

WEST VIRGINIA DIVISION OF HIGHWAYS  
ADMINISTRATIVE OPERATING PROCEDURES  
SECTION V, CHAPTER 8

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SECTION TITLE: HIGHWAY OPERATIONS  
CHAPTER TITLE: MAINTENANCE MANAGEMENT CONTROL REPORTS

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I. **INTRODUCTION**

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An important principle of management is control. The object of control is to monitor the work performance and the effectiveness of resource utilization.

Control provides management with performance data that can be compared to the predetermined plans. If management sees unsatisfactory trends, through the control function, corrective action can be taken. Management Control Reports have been developed to resolve this situation.

Control of the Maintenance Operation is largely made possible through Maintenance Management Control Reports. These reports provide managers with a variety of information:

- Productivity Data
- Plan Performance
- Year-To-Date Accomplishments
- Year-To-Date Expenditures
- Budget Status
- Reporting Edits

There are four hard copy control reports currently available to the manager for utilization:

1. Daily Entry Listing
2. Field Production Analysis Report (Monthly)
3. Field Production Cost Report (Monthly)
4. Key Ranking Report (Monthly)

In addition to the hard copy reports listed above, the Field Production Cost Report information is also available at the organization level via the computer terminal through the CICS system currently being used. This report will be explained later in this chapter.

In order to have usable work control reports, it is a must that information be reported as accurately as possible. To ensure the accuracy of reported information, a means to review what has been reported and the ability to make corrections must be provided.

## II. DAILY ENTRY LISTING REPORT

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The Daily Entry Listing Report lists data entered by an organization. The Daily Entry Listing Report will contain each day's reported data. For the most part, the information contained will be for one day, except for weekends and holidays. For example, if the Clerk enters three days worth of data on a Monday then the Daily Entry Listing will contain all three days entered in one report.

The Daily Entry Listing has eighteen columns of information. They are as follows:

- |                           |                      |
|---------------------------|----------------------|
| 1. Receiving Organization | 10. Ending Milepost  |
| 2. Activity Number        | 11. Accomplishment   |
| 3. Home Organization      | 12. Measure Entered  |
| 4. Document Number        | 13. Activity Measure |
| 5. Report Date            | 14. Record Type      |
| 6. Authorization Number   | 15. Account Number   |
| 7. N or P                 | 16. Units            |
| 8. Route Number           | 17. Amount           |
| 9. Beginning Milepost     | 18. Measure Error    |

The following is a sample of the left side of the report that shows the first nine columns.

STATE OF WEST VIRGINIA DEPARTMENT - HIGHWAYS DIVISION - MAINTENANCE								DAILY E
REC. ORG.	ACT	HOME ORG.	DOC. NO.	REPT DATE	AUTH.	N P	ROUTE NO.	BEGIN M.P.
0103	201	0103	0220000FR	90/01/12	MR4351F	N	HV00300	
0103	201	0103	0220000FR	90/01/12	MR4351F	N	HV00300	
0103	201	0103	0220000FR	90/01/12	MR4351F	N	HV00300	
0103	201	0103	0220000FR	90/01/12	MR4351F	N	HV00300	

Column 1 - REC. ORG..

The Organization that is receiving the charges for the work activity.

Column 2 - ACT.

The "Activity Number" of the work activity being performed.

Column 3 - HOME ORG.

The Organization that performed the work activity.

Column 4 - DOCUMENT NO.

The type and number of source document that the data was entered from, i.e. DOH-12, Daily Work Report.

Column 5 - REPORT DATE

The date of the specific source document as numbered in Column 4.

Column 6 - AUTHORIZATION

The "Authorization Number" used for the particular entry.

Column 7 - N or P

Non-Participating or Participating

Column 8 - ROUTE NO.

The "Route Number" used for the particular entry.

Column 9 - BEGIN M.P.

The "Beginning Milepost" used for the particular entry.

The following is a sample of the right side of the report that shows the remaining columns.

DETAIL LISTING					REPORT NO. 1 PAGE 5			
					JOB NUMBER - HWF4000A			
					CURRENT DATE - 01/16/90			
END M.P.	ACCOMP.	MEAS. ENTERED	ACT MEAS.	REC. TYPE	ACCT	UNITS	AMOUNT	MEAS ERR
	3.00	TN	TN	04	4351	3.00	105.98	
	3.00	TN	TN	02	4351	4.00	50.13	
	3.00	TN	TN	03	4351	4.00	18.32	
	3.00	TN	TN	03	4351	4.00	13.16	

Column 10 - END M.P.

The "Ending Milepost" used for the particular entry.

Column 11 - ACCOMP.

The number of activity "Work Accomplishments" performed for the particular entry.

Column 12 - MEAS ENTERED

The activity "Unit of Measure" as entered from the document.

Column 13 - ACT MEASURE

The activity "Unit of Measure" as per the Maintenance Management Performance Standards.

Column 14 - RECORD TYPE

The "Type" of record entered. Number

Column 15 - ACCT

Column 16 - UNITS

Column 17 - AMOUNT

Column 18 - MEAS ERR

codes are as follows:

01=Accounting, 02=Payroll,  
03=Equipment, 04=Material

The "Account Number" used for the particular entry.

The "record type" will determine what the unit column represents. Payroll records will be equal to man-hours. Equipment records will be equal to either equipment dollars or hours, Material records will be equal to the particular material measurement.

The "Amount" is the actual cost for the particular entry.

An asterisk will appear in this column when Column #12 and Column #13 do not equal. This will aide in detecting activities that are being reported in the wrong "unit of measure" by the reporting organization.

### Detecting Errors

The Daily Entry Listing Report can be used by the Organizational Clerk to detect reporting errors. A general review in addition to verifying errors denoted in the MEAS ERR column (#18) should lead to the correction of reporting errors. The document of origin can be easily located in addition to the other pertinent information pertaining to the entry. Asterisks that appear by the Document number indicates that the transaction is a correction made by the Central Office. Such transactions may include Journal Vouchers, DOT-12A's, etc. The Daily Entry Listing Report is submitted to the District Maintenance Management Analyst each week for organizational distribution, review, and corrective action where warranted.

### III. FIELD PRODUCTION ANALYSIS REPORT

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Another report used in detecting reporting errors is the Field Production Analysis Report. In this report three situations are flagged.

#### Man Hour Activity But Man Hours Do Not Equal Accomplishments

There are several activities in the Performance Standards that are reported in units of man-hours. This means the units of accomplishment for these activities should be identical to the number of man-hours used. If any man-hour activity is found by this program to have unlike accomplishments as compared to it's reported man-hours it will be flagged as No. 1. This type of error is nearly always valid and should be corrected.

## Not A Man-Hour Activity But Man=Hours Equal Accomplishments

Activities that are not reported in man-hours and the accomplishments and man-hours are found to be identical will be flagged as No. 2. Generally this will be a valid error, that needs correction.

## Performance Percentage Less Than .3% or Greater Than 400%

Activities showing an extremely low or extremely high productivity will be flagged as No. 3. It is likely that activities which show a percent performance below .3% or above 400% will contain a reporting error.

Below is an example of the Field Production Analysis Report:

STATE OF WEST VIRGINIA  
DEPARTMENT - HIGHWAYS  
DIVISION - MAINTENANCE

FIELD PRODUCTION ANALYSIS REPORT  
02/01/90 TO 02/28/90  
GND 8344

REPORT NO. 9 PAGE 35  
JOB NUMBER - HMF50004  
REPORT DATE - 03/01/90

FLAG: 1 = MAN HOUR ACTIVITY BUT MAN HOURS DO NOT EQUAL ACCOMPLISHMENTS  
2 = NOT A MAN HOUR ACTIVITY BUT MAN HOURS EQUAL ACCOMPLISHMENTS  
3 = PERFORMANCE PERCENTAGE LESS THAN .3% OR GREATER THAN 400%

ACT CODE	ACTIVITY TITLE	UNIT MEAS	UNITS ACCOMP	MAN HOURS	PERFORMANCE PERCENTAGE	FLAG
262	DITCHING AND DRAINING	RM	55.00	24.00	+229.00%	3
205	REPAIRING OF EMBANK	TH	1.00	0.01	91.90%	2
501	EQUIPMENT DOWNTIME	DL	1132.91	0.00	0.00%	3
ORGANIZATION TOTAL FOR ALL ACTIVITIES						

This report is submitted to the District Maintenance Management Analyst each month for organizational distribution, review and corrective action where warranted.

## Correcting Reporting Errors

It is important to dedicate time each week for the review of the Daily Entry Listing and each month for the Field Production Analysis Report. It is important to be aware that all corrections that are made during the course of the month will lessen the number of errors that appear on the monthly Field Production Analysis Report. Correction of reporting errors is absolutely essential to maintaining accurate and useable management information. It is much simpler to keep current with the correction of reporting errors rather than allow a great deal of time to elapse and then attempt to prepare corrections. Accurate, error free management reports are beneficial to all levels of DOH management.

When an error is found, the Central Office has made available a procedure, to the District Management Analyst District, through the CICS system, for correcting reporting errors. The correction of the reporting errors affects the Field Production Report accomplishments as soon as they are entered, thereby the ability to maintain accurate up-to-date information. All errors must be reported to the District Management Analyst in order to obtain the correction.

The District may already have an established procedure for their organizations concerning reporting errors. Contact the District Management Analyst or Assistant District Administrator - Maintenance for the existing procedures.

#### IV. FIELD PRODUCTION COST REPORT VIA COMPUTER SCREEN (CICS)

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The next report to be discussed is the Field Production Year-To-Date Cost Report that is accessible through the CICS inquiry system (HWIQ). This report is available to all organizations and the information it contains is as current as the last reported work day.

Logon to the CICS system using the current method. Access HWIQ. The following menu listing will appear.

```

      WEST VIRGINIA
DEPARTMENT OF HIGHWAYS
INQUIRY SYSTEM

1.  PROJECT TRACKING
2.  AUTHORIZATION
3.  F.E.I.N.
4.  ROAD FILE INVENTORY
5.  EQUIPMENT
6.  WEATHER
7.  INVENTORY
8.  PURCHASING
9.  GAS & LUBE RATES
10. FIXED ASSETS INVENTORY
11. PHONE DIRECTORY
12. MAINTENANCE MANAGEMENT

X   EXIT

ENTER NUMBER OF SELECTION: _
```

Enter menu item #12 to select Maintenance Management. Below is an example of the first screen that appears after entering menu item #12.

```

      W E S T   V I R G I N I A
D I V I S I O N   O F   H I G H W A Y S

      MAINTENANCE MANAGEMENT SYSTEM
      INQUIRY

(1)  TO INQUIRE BY ORGANIZATION:
      ENTER ORG. ==>
      ENTER ACT. ===>

(2)  TO INQUIRE BY ACTIVITY:
      ENTER ACT. ==>
      ENTER ORG. ===>

TO EXIT THIS TRANSACTION:
      ENTER 'X' ===>
```

At this point, different selections can be made. To access all activities for an organization number, enter the Organization number "only" under "To Inquire By Organization". The

following screen appears listing all the activities for the organization and the following for each activity:

Year To Date Accomplishments  
 Year To Date Man Hours  
 Percent Performance  
 Planned Accomplishment  
 Percent Complete

EXAMPLE:

MAINTENANCE MANAGEMENT SYSTEM							
ORG	ACT	DESCRIPTION	YTD ACCOMP	YTD MH	%PERF	PLANNED	%COMP
0103	201	PATCHING BITUMINOUS	779.63	2,801.50	1.11	1,000.00	.78
0103	202	REPAIR OF BASE FAIL	.00	14.00	.00	250.00	.00
0103	203	SKIP PATCHING	1,081.28	1,171.50	.82	800.00	1.35
0103	204	SEALING AND SURFACE	730.00	371.50	1.63	1,000.00	.73
0103	207	PATCHING WITH ASPHA	512.00	1,520.50	.78	1,000.00	.51
0103	241	PATCHING PCC PAVEME	.00	.00	.00	1,100.00	.00
0103	261	SPOT STABILIZATION	5,539.60	2,453.00	1.13	16,918.00	.33
0103	262	DITCHING AND BLADIN	71.66	902.50	1.11	500.00	.14
0103	281	MINOR DRAINAGE STRU	2,153.00	2,153.00	1.00	2,800.00	.77
0103	282	INSTALL PIPE CULVER	780.00	791.00	.80	1,400.00	.56
0103	284	DUMPED ROCK DITCHES	54.90	40.00	1.32	.00	.00
0103	285	RIPRAPPING OF EMBAN	2,214.25	1,187.00	1.70	1,200.00	1.83
0103	286	INSTALLATION & MAIN	115.00	115.00	1.00	.00	.00
0103	287	REMOVING DITCHLINE	12,095.00	706.00	.82	27,000.00	.45
0103	301	GUARDRAIL MAINTENAN	.00	.00	.00	300.00	.00
0103	303	MOWING	517.00	327.00	.63	700.00	.74
0103	304	VEGETATION CONTROL	14.87	760.00	1.17	20.00	.74
0103	305	VEGETATION CONTROL	142.50	1,004.50	.76	135.00	1.06
0103	308	LITTER PICKUP AND D	202.00	57.00	1.63	2,500.00	.08
0103	310	DEAD ANIMAL AND HAZ	934.50	940.50	.99	1,000.00	.93
PF1/13: MENU PF2/14: LIST PF3/15: MASTER PF7/19: UP PF8/20: DOWN							

To access a detail file from this screen, move the cursor beside the desired activity number and enter. The following is a detail screen for Activity 281, Minor Drainage Structures. All the same information appears that did on the prior screen in addition to the Chargeable/Nonchargeable Costs by Labor, Equipment, Material and Total for the activity. The Basic Expense Standard costs is listed for the activity as well as the Average Actual Costs for comparison purposes.

FIELD PRODUCTION PRODUCTIVITY/COST						
ORG.	ACTIVITY	ACTIVITY DESCRIPTION		UNIT OF MEASURE		
0103	281	MINOR DRAINAGE STRUC		MAN HOUR		
MONTH	TO	DATE	YEAR	TO	DATE	
ACCOMPLISHMENTS	MAN HOURS	% PERF	ACCOMPLISHMENTS	MAN HOURS	% PERF	
202.00	202.00	1.00	2,153.00	2,153.00	1.00	
PLANNED ACCOMPLISHMENTS			PERCENT COMPLETED			
2,800.00			.77			
** COSTS **						
MONTH-TO-DATE		NON-CHARGEABLE		CHARGEABLE		
LABOR		.00		2,524.36		
EQUIPMENT		.00		321.23		
MATERIALS		.00		35.08		
TOTAL		.00		2,880.67		
YEAR-TO-DATE		NON-CHARGEABLE		CHARGEABLE		BES
LABOR		.00		25,285.35		11.94
EQUIPMENT		.00		5,573.89		3.22
MATERIALS		.00		588.25		.00
TOTAL		.00		31,447.50		15.16
						AVG ACTUAL
						11.74
						2.59
						.27
						14.60

To access a particular activity for an organization, enter the Organization Number and the Activity Number under "To Inquire By Organization" as in the example below.

Below is an example of how that screen appears.

MAINTENANCE MANAGEMENT SYSTEM							
ORG	ACT	DESCRIPTION	YTD ACCOMP	YTD MH	%PERF	PLANNED	%COMP
0103	287	REMOVING DITCHLINE	12,095.00	706.00	.82	27,000.00	.45

Again, to see the detail screen file of the activity, place the cursor beside the activity and then enter.

The next two reports to be discussed are the "hard copy" reports that will be used to monitor and control an organization, assuming of course, that reporting errors are being corrected and kept to a minimum.

## V. FIELD PRODUCTION COST REPORT

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This hard copy report is a summary of work that was performed by an organization through a given period of time. It provides information on work accomplishments, crew performance, plan status, expenditure status and Basic Expense Standard/Actual cost comparison. This report lists the work activities performed in numerical order. The following is a basic breakdown of the information contained in this report:

1. This period
  - a. Units of Accomplishment
  - b. Percent Performance
2. Year-To-Date Period
  - a. Units of Accomplishment
  - b. Percent Performance
3. Annual Plan Status
  - a. Planned Accomplishments
  - b. Percent Complete
4. Nonchargeable Cost-To-Date
  - a. Labor



- b. Equipment
  - c. Material
  - d. Total
- 5. Chargeable Cost-To-Date
  - a. Labor
  - b. Equipment
  - c. Material
  - d. Total
- 6. Current Organizational Basic Expense Standard
  - a. Labor
  - b. Equipment
  - c. Material
  - d. Total
- 7. Average Unit Chargeable Cost
  - a. Labor
  - b. Equipment
  - c. Material
  - d. Total

Below is an example of the left hand side of the hard copy report.

STATE OF WEST VIRGINIA DEPARTMENT - HIGHWAYS DIVISION - MAINTENANCE				MAINTENANCE MANAGEMENT FIELD PRODUCTION PRODUCTIVITY/COST 02/01/98 TO 02/28/98 DISTRICT 01				
				<u>MONTH-TO-DATE</u>		<u>YEAR-TO-DATE</u>		
<u>ACT CODE</u>	<u>ACTIVITY DESCRIPTION</u>	<u>UNIT</u>	<u>UNITS MEAS ACCOMP</u>	<u>% PERF.</u>	<u>UNITS ACCOMP</u>	<u>% PERF.</u>	<u>PLANNED ACCOMP</u>	<u>% COMPLETE</u>
201	PATCHING BITUMINOUS	TH	409	0.59	5549	1.18	6820	0.81
202	REPAIR OF BASE FAULT	TH	50	4.81	788	4.48	569	1.39

The first column lists the Activity Number immediately followed by the Activity Description

and Unit of Measure.

The first group of information is "This Period". "This Period" information contains data for the seven day period as listed under the title of the report. Beneath the heading "This Period" are two columns:

1. UNITS ACCOMP (Data reported for the weekly period)
2. % PERF (Calculated % performance using the weekly information)

Percent performance is the number of man-hours expended to perform the accomplishments as compared to the standard number of hours outlined in the Maintenance Performance Standards.

FOR EXAMPLE: Suppose an Organization reported the following:

Activity 201-Patch Bit Pavements 34 Tons 92 Man Hours

The calculation to find the percent performance is as follows:

Actual Accomp. X Standard Man-Hour/s Per Unit E Actual Man-Hour/s Used

"OR"

34 tons x 4 (Standard Man-Hours\*) = 136

For Act. 201

136 Standard Man-Hours E 92 Actual Man-Hours = 1.47 %

Therefore the percent performance for this particular entry would be 147 %.

\* Refer to the Maintenance Performance Standards for this particular data.

The second group of information is the "Year-To-Date". The "Year-To-Date" information contains data from the beginning of the first day of the Fiscal Year (July 1) through the current period shown under the title at the top of the report. Beneath the heading "Year-To-Date" are two columns:

1. UNITS ACCOMP (Data accumulated from the beginning of the Fiscal Year)
2. % COMPLETE (Calculated % performance as explained above)

The third group of information is the Annual Plan Status. There are two columns:

1. PLANNED ACCOMP (Planned units for the given period.)
2. % COMPLETE (Actual units reported E Units planned)

Using these columns, the manager at a glance can monitor his organization's plan compliance.

Below is an example of the right hand side of the hard copy report.

REPORT		REPORT NO. 2 PAGE 4		
		JOB NUMBER - HNF5000A		
		REPORT DATE - 03/01/90		
	NON-CHARGEABLE COST TO DATE	CHARGEABLE COST TO DATE	89-90 BES	AVG UNIT CHG COST
LAB	11,795.15	217,620.79	47.76	35.21
EQP	5,569.81	47,113.73	10.00	4.49
MAT	8,269.33	99,726.47	26.34	17.97
TOT	25,637.29	364,462.99	84.10	65.67
LAB	598.50	12,616.60	76.42	16.00
EQP	415.10	5,136.31	13.03	6.51
MAT	618.50	10,921.93	31.35	13.85
TOT	1,452.10	28,674.84	120.80	36.36

The first column is "NONCHARGEABLE COST TO DATE". Directly beneath this column heading you will see LAB, EQP, MAT & TOT. This column lists the expenditures, by resource, incurred by an organization against a funding source 'other' than their Annual Plan. This may be Special Authorizations or various types of reimbursables.

The next column is "CHARGEABLE COST TO DATE". It contains the same format of resource costs as described for "NONCHARGEABLE COST TO DATE" except these expenditures were incurred against the organization's allocated Annual Plan Funds.

The column entitled "FY BES" is the particular organization's Basic Expense Standard for the current year. It, too, is listed by resource type, Labor, Equipment, Materials and Total. The Basic Expense Standard (BES) is described in detail in the chapter dealing with the Annual Plan. Briefly, the BES costs are those standardized average costs computed annually as the gauge for costing each maintenance activity.

The last column is the "AVG UNIT CHG COST". This column contains, by resource type, the ACTUAL cost of the activity per unit. This is derived by dividing the Year-To-Date accomplishments reported into the "Chargeable Cost To Date" figures. A manager can then easily review the differences that might occur between the Standard BES costs and Actual costs. This comparison, then, may result in the need for additional correction of reporting errors or it may point to inadequacies in the methods being utilized to perform the particular maintenance task.

This information is given for each activity found on the Field Production Report for each Organization. At the end of each report will be an Organizational Total for ALL activities, and finally a District Summary that is generally filed at the District Headquarters.

The Field Production Cost Report is submitted to the District Maintenance Management Analyst in hard copy format at the end of each month for further distribution.

## VI. KEY ACTIVITY RANKING REPORT

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The second control report is entitled "Key Activity Ranking Report". The Key Activity Ranking Report was developed to more closely monitor the primary or "gut" maintenance activities. A report is generated for the following organizations and activities:

#### COUNTY MAINTENANCE ORGANIZATIONS

Activity 201 - Patch Bituminous Pavements  
 Activity 204 - Seal & Surface Treatment  
 Activity 207 - Patch w/Asphalt & Aggregate  
 Activity 261 - Spot Stabilization  
 Activity 262 - Ditching & Blading  
 Activity 282 - Install Pipe Culverts  
 Activity 341 - Mechanical Application of SRIC Material

#### EXPRESSWAY MAINTENANCE ORGANIZATIONS

Activity 204 - Seal & Surface Treatment  
 Activity 241 - Patch PCC Pavements  
 Activity 303 - Mowing  
 Activity 308 - Litter Pickup & Disposal  
 Activity 341 - Mechanical Application of SRIC Material

#### ALL ORGANIZATIONS

Activity 345 - SRIC Support Operations  
 Activity 801 - Organizational Overhead  
 Activity 811 - Unproductive Equipment

#### SIGN SHOPS

Activity 362 - Roadway Striping

Below is an example of the Key Activity Ranking Report. This particular sample is a County category and is for Activity 201–Patch Bituminous Pavements.

STATE OF WEST VIRGINIA DEPARTMENT OF HIGHWAYS MAINTENANCE DIVISION		MAINTENANCE MANAGEMENT KEY ACTIVITY RANKING REPORT COUNTY MAINTENANCE ORGANIZATIONS 01/23/89 TO 01/28/89		NUMBER OF PAGES - 30 CURRENT DATE - 01/31/89 REPORT DATE - 01/28/89
ACTIVITY 201 PATCH BIT PAVEMENTS				
DISTRICT 01				
YTD STATEWIDE AVERAGE PRODUCTIVITY:		5.189	1309	
		2.067		
ORGANIZATION	PERCENT PERFORMANCE TO DATE	YTD UNITS COMPLETED	YTD COST	PLANNED 1989
0030	56X	34	\$8,274.04	810
0036	56X	34	\$4,491.34	1666
0037	57X	29	\$2,899.03	931
0042	57X	951	\$78,147.77	1500
PERCENT PERFORMANCE AS COMPARED TO YTD STATEWIDE AVERAGE PRODUCTIVITY.				

The first item listed is the activity and the activity description followed by the District number. All counties within a District will be included on the same page. Listed next is:

Standard Productivity: Productivity as set forth in the Maintenance Performance Standards.

YTD Statewide Average Productivity: Actual productivity as calculated for ALL Organizations reporting this particular Activity within the State.

Immediately following the YTD Statewide Average Productivity, you will see a percentage amount. This percent is figured by dividing the YTD Statewide Average Productivity by the Standard Productivity. This figures tells us how the Statewide average performance of an activity compares to the Standard performance. It is important to remember that the figures are only as accurate as the reporting. Massive Reporting errors by one organization or the sum of reporting errors from a group of organizations can affect the accuracy of the percent.

With this information, one organization can be compared against either type of productivity (Statewide Average or Standard Productivity).

Below is a definition of each column heading found on the Key Activity Ranking Report:

ORGANIZATION: Organization number

\*PERCENT PERFORMANCE TO DATE: This is an organization's calculated percent performance through the given period. However, it is important to remember that the calculation for this particular report compares the reported organization's data to the "YTD STATEWIDE AVERAGE PRODUCTIVITY" and not the "STANDARD PRODUCTIVITY" as is calculated in the Field Production Cost Report described on Page 12. Again, remember the aforementioned possibility of reporting errors causing information to be inaccurate. All these factors must be considered before making any determinations concerning your organization's performance.

FOR EXAMPLE:

In the report that follows, you will notice that the "YTD Statewide Average Productivity" when compared to the "Standard Productivity" is 138%. In other words, instead of the activity requiring 14 man-hours per road mile (as set forth in the Performance Standards) it is actually taking 10.153 man-hours per road mile, when averaged for all organizations in the state. It is helpful to remember that when the performance is over 100%, it is taking less time per unit and when performance is under 100% is it taking more time per unit than the Standard or the Statewide Average, depending on the type of comparison being made.

STATE OF WEST VIRGINIA DEPARTMENT OF TRANSPORTATION MAINTENANCE DIVISION		MAINTENANCE MANAGEMENT KEY ACTIVITY RANKING REPORT COUNTY MAINTENANCE ORGANIZATION ALLEGANY TO 01/30/89		FORM 8771 CURRENT DATE - 01/31/89 REPORT DATE - 01/30/89	PAGE 56
ACTIVITY 882 DETOURS AND MARKING					
ACTIVITY 882					
STANDARD PRODUCTIVITY:		15.00			
YTD STATEWIDE AVERAGE PRODUCTIVITY:		10.133	120%		
ORGANIZATION	PERCENT PERFORMANCE TO DATE	YTD UNITS ACCOMPLISHED	YTD COST	PLANNED UNITS	
0847	94%	334	665,852.91	254	
0848	130%	778	668,733.27	330	
0838	150%	349	648,219.75	166	
0836	141%	387	619,146.05	323	
PERCENT PERFORMANCE AS COMPARED TO YTD STATEWIDE AVERAGE PRODUCTIVITY.					

On this particular report, it appears that Organization 0838 is performing the work in far less time than the Statewide Average. As stated before, we already know that the Statewide Average is less than the Standard, therefore, this organization is even less than the Standard.

Because this organization is the only one that has an extreme percentage, in this particular case, it is likely that the Statewide Average Productivity is a good figure to use. Therefore, for Organization 0838 the various possibilities to consider are as follows:

1. Reporting error/s.
2. Using the wrong activity for the work being done.
3. Extraordinary conditions surrounding the work being done.
4. Inadequate work achievement.

This is an example of how the Key Activity Ranking Report can alert the Maintenance Supervisor to finding and resolving the problems that may exist in the organization.

**YTD UNITS ACCOMPLISHED:** This is the number of accomplishments reported for the organization from the beginning of the Fiscal Year.

**PLANNED UNITS:** The number of accomplishments planned in the Annual Plan (Period-To-Date) for the specific activity.

This same series of information will be given for all key activities listed on the County Maintenance Organizations, Expressway Maintenance Organizations and for the Sign Shop Roadway Striping Activity.

Below, is an example of the ranking report for Activity 801 - Organizational Overhead and Activity 811 - Unproductive Equipment:

STATE OF MISSISSIPPI DEPARTMENT OF HIGHWAYS MAINTENANCE DIVISION		MAINTENANCE MANAGEMENT ACTIVITY RANKING REPORT DISTRICT ORGANIZATION - OVERHEAD 6/1/68 TO 6/30/68		MANAGER PAGE 1 CURRENT DATE - 01/31/69 REPORT DATE - 01/30/69	
ACT. 341 ORGANIZATIONAL OVERHEAD					
		TOTAL COST	% OF TOTAL		
	ORG.	YTD YTD	COST YTD		
	0034	004,525.18	88		
	0120	001,500.13	32		
	0121	001,500.13	32		
	0047	002,525.37	87		
	0055	00.00	0		
	0112	00.00	0		
	0097	004,105.17	82		
	0096	005,316.21	100		
ACT. 343 UNPRODUCTIVE REPAIR					
		TOTAL COST	% OF TOTAL		
	ORG.	YTD YTD	COST YTD		
	0030	004,317.00	133		
	0032	0050,983.83	146		
	0042	0050,062.00	134		
	0047	0050,564.33	150		
	0050	00.00	0		
	0082	00.10	0		
	0087	004,859.37	14		
	0098	004,021.12	13		

Three columns of information appear on this report as follows:

ORG: Organization number

TOTAL COST YEAR-TO-DATE:

The "Chargeable" costs from the beginning of the Fiscal Year for SRIC activities in total. "Chargeable" costs are those expenditures incurred against an Organization's Annual Plan allocation.

% OF "TOTAL" COST YTD:

This is derived by dividing the "Total Overhead Activity Cost YTD" by the "Total Cost for ALL Activities reported Year-To-Date" for the particular organization. This gives the Supervisor the ability to monitor and control the amount of expenditures being consumed by the particular overhead activity.

The same series of information holds true for the ranking report on Activity 345 (SRIC Support Operations), except for the last column. The difference is as follows:

PERCENT OF "TOTAL" SRIC EXPENDITURES:

This is derived by dividing the "Total SRIC Support Operation" expenditures by the "Total of all SRIC Activity" expenditures, thus resulting in the percentage amount being consumed by SRIC Support Operations, again, enabling the Supervisor to monitor SRIC overhead costs.

As stated in the Introduction, control is the most important principle of management; one might say control is the very essence of management.

A manager's primary function is to make decisions that determine the future course of action for the organization over the short and long term. The manager's degree of success in making decisions most often hinges on the manager's level of knowledge, complexity of the decision to be made, and the availability of data for comparing alternatives.

The data for comparing alternatives is often clear, straightforward, and readily available. In

other situations, the manager may find the data vague and difficult to obtain. More often than not, the required data is available in some form, and with the large volume of data generated by today's computers the manager often finds himself deluged with data.

The Maintenance Management Control Reports discussed in this chapter have evolved over a period of years to enhance the highway maintenance manager's skills in controlling the maintenance organization. These management reports are often neglected until a near crisis results. The successful maintenance manager, however, will become familiar with the management control reports and learn to review, classify, and identify the data on each report. Through this process, managers soon develop the ability to identify significant deviations from the plan and the control principle of management naturally follows.