PERCEPTION® WORK-PAC

Manpower Planning

&

Forecasting

A Training Tutorial

This training guide outlines the basic features of the *PERCEPTION* system for developing and managing shipyard work orders.

It is a supplement to the user manual entitled "*PERCEPTION Labor/Manpower Planning & Cost/Schedule Management,*" which provides more details for the user.

Before using this training guide, the user should first view the preliminary training guide, "Getting Started With *PERCEPTION.*"

Training Directory

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Other related training tutorials are the following:

1. *PERCEPTION* **Starting A New Project**

2. **PERCEPTION** *WORK-PAC* **Starting From Scratch**

3. *PERCEPTION WORK-PAC* **Modeling Shipyard Manpower**

4. *PERCEPTION WORK-PAC* **Work Orders**

An analysis of manpower requirements is important for determining whether or not planned labor hours, in conjunction with planned schedules, are realistic and will result in a successful project.

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If the schedules are too short, the manpower required to complete the work in time may prove to be much too high for the available manpower at hand.

This problem can result in much higher costs in over-time or perhaps jeopardize the successful completion of other work on-going in production.

Further, if the schedules are established in ways that result in un-even manpower utilization, costs again can be higher than if these schedules yielded a more level loading of the manpower requirements.

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PERCEPTION **provides a powerful set of reporting tools for analyzing manpower requirements. These reports can focus on a single project, or across any combination of projects.**
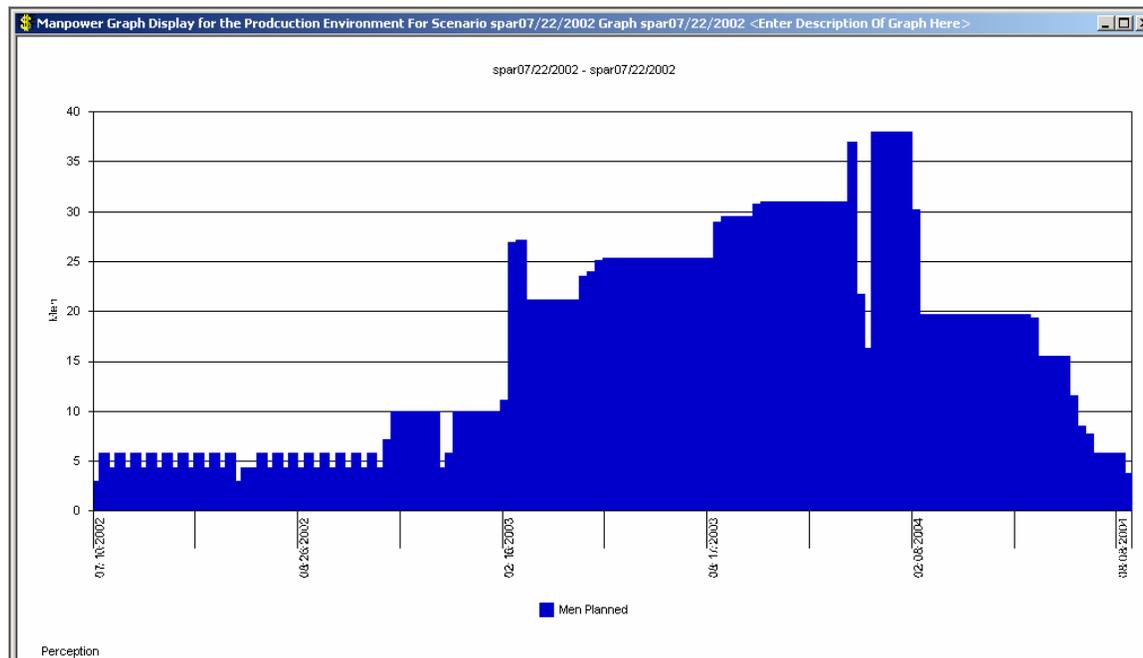
Further details of these requirements can be developed for specific shipyard work centers, even down to individual trades.

PERCEPTION **Manpower Analysis can generate two basic types of manpower requirements forecasts:**

1. **Manpower Runs that produce manpower requirements for one or more projects.**

2. **Manpower Proposals that consolidate backlog requirements with requirements for new projects superimposed.**

Manpower Data

The *PERCEPTION* manpower requirements analysis can look at manpower requirements five ways:

1. **As estimated (from estimate Cost Items)**

2. **As baseline budgeted and scheduled (from scheduling Planning Activities)**

3. **As planned (using Work Order budgets and current planned schedules)**

4. **As actually expended (using actual Work Order time charge hours and actual start and finish dates for schedules)**

5. **As projected (forecast) remaining Work Order labor hours**

Computing Manpower Requirements

To compute manpower requirements, the system converts the labor man-hours (estimated, baseline scheduled, current planned, actual or remaining) into equivalent persons per day over the duration of a work order schedule (start to finish).

The system assumes that the equivalent persons work normal 8 labor hours per workday.

The analysis honors the workdays in the user-defined calendar schedule (*Library/Calendar*).

Estimated
Manpower Requirements

To develop **estimated manpower requirements**, the system collects a user-specified range of **estimate Cost Items** and converts their **man-hour estimates** into equivalent persons per day over the duration of the estimated work order schedule (estimated start to finish).

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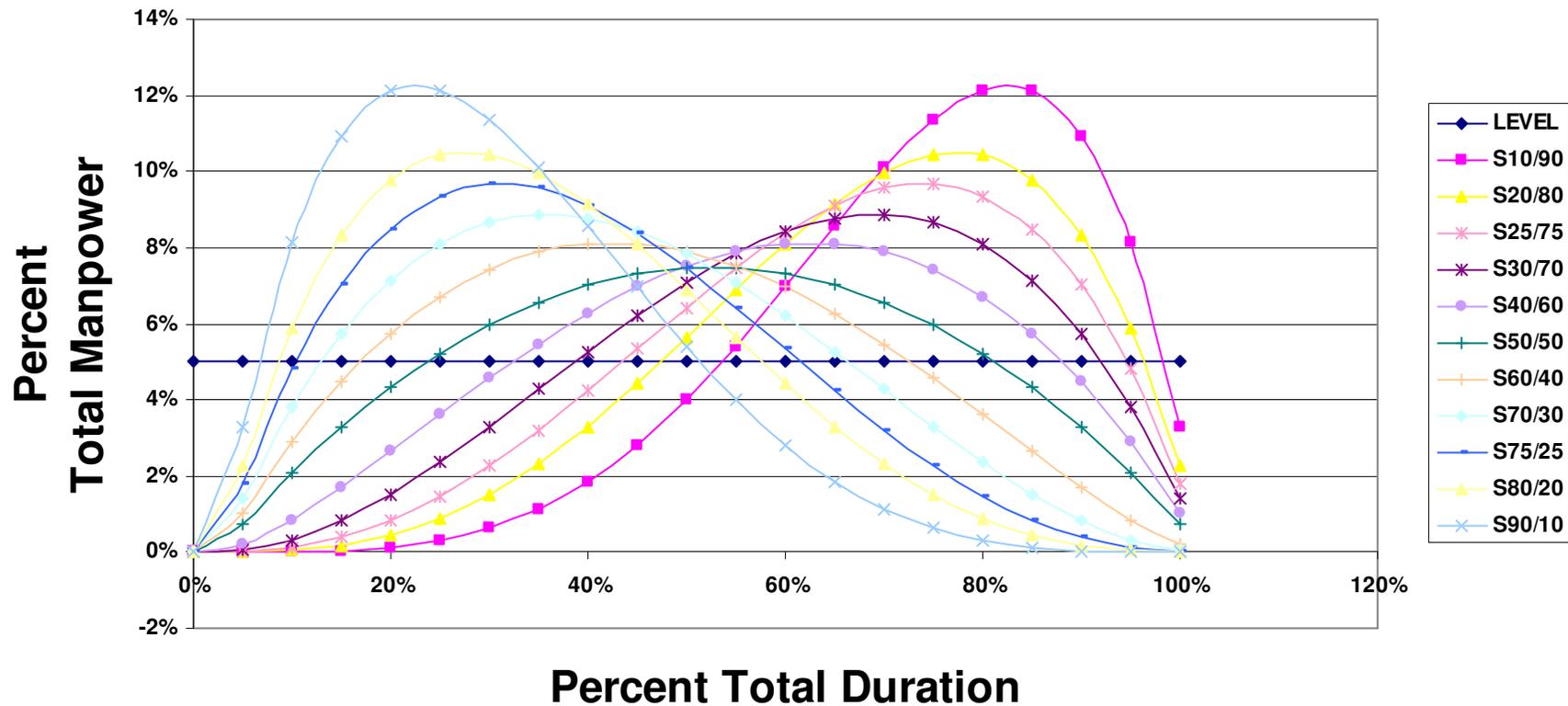# Scheduled Baseline Manpower Requirements

To develop the scheduled baseline manpower requirements, the system collects a user-specified range of project **Planning Activities** and converts their **man-hour baseline budgets** into equivalent persons per day over the duration of the scheduled activities schedule (baseline start to finish).
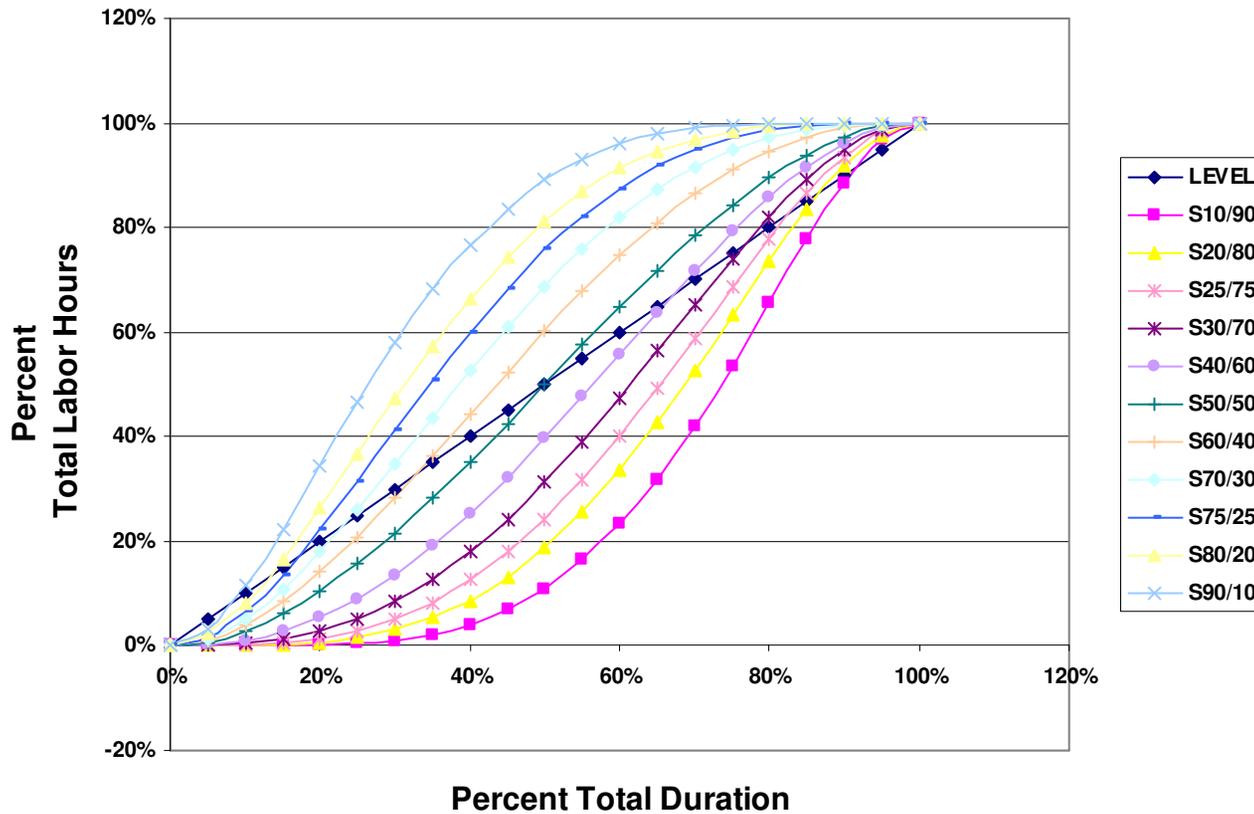
Budgeted
Manpower Requirements

To develop the budgeted work manpower requirements, the system collects a user-specified range of Work Orders and converts their man-hour budgets into equivalent persons per day over the duration of the current planned work order schedule (start to finish).

The system also assumes that the manpower is level loaded over the planned duration unless the work order has been assigned a specific manpower distribution curve.

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Time-Phased
Manpower Distribution Curves
(Standard)

Time-Phased
Accumulative Labor Hour Distributions
(Standard)

Actual
Manpower Requirements

To develop the actual work manpower requirements, the system collects a user-specified range of <u>Work Orders</u> and converts their <u>actual man-hour time charges</u> (including rework hours charged) into equivalent persons per day over the actual duration of the work order from the date of the first time charge to the last.

If the work order is still in progress, the system only computes the equivalent manpower up through to the current effective date of time charges (the date that the last time charges for all projects were processed by the system).

The system also assumes that the manpower is level loaded over the actual duration.

Remaining
Manpower Forecasts

To develop the forecast manpower requirements, the system collects a user-specified range of <u>Work Orders</u> that are either incomplete (not closed) or not started and converts their remaining man-hour budgets into equivalent persons per day over the remaining duration of the work order schedule (start to finish).

There are <u>two forecasting options</u> based upon what WBS performance the user wishes to relate the forecast calculations:

1. **<u>SWBS Accounts</u>**

2. **<u>COA Sub-Group</u>**

SWBS Account Performance Forecasting Option:

Remaining work order budgets are automatically adjusted according to the current cost performance of associated SWBS accounts.

For example, if a SWBS account currently is over-running by 10%, remaining budgets of work orders in the account will increased by 10% to reflect the additional manpower needed to do the work and finish on schedule.

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COA Sub-Group Performance Forecasting Option:

Remaining work order budgets are automatically adjusted according to the current cost performance of associated COA sub groups.

If the COA represents stages of construction and work centers, the remaining work order budgets will be adjusted by the current cost performance of the work center.

For example, if a COA Sub-Group currently is over-running by 10%, remaining budgets of work orders in the sub-group will increased by 10% to reflect the additional manpower needed to do the work and finish on schedule.

Two additional options for forecast calculations are also available:

1. **Manual Forecast Method:**

   Remaining Work Order Hours = Work Order Budget x (100% - WBS Manual Progress)/100

2. **Factored Forecast Method:**

   Remaining Work Order Hours = Work Order Budget x [WBS EAC/WBS BAC]

Once the system forecasts the remaining labor hours, it applies them to the planned schedules of the remaining unfinished work orders.

The system assumes that the equivalent persons work normal 8 labor hours per workday.

These latter specifications can be over-ridden by the user in the Manpower Range Selection window.

The system also assumes that the manpower is level loaded over the planned duration <u>unless the work order has been assigned a specific manpower distribution curve function</u>.

The user is given an option to apply schedule adjustments by directing the system to revise schedules of work orders that have planned schedules which are now past due.

The system will shift these schedules so that these late-to-finish work orders all have start dates equal to the system effective date.

This effective date is recorded on each project level and represents the last date a time charge was entered and processed by the system against work orders under that project.

The system compiles the work orders and places their labor hours into appropriate time slices.

The figure below illustrates an example of how the manpower analysis uses the work order data to compute the requirements.

Scheduled & Budgeted Work Orders
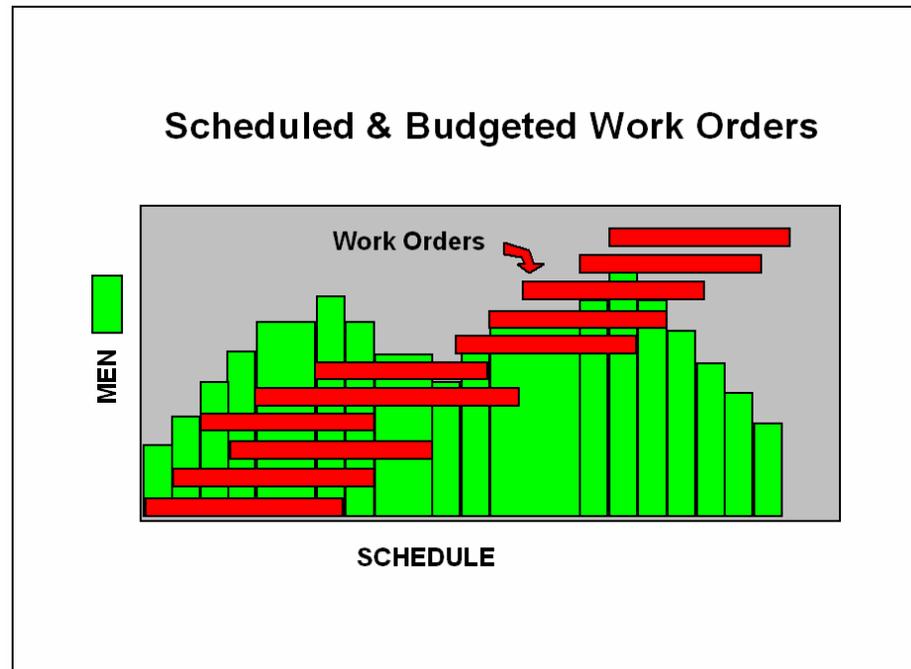
If a work order's schedule (start and finish dates) crosses the time slice, its hours are prorated and added to other hours already placed into the time slice.

The prorating is uniform over the work order's schedule unless the user has defined the work order with a manpower curve.

At the conclusion of this process, each time slice has a summation of hours and manpower requirements.

The only way that the system can process manpower in this manner is to have a labor hour value (budget, actual or forecast) and a time schedule (planned, actual, or revised).

Manpower Analysis Reports

Manpower analysis reports can be either tabular or graphical and offer a variety of options.

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Reports Time Granularity

1. Daily

2. Weekly

3. Monthly

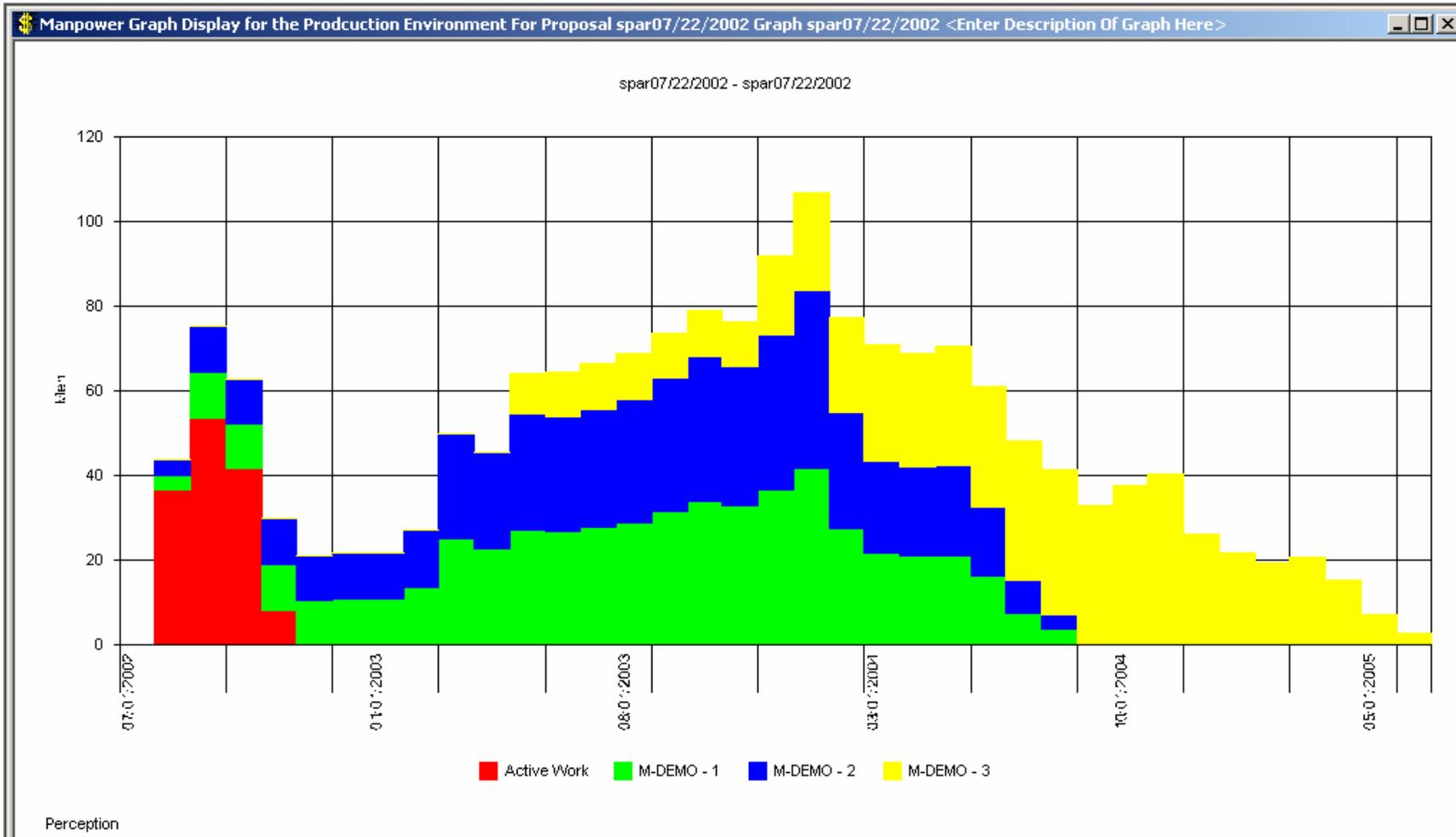4. Quarterly, or

5. Yearly

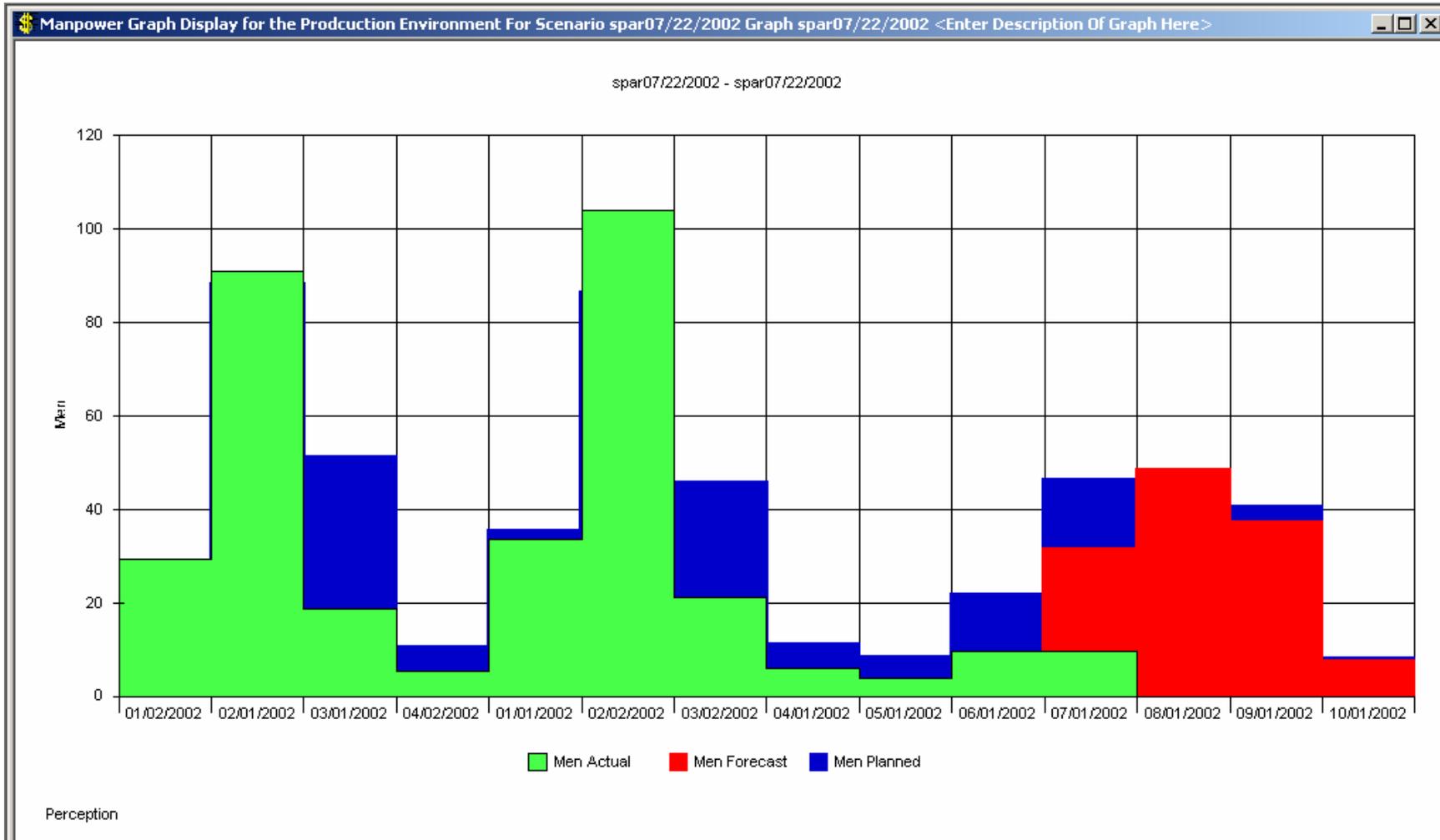# Report Graphic Options

1. **Men, or**

2. **Hours**

In addition, the men or hours can be displayed in the following formats:

1. **Cumulative Men or Hours, or**

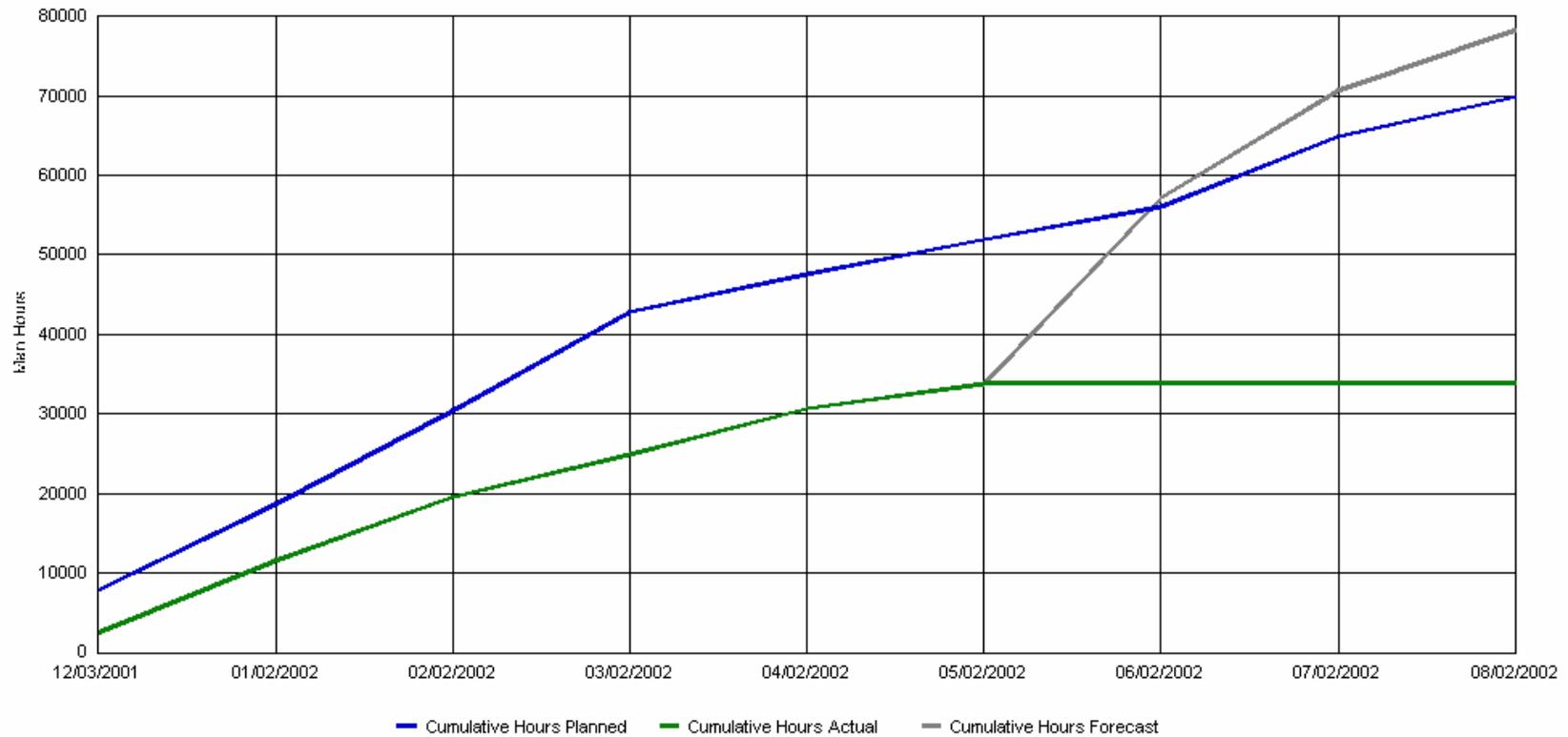2. **Incremental (Distributed) Men or Hours**

Sample Manpower "Proposal" Graphic Report

# Sample Manpower "Run" Graphic Report

Sample Accumulative Hours Line Format

Cumulative Hours Planned — Cumulative Hours Actual — Cumulative Hours Forecast

Initiating A Manpower Analysis

To use the manpower-reporting tool, select either *Environment/Planning & Scheduling/Manpower* or *Environment/Production Engineering/Manpower* from the main menu.

The *Select Process* window will open.
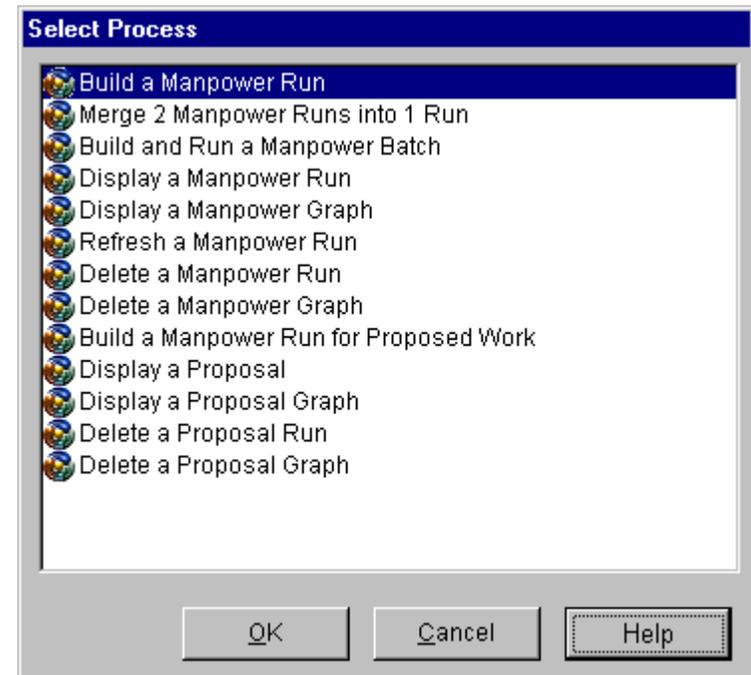
Manpower "Runs"

A <u>manpower run</u> is a specific selection of data and options.

A manpower run, by definition, focuses on the manpower requirements (planned, actual, and forecast) for one single project, or group of projects under a contract. Lower levels of a project WBS also can be evaluated.

Once a manpower run has been set up, a variety of reports can be generated from the compiled data. These reports can be either in tabular or graphical form.

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Manpower runs can be saved and re-opened (Display) without being re-executed.

Saved manpower runs also can be re-executed or updated (Refresh).

Building A Manpower Run

To create a new manpower run, select the first option *Build A Manpower Run.*

This will open the Manpower Run Setup window:

The following steps will set up the new manpower run:

Build Manpower Run Setup

Manpower Options

Run Name: A-DEMO-01 12/12/2002

Description: Manpower analysis for project A-DEMO-01

Elements To Analyze
- ☐ Cost Estimate Hours & Schedules
- ☐ Planning Activity Budgets & Schedules
- ☑ Work Order Planned Budgets & Schedules
- ☑ Work Order Actual Hours & Schedules
- ☑ Forecast Remaining Work Order Hours & Schedules

Forecast Method
- ○ Manual Forecast
- ◉ System Forecast

Select the WBS To Forecast To
SWBS - Account

Schedule Adjustments
- ○ Revise Schedules
- ◉ Maintain Schedules

WBS Selection Options
- ◉ Either Select the WBS Level to Process for This Run   Project

Contract: A-DEMO   Project: 01

- ○ Or, Use the Advanced Option to Select a WBS Range to Process >>

OK   Cancel   Help

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Assign A Name To The Manpower Run

The "manpower run" column will hold up to 40 alphanumeric characters so the manpower run name can include information about the options selected.

Additional text can be typed into the *Description* column, which will hold an unlimited number of characters.

The option to *Save Manpower Run To Database* allows the output data to be viewed and graphed multiple times.

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Select The Types of Manpower Data To Analyze

Briefly, the requirements may be selected from the following choices:

Cost Estimate Hours & Schedules – From *estimating Cost Items* estimated labor hours and estimate schedules

Planning Activity Budgets & Schedules – From *scheduling Planning Activities* budget hours and schedules

Work Order Planned Budgets & Schedules – From W*ork Order* budgets and current planned schedules

Work Order Actual Hours & Schedules – From *Work Order* actual hours and actual schedules

Forecast Work Order Remaining Hours & Schedules – From *Work Order* forecast of remaining hours. The schedules used for this remaining work will be either planned work order schedules for remaining work or planned schedules adjusted as selected in the *Schedule Adjustments*.

Any or all of the above choices may be selected for a manpower run.

WBS Selection Options

Manpower can be calculated for an entire Contract, or for a selected project under the contract or for a selected project WBS level.

1. **Select the level to process (Contract, Project, SWBS Account, Zone, COA Group, Sub Group or Item, Center or Trade).**

2. **Then choose the correct contract, project and level from the drop-down list boxes.**

Alternatively, if greater selection details are desired, the *Advanced Option* allows the user to focus on a variety of selection ranges of WBS levels, work centers, trades, date range, etc.

Forecasting Manpower For Remaining Work Order Hours & Schedules

If *Forecast Work Order Remaining Work Order Hours & Schedules* **is selected, then the** *Select the WBS To Forecast To* **options will become active. In addition, so will** *Adjustment Schedules to Forecast* **and** *Forecasting Method***.**

The following is the process by which the system makes its <u>manpower forecasts for remaining work</u>:

1. The system collects from within the range of work orders only those orders that are either incomplete (not closed) or un-started.

2. From this collection of work orders, the system converts the forecast of remaining man-hours into equivalent persons per day over the remaining duration of the work order schedule (start to finish).

3. The system assumes that the equivalent persons work a normal 8 man-hours per workday, 5 days per workweek.

4. The system also assumes that the manpower is level loaded over the remaining work order duration unless the work order has been assigned a specific manpower distribution curve function.

The *Forecast Method* enables the user to select the method by which the analysis will determine work completed: Manual Forecast or System Forecast.

Manual Forecast Method

The *Manual Forecast* method uses the remaining work order budget as the forecast of remaining work:

$$\text{Remaining Budget Hours} = B \times (100\% - P)/100. \, ,$$

Where

B = total work order budget

P = percent manual progress of the work order

Un-started work orders are assumed to be at zero percent progress. Completed work orders (closed by the system) are ignored in the remaining work manpower forecasts.

If a work order has been completed, the system will ignore this work order and not include it in forecasting remaining work requirements.

System Forecast Method

The *System Forecast* method computes remaining hours for work orders adjusted to reflect current budget performance of work completed.

The system assumes that budgets are a measure of the scope of work. An over-run typically indicates that the scope of work is really more than what was planned in the budget.

For this condition, one might expect that manpower requirements based upon the budget may be insufficient, particularly if planned schedules are to be maintained.

Similarly, an under-run may indicate that the scope of work is less than planned, and one might expect that manpower can be reduced for this condition.

The *System Forecast* method computes remaining work order hours as follows:

$$\text{Forecast Remaining Hours} = B \times F_s - A,$$

Where

B = total work order budget

F_s = budget performance factor

A = total actual hours charged to date

The remaining budget hours are the hours of incomplete work orders and their pro-rated budgets of work to complete.

If a work order has been completed, the system will ignore this work order and not include it in forecasting remaining work requirements.

The system's **budget performance factor** is computed on the basis of the budget performance of a WBS level that best characterizes the overall performance of groups of work orders. If the WBS level is performing poorly, for example, the system will assume that the work orders under that particular WBS level share some measure of the performance problems. The system computes the work order performance factor as follows:

Budget Performance Factor = EAC/BAC

Where *EAC* is the **E**stimated hours **A**t **C**ompletion for the WBS Level and *BAC* is the **B**udget hours **A**t **C**ompletion for the WBS Level.

Refer to "Automated Progress & Cost Forecasting" of the *PERCEPTION WORK-PAC Labor/Manpower Planning and Cost/Schedule Management User Manual*, for a full explanation of how the EAC calculations are performed.

WBS To Forecast

PERCEPTION's manpower forecasting calculations are done at more detailed levels than at the total project.

The user may select the forecasting to be done either by the SWBS Account or the COA Sub-Group level.

1. **If by SWBS Account**, the system will sort unfinished work orders by SWBS Account and forecast manpower requirements account by account depending on each account's budget performance (EAC/BAC). This way, some SWBS accounts may require more manpower than planned while others that are under-running will have lower manpower requirements than planned.

2. Similarly, if the user selects forecasting to be done on the basis of **COA Sub-Group**, the system will sort unfinished work orders by COA Sub-Group and forecast manpower requirements sub-group by sub-group depending on each sub-group's budget performance.

Forecast Schedule Adjustments

The user may elect to produce remaining manpower requirements by either maintaining planned schedules ("Maintain Schedules") or revising them to suit actual schedule performance.

Using planned schedules to compute remaining manpower requirements may not be correct for all circumstances.

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When using the option to revise the work order schedules, the system performs the following schedule changes:

1. **The work order has not yet been started (no progress):**

    a) If the scheduled start date still is in the future (relative to the current system date), the system will maintain the same planned schedule.

    b) If the scheduled start date has past, the system will re-plan (shift schedules) the start to the current system date, maintaining the original duration.

2. **The work order has been started, but not completed (interim progress):**

    a) If the scheduled finish date still is in the future, the system will maintain this planned schedule. The start for remaining work will be the current system date.

    b) If the scheduled finish date has past, the system will compute remaining workdays ([100%-progress] x total planned work days/100) and re-schedule remaining work starting today through the computed remaining work days.

Any revisions to schedules are automatically reported to the user by the system on a printed report.

WARNING: When the system revises schedule, the system may reschedule work orders out of their proper work schedule sequence.

Unlike critical path scheduling, the Manpower Analysis Module has no work sequencing information within its processing capabilities.

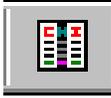*Note: <u>These schedule changes are only temporary for the forecasting calculations and are not stored on the database of work orders.</u>*

Executing The Manpower "Run"

Once the selections have been completed, click on the *OK* button on the manpower run Options window, and the system will proceed to collect the required information and produce the analysis results.

The output data produced by the manpower calculations is presented in worksheet window format:

	Year	Quarter	Month	Week	Day	Hours Estimated	Hours Scheduled	Hours Planned	Hours Actual	Hours Actual Timecard	Hours Forecast	Cumulative
1	2002	2	5	22	4	0	0	48	0	0	0	
2	2002	2	5	22	5	0	0	48	0	0	0	
3	2002	2	5	22	6	0	0	0	0	0	0	
4	2002	2	6	22	7	0	0	24	0	0	0	
5	2002	2	6	23	1	0	0	24	21	0	0	
6	2002	2	6	23	2	0	0	24	21	0	0	
7	2002	2	6	23	3	0	0	0	21	0	0	
8	2002	2	6	23	4	0	0	48	33	0	0	
9	2002	2	6	23	5	0	0	0	33	0	0	
10	2002	2	6	23	6	0	0	48	12	0	0	
11	2002	2	6	23	7	0	0	0	12	0	0	
12	2002	2	6	24	1	0	0	0	29	0	0	
13	2002	2	6	24	2	0	0	0	29	0	0	
14	2002	2	6	24	3	0	0	48	34	0	0	
15	2002	2	6	24	4	0	0	48	34	0	0	
16	2002	2	6	24	5	0	0	48	17	0	0	
17	2002	2	6	24	6	0	0	0	17	0	0	
18	2002	2	6	24	7	0	0	80	24	0	0	
19	2002	2	6	25	1	0	0	80	24	0	0	
20	2002	2	6	25	2	0	0	80	24	0	0	
21	2002	2	6	25	3	0	0	80	24	0	0	
22	2002	2	6	25	4	0	0	80	72	0	0	
23	2002	2	6	25	5	0	0	0	72	0	0	
24	2002	2	6	25	6	0	0	48	48	0	0	
25	2002	2	6	25	7	0	0	80	48	0	0	
26	2002	2	6	26	1	0	0	80	48	0	0	
27	2002	2	6	26	2	0	0	80	48	0	0	
28	2002	2	6	26	3	0	0	80	59	0	0	

Manpower Analysis Tabular Reports

By clicking on *Run Associated Reports* button **on the tool bar, the system provides a series of report options that produce the report in terms of labor hours or manpower and the time frame granularity (by day, week, month, etc.).**
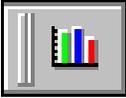
Click on the desired selection to generate the report.

Select Report To Run

Report List

Manpower Reports
- MAN01 - Manpower Proposal Summarized By Day
- MAN02 - Manpower Proposal Summarized By Week
- MAN03 - Manpower Proposal Summarized By Month
- MAN04 - Manpower Proposal Summarized By Quarter
- MAN05 - Manpower Proposal Summarized By Year
- MAN06 - Hours Summarized By Day
- MAN07 - Hours Summarized By Week
- MAN08 - Hours Summarized By Month
- MAN09 - Hours Summarized By Quarter
- MAN10 - Hours Summarized By Year
- MAN11 - Men Summarized By Day
- MAN12 - Men Summarized By Week
- MAN13 - Men Summarized By Month
- MAN14 - Men Summarized By Quarter
- MAN15 - Men Summarized By Year

OK   Cancel

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Manpower Requirements For:

Scenario spar08/01/2001 - <Enter Description Of Scenario Here>

Date Run 08/01/2001   User ID spar

	Men					Cumulative Men			
imated	Scheduled	Planned	Actual	Forecast	Estimated	Scheduled	Planned	Actual	Foreca
91-06-30									
0	0	0	2	0	0	0	0	2	
0	0	0	6	0	0	0	0	8	
91-09-30									
0	0	0	8	0	0	0	0	16	
0	0	0	8	0	0	0	0	23	
0	0	6	8	0	0	0	6	32	
91-12-31									
0	0	9	11	0	0	0	15	43	
0	0	9	11	0	0	0	24	53	
0	0	9	14	0	0	0	33	67	
92-03-31									
0	0	29	23	0	0	0	62	90	
0	0	31	92	0	0	0	93	182	
0	0	65	290	0	0	0	157	473	
92-06-30									
0	0	158	385	0	0	0	316	858	
0	0	230	426	0	0	0	546	1,284	
0	0	303	472	0	0	0	850	1,756	
92-09-30									
0	0	374	521	0	0	0	1,224	2,277	
Aug 1992-08-01 to 1992-08-31	0	486	414	0	0	0	1,710	2,691	

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Manpower Analysis Graphical Reports

From the manpower run process output worksheet, click on the *Create Graph* on the pop-up menu, or more directly click on the *Create Graph* button on the window tool bar.

The system will respond with a pop up window that allows the user to set the options to produce the graphic report in terms of labor hours or manpower and the time frame granularity (by day, week, month, quarterly or yearly).

Here, the user may also choose whether to display planned, actual and/or forecast manpower.
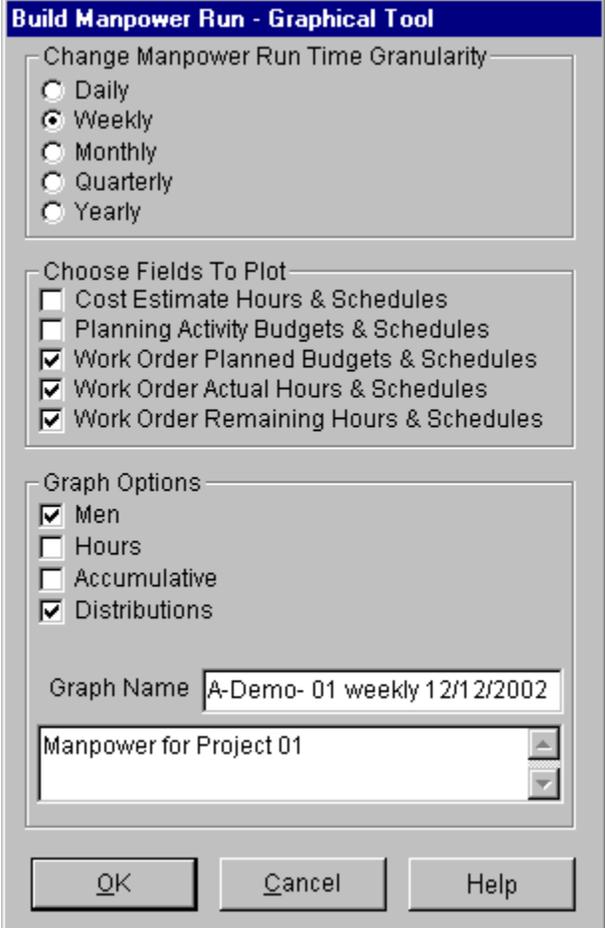
Click on the desired selection to generate the report.

Sample Graphical Manpower Report
(Planned, Actual & Forecast)
Step Format
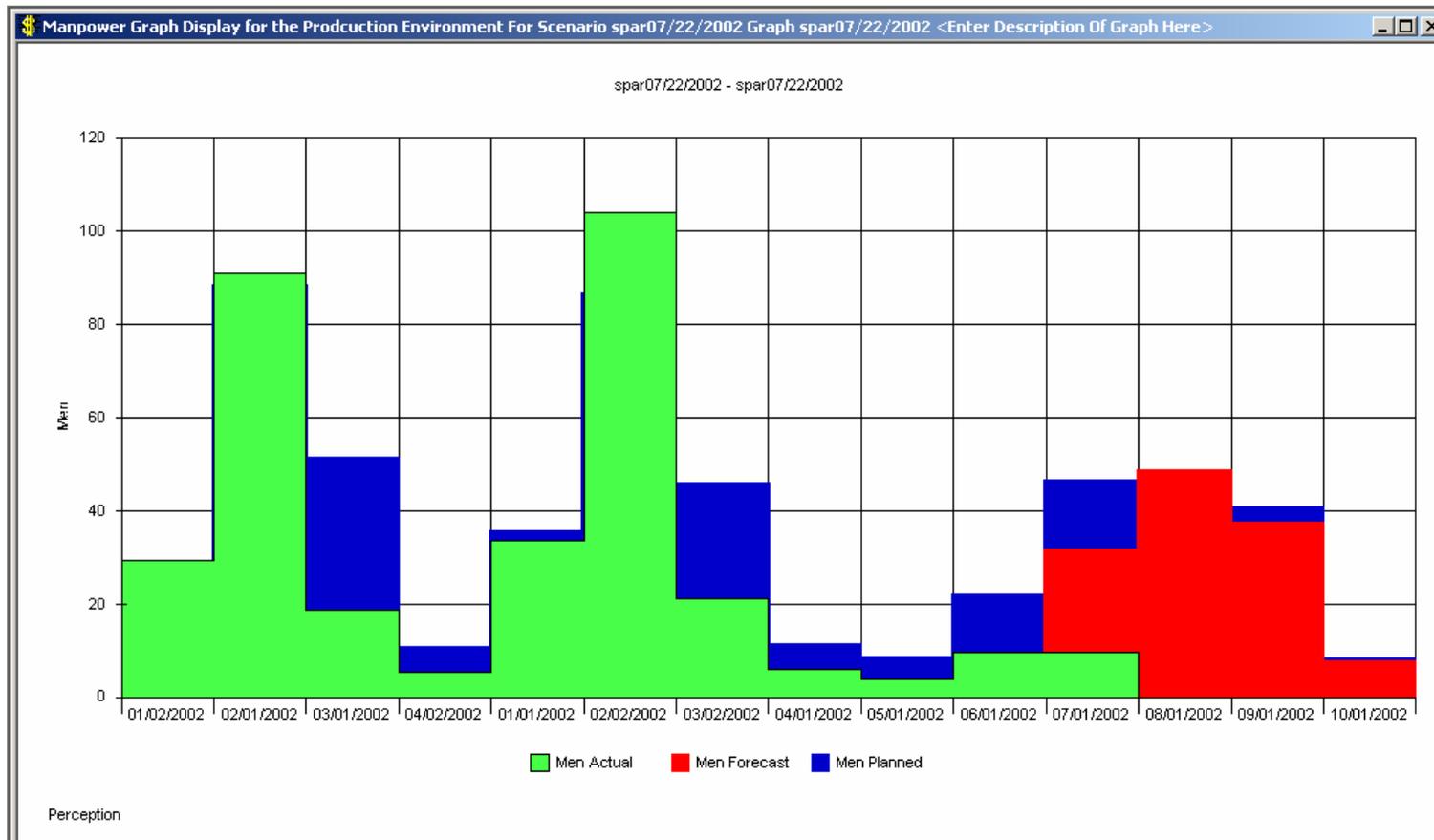
Graphical reports, like all *PERCEPTION* graphics, can be modified to suit the user's needs.

While a graphical report window is open, <u>right click anywhere on the graph</u> for a pop-up menu and select the *Chart Designer*.

The system will display the *Chart Designer* options window:
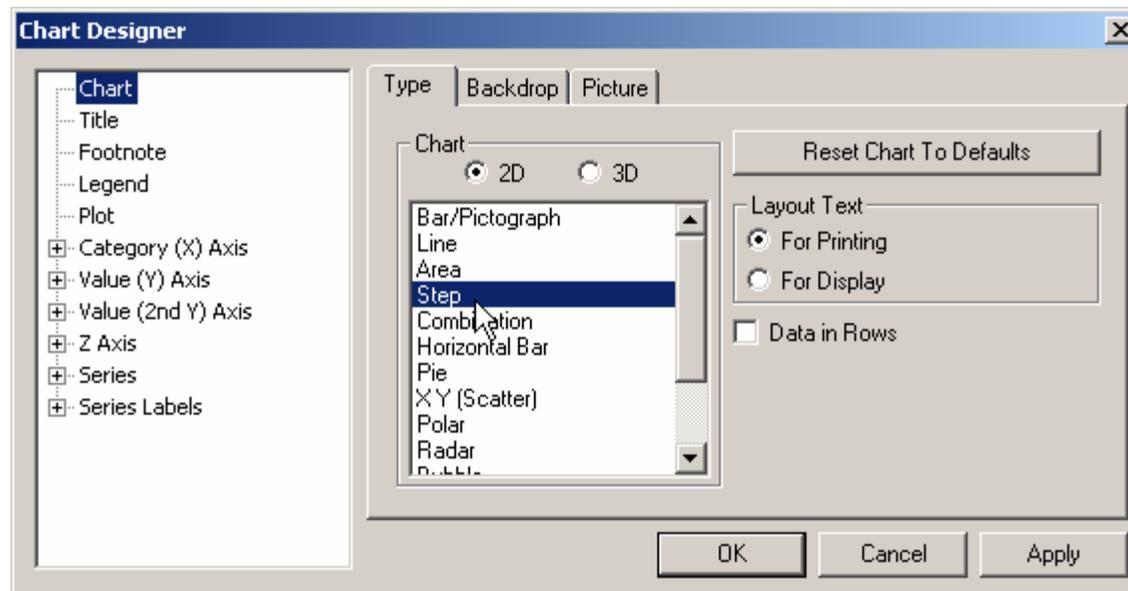
The user may add titles, footnotes and the like. A variety of chart formats also can be specified.

The following formats are recommended, although the user may wish to try others too:

1.   For **Manpower Requirements** profiles (Manpower Processor – Graphical Tool, Graph Options: Men and Distributions): Select Step format.

     If some information is hidden behind others, the user may click on the Series option and move the layers of information so that those that are hidden are more visible.

2.   For **Accumulative Labor Hours** profiles (Manpower Processor – Graphical Tool, Graph Options: Hours and Accumulative): Select Line format.

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Sample Accumulative Hours <u>Line</u> <u>Format</u>
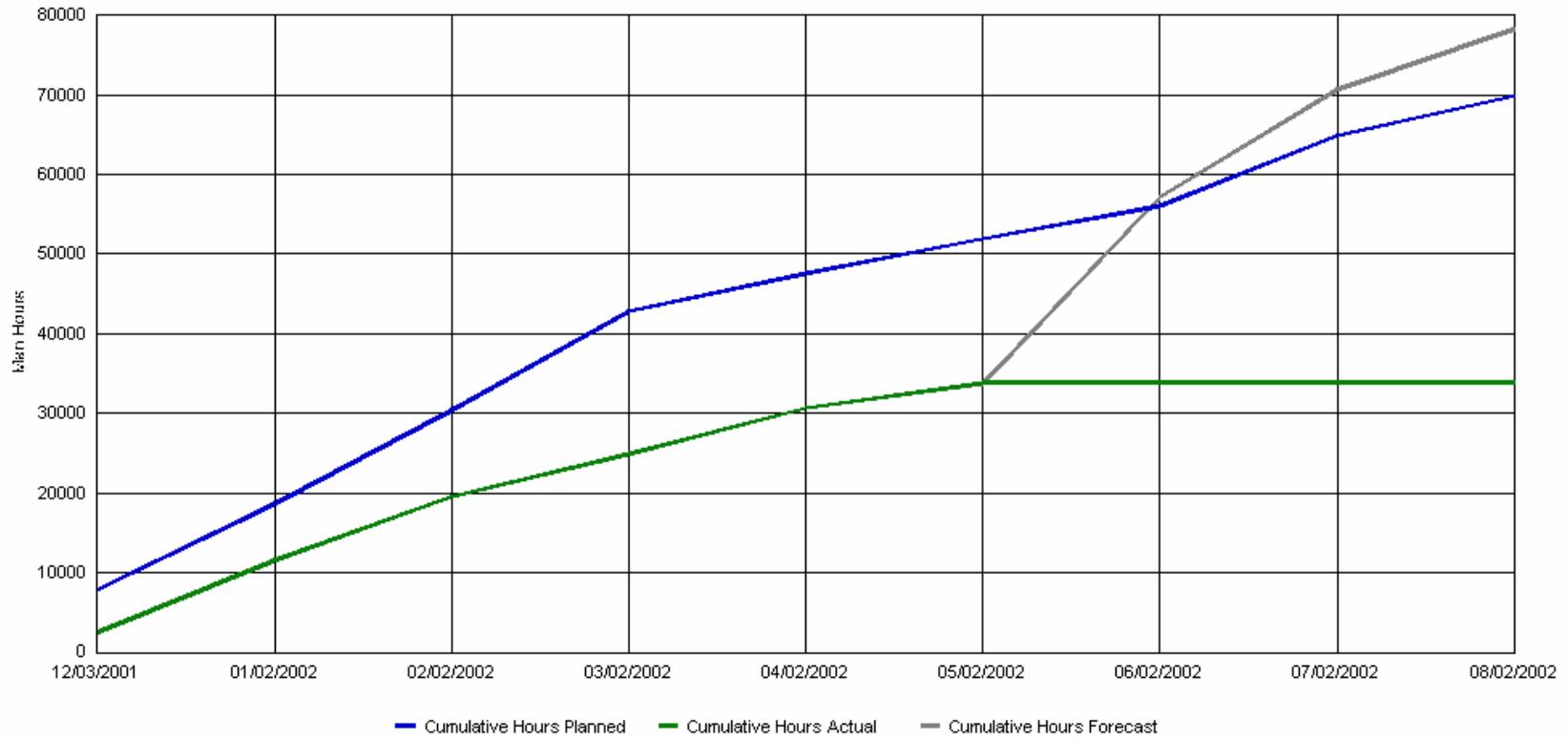
To change colors, click on the "Series" option on the left.

Then click on the series for the color change.

If the graph is a line graph, change the color on the "Line" tab window.
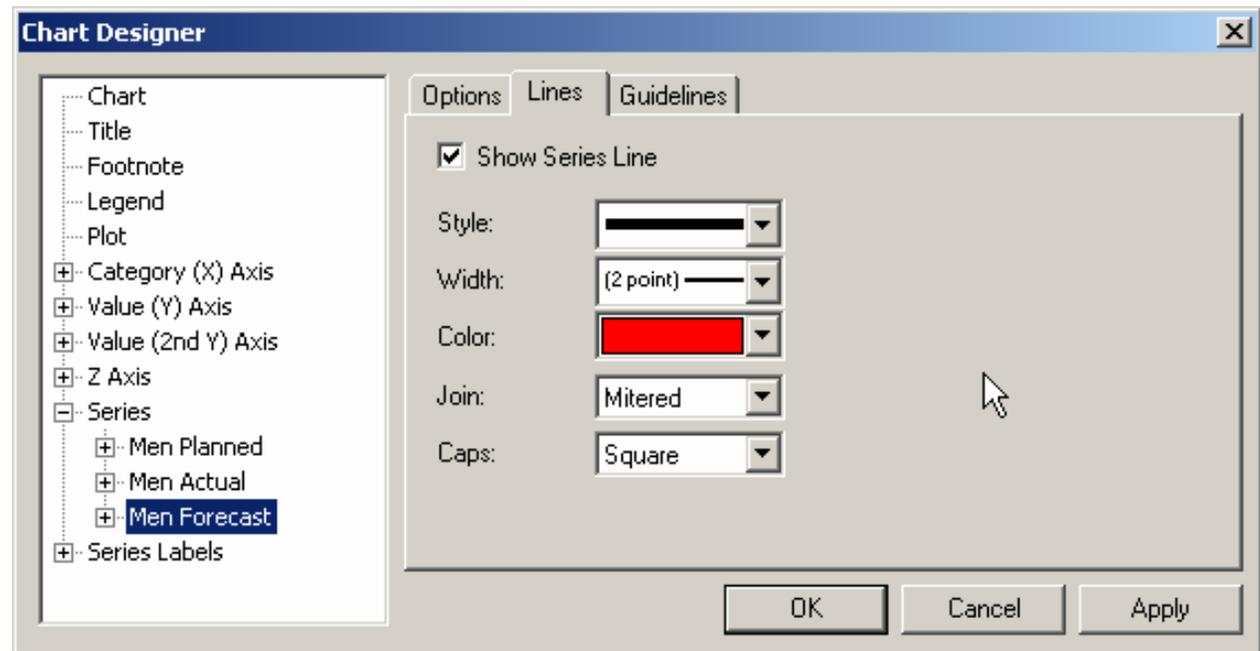
If the graph is an <u>area or step graph</u> that uses a fill, click on "Series," the series to change, and then "Data Point."
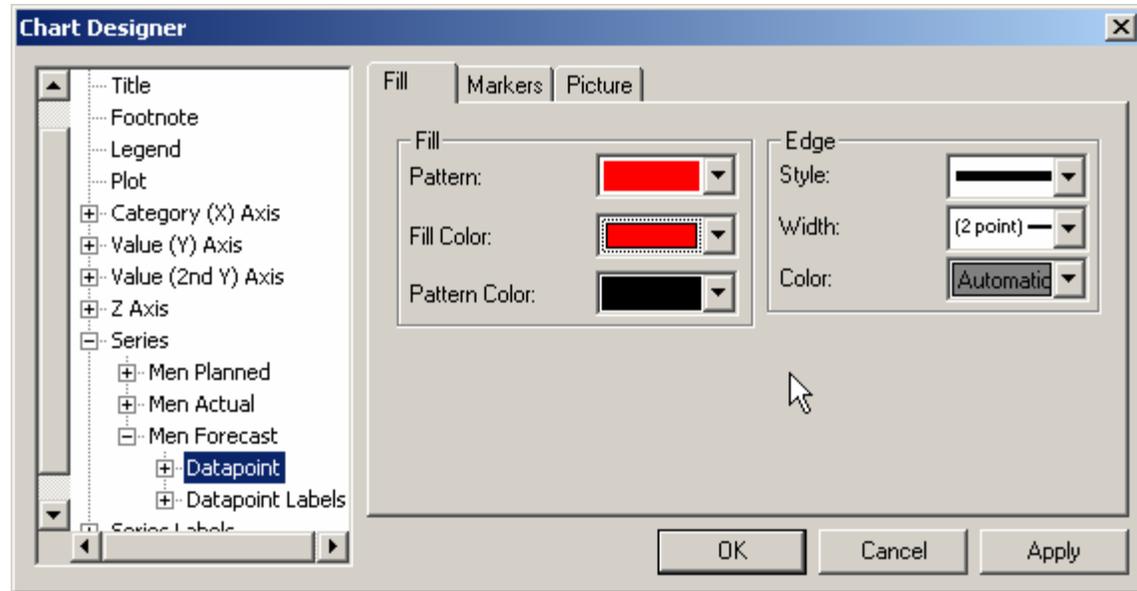
Change the color on the "Fill" tab window.

Other options are available in the Chart Designer for the user to customize the graphic report.

Saving Graphs:

The user can save the graph by selecting *Save As* from the graph's pop up menu.

These saved graphs can be viewed later as described below in *Display Manpower Graphs*.

The graph name will hold up to 40 alphanumeric characters so it can include information about the options selected.

Additional text can be typed into the *Description* column, which will hold an unlimited number of characters.

Advanced Manpower Analysis

Besides performing manpower analysis for a specific project, *PERCEPTION* can focus on certain aspects of a project or certain aspects of a range of projects across the shipyard.

In the Build Manpower Run Setup, click on the option to Use Advanced Options

Selection Ranges for Advanced Manpower Analysis

Select desired range of project, WBS, Work Centers, Trades, etc.

Sample Manpower Requirements Profile For A Selected Shipyard Work Center:
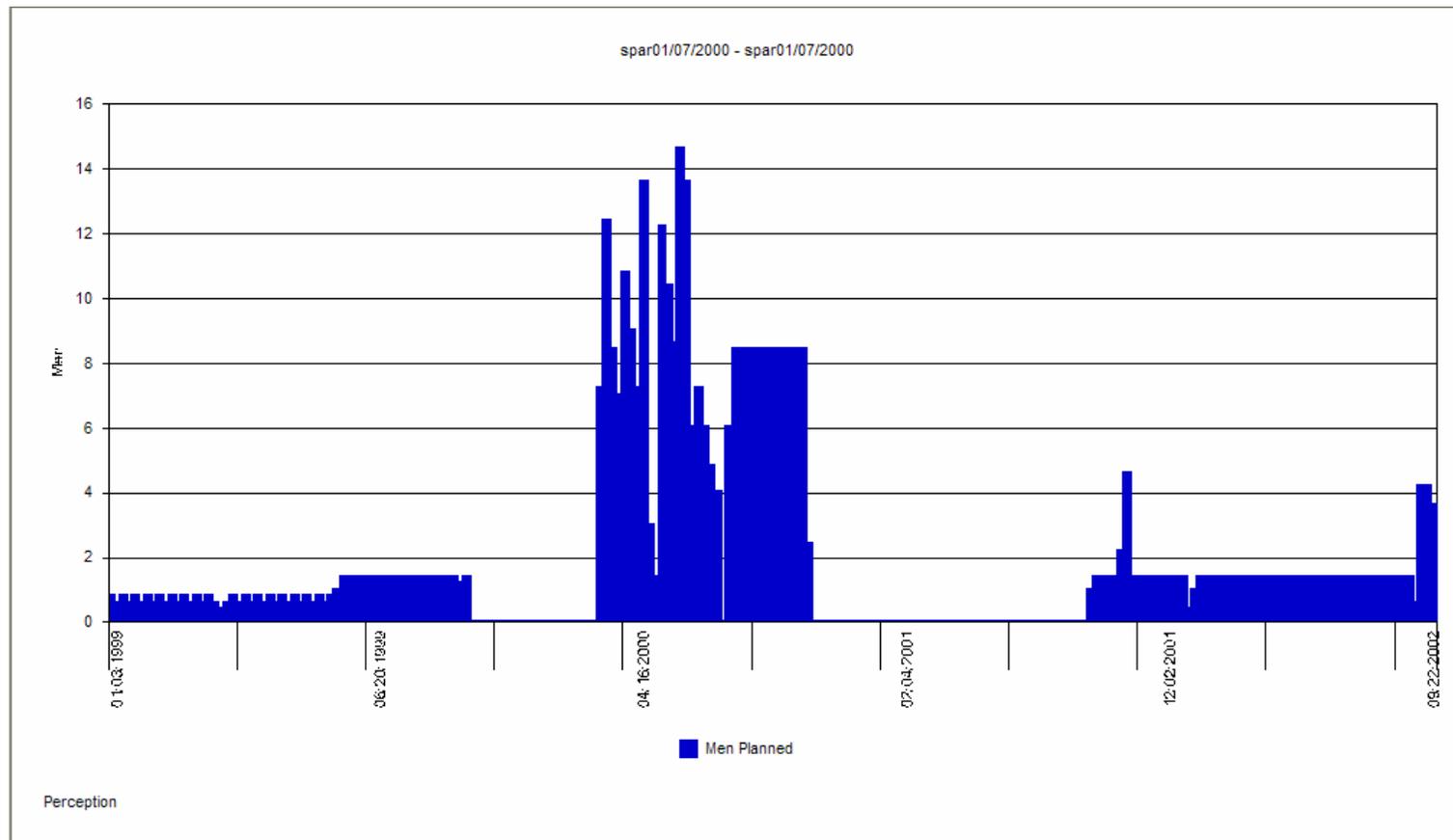
Merge Manpower Runs

Two manpower runs can be merged (either added together or one subtracted from the other) to produce a third manpower run.

The user can create a new merged manpower run by clicking *Merge Manpower Runs* in the *Select Process* window.

The system will display a manpower run selection window.

The following are the merge options:

1. **Whether or not to view the output.**

2. **Limit the time frame to accommodate only the time duration of the first run.**

3. **Limit the time frame to accommodate only the time duration of the second run.**

Build & Run A Manpower Batch

Multiple manpower runs can be created and run in batch mode. This allows them to be run over night or some other time on an unattended PC.

The output data for each run will be saved with the manpower run name identifiers and can be viewed and graphed and/or reported at any time.

To perform the batch run process, select the fourth option, *Build and Run a Manpower Batch* from the *Select Process* window. This will open the Manpower Batch Facility window.

Build Manpower Proposed Facility

Select the Manpower Run(s) to Refresh by Batch

SPAR06/28/2002P2 - 2 Merged   [Add]

Batched Runs

Manpower Run Name	Description
Barge - 2	<Enter Description Of Proposal Here>
Proposal for TSHIP	Project 2002
spar07/11/2002 - 1	<Enter Description Of Proposal Here>

[Remove]

[OK] [Cancel] [Help]
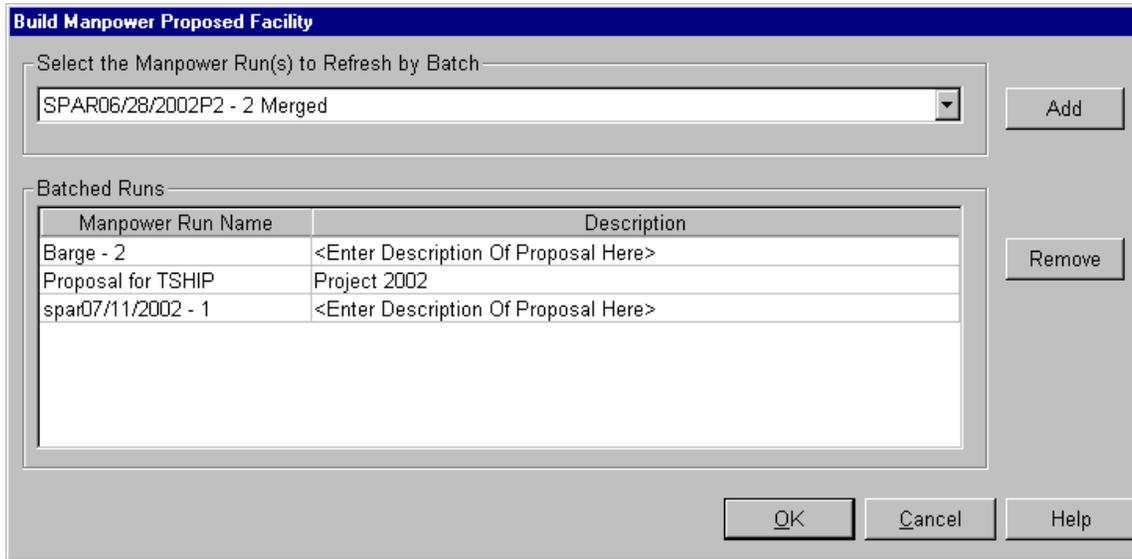
From the "Select Manpower Run" drop down window, select a run to process and click on the *Add* button to place it into the batch run scenario list at the bottom of the window.

Continue building and adding manpower runs as necessary.

When all desired manpower runs have been selected, click on the *OK* button to begin processing. The output calculations can be viewed, graphed and maintained like any other manpower run that has been saved.

Display Manpower Run

A manpower run that already has been built can be retrieved and re-processed by clicking on *Display A Manpower Run* in the *Select Process* window;

The system will display a manpower run selection window for the user to make the required selection.

After the user clicks the *OK* button, the system will re-load the already compiled results into a Manpower Processor Output worksheet.

From there, the user can produce additional tabular reports and graphs as needed.

Display Manpower Graph

Manpower run graphs that already have been created and saved can be retrieved and re-configured by clicking on *Display a Manpower Graph* in the *Select Process* window.

The system will display a manpower run graph selection window for the user to make the required selection.

After the user clicks the *OK* button, the system will display the manpower run graph.

From there, the user can print additional copies of the graph or modify it using the *Chart Designer* options from the pop up menu displayed with a right click anywhere on the graph area.

Refresh Manpower Run

An existing manpower analysis can be re-processed without having to build a new manpower run. Re-processing, or refreshing a manpower run can be useful when the analysis data needs to be updated.

Manpower runs that already have been built can be re-processed by clicking on *Refresh a Manpower Run* in the *Select Process* window.

The system will display a manpower run selection window for the user to make the required selection.

Manpower - Refresh Scenario
Select Scenario To Refresh
Testship project manpower composite
OK   Cancel

After the user identifies the manpower run to refresh and clicks the *OK* button, the system will re-process the run and re-generate an updated Manpower Run Output worksheet for that run.

Delete Manpower Run

As projects are completed and historical information archived, the user will want to delete information no longer needed.

Manpower runs can be deleted by clicking *Delete a Manpower Run* in the *Select Process* window.

The system will display a manpower run list worksheet.

By highlighting those manpower runs to be deleted, then clicking on the *Delete* button on the toolbar, and finally saving these transactions, the manpower runs, complete with any associated saved graphs, will be deleted from the database.

Delete Manpower Graphs

Manpower run graphs also can be deleted individually by clicking *Delete a Manpower Graph* **in the** *Select Process* **window.**

The system will display a manpower graph list worksheet.

	Scenario	Graph	Description
1	all proposals spar07/09/2002 - 4	spar07/12/2002	\<Enter Description Of Graph Here\>
2	dinaS	spar07/11/2002	\<Enter Description Of Graph Here\>
3	M-101	spar07/03/2002	\<Enter Description Of Graph Here\>
4	spar07/03/2002	spar07/03/2002	\<Enter Description Of Graph Here\>
5	spar07/09/2002	spar07/09/2002	\<Enter Description Of Graph Here\>

Select Manpower Run Graph(s) to Delete

By highlighting those <u>manpower</u> **graph runs to be deleted, then clicking on the** *Delete* **button** on the toolbar, **and finally saving these transactions, the graphs will be deleted from the database.**

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Manpower "PROPOSALS "

The manpower proposal processor works very much like the manpower run processor with the exception that it is designed to merge selected projects into two manpower groups:

1. **Active projects and their manpower requirements**

2. **Proposed projects and their manpower requirements**

The system then calculates the combined manpower requirements. Any number of active projects can be selected, and a <u>maximum of six (6) proposed projects</u>.

For Manpower Proposals, the manpower requirements for the <u>active projects</u> are based upon <u>forecasts of remaining work</u>.

All active projects selected by the user are grouped together by the system.

The budgeted and planned manpower requirements of the <u>selected proposed projects</u> are then superimposed upon the active project's total manpower to provide a net total manpower profile.

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The sample graph shown below was plotted from a proposal that added four projects to the active work and shows the weekly man-hour requirements for the combined projects.

The manpower requirements of the <u>proposed projects are individually displayed.</u>
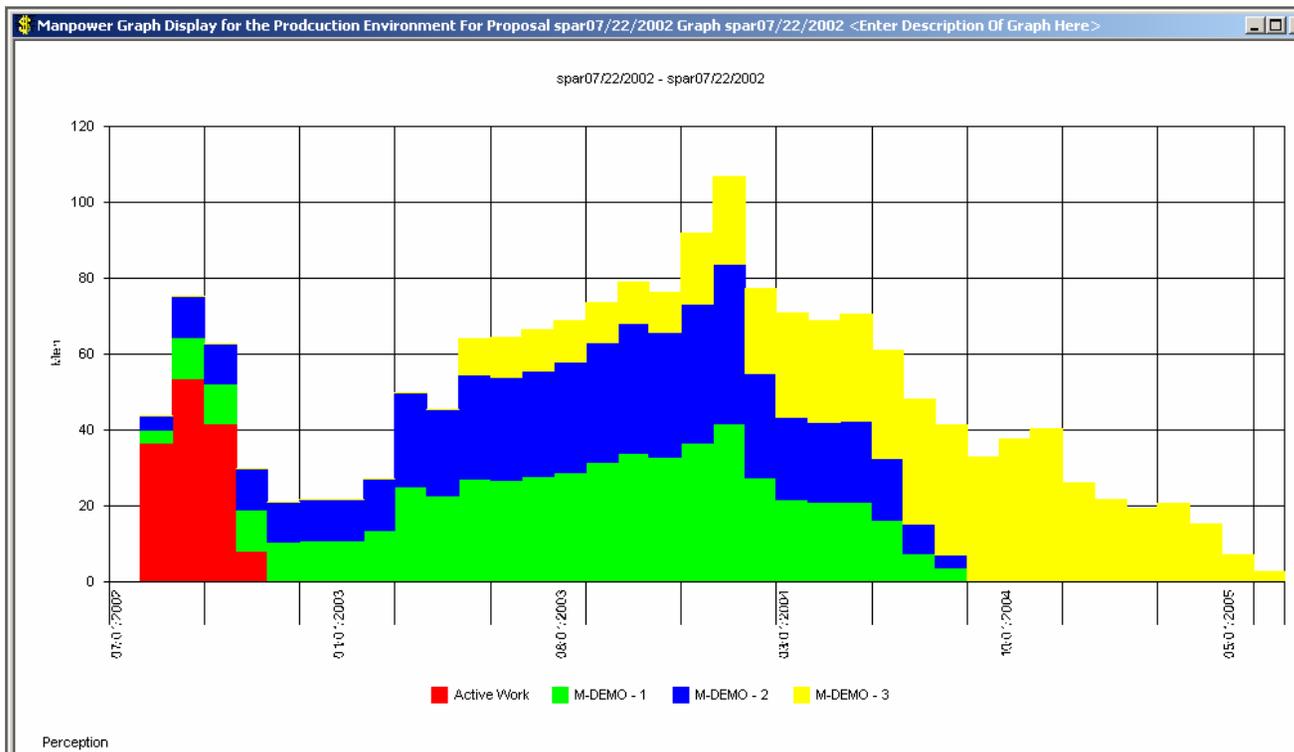
The legend shows the <u>proposed projects</u> by contract number and project number.

Build Proposal

To create a new proposal manpower run, select the processor option, *Build a Manpower Run for Proposed Work*.

This will open the *Build Proposed Manpower* setup window

Perform the following steps to build a manpower proposal analysis:

1. Using the selections in the list box for Active Projects, select (highlight) the first active project to use in the calculations.

   Click on the *Add* button or drag the desired projects to the right-hand collection box of the top half of the selection window.

   As many active projects as necessary can be selected and added in this manner.

2. The data for the active projects is gathered from work orders. The data used from these work orders are the forecasts of the remaining work.

   This work is based on either manual or the system's assessment of remaining work with schedule adjustments as described above for manpower runs.

3. Using the selections in the list box for Proposed Projects, select (highlight) the first proposed project to use in the calculations.

    Click on the *Add* button or drag the desired projects to the right-hand collection box of the bottom half of the selection window.

    A maximum of six (6) proposed projects can be selected and added in this manner.

4. Select the data source (estimate Cost Items, scheduling Planning Activities or Work Orders) for the proposed projects.

    The system will compute manpower from Cost Item estimated hours and estimated schedules; from Planning Activity baseline hours and schedules; or from Work Order budget hours and planned schedules.

    Only one source option can be chosen for all selected proposed projects.

When all selections and options have been made, click on the OK button and the system will display the final setup, *Build Proposal Setup*.

Here, the user should identify the proposal run and to what level of detail: project, work center or production trade.

Display Proposal

Clicking on *Display a Proposal* in the *Select Process* window can retrieve proposals that already have been built.

The system will display a proposal selection window for the user to make the required selection.

After the desired proposal has been selected, the system will open that proposal's output results worksheet.

Display Proposal Graph

Proposal graphs that already have been created and saved can be retrieved and re-configured by clicking on *Display a Proposal Graph* in the *Select Process* window.

The system will display a proposal graph selection window for the user to make the required selection.

Delete Proposals

As projects are completed and historical information archived, the user will want to delete information no longer needed.

Manpower proposal runs can be deleted by clicking *Delete a Proposal* in the *Select Process* window.

The system will display a proposal list worksheet.

By highlighting those proposals to be deleted, then clicking on the *Delete* button on the toolbar, and finally saving these transactions, the proposals, complete with any associated saved graphs, will be deleted from the database.