

***PERCEPTION<sup>®</sup> MAT-PAC<sup>™</sup>***  
**Tool Room Management Center**

**User Manual**  
MP-UM-012  
*Revised April 2007*

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**VERSION 8**



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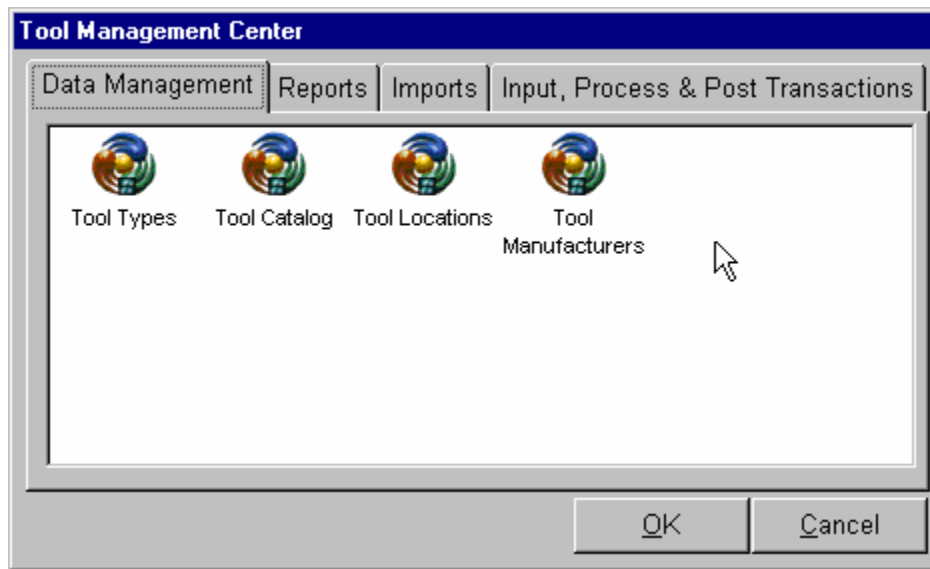
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## Tool Room Management Center

*PERCEPTION* provides features for managing the shipyard's tool room. The system provides a tool room catalog where tools can be classified by type. Tools then can be checked in and out and tools remaining checked out are tracked by the system.

To reach the system's tool management functions, click on *Environment/Stores Management/Tool Management Center* from the main menu. The system will display the various features of the Tool Management Center (Figure 1).



*Figure 1: Tool Room Management Center Functions*

The Tool Management Center control window groups tool room functions into the following tab windows:

- Data Management
- Reports
- Imports of data from remote bar code scanning devices
- Input, process & posting tool room usage transactions

Note: The icons of the Tool Management Center can be exercised using a touch screen monitor by double “clicking” with the finger on the icon to open its window.

## Data Management

Data Management provides all of the means for defining the tool catalog. The Tool Catalog is the primary basis for defining the tools to be managed by the system. However, there are supplemental database tables that can be used in the cataloging process. The following describes these tables in more detail.

### Tool Types (Optional)

The tool type allows the separation of tools into categories. Power drills, for example, may be broken down by the specification of a tool type: electric, or air powered. When a user changes a tool type, this change will have the effect of cascading that change throughout the system. In other words changing a tool type of 'ar' to 'air' will update all tools of type 'ar' to now be of type 'air'.

Tool types enable the tool room manager to define tools under user-defined categories. These categories can help the manager locate tools more easily on the database. It allows similar tools to be grouped so that their availabilities can be better assessed.

If tool types are to be used, they must be defined before the actual tools are defined on the database. To open the Tool Type Worksheet, double click on the Tool Type icon, and the system will display the worksheet (Figure 2).

Types of Tools			
	Tool Type	Tool Class	Heading
1	(NONE)	(NONE)	Default Type And Class. Do NOT Delete.
2	Blowers & Ventilators	Blowers & Ventilators	Blowers & Ventilators
3	Calibration Equipment	Calibration Equipment	Calibration Equipment
4	Caulking Guns	Caulking Guns	Caulking Guns
5	Combination Kits	Combination Kits	Combination Kits
6	Compressors	Compressors	Compressors
7	Dremel Tools	Dremel Tools	Dremel Tools
8	Drills	Cordless Drills	Cordless Drills
9	Drills	Drill Bit Indexes	Drill Bit Indexes
10	Drills	Drill Bit Sharpeners	Drill Bit Sharpeners
11	Drills	Drill Bits	Drill Bits
12	Drills	Drill Presses	Drill Presses
13	Drills	Electric Drills	Electric Drills
14	Drills	Hammer Drills	Hammer Drills
15	Gauges & Monitoring Equipment	Gauges & Monitoring Equipment	Gauges & Monitoring Equipment
16	Grinders & Scalers	Die Grinders	Die Grinders
17	Grinders & Scalers	Pneumatic Grinders	Pneumatic Grinders
18	Grinders & Scalers	Pneumatic Scalers	Pneumatic Scalers
19	Hammers	Claw Hammers	Claw Hammers
20	Hammers	Demolition Hammers	Demolition Hammers
21	Hammers	Rotary Hammers	Rotary Hammers

*Figure 2: Tool Types Worksheet*

The procedures for retrieving, adding, changing and deleting tool types are the same as outlined in *General System Operation*, “Getting Started With PERCEPTION.” Tool type data also can be imported (see *Importing & Exporting Data*, “Getting Started With PERCEPTION”).

The Tool Type Worksheet carries the following information:

- Tool Type (maximum 50-characters identification)
- Tool Class (maximum 50-characters identification)
- Tool Type Description (maximum 50-characters)

The Tool Class is an optional sub-category of Tool Type.

### Tool Catalog

The Tool Catalog is the database file where all tools are defined and managed by the system.

To open the Tool Catalog Worksheet, double click on the Tool Catalog icon, and the system will display the worksheet (Figure 3). The procedures for retrieving, adding, changing and deleting tools are the same as outlined in *General System Operation*, “Getting Started With PERCEPTION.” Tool data also can be imported (see *Importing & Exporting Data*, “Getting Started With PERCEPTION”).

Tool ID	Tool Type	Tool Class	Part ID	Description	Serial Number	
TR-0001	Multiple Tool Sets	Multiple Tool Sets		135 PC Tool Set w/Case	SER-0001	A-108
TR-0002	Wrenches	Socket Wrenches		Set, 75 PC Socket Tool Set	SER-0001	A-108
TR-0003	Wrenches	Socket Wrenches		Set, 20 PC 3/8" Drive Socket Wrenches	SER-0001	A-108
TR-0004	Wrenches	Socket Wrenches		Set, 121 PC Metric/Standard Combination Drive	SER-0001	A-108
TR-0005	Wrenches	Flat Wrenches		Combo Set, 12 PC Std/Metric wrench set	SER-0001	A-108
TR-0006	Wrenches	Flat Wrenches		Combo Set, 14 PC Std wrench set	SER-0001	A-108
TR-0007	Wrenches	Flat Wrenches		Combo Set, 14 PC Metric wrench set	SER-0001	A-108
TR-0008	Wrenches	Flat Wrenches		Combo Set 6 PC Std wrench set		A-108
TR-0009	Wrenches	Flat Wrenches		Combo Set, 6 PC Metric wrench set		A-108
TR-0010	Wrenches	Flat Wrenches		Gear, 5/16" Gear Wrench		A-108
TR-0011	Wrenches	Flat Wrenches		Open End, 3/8" x 7/16" wrench		A-108
TR-0012	Wrenches	Flat Wrenches		Combo, 7/16" Wrench		A-108
TR-0013	Wrenches	Flat Wrenches		Open End, 3/4" x 7/8" wrench		A-108
TR-0014	Wrenches	Flat Wrenches		Combo, 11/31" wrench		A-108
TR-0015	Wrenches	Flat Wrenches		Combo Set, 11 PC SAE wrench set		A-108
TR-0016	Wrenches	Adjustable Wrenches		Locking, 10" Adjustable Wrench		A-108
TR-0017	Wrenches	Adjustable Wrenches		Crescent, 4" Adjustable Wrench		A-108
TR-0018	Wrenches	Adjustable Wrenches		Crescent, 6" Adjustable Wrench		A-108
TR-0019	Wrenches	Adjustable Wrenches		Vise Grip, 10" Locking Wrench		A-108
TR-0020	Measuring Devices	Tapes Measures		Tape Rule, 1" x 25' Stanley		A-108
TR-0021	Measuring Devices	Tapes Measures		Tape Rule, 1" x 25' Stanley Powerlock		A-108
TR-0022	Measuring Devices	Levels		Level, aluminum 48"		A-108
TR-0023	Measuring Devices	Levels		Level, Stanley torpedo 8"		A-108
TR-0024	Measuring Devices	Levels		Level, aluminum 18"		A-108

Figure 3: Tool Catalog Worksheet

The following information initially defines each tool for cataloging onto the *PERCEPTION* database. This data can be entered directly using the system data entry windows or imported from a spreadsheet:

- Tool ID (maximum 50 characters)
- Tool Type (maximum 50 characters)
- Tool Class (maximum 50 characters)
- Part ID (maximum 25 characters)
- Serial Number (maximum 25 characters)
- Description (maximum 40 characters). When using the drop-down Tool Type, the system will automatically insert the tool type description into the tool description. The user may then modify the description to suit a more appropriate description for the specific tool.
- Vendor ID (maximum 8 characters) for purchasing a tool replacement
- Manufacturer ID (maximum 25 characters). The name of the manufacturer can be entered directly in this worksheet, or manufacturer names can be managed centrally in the Manufacturers Worksheet
- Purchase Cost
- Purchase Date
- Barcode label (maximum of 50 characters)

Note: the bar code label is useful when pre-printed labels are used as an independent tool identifier. This label must be unique for any tool managed on the database. It may be replaced with another label without losing existing tool information.

The worksheet also provides current status of the tool:

- Current Status (In, Out, Lost, Damaged, or Inactive)
- Date of Status
- Current Location (Optional)
- Last User
- Last Date Used

Special Note: Each Tool ID must be unique.

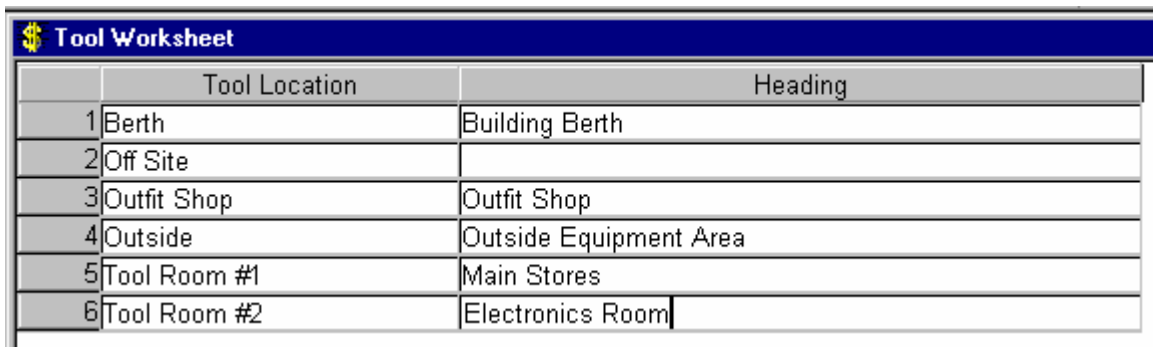
The Part ID and Serial Number are optional. The Part ID may be used for cataloging the tool in the Parts Catalog for re-purchasing standard items purposes.

The Current Status, Date of Status, Current Location, Last User, and Last Date Used are all data provided when tool check-in/check-out transactions are entered into the system.

## Tool Locations

The Tool Locations (optional) is the database file where all locations for tools are defined and managed by the system. Locations include both where the tools are stored in the tool room and where the tools are destined when checked out.

To open the Tool Location Worksheet, double click on the Tool Location icon, and the system will display the worksheet (Figure 4). The procedures for retrieving, adding, changing and deleting tool locations are the same as outlined in *General System Operation, "Getting Started With PERCEPTION."* Location data also can be imported (see *Importing & Exporting Data, "Getting Started With PERCEPTION."*)



Tool Worksheet		
	Tool Location	Heading
1	Berth	Building Berth
2	Off Site	
3	Outfit Shop	Outfit Shop
4	Outside	Outside Equipment Area
5	Tool Room #1	Main Stores
6	Tool Room #2	Electronics Room

**Figure 4: Tool Location Worksheet**

Tool locations also will be added to this table automatically by the system when newly defined either in the Tool Catalog with the tool, or when newly defined with a check-in-check-out transaction.

## Tool Manufacturers

The Tool Manufacturers is the database file where all manufacturers for tools are defined and managed by the system.

To open the Tool Manufacturers Worksheet, double click on the Tool Manufacturers icon, and the system will display the worksheet (Figure 5). The procedures for retrieving, adding, changing and deleting manufacturers are the same as outlined in *General System Operation, "Getting Started With PERCEPTION."* Manufacturer data also can be imported (see *Importing & Exporting Data, "Getting Started With PERCEPTION."*)

Tool Manufacturers		
	Manufacturer	Heading
1	Black & Decker	Black & Decker
2	Stanley	Stanley

**Figure 5: Tool Manufacturers Worksheet**

Tool manufacturers also can be entered directly into the Tool Catalog worksheet and will be automatically added to the Tool Manufacturers table. They can then be retrieved into this Tool Manufacturers worksheet.

## Tool Transactions

*The transactions supported by the tool room are:*

- Check-Out tool to user
- Check-In tool from user

There are two methods for entering tool room issues transactions: direct entries into the transaction worksheet and imported transactions from remote bar code data files.

### Direct Tool Room Transactions

Entries of direct tool room transactions are made into the Tool Transaction Posting Worksheet (Figure 6). Each transaction must be coded as follows”

- “TWDRW” for tool issues (withdraws)
- “TREC V” for tool returns (receiving)

Tool Transaction Posting								
	Trans Code	Tool ID	Badge Num	Location	Trans Date	Trans Time	Comments	Transac
1	TWDRW	TR-0007	15	Outfit Shop	08/03/2001	10:19 AM		08/
2	TREC V	TR-0007		Tool Room #1	08/03/2001	10:24 AM		08/
3	TWDRW	TR-0001	12345	Off Site	08/03/2001	10:24 AM		08/
4	TWDRW	TR-0004	15	Berth	08/03/2001	10:27 AM		08/

**Figure 6: Tool Room Transactions Worksheet**

At a minimum, each transaction must record the following information:

- Transaction Code (TWDRW or TRECV)
- Tool ID for the tool defined on the Tool Catalog
- Badge Number of the person being issued the tool. If a tool return transaction, entry of the badge number is optional.

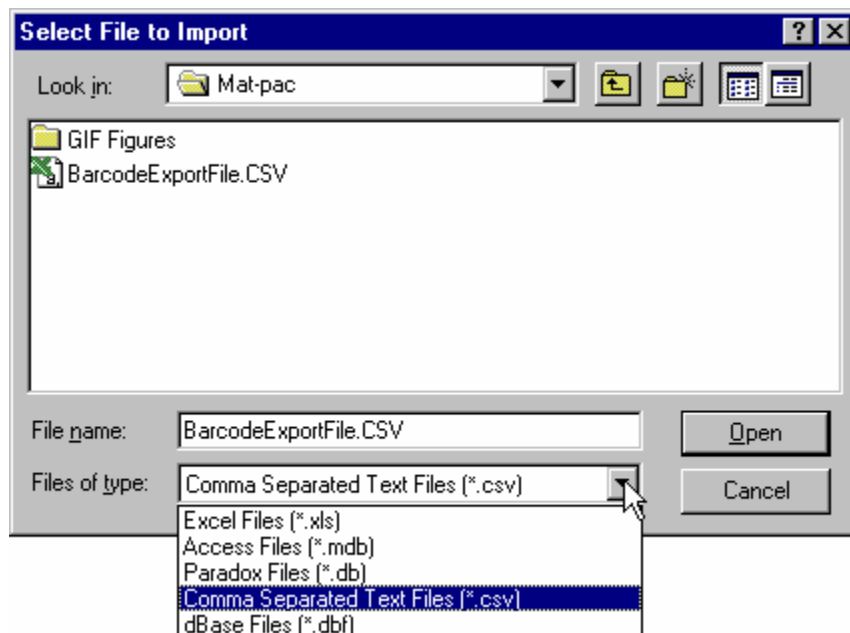
Note: Tool Check-Out transactions require the badge number of the person being issued the tool. This badge number must be valid (and active) on the system's employee file (*Environment/Accounting/Employees*).

Other information may also be provided:

- Location where the tool is being issued or where it is being stored in the tool room facility
- Comments as necessary
- Tool ID for the tool defined on the Tool Catalog

### Imported Tool Room Transactions

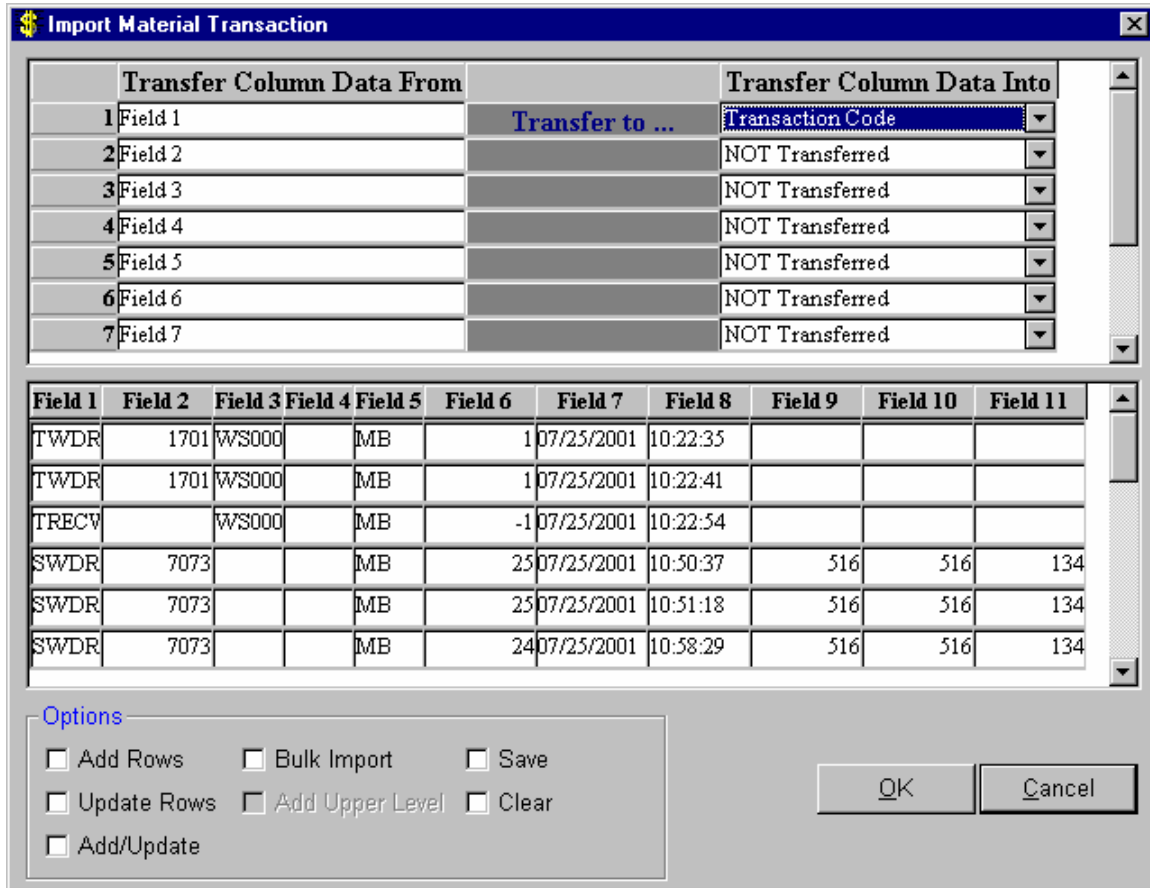
To import transactions from an external file, click on the *Import* tab of the Tool Room Management Center. The system will provide the window for the user to select the import file (Figure 7) in the network directories. The system accommodates several types of files for importing.



*Figure 7 Selecting Barcode Import File*

After the user has identified and opened the import file, the system will display the data-mapping window (Figure 8). The mapping process allows the user to identify columns of the imported data file with columns in the Tool Room Transaction Worksheet. If the import file will remain unaltered thereafter, the user can save this mapping by clicking on the *Save* box in this mapping window.

The imported information required by the system is the same as required for the direct data entry method.



**Figure 8: Mapping Imported Transactions**

When the mapping is complete, click on the *OK* button. The system will proceed to import the transactions. Click on the *Save* button on the tool bar, and the system will save all imported transactions to the same file as the direct transaction entries described in “Direct Tool Room Transactions.” Since all transactions are stored on the same file, the user can retrieve them into the Tool Transaction Posting worksheet.

## Posting Transactions

The system requires formal posting of tool room transactions, both direct and imported. The posting process performs a data validation of the transactions to help ensure correct information is being entered.

The system color-codes each transaction as follows:

- Gray: un-posted and non-validated transaction
- Red: un-posted and determined to have errors
- Green: posted and successfully validated transaction

To perform the posting process, highlight one or more transactions in the worksheet. Then click on *Edit/Post Selected Transactions* from the main menu. When the validation process has been completed, the color-coding will be initiated. The transactions found in error will be color-coded red and the system will provide for the user appropriate errors messages. Figure 9 provides examples of these error messages.

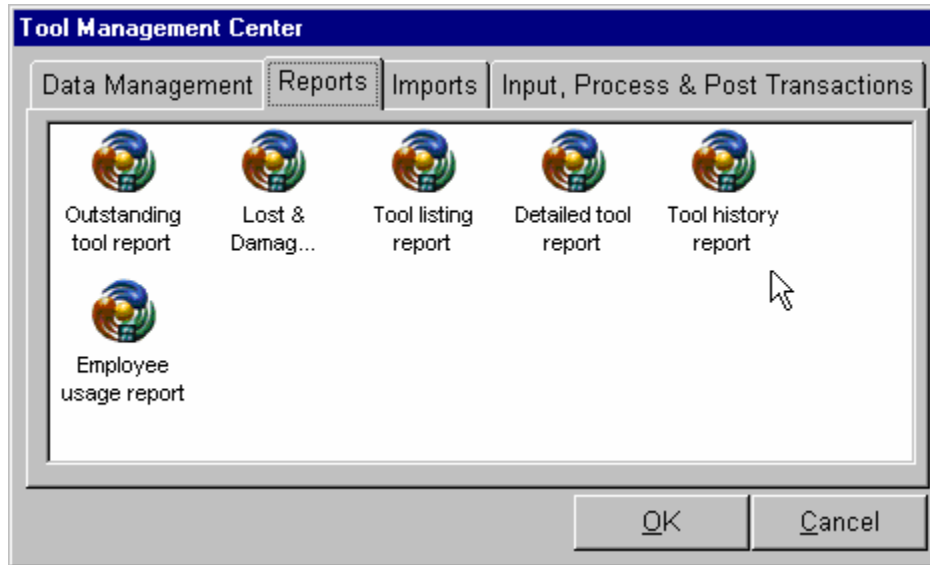
Tool Transaction Posting							
me	Comments	Transaction Created	Created By	Posted Flag	Date Posted	Error Message	Import
M		08/03/2001	spar	Yes	08/03/2001		
M		08/03/2001	spar	No	00/00/0000		
M		08/03/2001	spar	No	00/00/0000	No employee has the badge number spec	
M		08/03/2001	spar	Yes	08/03/2001		
M		08/03/2001	spar	No	00/00/0000	This tool is not available for usage.	

**Figure 9: System-Provided Validation Errors Messages**

Note: Transactions that have been successfully posted cannot be modified. Successfully posted transactions will not be re-posted by the system.

## Reports

The Tool Management Center offers a selection of reports that track tools and their status in the system. The user can generate these reports by clicking on the *Reports* tab of the Tool Management Center and then by clicking on the specific report of interest (Figure 10). Each report provides a selection window so that the user can narrow down the reported information to only those transactions that are of most interest.



*Figure 10: Tool Room Reports*

### **Outstanding Tools Report**

The Outstanding Tool Report lists tools remaining checked-out and allows query by

- Tools
- Users
- Usage Locations

### **Lost & Damaged Tools Report**

The Lost or Damaged Tool List lists tools flagged by the user as lost or damaged and allows query by tool classification

### **Tool Listing Report**

The Tool Listing Report produces hard copies of the Tool Catalog.

### **Detail Tool Report**

The Detailed Tool Report provides a basic description of the tool, its serial number, etc.

### **Tool History Report**

The Tool History Report lists all transactions logged for the tool, but allows query by

- Date range
- Tools
- Users

## **Employee Usage Report**

The Employee Usage Report lists all tool usage transactions by employee, but allows query by

- Employee
- Date range

## **Tool Room Remote Bar Code Transactions**

The following describes the requirements for a remote bar code scanning device that is capable of generating the above transactions in a bulk data file that can be uploaded to the server and which then can be processed by *PERCEPTION*.

To support a bulk import of the data from these tool room transactions into *PERCEPTION*, the bar code scanner must create a file containing the following fields as a minimum of information:

- Action – {Check In, Check Out}
- User
- Tool ID Number
- Date
- Time

It should also be noted that for the check-in process, the user is irrelevant. The system will determine who checked the tool out via query of its own table structure.

As with the other imports, this data is brought into the system and staged into a table to allow for data correction and error recovery in a reasonable fashion.

(TOOL01) Outstanding Tools				
08/06/2001 11:15:19 (Date format:MM/DD/YYYY)		Chesapeake Ship Builders		Page 1 of 1
Outstanding Tools (TOOL01)				
Tool ID	Tool Type	Description	User	Date Withdrawn
Test Tool	(NONE)	Combo Set, 14 PC Metric wrench set	S. Smith	07/30/2001
Wrenches	Sockel Wrenches 75	Combo Set 16 PC SM wrench set	S. Smith	07/30/2001
Wrenches 1	Sockel Wrenches 20	Combo Set, 6 PC Metric wrench set	S. Smith	07/30/2001
Wrenches 10	Flat Wrenches 7/16	Gear, 5/16" Gear Wrench	S. Smith	07/30/2001
Wrenches 11	Flat Wrenches 3/4	Open End, 3/8" x 7/16" wrench	S. Smith	07/30/2001
Wrenches 12	Flat Wrenches 11/31	Combo, 7/16" Wrench	J. Brilliant	07/30/2001
Measuring Devices	Tapes Measures	135 PC Tool Set w/Case	J. Thompson	07/30/2001
Multiple Tool Sets	Multiple Tool Sets	Combo Set, 14 PC SM wrench set	D. Callahan	07/30/2001
Measuring Devices 2	Levels 48	Set, 20 PC 3/8" Drive Sockel Wrenches	D. Callahan	07/30/2001
Measuring Devices 3	Levels 8	Set, 121 PC Metric/Standard Combination Drive	D. Callahan	07/30/2001
Measuring Devices 4	Levels 18	Combo Set, 12 PC SM Metric wrench set	D. Callahan	07/30/2001

*Figure 11: Outstanding Tools Report*

(TOOL02) Lost / Damaged Tools				
08/06/2001 11:35:35 (Date format:MM/DD/YYYY)		Chesapeake Ship Builders		Page 1 of 1
Lost / Damaged Tools (TOOL02)				
Tool Class	Tool ID	Description	Status	Status Date
Tool Type Adjustable Wrenches 4 Crescent, 4" Adjustable Wrench	Wrenches 15	Combo Set, 11 PC SAE wrench set	Lost	08/02/2001
Tool Type Adjustable Wrenches 6 Crescent, 6" Adjustable Wrench	Wrenches 16	Locking, 10" Adjustable Wrench	Lost	08/02/2001
Tool Type Tapes Measures 1 Tape Rule, 1" x 25' Stanley Powerlock	Measuring Devices 1	Set, 75 PC Socket Tool Set	Lost	07/30/2001

*Figure 12: Lost/Damaged Tools Report*

**(TOOL03) Tool Listing With Cost**

08/06/2001 11:21:13 Chesapeake Ship Builders Page 1 of 1  
 (Date format: MM/DD/YYYY) Tool Listing With Cost (TOOL03)

Tool ID	Tool Class	Part ID	Description	Vendor	Cost	Purchase Date
Test Tool	(NONE)	TR-0007	Combo Set, 14 PC Metric wrench set	A108	20.73	07/30/2001
Wrenches 12	Flat/Wrenches 11/31 Combo, 11/31" wrench	TR-0012	Combo, 7/16" Wrench	A108	5.99	07/30/2001
Wrenches 11	Flat/Wrenches 3/4 Open End, 3/4" x 7/8" wrench	TR-0011	Open End, 3/8" x 7/16" wrench	A108	3.49	07/30/2001
Wrenches 10	Flat/Wrenches 7/16 Combo, 7/16" Wrench	TR-0010	Gear, 5/16" Gear Wrench	A108	8.99	07/30/2001
Measuring Devices 4	Level, aluminum 18" Level, aluminum 18"	TR-0005	Combo Set, 12 PC Metric wrench set	A108	12.78	07/30/2001
Measuring Devices 2	Level, aluminum 48" Level, aluminum 48"	TR-0003	Set, 20 PC 3/8" Drive Socket/Wrenches	A108	26.38	07/30/2001

Figure 13: Tool Listing With Cost Report

**(TOOL04) Detailed Tool Listing**

08/06/2001 12:08:20 Chesapeake Ship Builders Page 1 of 1  
 (Date format: MM/DD/YYYY) Detailed Tool Listing (TOOL04)

Tool ID	Tool Class	Part ID	Vendor	Location	Manufacturer	Status	Last User	Last Used
Test Tool	(NONE)	TR-0007	A108	A161	Black & Decker	Out	B. Smith	07/30/2001
Wrenches 14	Adjustable Wrenches 10 Locking, 10" Adjustable Wrench	TR-0014	A108	A262	Black & Decker	Out	B. Hamer	07/30/2001
Wrenches 17	Vise Grip, 10" Locking Wrench	TR-0017	A108	A262	Black & Decker	In	B. Hamer	07/30/2001
Wrenches 15	Adjustable Wrenches 4 Crescent, 4" Adjustable Wrench	TR-0015	A108	A262	Black & Decker	Lost	B. Hamer	07/30/2001
Wrenches 16	Adjustable Wrenches 6 Crescent, 6" Adjustable Wrench	TR-0016	A108	A262	Black & Decker	Lost	B. Hamer	07/30/2001
Wrenches 12	Flat/Wrenches 11/31 Combo, 11/31" wrench	TR-0012	A108	A262	Black & Decker	Out	J. Brillhart	07/30/2001
Wrenches 13	Combo Set, 11 PC SAE wrench set	TR-0013	A108	A262	Black & Decker	Out	J. Brillhart	07/30/2001
Wrenches 11	Flat/Wrenches 3/4 Open End, 3/4" x 7/8" wrench	TR-0011	A108	A161	Black & Decker	Out	B. Smith	07/30/2001
Wrenches 10	Flat/Wrenches 7/16 Combo, 7/16" Wrench	TR-0010	A108	A161	Black & Decker	Out	B. Smith	07/30/2001
Measuring Devices 4	Level, aluminum 18" Level, aluminum 18"	TR-0005	A108	A161	Black & Decker	Out	D. Callahan	07/30/2001
Measuring Devices 2	Level, aluminum 48" Level, aluminum 48"	TR-0003	A108	SPARHOLDER	Tom Tom	Out	D. Callahan	07/30/2001
Measuring Devices 3	Level, Stanley biped 8" Level, Stanley biped 8"	TR-0004	A108	A161	Black & Decker	Out	D. Callahan	07/30/2001

Figure 14: Detailed Tool Listing Report

**(TOOL05) Tool History** Page 1 of 5

08/06/2001 11:47:23 **Chesapeake Ship Builders**  
 (Date format: MM/DD/YYYY) **Tool History Report (TOOL05)**

Trans CODE	Badge Num	Location	Transaction Date
Tool Type (NONE) Tool Class (NONE)			
Tool ID ggh			
TDEL	SPAR		08/02/2001
Tool ID TestTool			
TWDRW	20021001	A1B1	07/30/2001
TDEL	SPAR		08/02/2001
TDEL	SPAR		08/02/2001
TDEL	SPAR		08/02/2001
TWDRW	SPAR		08/02/2001
Tool Type Adjustable Wrenches 10 Tool Class Locking, 10" Adjustable Wrench			
Tool ID Wrenches 14			
TWDRW	SPAR		08/02/2001
TDEL	SPAR		08/02/2001
TDEL	SPAR		08/02/2001
TDEL	SPAR		08/02/2001

*Figure 15: Tool History Report*

**(TOOL06) Tool Usage By Employee**

08/06/2001 11:25:23 **Chesapeake Ship Builders**  
 (Date format: MM/DD/YYYY) **Tool Usage By Employee (TOOL06)**

Tool Type	Tool ID	Description
<b>Employee</b> B. Smith	<b>Badge Num</b> 20021001	
(NONE)	TestTool	Combo Set, 14 PC Metric wrench set
Flat Wrenches 7/16	wrenches 10	Gear, 5/16" Gear Wrench
Socket Wrenches 20	wrenches 1	Combo Set, 6 PC Metric wrench set
Socket Wrenches 75	wrenches	Combo Set 6 PC Std wrench set
<b>Employee</b> D. Callahan	<b>Badge Num</b> 200210	
Levels 18	Measuring Devices 4	Combo Set, 12 PC Std/Metric wrench set
Levels 48	Measuring Devices 2	Set, 20 PC 3/8" Drive Socket Wrenches
Levels 8	Measuring Devices 3	Set, 121 PC Metric/Standard Combination Drive
Multiple Tool Sets	Multiple Tool Sets	Combo Set, 14 PC Std wrench set
<b>Employee</b> J. Thompson	<b>Badge Num</b> 20021	
Tapes Measures	Measuring Devices	135 PC Tool Set w/Case

*Figure 16: Tool Usage By Employee*