

8 Jun 2001

***CONSOLIDATED COMMAND GUIDANCE
FOR
Materiel Maintenance Management Indicators***

REFERENCE:

- Consolidated Command Guidance 2000
(<http://www.usace.army.mil/inet/function/rm/rmpg/rmpg.htm>)
- ER 750-1-1, Materiel Maintenance Policies
(<http://www.usace.army.mil/inet/usace-docs/eng-regs/er.htm>)
- EP 750-1-1, Procedural Pamphlet for Materiel Maintenance Policies
(<http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/ep.htm>)

PURPOSE:

To provide a general procedure for reporting Command Management Review (CMR) maintenance data from USACE Divisions, Laboratories, Centers, and Field Operating Activities (FOA) (here after referred to as activities), for the purpose of meeting CMR criteria and reporting requirements. The equipment effected will have an acquisition value (not cost) of \$5,000 or greater when acquired. This property is further defined at Appendix (A) The materiel maintenance management (MMM) CMR indicators are:

- Equipment maintenance cost (parts/labor)

Note: Initially maintenance cost data will not be tracked for CMR purposes. Maintenance cost data collected from the Facilities and Equipment Maintenance (FEM) System for the first four full quarters after implementation will be used to develop a baseline for each maintenance category. Beginning with the fifth quarter maintenance cost by category of maintenance would be compared against total equipment maintenance expenditures. See example on page 4

- Equipment operational (availability) rates
- Equipment maintenance backlog

CMR Reporting Periods are as follows:

- (1) First Quarter: 1 OCT through 31 DEC = 92 possible days.
- (2) Second Quarter: 1 JAN through 31 MAR = 90 possible days (add one day for leap year).
- (3) Third Quarter: 1 APR through 30 JUN = 91 possible days.
- (4) Fourth Quarter: 1JUL through 30 SEP = 92 possible days.

CMR for materiel maintenance management will be initiated using a two phased approach. Phase one will include the four equipment commodities , **Watercraft, Construction, Material Handling** and

Support. Phase two of this effort will begin later at a time to be determined (TBD) and will include items of civil works equipment, such as, individual generators (powerhouses), and individual pumps (pumping stations).

Materiel maintenance management performance indicators: *are required to control maintenance cost while increasing maintenance productivity. Indicators show where your maintenance program is and where it is going. They provide a quick, accurate performance assessment of a Materiel Maintenance Management Program (MMMP) and a measure of productivity, as well as a means of providing feedback for corrective action.*

Each USACE activity will use maintenance indicators to aid in attaining effective measures to improve performance in Materiel Maintenance Management functions. There are three common indicators that will be very beneficial when they are used within the USACE business process. We will gain certain advantages once we begin to monitor and record equipment maintenance cost (parts and labor), equipment operational (availability) rates, and equipment maintenance backlog . At that time we will be able to analyze data that will help us improve the performance and efficiency of the MMMP.

The importance of maintaining accurate maintenance data records cannot be over emphasized, once the FEM system is fielded the headquarters will have the capability to pull CMR data directly from the database. It will be the responsibility of the field to ensure that all required maintenance data is entered into the FEM system,

We can expect no improvements in maintenance operations without reliable data. Commanders and managers should rely on this type data to measure and improve the effectiveness of the MMMP in the Corps. Taken collectively, these indicators provide materiel maintenance managers the required tools to perform effective, efficient, and comprehensive life cycle MMMP activities. The ultimate goal of all our efforts is to field, operate, maintain, and sustain the range and depth of equipment adequate to perform our missions at the lowest life cycle cost of ownership.

A typical MMMP is likely to encompass several categories of maintenance. This maintenance might be grouped into any or all of five types, including **Preventive Maintenance (PM)**, **Predictive Maintenance (PdM)**, **Repair Maintenance (RM)**, **Rebuild Maintenance (RbM)**, and **Modification (MM)**. USACE will now begin to focus on collecting all MMMP data by these categories. In the future maintenance work orders will, be annotated to indicate the category of maintenance requested, by use the two or three letter code, as shown in parenthesis above.

DEFINITIONS:

Materiel: All items (including ships, tanks, self-propelled weapons, aircraft, etc., and related spares, repair parts, and support equipment, but excluding real property, installations, and utilities) necessary to equip, operate, maintain, and support military activities, without distinction as to its application for administrative or combat purposes.

Personal Property: Property of any kind or any interest therein, except real property, records of the Federal Government, and naval vessels of the following categories: surface combatants, support ships, and submarines.

Preventive Maintenance: All actions performed in an attempt to retain an item in a specified condition by providing systematic inspection, detection, and prevention of incipient failures.

Predictive Maintenance: Using technologies such as vibration analysis, infrared thermograph, used oil analysis, ultrasound detection, and motor circuit analysis to detect abnormal conditions and impending failure. This technique can minimize the need for disassembly and inspection of internal parts.

Repair Maintenance: The restoration or replacement of parts and or assemblies to maintain efficient operating conditions.

Rebuild Maintenance: To restore an item to a standard as nearly as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerance, specifications and the subsequent re-assembly of the item.

Modification: Any maintenance actions taken to change or modify the form, fit, function and life expectancy of a standard item of equipment.

1. Equipment Operational (Availability) Rate. An operational rate is also a helpful indicator to diagnose the level of performance for a MMMP. The rate is a mathematical expression of up time for equipment versus down time, and is displayed as a percentage of total time. This numerical relationship is known as Operational Availability and refers to the equipment readiness goals that are set for USACE activities to attain.

USACE has set operational criteria or a goal for all Command activities to strive for or surpass. Our goal is to achieve an equipment operational readiness rate that is 85 per cent or higher. Equipment readiness will be measured using colors to designate specific numeric ranges or degrees of equipment readiness. Green is 85 percent or higher, Amber is 75 to 84, and Red is 74 percent or lower.

Formula:
$$\frac{\text{Available Days}}{\text{Possible Days}} \times 100 = \text{Operational Rate}$$

Example: To compute the Operational Rate: first divide available days by possible days. Then multiply the resulting decimal (fraction) by 100 to convert it to a percentage, i. e., when we have one equipment item with 82 available days, and 91 possible days, the equation would be: $82/91 = .901 \times 100 = 90.1 \%$.

2. Equipment Maintenance Cost (Parts & Labor). Chapter 5, of ER 750-1-1 explains the importance of collecting, recording, and using historical maintenance cost information as part of a superior MMMP. USACE activities will document maintenance cost utilizing the provisions contained in an automated maintenance management system. In each case, care should be taken to record entries for total parts and total labor for each maintenance category, as appropriate.

Life cycle costing attempts to identify projected personal property related expenditures, using the acquisition to retirement approach. As such, its focus considers maintenance costs from the time of equipment acquisition, until disposal. An aggressive PM program goes a long way toward reducing total life cycle equipment maintenance costs. As an example, almost without exception, it is far more cost effective to expend PM dollars than to wait for an equipment failure before taking action. Industry experience has shown that certain ratios and percentages of cost by maintenance category, versus total equipment maintenance expenditures, can send management clues on where the MMMP performance can improve. Some industry maintenance experts advise the following values as reasonable goals for a quality MMMP performance:

Preventive Maintenance (PM).	Target: 35 per cent
Predictive Maintenance (PdM).	Target: 20 per cent
Repair Maintenance (RM).	Target: less than 20 per cent
Rebuild Maintenance (RbM).	Target: less than 15 per cent
Modification (MM)	Target: less than 10 per cent

In all situations pertaining to the MMMP, all USACE activities are required to take appropriate actions so that permanent records are made to document all maintenance expenditures in a manner that enables management levels and higher organizations to perform thorough analyses and evaluations as desired. As previously stated, we must now begin to emphasize data collection by the five maintenance categories above.

Example: Total Equipment Maintenance Expenditures for the reporting period = \$600,000.00

Maintenance cost (Parts and Labor) by category of maintenance

Preventive Maintenance (PM)	\$200,000.00
Predictive Maintenance (PdM)	\$50,000.00
Repair Maintenance (RM)	\$150,000.00
Rebuild Maintenance (RbM)	\$150,000.00
Modification (MM)	\$50,000.00

$$\text{1 Formula: Maintenance Category} = \frac{\text{Maintenance Category Cost}}{\text{Total Equipment Maintenance Expenditures}} \times 100$$

$$\text{Preventive Maintenance} = \$200,000.00 / \$600,000.00 = .3333 \times 100 = 33.33\%$$

Predictive Maintenance =	\$50,000.00 / \$600,000.00 = .0833 X 100 =	8.333%
Repair Maintenance =	\$150,000.00 / \$600,000.00 = .2500 X 100 =	25.00%
Rebuild Maintenance =	\$150,000.00 / \$600,000.00 = .2500 X 100 =	25.00%
Modification =	\$50,000.00 / 600,000.00 = .0833 X 100 =	8.333%
Total	\$600,000.00	99.99%

3. Equipment Maintenance Backlog. We may also gauge the level of performance effectiveness and efficiency in a maintenance program by monitoring the scheduled maintenance (planned) and unscheduled maintenance (unplanned) actions that are incomplete at the end of the quarter. As an example, we may wish to focus on maintenance backlog in terms of hours of scheduled and unscheduled maintenance for the five categories listed below: Our measurement would examine the ratio of maintenance hours that remained incomplete compared to maintenance hours scheduled (planned).

USACE has establish a goal of 15 percent or less for maintenance backlog. Maintenance backlog will be depicted using colors for specific numeric ranges or percent of maintenance backlog. Under this system, Green = 15 percent or less, Amber = 16-20 percent, and Red = 21 percent or higher. Backlog is the ratio of maintenance hours that remain incomplete at the end of the quarter compared to completed maintenance hours scheduled (planned) at the beginning of the quarter.

We can determine planned maintenance hours at the beginning of the quarter, by summation of maintenance hours required to complete all scheduled maintenance during the quarter, and adding additional maintenance hours required as a result of unscheduled maintenance that arise during the quarter).

Example:

Category of maintenance	Maintenance Hours Scheduled	Maintenance Hours Unscheduled	Maintenance Hours Incomplete
Preventive Maintenance (PM).	2050	0	300
Predictive Maintenance (PdM).	500	0	50
Repair Maintenance (RM).	0	400	40
Rebuild Maintenance (RbM).	0	500	80
Modification (MM)	<u>0</u>	<u>150</u>	<u>0</u>
Total	2550	1050	470

Formula:
$$\frac{\text{Maintenance_Hours_Incomplete}}{\text{Total Maintenance Hours (Scheduled + Unscheduled)}} \times 100 = \text{Backlog}$$

Example: $470 / (2550 + 1050) = 470 / 3600 = 0.1305 \times 100 = 13.05\%$ (Green)

NOTE: *This data when properly documented could be used to support justification for additional resources if required.*

Equipment Maintenance Backlog Report Description

Short Title: EQMNBACK *Origin:* HQ USACE Logistics

Purpose: This quarterly report calculates the amount of Equipment Category Group backlog maintenance hours, for each of the 5 CMR Maintenance Categories, by Scheduled (Planned), Unscheduled (Added), and Incomplete (Scheduled plus Unscheduled - Actual) Maintenance hours. Preventive Maintenance (PM), Predictive Maintenance (PDM), Rebuild Maintenance (RBM), and Modification (MM) CMR Maintenance Categories are scheduled hours. The Repair Maintenance (RM) CMR Maintenance Category is unscheduled hours. Backlog is defined as work not done that has to be done. The Backlog calculation is Planned Work (PMs and Work Orders) minus Work Accomplished. PM records that was due during the reporting period that may not have been converted to a work order is also computed for backlog. The FEM End Item Code (EIC) Custom Application identifies which Equipment belongs to what Equipment Category Group. The End Item Code (EIC) field, of the FEM Equipment Application is tied to the FEM EIC Custom Application. The computations require the building of Job Plans with planned labor for all PMs and also requires work plan building for other work order types, thus ensuring the backlog hours are computed correctly. PMs that could not be accomplished should be cancelled. Backlog hours from quarter to quarter are carried over as the same category. A total of hours scheduled, unscheduled, and incomplete are performed for each Maintenance Category and for each Equipment Category Group. Total Scheduled, Unscheduled, and Incomplete Hours is the sum of each Equipment Category Group totals. The Backlog Percentage calculation is Total Incomplete Hours divided by the sum of Total Scheduled and unscheduled hours, and then multiplying that result by 100.

Data Selection: The report will select all equipment records having the 5 CMR Command Work Type field values of PM, PDM, RM, RBM, or MM. Another selection criterion is that the value "M" must be in the Corporate Work Type field. Only Equipment records that fall within the requested quarter for the selected equipment are used. Only select Work Order records where the status is not equal to "CAN" (Cancelled), "COMP" (Completed), or "CLOSE" (Closed).

Parameters: The user is prompted for the desired location, quarter, and fiscal year ("Q/YYYY").

Sequence: The sequence of the report is by Equipment Category Group.

Registered: This report is registered to the FEM Equipment and Work Order Tracking applications.

Equipment Operational (Availability) Rate Report Description:

Short Title: EQOPAVRT *Origin:* HQ USACE Logistics

Purpose: This quarterly report calculates the percentage of the Equipment Operational (Availability) Rate by Equipment Category Group for the quarter. The FEM End Item Code (EIC) Custom Application identifies which Equipment belongs to what Equipment Category Group. The quantity on hand will be determined by counting Equipment who's End Item Code (EIC) falls within the Category Group. The possible days for a quarter are determined from the CMR calendar. Equipment installed during a quarter will determine the possible days from the install date to the end on the quarter based on the CMR calendar. The Available and Non-Available days will be computed from Equipment Utilization records.

Data Selection: The report will select all equipment records belonging to the location hierarchy of the requested location and have a value in the EIC field. Only Equipment Utilization records that fall within the requested quarter for the selected equipment are used.

Parameters: The user is prompted for the desired location, quarter, and fiscal year ("Q/YYYY").

Sequence: The sequence of the report is by Equipment Category.

Registration: This report is registered to the FEM Equipment and Utilization Input applications.

Equipment Operational (Availability) Rate Report Format:

REPORT: EQOPAVRT
 LOCATION:XXXXXXXX

FACILITY AND EQUIPMENT MAINTENANCE SYSTEM
 EQUIPMENT OPERATIONAL (AVAILABILITY) RATE
 FOR QUARTER: ## YYYY

ATE:DD-MON-YYYY TIME: HH:MM
 PAGE:# OF ###

Equipment Category Group	On Hand Quantity	Possible Days	Non-available Days	Available Days	Operational Rate
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####	###	###	###	###.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####	###	###	###	###.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####	###	###	###	###.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####	###	###	###	###.##
TOTAL	#####	####	####	####	###.##

Equipment Maintenance Cost (Parts & Labor) Report Description:

Short Title: EQMNCSP *Origin:* HQ USACE Logistics

Purpose: This quarterly report calculates the Equipment Category Group maintenance cost, for each of the five CMR Maintenance Categories, by In House and Contract Repair Parts Costs and In House and Contract Labor Costs. The following are further calculated: 1). Total Repair Parts Cost for each CMR Maintenance Category. 2). Total Labor Cost for each CMR Maintenance Category. 3). Total Parts and Labor Costs for each CMR Maintenance Category. 4). Total Repair Parts Cost for each Equipment Category Group. 5). Total Labor Cost for each Equipment Category Group. 6). Total Parts and Labor Costs for each Equipment Category Group. 7). Grand Total Repair Parts Cost for In House and Contract. 8). Grand Total Labor Cost for In House and Contract. 9). Grand Total Parts and Labor for In House and Contract. 10). Parts and Labor Cost Percentage for each Maintenance Category. 11). Total Parts and Labor Cost Percentage. The FEM End Item Code (EIC) Custom Application identifies which Equipment belongs to what Equipment Category Group. The End Item Code (EIC) field, of the FEM Equipment Application, is tied to the FEM EIC Custom Application. The procedure to either enter In House or Contract work is defined.

Data Selection: The report will select all equipment records having the 5 CMR Command Work Type values of PM, PDM, RM, RBM, or MM. Another selection criterion is that the value “M” must be in the Corporate Work Type field. Only Equipment records that fall within the requested quarter for the selected equipment are used. The “Labor” and “Material” values entered on the Standard Service column of the PR Lines Tab of FEM Purchase Requisition and Commitment (PR & C) Application determines that Contract work was done. Calculations for Contract Material and Labor Costs are found on the Service Receipts Tab of the PR & C application. The Standard Service columns of the PR & C Service Receipts will have either “Labor” or “Material” values. Ignore an Outside? Column “Y” value on both the FEM Work Order Tracking application Actuals Tab – Labor sub tab and Actuals Tab – Materials sub tab.

Parameters: The user is prompted for the desired location, quarter, and fiscal year (“Q/YYYY”).

Sequence: The sequence of the report is by Equipment Category Group.

Registered: This report is registered to the FEM Work Order Tracking application.

Equipment Maintenance Cost (Parts & Labor) Report Format:

REPORT: EQMNC SPL
 LOCATION:XXXXXXXX

FACILITY AND EQUIPMENT MAINTENANCE SYSTEM
 EQUIPMENT MAINTENANCE COST (PARTS & LABOR)
 FOR QUARTER: ## YYYY

DATE: DD-MON-YYYY TIME: HH:MM
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Repair Parts Cost:

Equipment Category Group	PM	PDM	RM	RBM	MM	TOTAL
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX IH: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
CON: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX IH: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
CON: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX IH: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
CON: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX IH: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
CON: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##

Repair Parts Totals: IH: #####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.##
 CON: \$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.##
 TOTAL :\$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.##

Labor Cost:

Equipment Category Group	PM	PDM	RM	RBM	MM	TOTAL
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX IH: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
CON: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX IH: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
CON: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX IH: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
CON: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXXX IH: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
CON: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##

Labor Cost Totals: IH: #####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.##
 CON: \$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.##
 TOTAL: \$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.##

Parts and Labor Total Cost:

	PM	PDM	RM	RBM	MM	TOTAL
IH: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
CON: #####.##	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##

Parts and Labor Totals: \$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.## \$#####.##

Parts and Labor Cost Percentages:

###.## ###.## ###.## ###.## ###.## ###.##

(Appendix A)

1 May 2001

**Standard Nomenclature for USACE Property Requiring Maintenance Tracking, and
CMR Reporting**

End Item	Nomenclature	Code	Equipment Category Class	Supply	Federal Code
(EIC)			(ECC)		
WATERCRAFT					
WBD	Barge, Deck Cargo		LA		1930
WBF	Barge, Fuel/Oil		LA		1935
WBH	Barge, Hopper		LA		1935
WBM	Barge, Mooring		LA		1930
WBP	Barge, Pipeline, Float/Pontoon		LA		1935
WBR	Barge, Revetment/Mat Sinking		LA		1935
WBS	Barge, Dump/Scow		LA		1935
WBQ	Barge, Quarters/Office		LA		1935
WBW	Barge, Work, Shop/Service		LA		1935
WTO	Towboats (inland style)		LE		1925
WTU	Tugboats (model bow)		LE		1925
WSD	Vessel, Debris Collecting		LF		1940
WSL	Vessel, Launch/Inspection/Patrol		LF		1940
WSS	Vessel, Survey		LF		1940
WSU	Vessel, Utility Boats(under 20 Ft)		LF		1940
WFB	Crane Barge, Bank Grader		LH		1935
WCC	Crane Barge, Crawler		LH		1935
WCM	Crane Barge, Mobile		LH		1935
WFS	Crane Barge, Stiff Leg/Derrick		LH		1935
WFM	Floating Crane, Marine Revolver		LI		1935
WFP	Floating Crane, Pedestal Mounted		LI		1935
WDC #	Dredge, Cutterhead		LR		1955
WDD #	Dredge, Dustpan		LR		1955
WDH #	Dredge, Hopper		LR		1955
WDM #	Dredge, Mechanical		LR		1955
WDO #	Dredge, Other (not listed)		LR		1955
WDS #	Dredge, Sidcasting		LR		1955
WDQ #	Dredge, Special Purpose		LR		1955
WAA #	Outboard Propelling Unit		LG		2805

Total 29

CONSTRUCTION EQUIPMENT :

CAA	Mixer Concrete,	NB	3895
CAB	Scraper, Earthmoving, Self Propelled	NC	3805
CAC	Scraper, Earthmoving, Towed	NC	3805
CAD	Auger, Earth	VK	3820
CAE	Tractor, Full Tracked /W Bulldozer	ND	2410
CAF	Tractor, Full Tracked /W Winch	ND	2410
CAG	Tractor, Wheel Industrial,	ND	2420
CAH	Grader, Road Motorized	ND	3805
CAI	Crane, Wheel Mounted,	NF	3810
CAJ	Crane, All Terrain	NF	3810
CAK	Crane, Truck Mounted	NF	3810
CAL	Crane, Crawler Mounted	NF	3810
CAM	Crane Shovel, Truck Mounted	NF	3810
CAN	Crane Shovel, Crawler Mounted,	NF	3810
CAO #	Shovel, Front Crane, Crawler Mounted	NF	3815
CAP	Attachment, Backhoe Crane-Shovel,	XX	3815
CAQ	Excavator, Crawler Mounted	NF	3805
CAR	Excavator, Truck Mounted	NF	3805
CAS	Loader, Scoop, Full Tracked	NG	3805
CAT	Loader, Scoop, Wheel	NG	3805
CAU #	Roller, Pneu Variable Pressure, Towed 13 Tired	NH	3895
CAV	Roller, Towed Sheepsfoot, 2 Drum	NH	3895
CAW #	Compactor Soil, Smooth Drum Vibratory	NH	3805
CAX #	Roller, Steel Wheeled, 2 Drum Tandem	NH	3895
CAY	Ditching Machine, Motorized	NV	3805
CAZ #	Hammer, Pile Driver	NV	3895
CBA	Drill, Pneumatic Crawler Mounted	NJ	3820
CBB	Drill Machine, Trailer Mounted	NJ	3820
CBC #	Spreader, Aggregate Towed	NM	3895
CBD	Compactor, Hi Speed Tamping Self Propelled	XX	3805
CBE	Tractor, Wheel, Industrial W/ Backhoe and Loader	ND	2420
CBF	Compactor Soil, Padded Drum Vibratory	XX	3805
CBG	Truck, Well Drilling	NJ	3820
CBH	Core Drill	XX	3820
CBI	Drill Machine, Truck Mounted	NJ	3820
CBJ	Distributor, Water, Truck Mounted	NB	3825
CBK #	Mixer, Rotary Tiller	NB	3895
CBL #	Extractor, Pile, Penumatic	XX	3895
CBM #	Roller, Towed, Sheepsfoot, 3 Drum	NH	3805
CBN #	Roller, Pneumatic Variable Pressure, Self Propelled	NH	3895
CBO #	Breaker Paving	XX	3820
CBP #	Kettle Heating, Bituminous	NP	3895
CBQ #	Tractor, Full Tracked /W Ripper	ND	2410
CBR #	Drill, Pneumatic, Crawler Mounted	NJ	3820
CBS #	Saw Abrasive, Disk	XX	3895

CBT #	Distributor, Liquid Bituminous Materials	NB	3895
CBU #	Tamper, Piston	XX	3895
CBV #	Compressor, Unit Rotary Air, Trailer Mounted	QC	4310
CBW #	Pneumatic Tool Outfit,	QC	3820
CBX	Pneumatic Tool and Compressor Outfit,	QC	3820
CBY	Compressor, Unit Rotary Air	QC	4310
CBZ #	Rock Drilling Equipment	NJ	3820
CCA #	Mixer, Bituminous, Trailer Mounted	NB	3895
CCB` #	Roller Asphalt, Dual Drum Vibratory	NH	3805
CCC #	Roller Asphalt, Pneumatic Tire	NH	3805
CCD	Compressor, Air Less than 250 CFM	QC	4310
CCE	Compressor, Air Greater than 250 CFM	QC	4310

Total 55

SUPPORT EQUIPMENT :

SAA	Sweeper, Rotary, Towed Gas/Diesel Driven	NV	3825
SAB	Harrow, Disk	NV	3895
SAC	Chipper, Tree	NV	3695
SAD	Cutter, Stump	VK	3695
SAE	Sweeper, Road Motorized	NV	3825
SAF	Snow Blower, Motorized	SY	3825
SAG	Snow Removal Unit, Self Propelled	SY	3825
SAH	Platform Lift, Scissors, Type	VM	3930
SAI	Platform, Aerial, Self Propelled	VM	3930
SAJ	Mule, All Terrain, 4 Wheel Drive	XX	XXX
SAK	Pump, Fire Fighting	QU	4210
SAL	Pump, Irrigation	QD	4320
SAM	Pump, Vacuum	QD	4310
SAN	Truck, Fire Plow	QU	4210
SAO	Generator, Engine Driven	QB	6115
SAS	Pump, Centrifugal, Engine Driven,	QD	4320
SAT	Pump, Reciprocating, Engine Driven	QD	4320
SAU	Welding Machine, Arc	QG	3431
SAV	Tractor, Wheeled Agriculture	VK	2420
SAW	Tractor, Wheeled Mower	VK	3750

Total 21

MATERIAL HANDLING EQUIPMENT :

MAA	Crane Truck, Warehouse Electric	PA	3950
MAB	Crane Truck, Warehouse Electric Hydraulic	PA	3950
MAC	Crane Truck, Warehouse, Engine Driven	PA	3930
MAD	Truck, Forklift, Electric	PB	3930
MAE	Tractor, Wheeled Warehouse, Electric,	PE	3930
MAF	Tractor, Wheeled Warehouse	PE	3930
MAG	Truck, Fork lift, Gas	PC	3930
MAH	Truck, Forklift, Liquid Natural Gas	PC	3930
MAI	Truck, Forklift, RT, 4,000 lb	PG	3930
MAJ	Truck, Forklift, Front/Side Loader 12,000lb	PC	3930
MAK	Truck, Wheel, Warehouse, 4,000 lb	PE	3930
MAL	Truck,Forklift, RT, 10,000 lb	PG	3930
MAM	Truck, Forklift, RT, 6,000 lb	PG	3930
MAN	Truck, Forklift, Diesel	PC	3930
MAO	Truck, Pallet, 4,000 lb, Electric	XX	3930

Total 15

**Grand Total
120**

Note: 1. End Item Code (EIC) XXX is reserved for any equipment that meets the \$5,000.00 value threshold but does not currently have an EIC or Standard Nomenclature assigned. Equipment Category Code (ECC) XX is established at HQUSACE for equipment not assigned a standard ECC.

Note: 2. This listing contains personal property identified from the APPMS data base whose value is in excess of \$5000.00. We are aware that this listing is not inclusive of all Corps personal property valued in excess of \$5000.00. We need your help to identify other items that are currently on your property book whose value is in excess of \$5000.00 that are not included on this list. Please provide nomenclature (generic), FSC, so that we may include these items to this listing.

Version 8 of 8, Jun 8, 2001

C/MY Docs/CMR

