

PERCEPTION[®] MAT-PAC

Reports

Material Cost & Status

A Training Guide



This training guide is a supplement to the user manual entitled “*PERCEPTION MAT-PAC Material Planning, Purchasing & Inventory Control,*” which provides more details for the user.

Before using this training guide, the user should first view the preliminary training guide “*PERCEPTION - Getting Started.*”



Other related training tutorials for material control are the following:

- 1. Starting From Scratch: Material Planning, Purchasing & Inventory Control**
- 2. Starting A New Project**
- 3. Managing Drawings & Bills of Materials**
- 4. Material Requisitions**
- 5. Work Order Pallets**
- 6. Purchase Orders**
- 7. Tool Room Control**
- 8. Developing A Parts Catalog**
- 9. Managing Stock Inventories**
- 10. Receiving & Warehousing**
- 11. Withdrawing Material to Production**
- 12. Managing Vendor Invoices**
- 13. Managing Customer Billings**



This tutorial outlines a selection of the material cost and schedule performance reports that have proved to be the most valuable for managing projects.

These reports provide management with the cost and schedule performance visibility necessary to maintain project budgets and planned schedules.



Tracking & Managing Costs and Schedules

PERCEPTION tracks the following cost and schedule information:

- Labor Hours
- Labor Dollars
- Overhead Dollars
- Material Dollars
- Purchased Services
- Total Dollars



In addition, *PERCEPTION* measures and tracks the following material costs:

- ✓ Committed Costs
- ✓ Purchased Costs
- ✓ Received Purchased Costs
- ✓ Stock Inventory Costs
- ✓ Stock Reserved Costs
- ✓ Material Costs Used In Production
- ✓ Vendor Invoiced Costs



***PERCEPTION* further tracks different phases of costs and schedules:**

- Original Estimated Costs & Schedules**
- Baseline Plan Costs & Schedules**
- Current Budget Costs & Planned Schedules**
- Management Reserves**
- Actual Costs & Schedules**
- Estimated Costs At Completion**
- Rework Material Costs**
- Change Order Material Costs**



Costs and schedules can be summarized by several different project work breakdown structures (WBS) simultaneously:

- **By Systems Work Breakdown Structure (SWBS)**
- **By Product Work Breakdown Structure (PWBS)**
- **By Shipyard Organization (COA)**
- **By Contract Line Item (CLIN)**



The *details* of material cost and schedule information at any level of the project WBS can be viewed on-line by drilling down from the WBS level's worksheet.

Project Details Information for the Accounting Environment									
Details	Material Status	Overall Status	Indexes	Variances	Notes	Baseline	Options	Milestones	Characteristics
Contract	TSHIP CONTRACT		Description: Severn Bulk Carrier (work orders)						
Project	2002		Effective Date: 01/14/1993						
	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Budgeted Cost	Estimated at Completion				
Mat'l Cost	0	0	0	29,193,294	29,193,294				
	Mgmt Reserves:			2887249.00					
	Budget + Reserves:			32,080,543					
	Less Total Committed:			28,840,055.37					
	EAC Margin:			2,887,249					
Total Committed Cost Status:									
Mat'l Purchased	Taxes And Duty	Freight	Stock Reserved	Stock Issued	Total RMA	Total Committed	Total Paid Invoices		
25,982,032	+ 2,858,024	+ 0	+ 0	+ 0	- 0	= 28,840,055	0		
Total Purchased Cost Status: Mat'l Cost									
Delivered	Pending QA	Rejected QA	Accepted QA	RMA	Issued	Unused			
0	0	0	0	0	0	0			



An overall status of labor, overhead and material cost status also is available on-line.

Project Details Information for the Accounting Environment									
Details	Material Status	Overall Status	Indexes	Variances	Notes	Baseline	Options	Milestones	Characteristics
Contract	TSHIP CONTRACT		Description	Severn Bulk Carrier (work orders)					
Project	2002				Effective Date:	01/14/1993			
	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Budgeted Cost	Estimated at Completion	Reserves	Rework		
Man-Hours	698,984	692,646	660,706	1017998.00	984,817	88,522	8503.00		
Rate/Hour	18.00		17.35		17.18		17		
Labor Cost	12,581,716	12,467,625	11,462,875	18,323,964	16,916,054	1,592,510	147150.00		
Overhead	0	9,974,100	0	14,659,171	0	1,274,717			
Mat'l Cost	0	0	0	29,193,294	29,193,294	2,887,249	0		
Total Cost	12,581,716	22,441,725	11,462,875	62,176,429	46,109,348	5,754,476	147150		
			Total Reserves:	5,754,476					
			Total Budget + Reserves:	67,930,905	Estimated Remaining Hours	324,111			
			Less Total EAC:	46,109,348					
			Less Current Total Rework Cost:	147,150					
			Net Cost Margin:	21,674,407					

NOTE: Rework included in ACWP and EAC



Material Cost Performance Reports

PERCEPTION produces many excellent high-level material status and tracking reports.

These reports provide the project manager with the visibility and status of material costs and schedules. These reports quickly identify problem areas of costs and schedules.

The quicker someone recognizes the problems, the sooner they can be resolved and any damage to costs and schedules minimized.



Material Rollups

Most material cost status reports require that a *Material Rollup* be performed prior to users generating updated reports.

The project manager should be responsible for ensuring that rollups are performed regularly and be the basis for any reports issued to management.



The project manager should produce quality labor status and forecast reports to management weekly...without fail:

- 1. Top level tracking graphics reports**
- 2. Contract Material Cost Status Report (C12)**
- 3. Labor/Material Status Reports (C7)**
- 4. Requisition Cost Summary Report (C1S)**
- 5. Drawing List (BOM01)**

And, to compliment these reports, a brief overview of identifiable problems and enacted/recommended solutions.

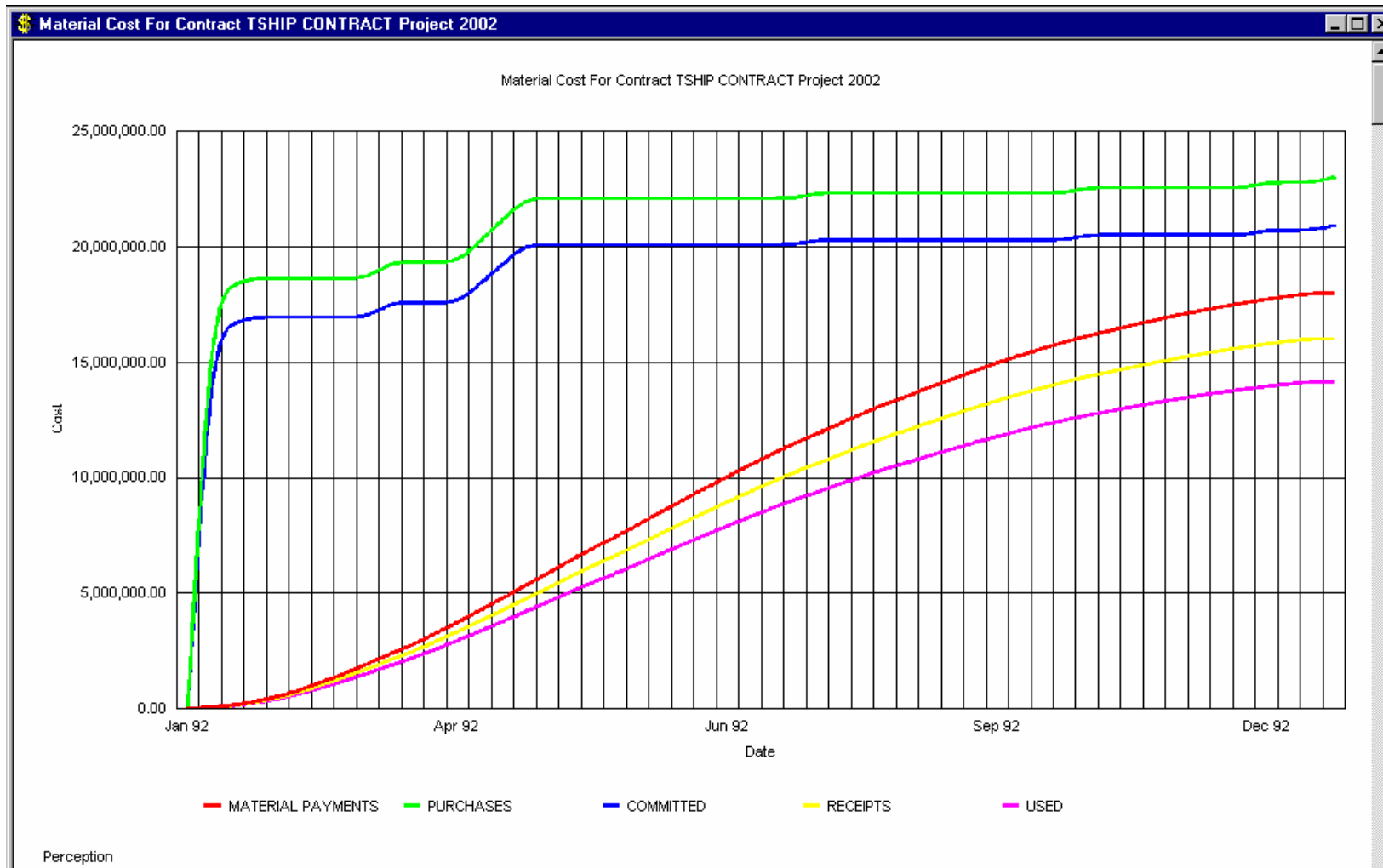


***PERCEPTION* tracks material costs at various stages and levels of detail:**

- ❖ **Total Committed Costs:
Purchases + Stock Used + Stock Reserved**
- ❖ **Total Purchases**
- ❖ **Purchases Received**
- ❖ **Purchases Used**
- ❖ **Purchases Paid**
- ❖ **Stock Used**
- ❖ **Stock Reserved**



Tracking Material Costs



Contract Material Cost Status Report (C12)

The C12 Material Report provides a good summary of the status of material costs.

C12 summarizes costs of direct purchases, stock usage and the status of total committed costs as compared to both the total material budget and its estimated value at completion (EAC).



Contract Material Cost Status Report (C12)

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SPAR Associates, Inc. Contract Material Cost Status Report (C12)

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Contract Range: 19060 Tanker to WBS Shells
Project: 0 to ZZZZZZZZ

Project	Description	Direct Purchase Material					Stock Material		Material Cost			Progress Material	
		Total Purchases	Cost Received	Cost Left to Receive	Vendor Invoices	Cost Received Not Invoiced	Cost Used	Stock Reserved	Stock Used	Budgeted	Committed		EAC
Contract: A-DEMO - Demo Contract for MAT-PAC Tutorial													
01	Sample Material Data	128.00	128.00	219,000.00	0.00	128.00	24.00	0.00	0.00	0.00	128.00	0.00	0.00%
Project Totals for Contract: A-DEMO		128.00	128.00	219,000.00	0.00	128.00	24.00	0.00	0.00	0.00	128.00	0.00	0.00%
Contract: D-DEMO - Demo Contract for Hull Block Const.Tutorial													
101	Sample Hull Block Construction Work Orders	0.00	0.00	122.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
Project Totals for Contract: D-DEMO		0.00	0.00	122.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
Contract: TSHIP CONTRACT - T-SHIP Series Contract													
2002	Severn Bulk Carrier (work orders)	25,982,031.87	0.00	25,982,031.86	0.00	0.00	0.00	0.00	0.00	29,193,294.00	28,840,055.37	29,193,294.00	98.79%
Project Totals for Contract: TSHIP CONTRACT		25,982,031.87	0.00	25,982,031.86	0.00	0.00	0.00	0.00	0.00	29,193,294.00	28,840,055.37	29,193,294.00	98.79%
Grand Totals:		25,982,159.87	128.00	26,201,154.27	0.00	128.00	24.00	0.00	0.00	29,193,294.00	28,840,183.37	29,193,294.00	



Labor/Material Status Report (C7)

The C7 Reports, available at various levels of the project WBS, summarizes the status of labor hours and material costs.

Actual and estimated at completion (EAC) hours and material costs are summarized and compared against budgets with savings/over-runs indicated.



Labor/Material Status Report (C7)

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Chesapeake Marine Industries

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Labor/Material Status (C7) - By Group

Contract 031

Project 031 Severn Harbor Tug

Project Range: 0 to ZZZZZZZZ Group Range: 0 to ZZZZZZZZ

Group	Description	Budgets		Current Status			Estimate at Completion			
		Labor Man-hours	Material Cost	Actual Hours	% Prog	Committed Material	Total Labor Man-hours	Man-hour Savings	Total Material Dollars	Material Savings
1	Group 100 Steelwork	75,040.00	1,180,670.00	89,834.10	3.01	1,296,632.14	163,958.50	-88,918.50	1,329,487.01	-148,817.01
19	Production Support Services	0.00	0.00	0.00	0.00	3,521.64	0.00	0.00	3,521.64	-3,521.64
2	Group 200 Main Machinery	448.00	100,200.00	0.00	0.00	110,569.00	448.00	0.00	110,569.00	-10,369.00
3	Group 300 Electrical	676.00	37,080.00	1.50	0.23	338.08	676.00	0.00	37,080.00	0.00
4	Group 400 Electronics/ Nav aids	140.00	97,250.00	2.00	1.43	79,631.56	140.00	0.00	97,250.00	0.00
5	Group 500 Piping Systems	13,630.50	639,354.00	5,083.01	28.45	499,738.83	15,510.84	-1,880.34	639,354.00	0.00
6	Group 600 Outfitting	11,110.00	728,160.00	1,180.47	17.70	580,861.17	10,152.82	957.18	728,160.00	0.00
8	Group 800 Production Support	2,470.00	125,500.00	1,474.05	17.16	132,611.94	3,526.74	-1,056.74	132,611.94	-7,111.94
9	Group 900 tests / misc.	3,700.00	86,000.00	17,593.40	66.95	102,807.19	18,822.85	-15,122.85	102,807.19	-16,807.19
Project 031	Total # Groups Reported 9	107,214.50	2,994,214.00	115,168.53	54.01	2,806,711.55	213,235.75	-106,021.25	3,180,840.78	-186,626.78



Requisition Cost Summary Report (C1S)

The C1S report summarizes costs by individual requisition.

The C1S report provides some details of actual costs as they are incurred from purchases.

The supporting C1 reports provides further details at individual requisition items.



Requisition Cost Summary Report (C1S)

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Chesapeake Marine Industries

Requisition Cost Summary (C1S)

Contract 023 - Honga River Transit Company

Project 023 - Choptank Carriers

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Requisition	Req Heading	Group Acct	Zone Unit	Work Center	Work Order	Req Create Date	Material Cost	Taxes	Freight	Total Cost	Budgeted Cost	Variance
02023109	Flanges/Tees					09/27/2002	647.60	0.00	0	647.60	0.00	-647.60
02023110	Steel tread					10/01/2002	502.15	0.00	0	502.15	0.00	-502.15
02023111	Nuts/bolts					10/02/2002	365.10	0.00	0	365.10	0.00	-365.10
02023112	Hatches					10/03/2002	7,699.59	0.00	0	7,699.59	0.00	-7,699.59
02023113	Freight					10/03/2002	340.14	0.00	0	340.14	0.00	-340.14
02023114	Painting					10/04/2002	174.00	0.00	0	174.00	0.00	-174.00
02023115	Pipe					10/07/2002	0.00	0.00	0	0.00	0.00	0.00
02023116	Calculations	8-831				10/08/2002	19,300.00	0.00	0	19,300.00	0.00	-19,300.00
02023117	Painting					10/15/2002	400.08	0.00	0	400.08	0.00	-400.08
02023119	Angle					10/18/2002	6,678.00	0.00	0	6,678.00	0.00	-6,678.00
02023120	Gasket cutter					10/21/2002	215.09	0.00	0	215.09	0.00	-215.09
02023121	Gasket material					10/21/2002	485.80	0.00	0	485.80	0.00	-485.80
02023122	Flanges					10/22/2002	145.35	0.00	0	145.35	0.00	-145.35
02023123	Pipe					10/23/2002	126.42	0.00	0	126.42	0.00	-126.42
02023124	Pipe/flat bar					10/28/2002	2,966.76	0.00	0	2,966.76	0.00	-2,966.76
02023125	weld flange					10/24/2002	440.42	0.00	0	440.42	0.00	-440.42
02023127	Plastic					10/28/2002	1,680.00	0.00	0	1,680.00	0.00	-1,680.00
02023128	Reducers/flanges					10/28/2002	187.38	0.00	0	187.38	0.00	-187.38
02023129	Bolts/nuts/washers					10/31/2002	1,041.34	0.00	0	1,041.34	0.00	-1,041.34
02023130	Plate					10/31/2002	126.30	0.00	0	126.30	0.00	-126.30



Drawing List (BOM01)

The BOM01 report lists the status of engineering drawings (optional).

The BOM01 report presents the schedule and approval status of drawings.

The supporting BOM02 report provides the status of detail drawing bills of materials.



Comparing Material Costs With Estimate

The performance of material costs should be monitored and compared against the original estimate.

PERCEPTION generates summary reports at any level of the project WBS comparing the estimate against the current budgets and commitments.



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SPAR Associates, Inc.

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SWBS Group - Estimate vs Production Labor/Material Status Report (EvsP02)

Contract TSHIP CONTRACT - T-SHIP Series Contract

Project Range: 0 to ZZZZZZZZ Group Range: 0 to ZZZZZZZZ

Group	Description	Estimated Hours	Production Budget Hours	Actual Hours	EAC Hours	Estimated Material Cost	Budget Material Cost	Committed Material Cost
Project 2002	Severn Bulk Carrier (work orders)	1,106,520	1,017,998	660,706	984,817	32,080,543	29,193,294	25,982,032
0	STEELWORK	515,791	474,528	450,719	474,895	17,150,061	15,606,555	13,889,834
1	ACCOMODATIONS OUTFIT	60,024	55,222	16,020	58,120	1,932,770	1,758,821	1,547,103
2	CARGO SYSTEMS OUTFIT	61,324	56,418	26,925	44,712	1,910,240	1,738,318	2,193,595
3	MECHANICAL SYSTEMS OUTFIT	89,983	82,784	20,641	73,453	2,708,477	2,464,714	2,108,533
4	PIPING SYSTEMS	89,620	82,450	26,504	62,160	2,603,448	2,369,138	687,686
5	MACHINERY SYSTEMS	30,325	27,899	7,712	23,832	849,100	772,681	1,376,678
6	ELECTRICAL SYSTEMS	63,073	58,027	4,821	55,591	1,699,813	1,546,830	1,981,189
7	PRODUCTION SERVICES	139,784	128,601	81,089	131,270	2,446,215	2,226,055	376,916
8	OWNER CHANGES	26,593	24,466	4,282	32,702	465,386	423,501	255,146
9	DESIGN & DRAWING	30,003	27,603	21,993	28,084	315,034	286,681	1,565,350
	Grand Total	1,106,520	1,017,998	660,706	984,817	32,080,543	29,193,294	25,982,032



The selected reports represent only a small number of reports available from *PERCEPTION*. They generally provide visibility at higher levels of the project work breakdown structure.

The intent of these high level reports is to help the project manager identify general areas of problems within the project.

The project manager should then proceed to lower level reports to identify more precisely the cause of the problems and initiate appropriate remedial actions as may be necessary.

