

# MS Project Professional 2007 Schedule Leveling: Tips & Tricks

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# Agenda

- What, Where, When & Why
- Understanding the Options
- Considering Different Views / Reports
- Tips & Tricks

# What, Where, When & Why

## ➤ **What:** (it does and doesn't do)

- It does not reassign tasks or units and does not change work amounts
- Works only on existing work resources, not generic, material, or cost resources
- Start/finish dates change due to delays/splits given resource availability

## ➤ **Where:** (it's used best)

- Primarily used in projects where resources are the most important priority
- Cost and schedule are secondary priorities

# What, Where, When & Why

## ➤ **When: (it's activated)**

- First checks each resource for overallocations
- Finds tasks associated with overallocations and identifies which ones can be delayed
- Does not delay if:
  - A constraint of "Must Start On" or "Must Finish On" exists
  - A constraint of "As Late As Possible" exists, if this project is being scheduled from the start date.
  - A constraint of "As Soon As Possible", if this project is being scheduled from the finish date.
  - A priority of 1000, meaning do not level.
  - An actual start date exists but will split remaining work if "Leveling can create splits in remaining work" check box is selected

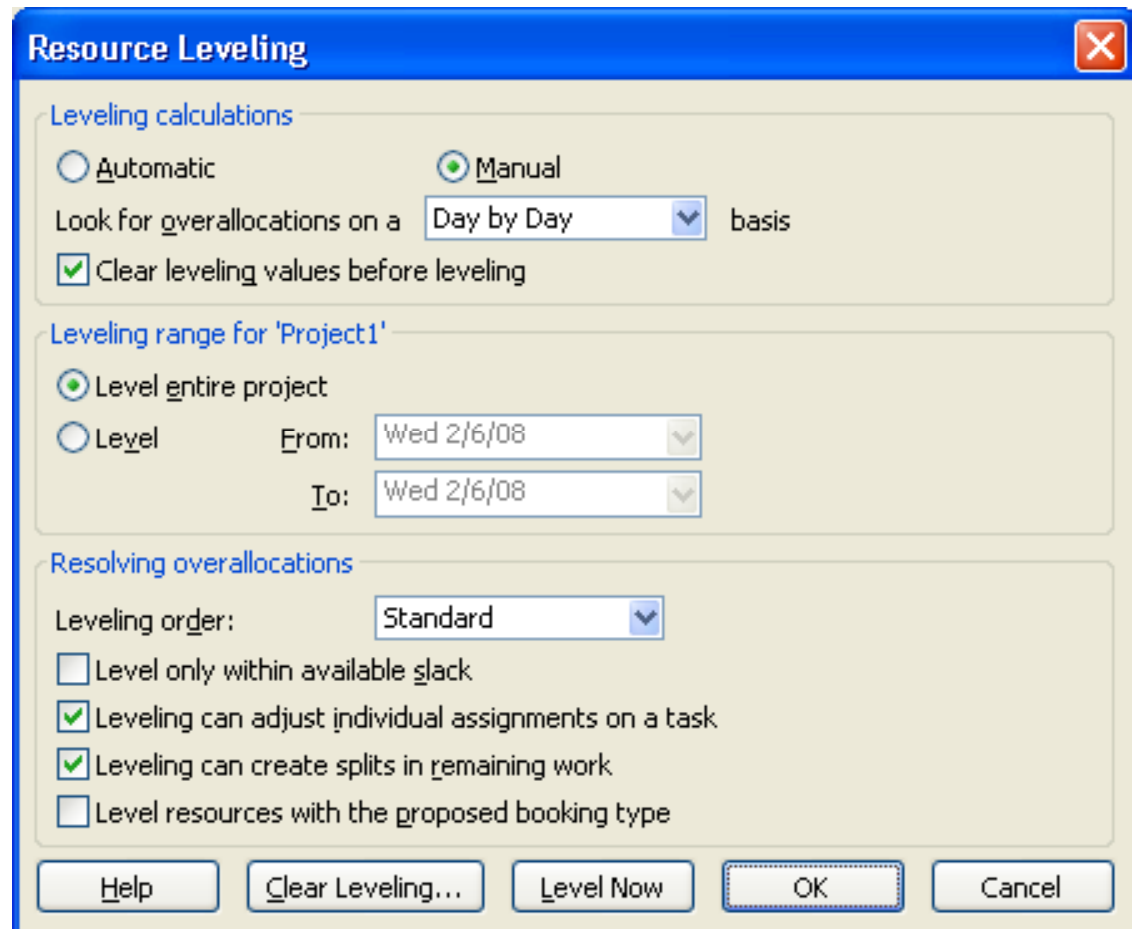
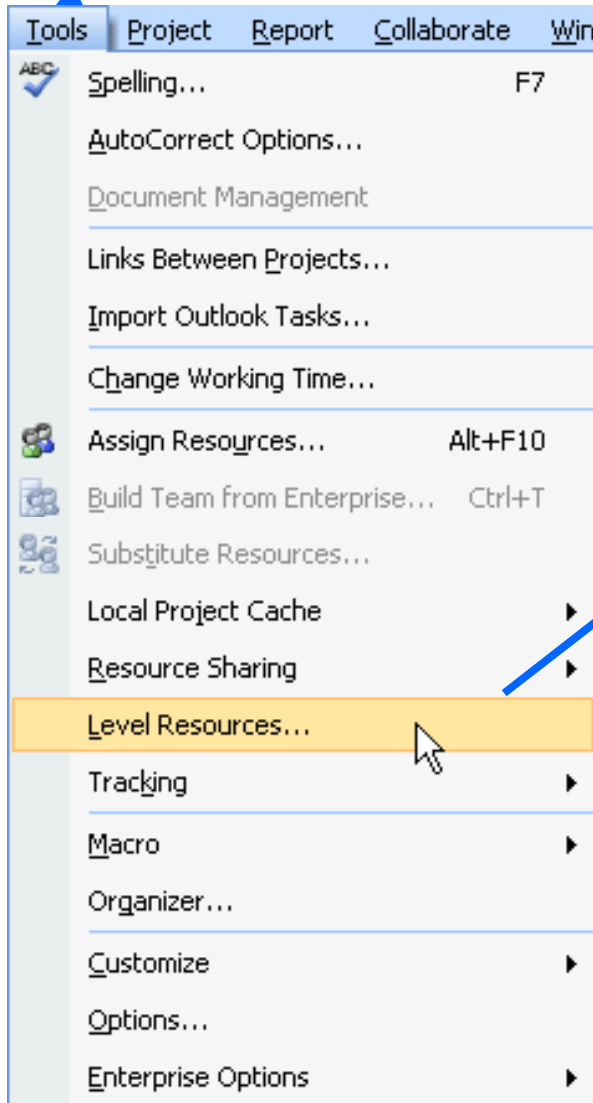
# What, Where, When & Why

## ➤ **Why: (Triple Constraint Impact)**

- Minimizes risks/disruptions due to over allocation
  - Scope Adjustment: poor quality or scope reduction
  - Schedule: missed deadlines/rework – schedule delays
  - Cost Adjustment: lower productivity to rectify the above risks
- Balances the work of a project based on resource assignment
  - Scope Adjustment: add/remove tasks – resource utilization
  - Schedule Adjustment: split/delay tasks – resource availability
  - Cost Adjustment: add/remove/extend resources
- Re-allocates resources to optimum usage without burning out resources
- Scope is defined more precisely, based on actual project limitations

# Understanding the Options

Same location as in 2003



# Leveling Calculation Options

## ➤ **Automatic vs. Manual:**

- Automatic
  - Levels as soon as there is a change in a task or resource
  - Assumes Automatic Calculation is set within Options
  - Typically degrades MS Project performance – not recommended
- Manual (Default)
  - Levels only when “Level Now” button is selected
  - Assumes Automatic Calculation mode is active
- **Note:** If Manual Calculation mode set in Options, neither will work until “Calculate Now” in Options is manually selected

# Leveling Calculation Options (Cont.)

- **Look for overallocations on a Day by Day basis: (Default)**
  - Established the point you want leveling to intervene
  - Week by Week smallest interval recommended
  - Time periods are based on settings within individual resource calendars first and then max units (Calendar tab of Options)
- **Clear leveling values before leveling: (Default-Checked)**
  - All leveling delays previously entered (automatic/manual) are cleared before the next leveling action
    - Clear the box if using Automatic Leveling to improve performance



# Leveling Range Options

- **Level entire project: (Default)**
  - Levels all tasks in a project over the entire project duration
- **Level – From/To:**
  - Levels only those tasks within the From/To range
  - Only way to do task selection for leveling

# Resolving Overallocations Options

## ➤ **Leveling Order:**

- Standard (Default)

- Task Relationship
- Slack
- Start Date
- Priority
- Constraint

- ID Only

- Task ID

- Same as left most column – bottom up leveling
- Always starts with the higher ID number

# Resolving Overallocations Options (Cont.)

## ➤ **Leveling Order: (Continued)**

- Priority, Standard
  - Priority
  - Task Relationships
  - Slack
  - Start Date
  - Constraint

# More on Priorities

- **Priorities are used to restrict/focus leveling activities**
- **Priority Range: 0 (lowest) to 1000 (highest)**
- **Priority Default for Tasks: 500**
- **Priorities Set to 1000:**
  - **No resources will be leveled**
  - **No splits or leveling delays will be applied**
  - **Used for critical tasks you never want to change w/leveling**
- **Priorities Set to 100:**
  - **Tasks that have more flexibility as to start/finish dates**
  - **MS Project will focus change to these tasks first**

# Resolving Overallocations Options

- **Level only within available slack (Default-not checked)**
  - Used if you do not want to push out the project finish date
  - Assumes slack exists – if it doesn't few changes may occur
  - Recommend first pass with this box checked
  - If little effect may need to add resources, cut scope, extend time line
- **Leveling can adjust individual assignments on a task (Default-checked)**
  - Adjusts when a resource works on a task independent of others assigned
  - May create problems based on the task & type/sequence of work

# Resolving Overallocations Options (Cont.)

- **Leveling can create splits in remaining work (Default-checked)**
  - Allows splits to tasks based on remaining work & resource availability
  - Affects tasks that have not started and those that have
- **Level resources with the proposed booking type (Default-not checked)**
  - Leveling is normally not applied to “booked” resources only “committed”
  - Booked resources are “tentative” resources
  - Booked & Proposed resources are different than Generic, Material, and Cost resources

# Leveling Buttons

## ➤ **Help:**

- Launches Internet help from Microsoft specific to Leveling Resources

## ➤ **Clear Leveling....:**

- Same function as Clear Leveling... check box
- Clears all manual and tool generated Leveling Delays
- Can use "Undo" to reverse mistakes

## ➤ **Level Now:**

- Use with manual leveling
- Will level resources by delaying/splitting tasks or resource assignments
- If in a resource view, a "Level Now" dialog box appears to allow your to choose all or selected resources

## Leveling Buttons (Cont.)

➤ **OK:**

- Sets any changed options for later use

➤ **Cancel:**

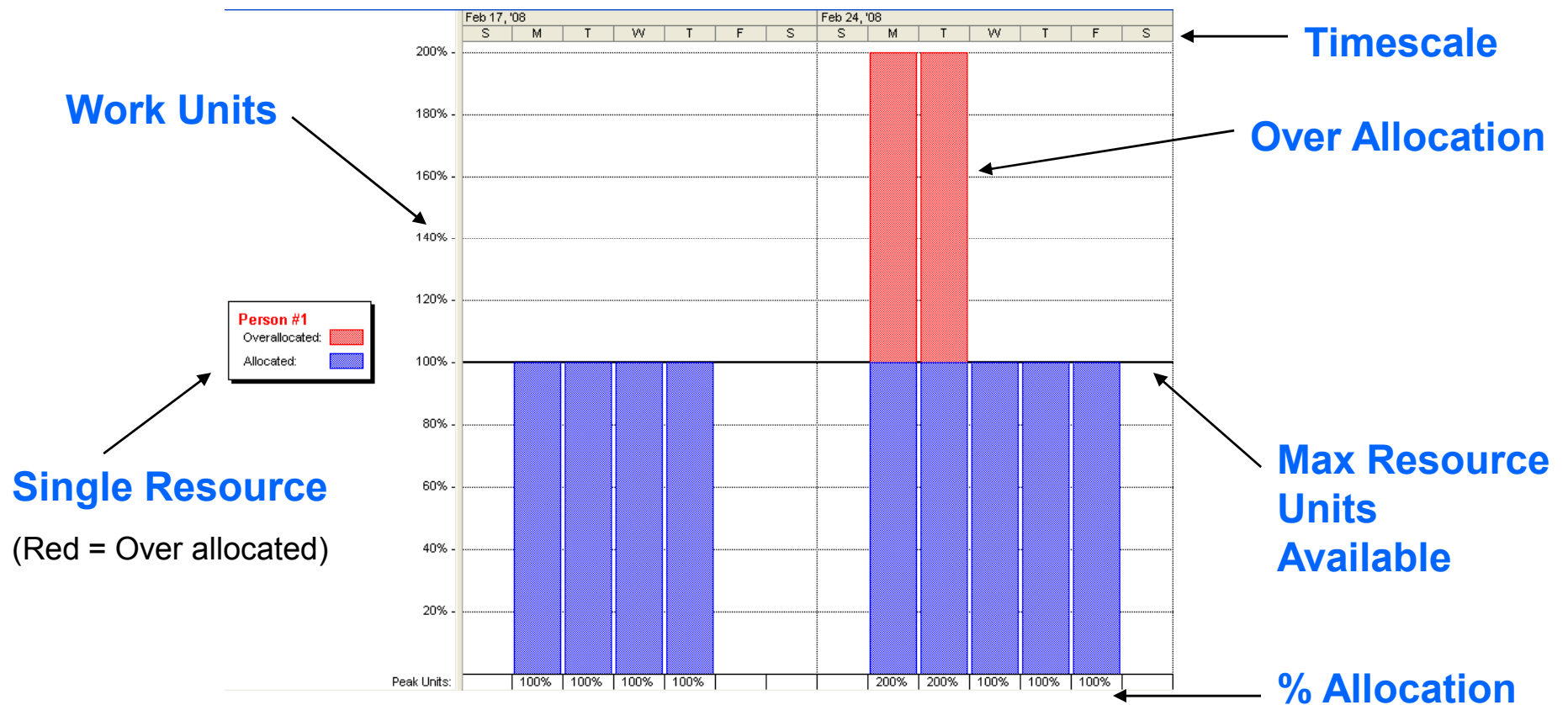
- Closes the Leveling Information Box ignoring any selected changes



# Considering Different Views

## ➤ Resource Graph:

- Displays resource utilization , one resource at a time
- Default view: Peak Units Format Others: Format → Details



# Considering Different Views

## ➤ Resource Allocation View:

- Split View: Resource Usage & Leveling Gantt
- Displays all resources w/all assigned tasks (more details available)
- Level Gantt shows tasks of selected resource

	Resource Name	Work	Details	Feb 17, '08							Feb 24, '0		
				F	S	S	M	T	W	T	F	S	S
1	Person #1	128 hrs	Work	8h			8h	8h	8h	8h			
	Task 1	24 hrs	Work										
	Task 2	16 hrs	Work	8h									
	Task 3	32 hrs	Work				8h	8h	8h	8h			
	Task 5	16 hrs	Work										
	Task 7	40 hrs	Work										
2	Person #2	104 hrs	Work				8h	8h	8h	16h	8h		
	Task 3	32 hrs	Work				8h	8h	8h	8h			
	Task 4	16 hrs	Work							8h	8h		
	Task 5	16 hrs	Work										
	Task 7	40 hrs	Work										
			Work										
			Work										
			Work										

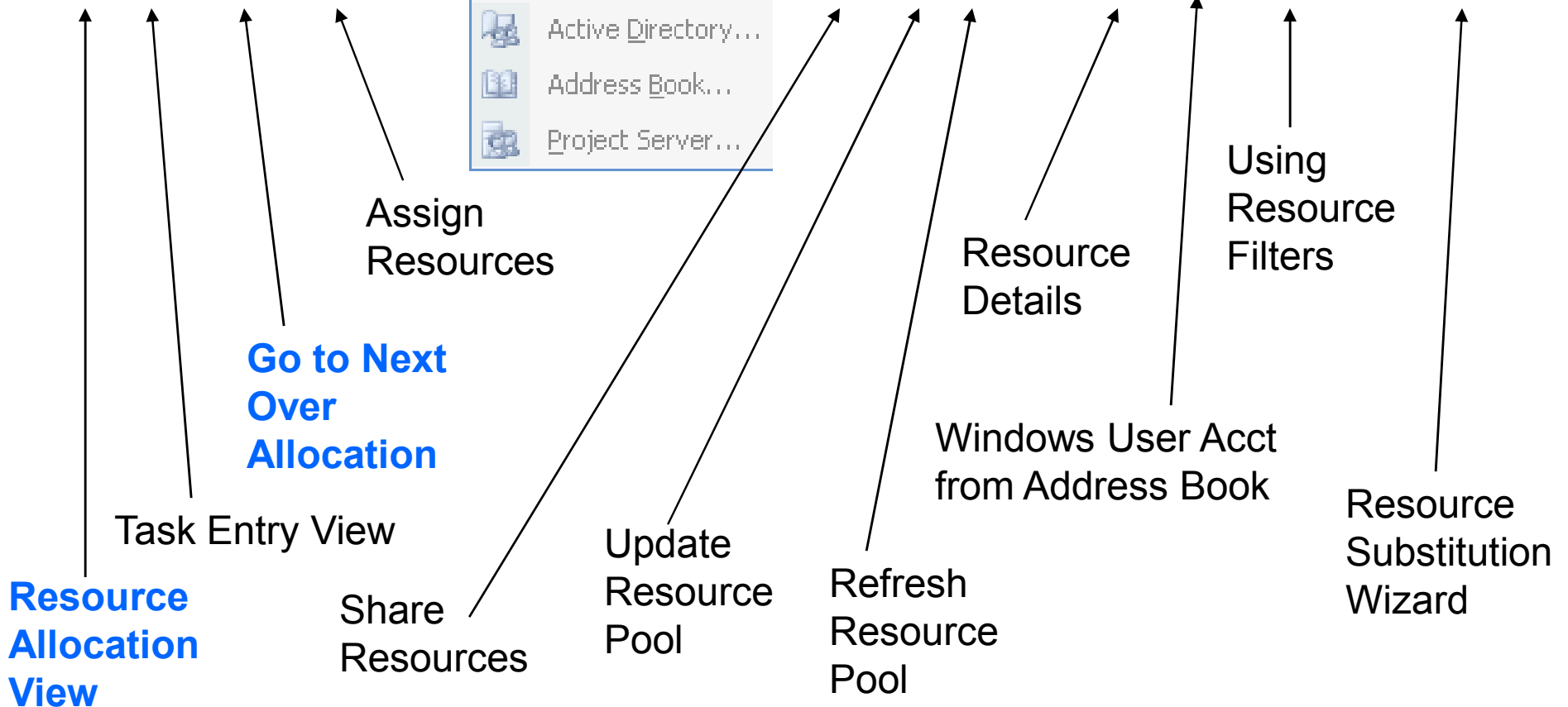
	Task Name	Levelin	Feb 17, '08							Feb 24, '0			
			F	S	S	M	T	W	T	F	S	S	
4	Task 3					Person #1, Person #2							
7	Task 4								Person #2				
8	Task 5												
11	Task 7												

# Considering Different Views

## ➤ Resource Leveling Toolbar:

- Provides easy access to a variety of Resource functions

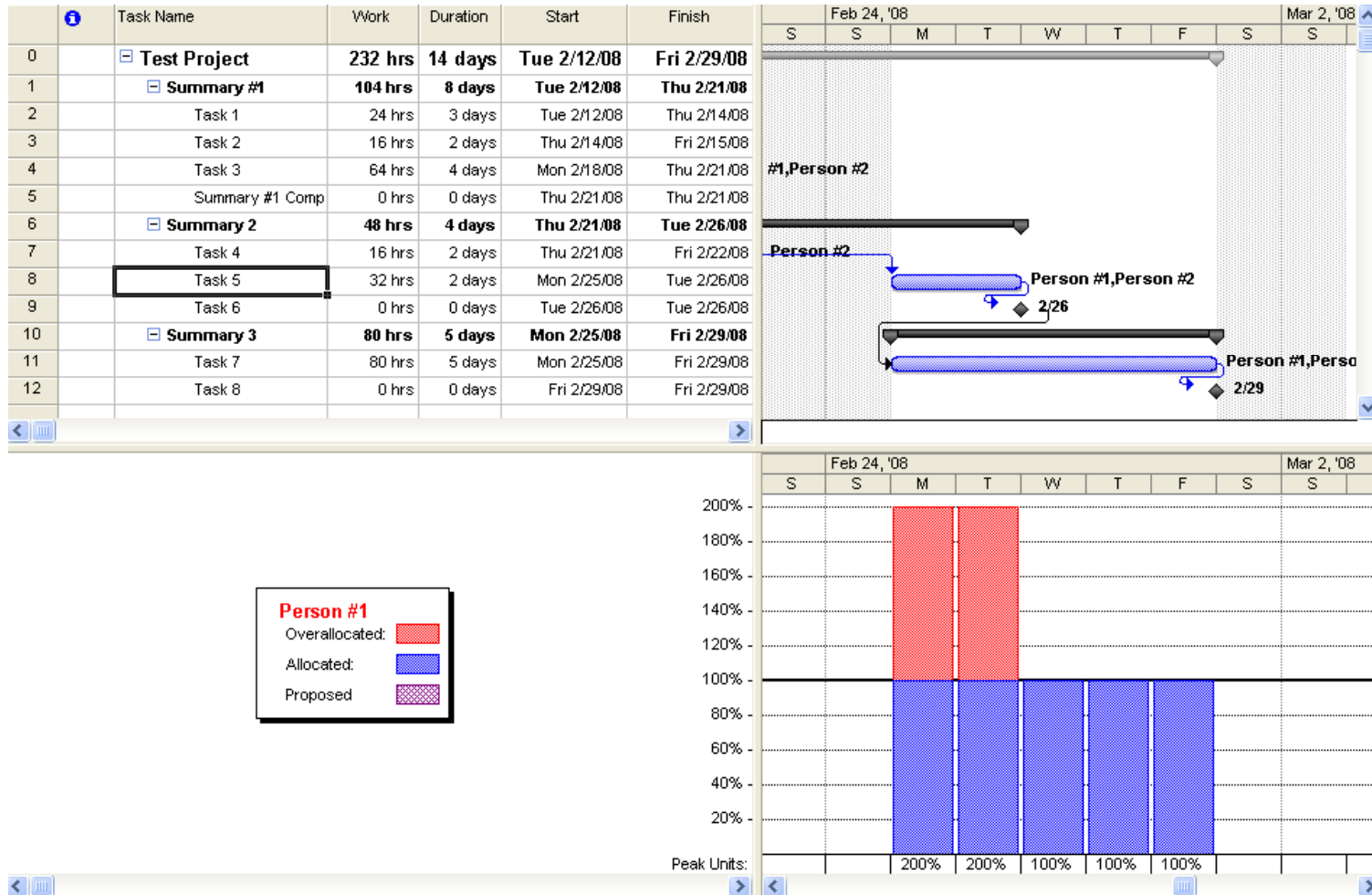
Leveling Help



# Considering Different Views

## ➤ Gantt Chart & Resource Graph:

- Task data tables and Resource Overallocations data in a split view



# Considering Different Views

## ➤ Resource Form w/ Resource Sheet:

- Displays details about the resource selected in the Resource Sheet
- Another way to manage resources

**Resource Sheet**

	Resource Name	Type	Material Label	Initials	Group	Max. Units	Std. Rate	Ovt. Rate	Cost/Use	Accrue At	Base Calendar
1	Person #1	Work		P		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
2	Person #2	Work		P		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard

**Resource Form**

Name:  Initials:  Max units:

Costs

Std rate:  Per use:  Ovt rate:  Accrue at:

Base cal:  Group:  Code:

Project	ID	Task Name	Work	Leveling Delay	Delay	Start	Finish
Test Project	2	Task 1	24h	0d	0d	Tue 2/12/08	Thu 2/14/08
Test Project	3	Task 2	16h	0d	0d	Thu 2/14/08	Fri 2/15/08
Test Project	4	Task 3	32h	0d	0d	Mon 2/18/08	Thu 2/21/08
Test Project	8	Task 5	16h	0d	0d	Mon 2/25/08	Tue 2/26/08
Test Project	11	Task 7	40h	0d	0d	Mon 2/25/08	Fri 2/29/08

# Considering Different Reports

- **Use reports for meetings**
  - Not everyone has access to or knows MS Project Professional
  - Great for meeting use
    - Resource Management Meetings
    - Team Status Meetings
    - Management Reporting
    - Project Review Meetings
    - And more
- **Run Assignment Related reports within MS Project**
  - **Who Does What When Report**
  - **Overallocated Resources Report**
- **Run Workload reports within MS Project**
  - **Resource Usage Report**
- **New in MS Project Professional 2007 – Visual Reports**
  - **Resource Availability Visual Report (MS Visio)**
  - **Resource Work Availability Visual Report (MS Excel Chart)**
  - **Resource Work Summary Visual Report (MS Excel Chart)**

# Considering Different Reports

## ➤ Overalllocated Resources report:

- Displays only overallocated resource information
- If no overallocated resources – no report is generated

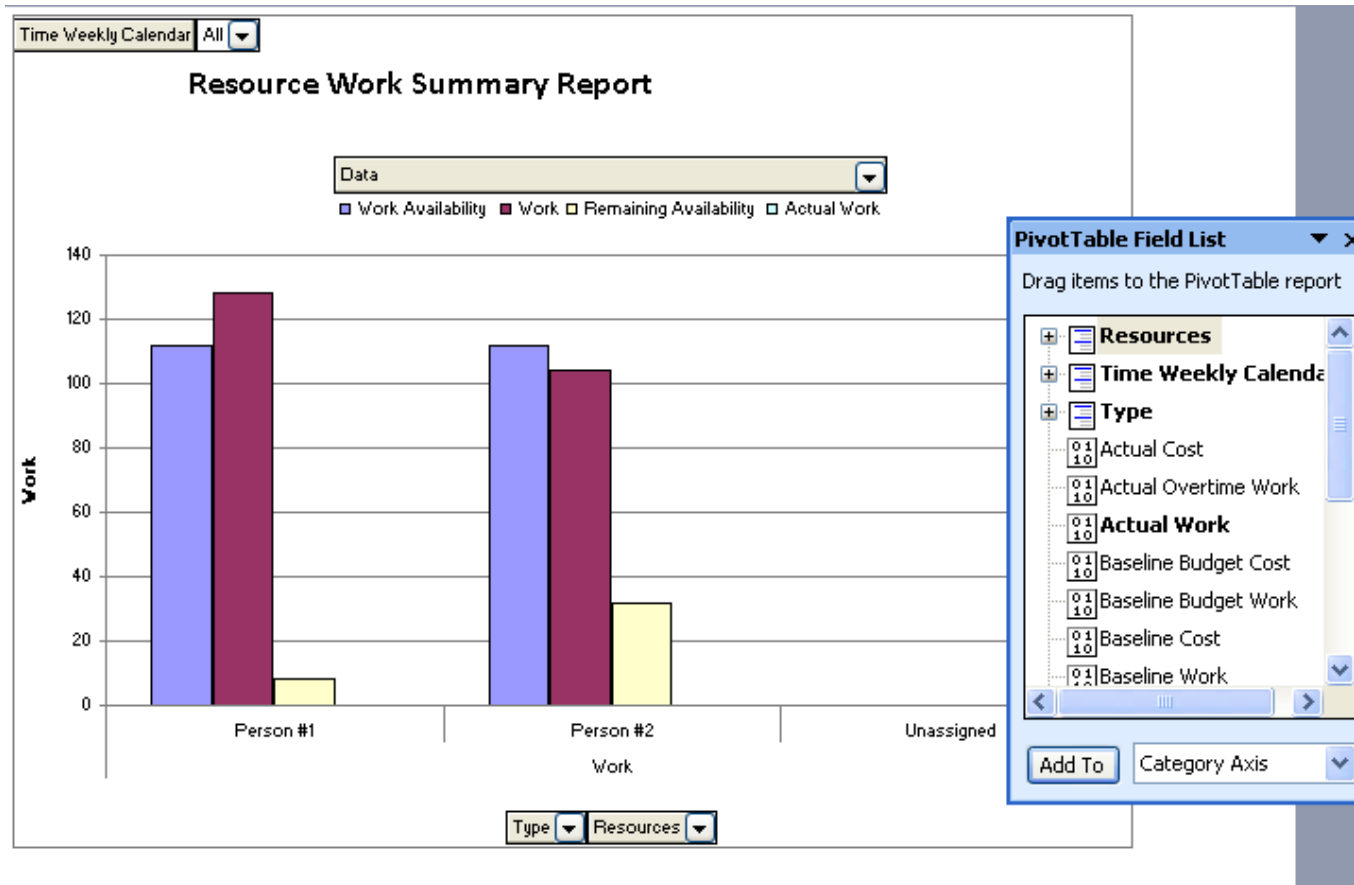
Overalllocated Resources as of Tue 2/12/08  
Test Project

ID		Resource Name	Work					
1	◆	Person #1	128 hrs					
		<i>ID</i>	<i>Task Name</i>	<i>Units</i>	<i>Work</i>	<i>Delay</i>	<i>Start</i>	<i>Finish</i>
		2	Task 1	100%	24 hrs	0 days	Tue 2/12/08	Thu 2/14/08
		3	Task 2	100%	18 hrs	0 days	Thu 2/14/08	Fri 2/15/08
		4	Task 3	100%	32 hrs	0 days	Mon 2/18/08	Thu 2/21/08
		8	Task 5	100%	18 hrs	0 days	Mon 2/25/08	Tue 2/26/08
		11	Task 7	100%	40 hrs	0 days	Mon 2/25/08	Fri 2/28/08
2	◆	Person #2	104 hrs					
		<i>ID</i>	<i>Task Name</i>	<i>Units</i>	<i>Work</i>	<i>Delay</i>	<i>Start</i>	<i>Finish</i>
		4	Task 3	100%	32 hrs	0 days	Mon 2/18/08	Thu 2/21/08
		7	Task 4	100%	18 hrs	0 days	Thu 2/21/08	Fri 2/22/08
		8	Task 5	100%	18 hrs	0 days	Mon 2/25/08	Tue 2/26/08
		11	Task 7	100%	40 hrs	0 days	Mon 2/25/08	Fri 2/28/08
			232 hrs					

# Considering Different Reports

## ➤ Resource Work Summary Visual Report:

- Uses an MS Excel column chart to show work and availability to each resource in a project





# Tip

## ➤ **Task Views vs. Resources Views:**

- Remember task views do not show over allocated resources
- You must be in a resource view to see them (will be red)

### **TRICK:**

**Insert the (“Overallocated” Column into Task Tables)**

**Yes/No Column**

**Yes indicates Over Allocated Resources Assigned to a Task**

**Sort by the Overallocated field for better focus**

**Remember your “Look for over Overallocations” option setting**

# Tip

- **So you level and you like what you see, but your concerned that you may clear the “leveling delay” either manually or automatically and loose the changes leveling made. Can you protect this data**

## **TRICK:**

**Change the priority to 1000!**

**Once a task is subsequently set with a priority 1000 (meaning do not level), if you click “Clear Leveling” in the Resource Leveling dialog box, the leveling delay or split is not removed.**

# Tip

- **What is the fastest way to see what leveling has done to my project schedule.**

## **TRICK:**

**Use the “Leveling Gantt”**

**The Leveling Gantt view will show you the results of leveling as well as how much delay leveling has added to tasks.**

# Tip

- **How can I better manage overallocations in projects that have 500+ tasks?**

## **TRICK:**

### **Use “Filtering”**

- **In a view like “Resource Usage”, click “Project”, “Filter For”, “Overallocated Resources”.**
- **Once you identify a resource you can switch to a task views like the “Gantt Chart” and use the filtering option “Using Resource” and enter the resource name to see their tasks**

# Tips

## **After leveling check other possible impacts**

- Finish Date
- Total Project Costs
- Scope Changes
- Obtain Formal approval for all leveling changes

# Thank You for Your Time!

Oakwood is an expert in the area of project management and Project Server implementations. If you'd like more information about how Oakwood can help your organization with your project management issues, please call 314-824-3000 or 800-810-8412.