [Tree] button, select any job, [OK], [OK].*

SUMMARY SCHEDULE   Formatting: End / Sub

Clear — Print — Graph>> — 6 Entries — Graph >>

PRODUCT NUMBER	PRODUCT NAME	Week Of: 3/19/00	Week Of: 3/26/00
P#1USPEN	Ball Point Pen	1000	3500
P#234Spring	Pen Spring	4500	
P#Ink_1000	Ink Cartridge	4500	
P#Lower_Ba	Pen Lower Barrel	4500	
P#Ring_101	Barrel Ring	4500	
P#Upper_Ba	Pen Upper Barrel	4500	

* Production

Action Step: Press [F4 - Production Report- Do It], Report from Forecast [OK], select first Job, [OK], [NO] to split window. This report, contains complete information about the Job, and when run from PLAN SCHEDULE, will include planned vs. actuals and variances in Time and Costs. This report can be used to enter in actual item costs, quantities, and more for instant updates.

Production Report

		JOB: F031_51501	End Item: P#1USPEN			Total Variance (days):		**Print**	**Apply**				

	Customer ID:	Customer Name:		**Clear**				**Bar Codes**	**Reset**				

8 Entries

Item Number	Item Name	Schedule Start	Schedule End	Actual Start	Actual End	Schedule Qty	Actual Qty	Variance (Days)	Schedule Unit Cost	Actual Cost	Orig. Req.	Beg. Inv.	Extra Prod	PO Numbers	Pieces Made Rem	Scheduled Line $ Total	Actual Line $ Total	Line Difference
P#234Spring	Pen Spring	15-May	18-May			1000			$0.05							$50.00		
P#Lower_Barrel	Pen Lower Barrel	16-May	18-May			1000			$0.05							$50.00		
P#Upper_Barre	Pen Upper Barrel	16-May	18-May			1000			$0.05							$50.00		
P#Ink_1000	Ink Cartridge	17-May	18-May			1000			$0.15							$150.00		
P#Ring_101	Barrel Ring	18-May	18-May			1000			$0.01							$10.00		
O#Assembly	Assemble the Pe	18-May	18-May			4.66667			$15.00							$70.00		
O#Inspection	Inspect the Pen	18-May	18-May			16.6667			$15.00							$250.00		
P#1USPEN	Ball Point Pen	18-May	19-May			1000			$0.63							$630.00		

* Calendar

Action Step: Press [F4 - Calendar Report- Do It], Report from Forecast [OK], Report on both End Items and Sub-components [OK], Report on Start Date [OK], [Yes] to start date default, [Yes] to split window.

Tuesday				Wednesday			
		March	21			March	22
F008_32100	P#234Spring	Pen Spring	1500	F009_32200	P#234Spring	Pen Spring	2000
F007_32000	P#Lower_Barrel	Pen Lower Barrel	1000	F007_32000	P#Ink_1000	Ink Cartridge	1000
F007_32000	P#Upper_Barrel	Pen Upper Barrel	1000	F008_32100	P#Lower_Barrel	Pen Lower Barrel	1500
				F008_32100	P#Upper_Barrel	Pen Upper Barrel	1500

This report, which is on same sheet as Item Report, is a popular tool to display the schedules in the familiar 'Wall Calendar' format. It is easy to highlight a single day or week and print.

* Sales, Shipping, Invoice, and BOL

These reports can be run from F4 menu or directly from their location on Production Tab. The sales reports are keyed from use of Order Entry function.

11. Inventory, Purchasing, Tracking

Hopefully, you see good potential for Resource Manager to help you with your planning and scheduling needs. Since the product has a 30-day guarantee, and we provide free technical support, it is a prudent decision to order the complete product for a full-scale test using your actual data.

While we don't recommend trying to run the entire trial program without the complete manual or at least some phone support, we will summarize the basic remaining steps to handle all inventory issues, generate purchase orders, track actual, and regenerate the master adjusted schedule on demand.

11.1 Initialize Inventory Table

The Plan Sheet is designed to accept the final planned schedule, apply inventory and adjustments, and maintain them on a perpetual basis.

Action Step: press [F4 - Initialize Inventory Table - Do It], [Yes] to add default values for new entries, [OK].

INVENTORY AND ADJUSTMENTS

							Export-Import		**Export**									

INVENTORY AND ADJUSTMENTS

Print	7 Entries		* Double click on Current Inv cell to show today's available quantity in inventory															
Find	**Reset**	**Sort**		Last Update: 3/26/01				**Graph**	**Import1**	**Import2**	#N/A Inv Date:			**Inv Levels**		#N/A		

PRODUCT NUMBER	PRODUCT NAME	Current Inv.*	Safety Stock	% Yield	Lot Size	Apply Beg. Inv.	To Order	On Order	Order Rec'd	User Column	Orig Req	Unit Cost	Extended Cost	Net Demand (To Date)	Inv. Allocated (To Date)	Inv. Rec. (To Date)	Difference (To Date)	Stock Bin Location
P#10Pack_Pen		0	100	1									#N/A					
P#1USPEN	Ball Point Pen	0	100	1								$8.12	#N/A					
P#234Spring	Pen Spring	0	100	1								$0.05	#N/A					
P#Ink_1000	Ink Cartridge	0	100	1								$0.15	#N/A					
P#Lower_Barrel	Pen Lower Barrel	0	100	1								$0.05	#N/A					
P#Ring_101	Barrel Ring	0	100	1								$0.01	#N/A					
P#Upper_Barrel	Pen Upper Barrel	0	100	1								$0.05	#N/A					

Entering Beginning Inventory

Initial, beginning inventory can be entered in the Inventory Table then transferred to the Production Calendar via the **[Apply]** button, on the day it is available to be used.

Action Step: Enter beginning inventory of 10 for all P#products in Inventory Table and press [Apply] button and apply one week ago, [OK]. the

Apply
Beg. Inv.
10
10

More Inventory Notes

Resource Manager's inventory system is designed for running with the LEAST amount of maintenance. Once you define safety stocks, lot sizes, and beginning inventory, RM will generate the required orders to fill demand. The system DOES NOT *require* you to 'receive' those orders to complete production – receiving is done for tracking and reporting on POs. The assumption is that you will more-or-less follow schedule and make adjustments when planned orders are significantly off from actual receipts.

Our users have found that it is far easier to take an instant 'snap-shot' of their schedule, available inventory, etc. and rerun entire schedule than it is to try to micromanage every step.

11.2 Initialize Job Planning Table

Next, you decide which Jobs to run through the Plan schedule.

Action Step: press [F4 - Initialize Job Planning - Do It], [Yes] to default for beginning date, and [Yes] to default of ending date [OK].

After jobs have been selected and inventory chart is initialized, we can process the adjusted schedule.

11.3 Master Adjusted Schedule

Action Step: Press [F4 - Master Adjusted Schedule – Do It], [No] to Print each BOR? Prompt then [OK].

After the adjusted schedule has been processed, you can view the results directly in the Schedule Database, in any Report, and summarized results in Inventory Table.

Action Step: Press [F4 Initialize Inventory Table – Go], to view Inventory Table. Note the To Order amounts.

11.4 Update Schedule with Actual

The final adjusted schedule holds all information for executing production and purchasing plans. Updates to this schedule are available for both Products and Operations directly through Resource Manager, or automatically via other systems (such as barcoding).

Schedule Regeneration
The [F4 - RERUN Adjusted Schedule] button allows you to reschedule one or more Jobs, using ACTUAL data for Operations to recalculate new capacity loads and schedules.

Summary Notes
The adjusted schedules show a time-phased plan for every item and can be sorted and manipulated by you however you wish.

All column headings can be modified directly by you as well as column widths, fonts, and row heights. All data sorting, charting, and other standard spreadsheet analytical tools can be used on any column(s) or row(s) in the schedule.

The entries for Num Reqr'd, Orig Req, Beg Inv, and Inv Used allow for complete inventory auditing at any stage of the process.

At this point, Resource Manager has generated a master schedule, made inventory adjustments, and generated a time-phased net plan.

Reports can be printed for action directly, and/or data can be exported for use by other systems (such as a purchasing module within an accounting package).

11.4 Purchase Orders

Once you have a Master Adjusted Schedule (PLAN sheet), and Products that have a NET REQUIRMENT and a Vendor, then you can generate Purchase Orders and Track Receipts.

Action Step: Press [F4 - Purchase Orders - Do It] **[NO] to print orders [OK]. Press [F4-PO View/Update – Do It] to view and update POs.**

Resource Manager can track each received quantity, monitor open or closed status, and transfer actuals directly to adjusted schedule.

Note that the Inventory Table [F4 - Initialize Inventory Table - Go] keeps a summary of all inventory transactions in an easy-to-read format.

To Order	On Order	Order Recv'd
0	4500	
0	4500	
0	4500	
0	4500	
0	4500	

PURCHASE ORDER LIST
Orders in system

| Clear All | | 4 Entries | | 4 Unposted Entries |

PO NUM	VENDOR NUM	PO DATE	LATEST RECEIPT	ORDER STATUS
V#Ace Ring22500	V#Ace Ring	2/25/00		Open
V#Acme Ink22500	V#Acme Ink	2/25/00	2/25/00	Closed
V#Central Spring2250(	V#Central Spring	2/25/00		Open
V#Plastics World2250	V#Plastics World	2/25/00	2/25/00	Open

THANK YOU for taking the time to review Resource Manager for Excel. This product is the result of working with thousands of customers, like you, who need immediate help to plan and schedule resources but don't need another expensive headache. PLEASE CALL US if you have any questions! When you order the complete product, we will work with you to make sure you are successful within 30 days – guaranteed.

Would you consider Resource Manager DB with EDGEBI? By combining the best features from the award-winning Resource Manager for Excel with the best ideas from customers, Resource Manager DB combined with EDGEBI enables most any operation to immediately improve their planning, scheduling, and tracking capabilities. Graphical Microsoft Excel as a flexible report writer, Resource Manager DB with EDGEBI provides the user unsurpassed flexibility for leveraging Excel on local PCs, and sharing data across a network.

Final Action Step – go to www.UserSolutions.com, or call US @ (800) 321-8737 to order complete product today!