

8 Jun 2001

**COMMAND MANAGEMENT REVIEW (CMR)**

**MAINTENANCE INDICATORS**

**FOR MATERIEL MAINTENANCE MANAGEMENT**

The following guidance is provided to assist in the preparation of CMR reporting for materiel maintenance management (MMM). CMR for MMM 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.*

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,

Each USACE activity will use maintenance indicators to aid in attaining effective measures to improve performance in MMM 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 operational (availability) rates, equipment maintenance cost (parts and labor), 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.

Materiel Maintenance Management 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 XXXXX

- 
- 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.

### **1. Equipment Operational (Availability) Rate.**

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 percent 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.

#### **DEFINITIONS:**

- Equipment On-hand Quantity:** The total quantity for each reportable item shown in appendix A, that the property book reflects as on-hand in the activity, on the last day of the reporting period.
- Possible Days:** The total number of days the equipment was on hand during the reporting period (i.e., 1 item = 92 days, 2 items = 184 days in the Qtr). To determine possible days for equipment on hand received during the current quarter, count from the property book date of receipt to the end of the reporting period.
- Non available Days:** The number of days equipment was not able to perform its intended mission. When equipment items are not mission capable at the end of the normal workday, they are considered non-available the entire day. When equipment is repaired prior to the end of the normal workday, it will be considered available for the entire day.
- Available Days:** The total possible days minus the total non-available days. Equipment that remains operational during test, inspections, and preventive maintenance (PM) service, is counted as available.
- Operational Rate:** The percentage of available days based on the possible days. The formula to derive the mathematical expression for each equipment item considers the Total Available Days, divided by the Total Possible Days, which is then multiplied by 100. This number represents the operational rate, expressed as a percentage.

**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:

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

$$82/91 = .901 \times 100 = 90.1 \% \text{ (Green)}$$

**2. Equipment Maintenance Cost (Parts & Labor).**

USACE has set the following criteria for all command activities to strive for or surpass. The goal is to maintain our equipment in such a manner that it will achieve maximum longevity with minimum maintenance cost. Equipment maintenance cost will be measured using colors to designate specific numeric ranges or degrees of maintenance cost. 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.

Maintenance Category	Green	Amber	Red
Preventive Maintenance (PM).	30 – 35 %	25 – 29 %	24 % or less
Predictive Maintenance (PdM)	15 – 20 %	10 – 14 %	9 % or less
Repair Maintenance (RM)	15 - 20 %	21 - 25 %	26 % or more
Rebuild Maintenance (RbM)	10 – 15 %	16 – 20 %	21 % or more
Modification (MM)	5 - 10 %	11 – 15 %	16 % or more

**DEFINITIONS:**

- a. **Repair Parts Cost:** Self-explanatory.
- b. **Labor Cost:** The fully burden (hourly) labor rate of the craftsman performing the Maintenance task.
- c. **Maintenance Category Cost:** The total maintenance cost both parts and labor for any one of the five maintenance categories.
- d. **Total Equipment Maintenance Expenditures:** The total maintenance cost spent on both parts and labor for all five-maintenance categories.

**Example:** To determine the percent of total equipment maintenance expenditures spent on preventive maintenance, parts = \$10,410, labor = \$ 34,525, total parts and labor = \$ 44,935, total equipment maintenance expenditures for all maintenance categories = \$ 201,800.

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

$$\$ 44,935 / \$ 201,800 = .2227 \times 100 = 22.27 \text{ (Red)}$$

The above formula is used for all five-maintenance categories)

### 3. Equipment Maintenance Backlog.

USACE has established 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. Green = 15 percent or less, Amber = 16-20 percent, and Red = 21 percent or higher.

#### DEFINITIONS:

a. **Maintenance Hours Scheduled (Planned):** Maintenance hours required to perform the required maintenance task. Normally this will include the categories of preventive and predictive maintenance only. This type of maintenance and the associated hours required to perform can be planned in advance based on some type of schedule, example, Quarterly service, every three months, or two hundred and fifty hours which ever comes first

b. **Maintenance Hours Unscheduled (Unplanned ):** Maintenance hours required to perform the required maintenance task. Normally this will include the categories of repair, rebuild, and modification maintenance. This type of maintenance and the associated hours required are usually unexpected and, therefore, could not normally be planned in advance.

c. **Maintenance Hours Incomplete:** The maintenance hours that remain incomplete at the end of the quarter.

e. **Backlog:** Is the ratio of maintenance hours incomplete at the end of the quarter compared to total maintenance hours scheduled (planned) at the beginning of the quarter plus additional maintenance hours resulting from unscheduled maintenance during the quarter.

We can determine scheduled (planned) maintenance hours at the beginning of the quarter, by summation of maintenance hours required to complete all scheduled and predictive maintenance during the quarter, and adding additional maintenance hours resulting from unscheduled maintenance during the quarter.

#### **Example:**

Maintenance Category	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:** 
$$\text{Backlog} = \frac{\text{Maintenance\_Hours\_Incomplete}}{\text{Total Maintenance Hours (Scheduled + Unscheduled)}} \times 100$$

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

## **Equipment Maintenance Backlog Report Description**

*Short Title:* EQMNBAC

*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 Maintenance Backlog Report Format**

REPORT: EQMNBCK  
 LOCATION:XXXXXXXX

FACILITY AND EQUIPMENT MAINTENANCE SYSTEM  
 EQUIPMENT MAINTENANCE BACKLOG  
 FOR QUARTER: ## YYYY

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

Scheduled:

<u>Equipment Category Group</u>	<u>PM</u>	<u>PDM</u>	<u>RM</u>	<u>RBM</u>	<u>MM</u>	<u>TOTAL</u>
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####.##	#####.##		#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####.##	#####.##		#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####.##	#####.##		#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####.##	#####.##		#####.##	#####.##	#####.##

Scheduled Totals: #####.## #####.## #####.## #####.## #####.##

Unscheduled:

<u>Equipment Category Group</u>			
XXXXXXXXXXXXXXXXXXXXXXXXXXXX		#####.##	#####.##

Unscheduled Totals: #####.## #####.##

Incomplete:

<u>Equipment Category Group</u>						
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##
XXXXXXXXXXXXXXXXXXXXXXXXXXXX	#####.##	#####.##	#####.##	#####.##	#####.##	#####.##

Incomplete Totals: #####.## #####.## #####.## #####.## #####.##

Backlog Percentage: ###.##

**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:* EQMNCSPL *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: EQMNCSP  
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

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**

<b>End Item Code (EIC)</b>	<b>Nomenclature</b>	<b>Equipment Category Code (ECC)</b>	<b>Federal Supply Class</b>
<b>WATERCRAFT</b>			
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, Sidecasting	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

