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PTI/APWA Equipment Management Information System, Program Documentation, Repair Module

Public Technology, Inc, Washington, D C

Prepared for

Department of Housing and Urban Development, Washington, D C Assistant Secretary for Policy Development and Research

1977

PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

PROGRAM DOCUMENTATION

REPAIR MODULE

U.S. Department of Housing and Urban Development
Office of Policy Development and Research

PUBLIC TECHNOLOGY, INC., WASHINGTON, D.C. AND SAN JOSE, CA.

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This document is one of a series comprising documentation for the PTI/APWA Equipment Management Information System; a system tailored to the special needs of local governments, developed by Public Technology, Inc. and the American Public Works Association.

The program documentation for the Repair Module (there are six modules in the system) describes the module job streams, and explains in detail each program in the module including a program narrative, definitions of switches and flags used, a brief description of the purpose of each program paragraph, and the specifications from which each program was coded.

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PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPUTER PROGRAM DOCUMENTATION

REPAIR MODULE

U.S. Department of Housing and Urban Development
Office of Policy Development and Research
Washington, D.C.

Prepared Under Contract #H-2106R

by

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SECTION 1

INTRODUCTION

INTRODUCTION

This program documentation is one volume of the technical program documentation of the PTI/APWA Equipment Management System. There are five volumes in all. Additionally the system is supported by Testing Instructions, an Implementation Handbook, Forms Completion Instructions, User's Guide, and Chief Executive's Report.

This program documentation is intended to help in maintaining the programs on the local government computer system. Before making the computer programs operational, the data processing staff should consult the Implementation Handbook and Computer Program Testing Instructions for relevant information.

Contact PTI if questions arise which are not addressed in this program documentation.

SECTION 1.1

COMPONENT INTRODUCTORY NARRATIVE

REPAIR MODULE

REPAIR MODULE

The most meaningful information for decision making in the equipment management system is entered through the repair module. The repair order with its labor hours, parts costs, and commercial costs is the means by which this data enters the system. Each of these three items of information are coded as to the nature of the repair on which they were spent. The repair order also collects several other items of information about each repair including the reason for the repair and the amount of downtime.

Since the operation of repair shops differs significantly between jurisdictions the system is flexible as to the format of the repair order. Any form, or forms, is acceptable as long as the basic data is generated for the system. Some jurisdictions have developed a separate form for parts data. Some enter labor data from time cards.

When a repair is completed, the repair order should be submitted to data processing. Some shops have a service writer complete a major portion of the repair order and the mechanic complete the labor, parts, and descriptive information. It is possible for more than one repair order (continuation sheets) to be used. In this case, the repair order completion instructions indicate the procedures to be followed.

Labor cost data is not entered on the repair order. The system maintains the labor rates for each mechanic (or a flat labor rate if this is used) to cost out the hours applied against each type of repair on a repair order.

The system produces several reports which analyze repair data historically, across various repair shops, across classes of equipment, and organizations. Additionally, repair data is combined with data from the other modules to build a comprehensive reporting module.

SECTION 2.1

JOBS STREAMS OVERVIEW

REPAIRS

COMPONENT JOB STREAMS

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT: Repairs

JOB STREAM IDENTIFICATION	RUN FREQUENCY
EMRJØ1 - Edit and Month to Date Update	Daily
EMRJØ2 - History by date - (2 years)	Monthly
EMRJØ3 - Shop Performance Report	Monthly
EMRJØ4 - Shop Performance by Type of Repairs	Monthly
EMRJØ5 - Cause of Repair Report	Monthly
EMRJØ6 - Repair Activity Report	On-Request

SECTION 2.2.1

DAILY JOBS

JOB STREAM PROGRAMS AND FILES

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

JOB NAME: Edit and Month-to-Date Update EMRJØ1

RUN FREQUENCY: Daily

JOB STREAM PROGRAMS	COMPILED SIZE	FILES ACCESSED BY THIS PROGRAM
EMRUØ1 - Utility Sort	5Ø K	EMRFØ1 EMRFØ2
EMRPØ1 - Repair Order	54K	EMRFØ2 EMRFØ3 EMRFØ4 EMIFØ4
EMRPØ2 - Month-to-Date Update	28K	EMRFØ4 EMRFØ5 EMRFØ6

SECTION 2.2.1.1

DAILY JOB FLOWS

REPAIRS

PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

JOB FLOW

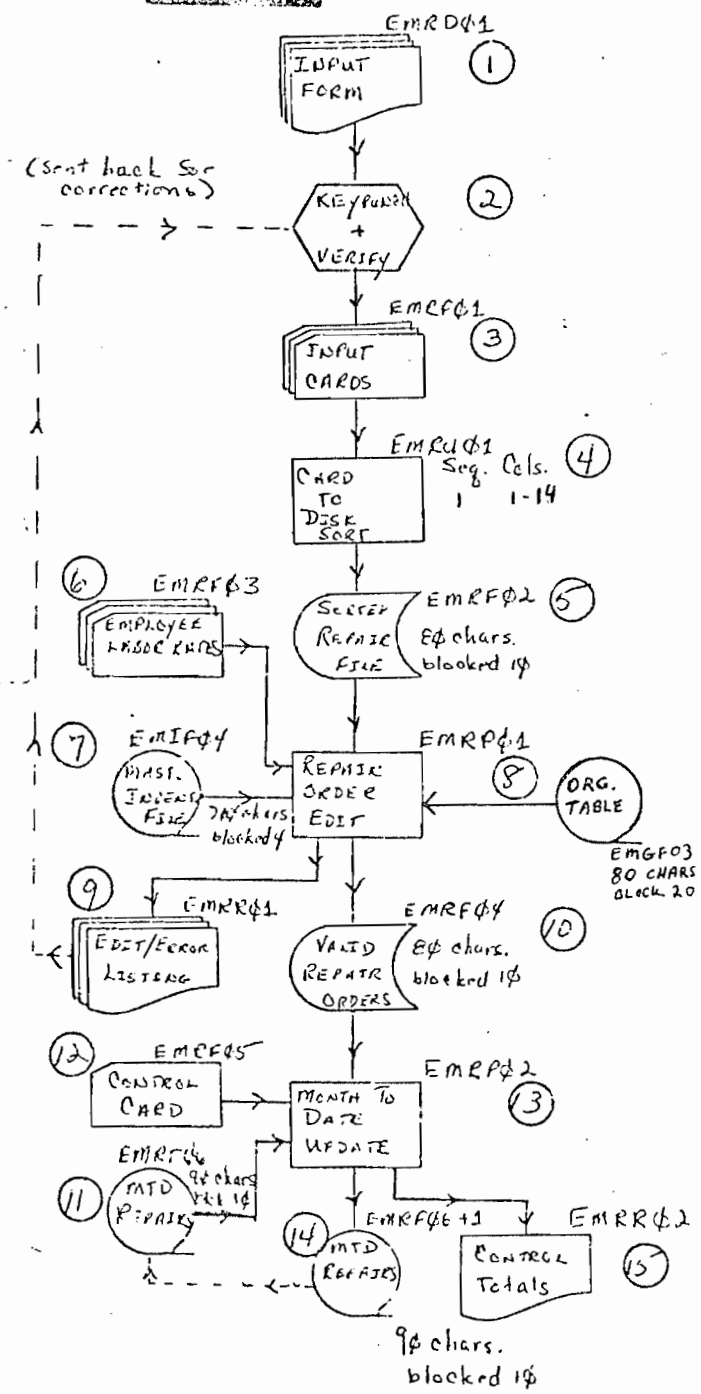
MODULE NAME Repair

JOB FLOW NUMBER EMRJØ1

JOB FLOW NAME Edit and Month-to-Date Update

FREQUENCY Daily

JOB FLOW



NARRATIVE

1. Repair Order Form.
2. Forms are keypunched and verified.
3. Card input deck is sent to data processing.
4. Card to disk sort of input transactions.
5. All sorted transactions are input to repair order. Edit
6. Employee rate cards are input.
7. Most recent equipment inventory master file is input.
8. Repair order edit checks for as many errors as is feasible and produces the following.
9. An edit/error listing which is sent back for any error corrections.
10. And a valid transaction file as input to the month-to-date update.
11. The month-to-date repair file is input to the month-to-date update.
12. Control card is input.
13. Repair month-to-date update is run and produces.
14. An updated month-to-date file.
15. And a control total report.

SECTION 2.2.2

MONTHLY JOBS

JOB STREAM PROGRAMS AND FILES

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

JOB NAME: History Update - EMRJØ2

RUN FREQUENCY: Monthly

JOB STREAM PROGRAMS	COMPILED SIZE	FILES ACCESSED BY THIS PROGRAM
EMRPØ3 - Repair History Update	18K	EMRFØ6 EMRFØ7

JOB STREAM PROGRAMS AND FILES

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

JOB NAME: Shop Performance Report - EMRJØ3

RUN FREQUENCY: Monthly

JOB STREAM PROGRAMS	COMPILED SIZE	FILES ACCESSED BY THIS PROGRAM
EMRUØ2 - Utility Sort	5ØK	EMRFØ6 EMRFØ8
EMRP11 - Shop Performance Program	44K	EMRFØ8 EMRFØ9 EMRF10 EMRF11

JOB STREAM PROGRAMS AND FILES

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

JOB NAME: Shop Performance by Type of Repairs - EMRJØ4

RUN FREQUENCY: Monthly

JOB STREAM PROGRAMS	COMPILED SIZE	FILES ACCESSED BY THIS PROGRAM
EMRUØ3 - Utility Sort	5Ø K	EMRFØ6 EMRF12
EMRP12 - Shop Performance by type repairs	38K	EMRF12 EMRF13 EMRF14

JOB STREAM PROGRAMS AND FILES

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

JOB NAME: Cause of Repair Report - EMRJØ5

RUN FREQUENCY: Monthly

JOB STREAM PROGRAMS	COMPILED SIZE	FILES ACCESSED BY THIS PROGRAM
EMRUØ4 - Utility Sort	5Ø K	EMRFØ6 EMRF16
EMRP13 - Cause of Repair Program	4Ø K	EMRF15 EMRF16 EMRF17

SECTION 2.2.2.1

MONTHLY JOB FLOWS

PTI/APWA EQUIPMENT MANAGEMENT INFOPMATION SYSTEM

JOB FLOW

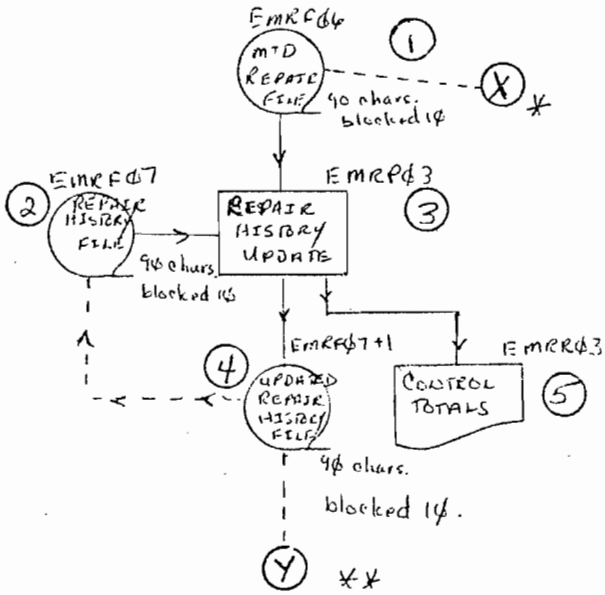
MODULE NAME Repair

JOB FLOW NUMBER EMRJØ2

JOB FLOW NAME History Update

FREQUENCY Monthly

JOB FLOW



*** MTD = MONTH TO DATE ***

NARRATIVE

1. Month-to-date repair file is input.
2. History file is input.
3. History file update program is run and produces the following.
4. An updated history file.
5. And a control total report.

* Note: Connector X goes to job flows 3 thru 5 of repairs and job flow 1 of the monthly master update.

** Note: Connector Y goes to job flow 6 of repairs.

PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

JOB FLOW

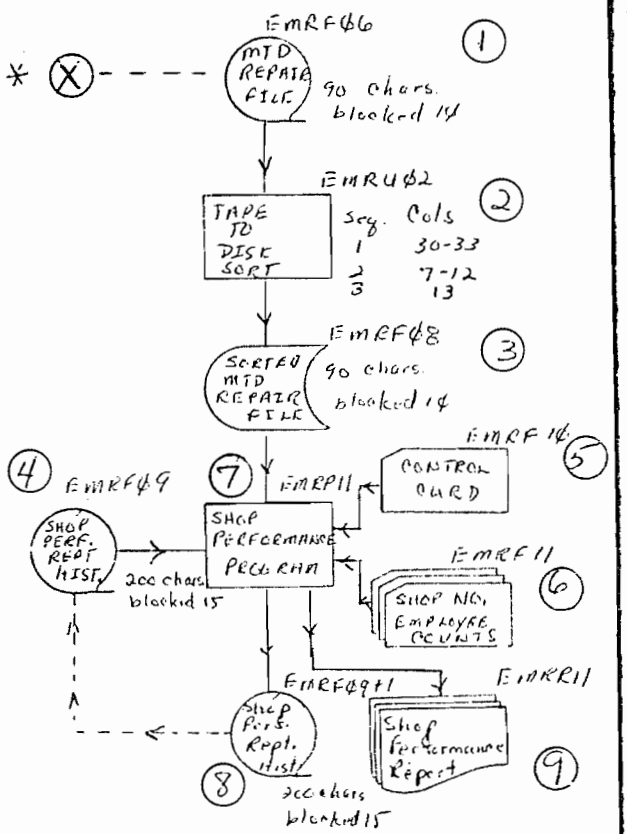
MODULE NAME Repair

JOB FLOW NUMBER EMRJØ3

JOB FLOW NAME Shop Performance

FREQUENCY Monthly

JOB FLOW



*** M D = Month To Date ***

NARRATIVE

1. Month-to-date repair file is input to sort.
2. Sort is run on all data.
3. Sorted repair file is input to shop performance report program.
4. Shop performance report history file is input.
5. Control card is input.
6. Shop number with employee counts file is input.
7. Shop performance report program is run and produces the following.
8. An updated Shop Performance report history file.
9. And the Shop Performance report.

* Note: Connector x is from job flow 2 of repairs.

JOB FLOW

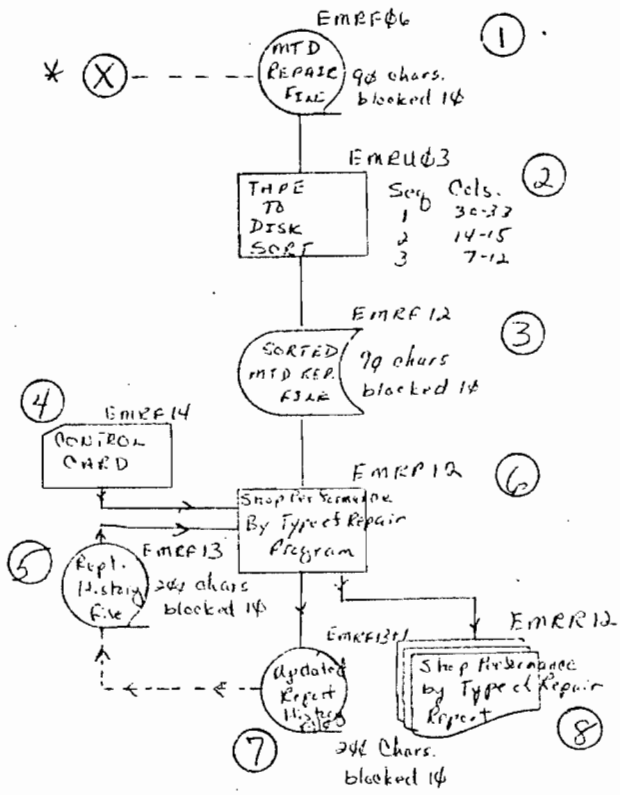
MODULE NAME Repairs

JOB FLOW NUMBER EMRJØ4

JOB FLOW NAME Shop Performance by Type of Repair

FREQUENCY Monthly

JOB FLOW



*** MTD = Month To Date ***

NARRATIVE

1. Month-to-date repair file is input to sort.
2. Sort is run on all data.
3. Sorted repair file is input to shop performance by type of repair program.
4. Control Card is input.
5. Shop Performance by Type of Repai report history file is input to program.
6. Shop Performance by Type of Repai program is run and produces the following.
7. An updated Shop Performance by Type of Repair report history file.
8. And the Shop Performance by Type of Repair report.

* Note: Connector x is from job flow 2 of repairs.

PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

JOB FLOW

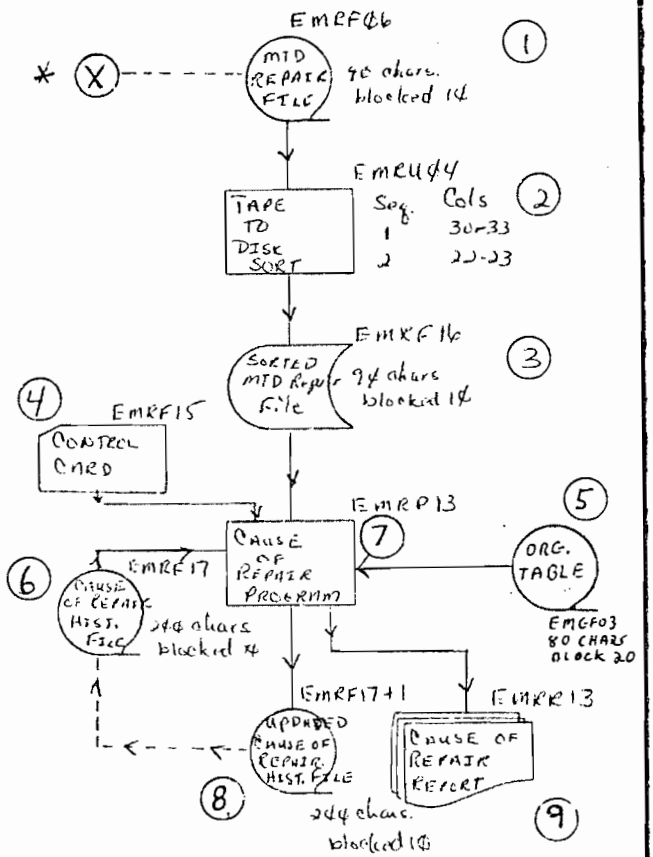
MODULE NAME Repair

JOB FLOW NUMBER EMRJØ5

JOB FLOW NAME Cause of Repair Report

FREQUENCY Monthly

JOB FLOW



*** MTD = Month To Date ***

NARRATIVE

1. Month-to-date repair file is input to sort.
2. Sort is run on all data.
3. Sorted repair file is input to the cause of Repair program.
4. Control Card is input.
5. APWA Table file is input.
6. Cause of Repair report history file is input.
7. Cause of Repair program is run and produced the following.
8. An updated cause of repair report history file.
9. And the Cause of Repair report.

*Note: Connector X is from job flow 2 of repairs.

SECTION 2.2.3

ON REQUEST JOBS

JOB STREAM PROGRAMS AND FILES

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

JOB NAME: Repair Activity Report - EMRJØ6

RUN FREQUENCY: On Request

JOB STREAM PROGRAMS	COMPILED SIZE	FILES ACCESSED BY THIS PROGRAM
EMRUØ5 - Utility Sort	5Ø K	EMRFØ7 EMRF18
EMRPØ7 - Detail Report Program	42K	EMRF18 EMRF19 EMRF2Ø EMIFØ4

SECTION 2.2.3.1

ON REQUEST JOB FLOWS

PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

JOB FLOW

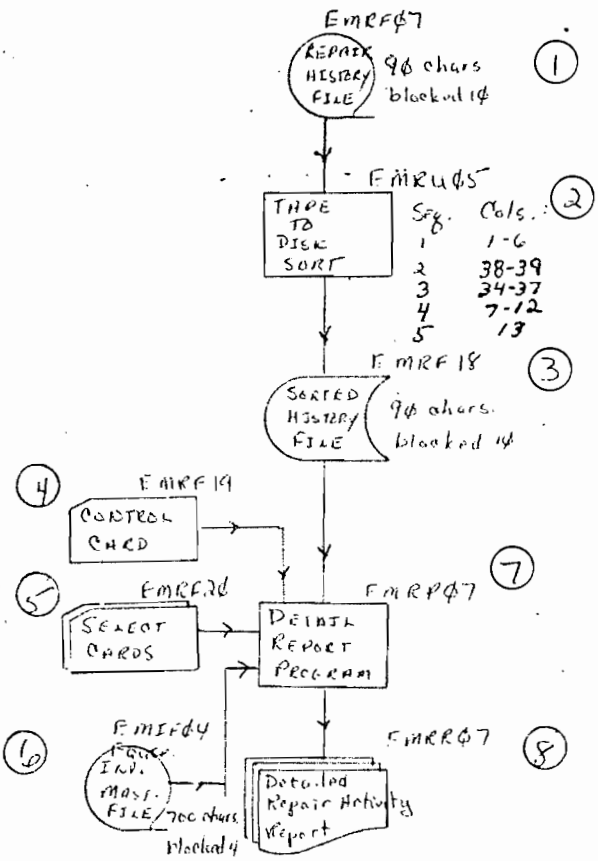
MODULE NAME Repairs

JOB FLOW NUMBER EMRJØ6

JOB FLOW NAME Repair Activity Report

FREQUENCY On Request

JOB FLOW



NARRATIVE

1. Repair history file is input to sort.
2. Sort is run on all data.
3. Sorted repair history file is input to the detail repair report program.
4. Control card is input.
5. Select cards are input.
6. Most recent Equipment Inventory master file is input.
7. Detail report program is run producing .
8. A detailed repair activity report.

SECTION 3.1

REPAIR EDIT

EMRPØ1

SECTION 3.1.1

REPAIR EDIT

PROGRAM NARRATIVE

REPAIR ORDER EDIT - PROGRAM EMRPØ1

General Description

The purpose of the repair order edit is to accept all repair order transactions and verify that the information being received is as accurate as possible prior to its being applied to the month-to-date repair order update. The information entered into this program comes from the Repair Order form (see Appendix B). This form contains all the basic information about a repair on a particular piece of equipment. It consists of 3 cards of which numbers 2 and 3 are optional. The information contained on the first card is necessary for the operation of the Repair Order Module. Any one of the remaining cards may, or may not, be present although at least one must be present.

Multiple repair orders may be necessary to supply all the information about a repair in which case continuation repair orders are submitted. Continuation repair orders are distinguished from original repair orders by the letters "BB" following the repair order number.

SECTION 3.1.2

REPAIR EDIT

PROGRAM SPECIFICATIONS

Edit Specifications - Repair Orders

Purpose

The purpose of this program is to edit the repair order transactions and to cost out the labor hours by employee, using an employee rate file. The edited transactions which are accepted are written to tape for further processing. An error listing, showing the status of each transaction is produced by the program.

System Inputs

1. Repair Order Transactions
2. Employee Rate File
3. Master Inventory File

System Outputs

1. Error Report
2. Edited Transactions (on tape)

Processing

General Requirements:

The program is to begin by reading the Employee Rate File into an appropriately described table. The table is to allow for up to 200 employees. If the rate file is not present or the limit of 200 entries is exceeded an appropriate message is to be printed under error type on the error report and the remainder of the run is to be terminated. Each rate card is to be edited to determine that fields 1 and 2 are numeric. An internally programmed sort is to be used to assure that the internal table of employee rates is in ascending employee number sequence.

The input transactions to be edited are in 80 column card format on tape in ascending order by column as follows: Equipment Number, Repair Order Number, and identifier. The identifier is located in columns 13 - 14, and will determine the card format. Card format 1 identifiers are AA or BB. Card format 2 identifier is LR. Card format 3 identifiers are CM or PT.

A group of transactions, all having the same equipment number and same repair order number is defined as a "set". There must always be at least one format 1 (either AA or BB) in each set. The absence of any required field, or the failure of any required field to pass an edit test will cause the entire transaction to be rejected. However, all remaining entries on the transaction will nevertheless, be edited. (This applies to format 2 and format 3 cards as well). When the first format 1 record has passed the edit then any additional format 1 records are not to be included in the output tape of edited transactions. The additional format 1's are printed on the error list, "NOT REQUIRED" is printed under error type and "BY PASSED" under disposition.

However, if the initially encountered format 1 record was rejected, check for another format 1 (either AA or BB) in the set which will pass the edit. Once an acceptable format 1 is encountered, then all other format 1 records are bypassed (as above). If no acceptable format 1 is found in a set, then all other format 2 and format 3 transactions in the same set must be rejected. However, format 2 and 3 should be edited by field according to the attached specifications even though they are to be rejected.

Whenever a format 1 record (either AA or BB) is accepted then the user organization must be moved from the master inventory record (field 3) to field 14 of the format 1 record. All format 2 and 3 records which follow an accepted format 1 record must have the same equipment number and repair order number as the format 1 record. Reject all format 2 and 3 records which do not agree using the error message "No Header Rec" and disposition "Rejected". However, all fields on these records should be edited even though the records are to be rejected. If a format 1 record is encountered and no associated format 2 or 3 records are present, or have been rejected, the format 1 record should be rejected (if it passes edits), and "No Cost" is printed under error type.

For each format 2 record (Labor) the employee number for each set of entries is to be looked up in the internal table of rates and the total cost of the

labor for each entry will be calculated by multiplying the number of labor hours in the entry by the cost per hour in the table. This calculated cost will be superimposed over the employee number (field 8, format 2). If an employee number is not in the table, the error message "Invalid Employee No" is printed, the entire transaction is rejected and a copy of the original transaction (prior to superimposing) will be printed on the error report. As a general rule, whenever any field fails an edit test the remaining fields on the transaction are nevertheless edited.

Field Edit Specifications for Repair
Order Data Transaction, Format 1 Record

Field

1. (Equipment Number) Required for both AA and BB identifiers. Edit to verify that a record with this equipment number exists in the master inventory file (field 1) and has a status code (field 4) of blank.

If the Use Status code field is "2", this indicates that there is another record for this vehicle on the master inventory file with a more current organization code. This second record should be used as the matched record rather than the one with the use status code of "2". If this other record does not exist, the transaction should be rejected and an error type message "Not in Fleet" printed.

If the status code field is "3" the transaction should be accepted, but print the error message "Vehicle De-Active" under Error Type.

If there is no corresponding record on the master file an error message "Not in Fleet" is to be printed on the edit error report. Place an asterisk under equipment number field for the transaction on the error list. The equipment number field is also edited for right justification.

2. (Repair Order Number) Required for both AA and BB identifiers. Edit for all numeric. The repair order number should also be edited for right justification.

3. (Identifier Code) Required. Must be AA or BB.

4. (Facility Number) Required for both AA and BB identifiers. Edit for numeric. Edit against an internal table of valid numbers.
   The facility number should also be edited for right justification.

5. (Odometer) If present edit for numeric; also if field 55 is greater than field 5, print under error type: "Less Than Last Mo Reading-" (contents of field 55) "-Accepted".
   This field should also be edited for right justification.

6. (Work Class) Optional. If present X, Y, Z are the only valid entries.

7. (Bill User) Optional. If present blank or Y are the only valid entries.

8. (Road Call) Optional. If present blank or Y are the only valid entries.

9. (Warranty) Optional. If present blank or Y are the only valid entries.

10. (Reason) Optional. If present any alpha Character A thru U is a valid entry.

11. (Received) Optional. If present edit first two characters for less than 13. Edit second two characters for less than 32. Edit next two characters for less than 13. Edit next two characters for less than 61. Edit final (9th) character for A or P as only valid entries.

12. (Completed) Optional; however if not present insert current day and month from system. If present edit this field as in 11. (Received) above. However, if the month on the transaction is from 6-12 greater than current month on the transaction is 1-5 greater than current month, print "Invalid Month" under Error Type.

13. (Downtime) Optional. If present edit for numeric, and edit for right justification.

Field

1. (Equipment Number) Must equal the equipment number on the associated format 1 record. This field should also be right justified.

2. (Repair Order Number) Must equal the repair order number on the associated format 1 record. This field should also be right justified.

3. (Identifier Code) Format 2 = LR; Format 3 = PT or CM.
   All other fields except filler, must be non-blank and numeric: the

absence of any field in the cost entry will cause the entire transaction to be rejected. The following additional rules apply:

Repair Type fields; the following are not valid entries (00, 08, 09, 10, 19 20, 21, 22, 27, 30, 36, 37, 38, 39, 40, 47, 48, 49, 50, 54, 57, 60, 66, 67, 68, 70, 76, 77, 78, 79, 80, 87, 89).

For file correcting transactions i.e. format 2 or 3 reocrds which have an entry in the month/year field, edit to verify that the month/year is not in advance of the current month/year, and also that the month/year is not more than two years old. If the month/year fails the edit, reject the entire transaction with an appropriate message.

Month: Must be < 13 or Blank

Year: Must be = or l < current year

or Blank

If the month and year specified is the current month and year move blanks to the month and year fields of the transaction.

If any field fails to pass an edit test, the entire transaction (format 2 or 3) is to be rejected; however, any remaining fields are nevertheless to be edited.

SECTION 3.1.3

REPAIR EDIT

DEFINITIONS

Selected Switches, Counters and Data Elements Used by EMRPØ1

Switches, Counters Data Elements	Use
FRST-OUTPT-REC	Indicates whether or not to move the total amount of employees to the first output record.
Hold-Empl-Number	Holds the employee number which is compared with employee number in employee rate table.
Hold-Empl-Rate	Holds the employee rate and is used to calculate the cost of labor.
Meter-Compr-Area	Holds the meter reading of the repair order for comparison against the meter reading on the master file.
Line-Count	Set value used for comparison against number of lines written on a page.

Switches, Counters Data Elements	Use
Line-cnt-tot	Line count per page.
Pagg-countrr	Page counter
CDS-IN-TOTCNT	Total cards input.
DOC-IN-TOTCNT	Total documents input.
ERRORS-TOTCNT	Total number of errors.
INVLD-CDS-TOTCNT	Total invalid cards.
INVLD-DOC-TOTCNT	Total invalid documents.
VALID-DOC-TOTCNT	Total valid documents.
REPONUM-SAVE-AREA	Holds the repair order number for comparison.
TOT-EMP-INTABLE	Total number of employees.
TAB-END-SWITCH	O-Indicates that there are more employee-rate cards remaining and addition of 1 to total number of employees. 1-Indicates end of employee rate cards.
SRTTAB-END-SWITCH	1-Indicates end of sort on the employee rate table. O-Indicates continuing of sort on employee rate table.
SRTTAB-INDEX1	Subscript used for sort of employee rate table.

Switches, Counters Data Elements	Use
SRTTAB-INDEX2	Subscript used for sort of employee rate table.
TOT-CDS-TO-TAPE	Total cards written to tape.
FIRST-READ-SW	O-Indicates first document read in.
COMPR-EQP-NUM-SAV	Holds the equipment number compared against EQP-NUM-SAVE-AREA.
COMPR-REPONUM-SAV	Holds the Repair Order Number compared against REPONUM-SAVE-AREA.
COMPR-FACNUM-SAV	Holds the Facility Number compared against FACILITY-NO-SAVEAREA.
FACILITY-NO-SAVEAREA	Holds the Facility Number.
RECDS-EQL-SW	3-Indicates that there has been a duplicate format 1 record found.
TABLE-SWTCH2	Holds total number of employees. Subscript used for moving High-Values into employee rate table.
TABLE-SWTCH1	Hold area used in building employee rate table and sorting of employee rate table.

Switches, Counters Data Elements	Use
MAST-EQPNUM-SAVE	Holds Master equipment number.
EQP-NUM-SAVEAREA	Holds Repair Order equipment number.
MAIN-COMPUTE-TIME	Holds Labor hours which are used in computation of labor costs.
READ-MAST-AGN-SW	Ø or 1-Indicates that Master file should be read again. 3-Indicates the end of the Master file should not be read again.
TERM-SWTCH	1-Indicates that the employee rate file has exceeded its limit.
HLDCD-SAVE	Subscript used to access format 1, 2 or 3 record that has been put in a table called Hold-cd-image.
SAVED-CD-NUMB	Holds the card number which has been put in the table called hold-cd-image. When the card number is equal to Hld Cd-Save the asterisk line is generated. Otherwise the card image is generated.

Switches, Counters Data Elements	Use
READ-CNTRLCD-SW	Ø-Indicates that the control card should be read, which has information for the page headers.
NUMBER-ASTR	Used in generating the asterisk line in the report
ERR-TABL-SUBSC	Subscript used in accessing the Error-Messages-Table.
ASTER-CHARCTR	Character of asterisk which is used in generating asterisk line of the report.
SET-NOT-ACCEPTED	1-Indicates that the entire set will not pass the edit. 2-Indicates that format 2 record has not passed the edit. 3-Indicates that format 3 record has not passed the edit.
FACLTY-TABL-SUBSC	Subscript used in accessing Facility-Number-Table.
YES-INFAC-TABL	1-Indicates that the facility number is in the facility number table.
ODMTR-SWTCH	1-Indicates that the odometer is equal to spaces.

Switches, Counters Data Elements	Use
FRMAT1-REC-ACCPTD	1-Indicates that the format 1 record has passed the edit and is written out to tape
FRMAT2-REC-ACCPTD	1-Indicates that the format 2 record has passed the edit and is written out to tape.
FRMAT3-REC-ACCPTD	1-Indicates that the format 3 record has passed the edit and is written out to tape.
DVID-MINUTES	0-Indicates that the minutes field in the format 1 record is not less than 60. 1-Indicates that the minutes field in the format 1 record is less than 60.
HRS-MIN-SWTCH	1-Indicates that the Labor Minutes or hours field of a format 2 record is not numeric 2-Indicates that the calculation of labor costs is bypassed.
BYPASS-F1-REC	1-Indicates that a Header Rec (format 1 record) has passed the edit and all format 1 records with the same equipment number and repair order number will be bypassed.

Switches, Counters Data Elements	Use
Hrs-AND-MINTS-X	Holds the labor hours which are used in calculating the cost of labor.
CURNT-MONTH-A	Holds the current month number.
CURNT-DAY-A	Holds the number of the current day.
CURNT-YR-A	Holds the number of the current year.
MOR-THAN-AMONTH	Field used in calculating whether or not a vehicle is out of fleet.
MOR-THAN-AYR	Field used in calculating whether or not a vehicle is out of fleet.
OUT-OF-FLEET-SW	Less than 2 indicates that the vehicle is in fleet. 3-Indicates that the vehicle is out of fleet.
RECEIVED-EDT-SW	1-Indicates that editing is done to the received field of the format 1 record.
COMPLT-EDT-SW	1-Indicates that editing is done to the completed field of the format 1 record.
SUBTRACT-RESULT	Hold area for results of various subtraction routines.

Switches, Counters Data Elements	Use
COST-OF-LABOR	Hold area used in calculating the cost of labor.
SPAC-SWITCH	1-Indicates that this group of labor hrs., labor minutes, repair type and employee number of the format 2 record are equal to spaces.
BAD-EMPL-NUMB-SWTCH	1-Indicates that the employee number is not numeric or is equal to zero.
MINTS-LESS THAN-60	1-Indicates that the minutes field being edited is less than 60. 0-Indicates that the minutes field is invalid.
SAM-TIM-AREA	Hold area for the time when the vehicle was bought in, AM (A) or PM (P).
HLD-EMP-RAT2	Hold area for the employee wage per hour.
RED-HLDEMPRAT2	Hold area which redefines HLD-EMP-RAT2. This field is used in calculation of labor cost.

Switches, Counters Data Elements	Use
EMPLOYEE-RATE-REC	Input record which contains the employee number and wage per hour.
EMPLOYEE-RATE-TABLE	Table that is built containing up to 200 employee number and wages per hour.
DATE-HOLD-AREA	Hold area for the current date from the system.
DATE-SPLITTER	Hold area which redefines DATE-HOLD-AREA. This field separates the system date so that it can be used in calculations.
PERIOD-ENDING-DATE	Hold area which contains the ending period of the repair orders.
SPLIT-PER-ENDDATE	Hold area which reformats Period-ending-date.
MONTH-TABLE	Table that contains abbreviated month names.
END-ROFILE-SW	1-Indicates that the end of the file containing the Repair Order transactions has been reached.
END-MASTERFILE	1-Indicates that the end of the Master file has been reached.

Switches, Counters Data Elements	Use
JUSTIFY-SWITCHES	Switches used in right justifying appropriate fields.
ERROR-MESSAGES	Table containing all error messages. Currently 27 error messages.
RIT-JUST-EDIT-FLDS	Hold areas used in right justification routines.
FACILITY-NUMBER-TABLE	Table containing all facility numbers in use.
RPR-TP-WRK-ST	Hold area used to determine whether or not a repair type is invalid.
WORKCLS-REAS	Hold area used in determining whether a work class and reason combination is valid.

SECTION 3.1.4

REPAIR EDIT

PARAGRAPH EXPLANATIONS

Program Concept

The following is a conceptualized idea of how the Repair Order edit program functions. It is not intended to be a detailed document, but rather a reference to be used with the program specifications, the actual program listing, and input forms.

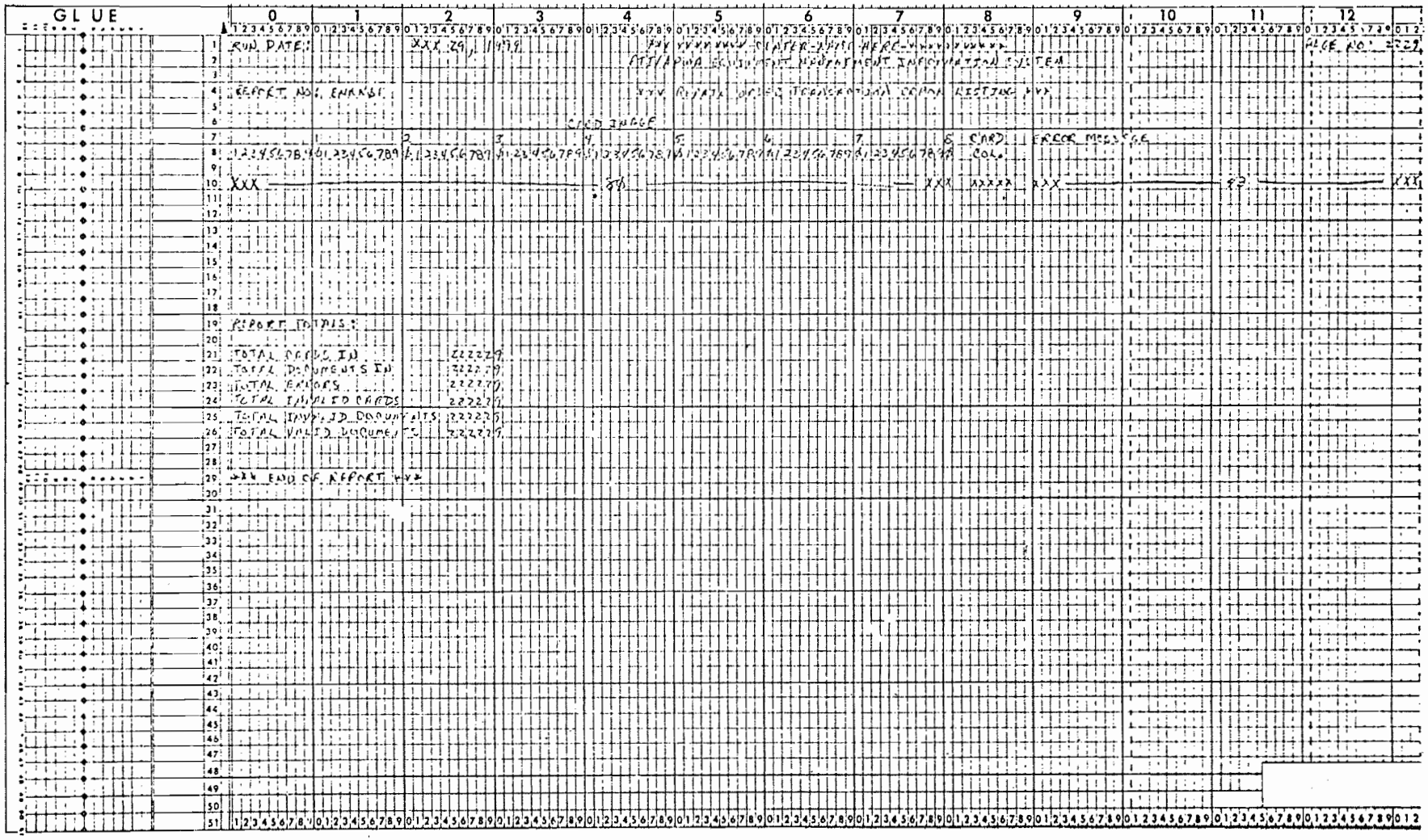
Paragraph Numbers	Functions
X100 thru X199	Initialization of dates and headings
X200 thru X299	Main Program loop. This section accepts the data for processing and turns control over to the appropriate subroutines for execution.
X300 thru X399	End of Job Processing
X400 thru X400-EDT-F1-EXIT	Edits involving format 1 card of regular transaction.
X450 thru X450-EXIT	Edits involving format 3 card of regular transaction.
X500 thru X501-EXIT	Building and Sorting of Employee Rate Table.
X7ØØ thru X720-EXIT	Subroutines for setting asterisks to indicate errors and also left and right justification of fields.

Paragraph Numbers	Functions
X900 thru X960-EXIT	All input output subroutines. E G., reading files, writing files, producting error listings, etc.

SECTION 3.1.5

REPAIR EDIT

REPORT LAYOUTS



SECTION 3.2

REPAIR MONTH-TO-DATE UPDATE

EMRP02

SECTION 3.2.1

REPAIR MONTH-TO-DATE UPDATE

PROGRAM NARRATIVE

Repairs Month-to-Date Update
Program Narrative

This program takes all valid transactions produced by the Repair Order Edit program and updates the month-to-date file of repair transactions. The first run of the month does not have an input file since it is the beginning of a new month-to-date file. All further processing during the month does have this file as input.

This program combines like repair types from original repair orders and continuation repair orders to condense the file as much as possible. Further narrative is included in the program specifications.

SECTION 3.2.2

REPAIR MONTH-TO-DATE UPDATE

PROGRAM SPECIFICATIONS

SPECIFICATIONS - RO Month-to-date UPDATE

Purpose

This program takes the edited repair order transactions, formats these transactions and merges them into a month-to-date file of repairs.

Processing

A. Initialization - First, the files are opened. For the first run of each month there will be no month-to-date RO file as input. The program accomodates this condition by a control card that is read in. The two (2) codes that are used are the following:

'F' - No MTD 'R' - MTD present

B. Mainline Processing - The program assumes that the edited RO file from program EMRPO1 is presorted in the following ascending order:

1. Equipment number (col. 1-6)
2. Repair order number (col. 7-12)
3. Record Identification (col. 13-14)

The old month-to-date file, when present, is already in this order. During processing, one of the following three conditions can occur:

1. There is no month-to-date file to be tested against the repair order transaction file.
2. There is no match on records between the files.

3. A match is found between a repair order transaction and an existing record on the month-to-date file. This happens when the key, equipment number and repair order number, are the same on both records.

For condition one, the edited repair order transactions are reformated along the guidelines that will be described in the section concerning matched records, condition 3. After the records are formated, they are written to a new month-to-date file.

Condition two has two possibilities that may occur. The first possibility is that the RO transaction tests less than the MTD record. When this occurs, the transaction is treated in the same manner as in condition one. The second possibility is that the RO transaction tests greater than the MTD record. In this case, the entire 'set' of MTD record is copied onto the new MTD file. A set consists of all header(Type 1) and all cost (Type 2) records that have the same equipment number and repair order number.

The rest of the specifications deal with condition three in which a match is found between the RO transaction and month-to-date records.

The first operation that takes place when a match is found is the updating of the current header record for the 'set' on the MTD file. This is accomplished with the information obtained from the format 1 record from the transaction file. The header record fields are updated only if the corresponding transaction field is non-blank. The downtime hours is added rather than moved to the MTD header record. If the start date is blank

on the old header record and the start date of the format 1 is non-blank, then this date is moved to the new record, otherwise the date is left untouched. If either the start or completion dates are non-blank, they must be reformated into a 'MMDDYY' configuration. On input from the transaction file, these dates contain only the month and day plus the hour and minutes and an 'A' or 'P' denoting the time that work was started and/or completed.

The turnaround-time code on the MTD file is calculated by the difference in the dates on the Transaction file as follows:

If difference is 24 hours	- code is set to 1
24-48 hours	- code is set to 2
over 48 hours	- code is set to 3

If the start date is blank or the last 3 characters of the completion date are '12P' then the code is set to 4.

A '1' is moved to the record type description field of the header record.

Before writing the header record for the current set to the new month-to-date file, all the RO transactions for the set are read and used to build an internal cost table. This internal table is used whenever there are cost records involved, except when the old month-to-date file is being copied directly to the new file. The use of the table is to consolidate repair type costs and to determine whether or not there have been over 20 repair types in a given month against the same equipment and repair order number. In the month-to-date file there can be the same repair type but with different dates associated with it. This situation causes more than 1 entry in the table

for the same repair type. The date that is mentioned is on the edited repair transactions in the form of MMYY in CC 75-78. This date is normally blank unless there is to be a change to data that already has been processed.

After all the transactions for the current set are read, each cost record on the old MTD file for the set is read and checked against the table. If the cost record repair type matches one in the table, the appropriate costs are added to the values in the table. If no match is found, a new table entry is made, as long as there are not over 20 entries in the table. If there are, the job is aborted. There can be 3 separate labor costs per format - 2 card and up to 5 separate costs on the format-3 card.

After all the transactions for the set are processed, the new file can now be written. If there is any entry made to the labor field in the table, a flag is set on. If the identifier of the format-1 RO transaction for the set was 'BB' and the flag was not on, spaces are moved to the date complete field of the new month-to-date file header record. The first nine fields of the header record are saved in order to update the first nine fields of each cost record for the new file. The only exception is as follows: If the month and year entry for the repair type in the table is non-blank, the month and year from the table are moved to their respective positions in the date-completed field of the cost record and 'xx' is moved to the day field of the date. The 'xx' serves as a flag to other programs that this is a file correcting entry and is used to make corrections to historical reports for the month and year indicated. If

the month and year are blank then the saved date-completed field is moved to the new record. For each cost record a '2' is moved to the record description area.

When there is a match between the MTD and transactions files but old cost record repair types do not match new repair types and the old date-completed contains 'xx', do not overlay the date-completed field with the new date.

Repair types are considered to match when date-completed fields on the new header record and the old cost record are equal. If they are not equal but both day fields are numeric, they are taken to be equal and the costs are added together, otherwise a new cost record is created.

All records are written in ascending order in each set as to repair type.

SECTION 3.2.3

REPAIR MONTH-TO-DATE UPDATE

DEFINITIONS

Selected Switches, Counters and Data Elements Used by EMRPO2

Switches, Counters Data Elements	Use
Labor-flg-sw	Set on if a labor entry is made into internal table.
EMDO7-EOF-SW	Set on when edited-RO-file is at EOF.
EMDØ 8-EOF- SW	Set on when old MTD is at EOF.
SKIP-OLD-RO-RD-SW	Set on when there is no old MTD file or when there is no match with the RO file.
Char 15	Turn around character.
RO-FORMAT-1	Area where edited RO header is placed on input.
RO-FORMAT-2	Area where all edited RP's are read into.
MTD-Header-Rec 1	Area where MTD file header record is placed.
MTD-Cost-Rec	Area where MTD records are read into and written from.
MTD-CREC-FLDS	Save area for MTD records.
Save-Flds	Hold areas for the first 9 fields of each MTD record.
Record-test-sw-07	Set to Ø when RO files MTD, 1, when RO file MTD, 2 when RO file = MTD.
Abort-sw	Set on when an abort condition occurs.
Normal - TERM-SW	Set on when both files are at EOF.
Sort-sw	Set to 1 each time sort procedure is started to determine how many entries are in the table when it is set to Ø for rest of sort.

Switches, Counters Data Elements	Use
Compare-02-SW	Determines from what area the new MTD record should be written.
MTH-SW-CODE	Is set to 'F' if it is the first run of the month or 'R' for all other runs.
NEW-MTD-REC-CNT	Counter for new file.
OLD-MTD-REC-CNT	Counter for old file.
EDIT-RO-REC-CNT	Counter for repair order transactions.
REC-CNT	Counts number of records per set on new file, if over 20 - job aborts.
Day-Diff, Hour-Diff	Used in determining turn-around code.
CD-FLD-SUB	Subscript for transaction card fields.
Table-sub	Subscript for internal cost table.
Sort-subl, Sort-sub2	Subscripts used in sort procedure.
Last-Tab-Entry	Used by sort in determining last table entry.
RO-Format-l	RO transaction header card.
RO-Format-2	RO transaction labor card.
RO-Format-3	RO-transaction cost card.
MTD-Header-Recl	MTD header record.
MTD-Cost-Rec	MTD cost record.
MTD-Crec-Hld	Hold area for MTD records.
Internal-cost-Table	Accumulates costs for each RO set.

SECTION 3.2.4

REPAIR MONTH-TO-DATE UPDATE

PARAGRAPH EXPLANATIONS

Program Concept

The following is a conceptualized idea of how the month-to-date update program functions. It is not intended to be a detailed description of the program. It should be used as a guide when using the actual program listing and input data.

Paragraph Numbers	Functions
X100	Initialization.
X200	Read Edited RO file and test for which records are present to be processed.
X205	Checks if old History file should be read or be bypassed.
X210	Read Old MTD file.
X215	Compares records from both files.
X220	Checks if abort switch is set.
X300	Abnormal exit when internal table size exceeded.
X303	Abnormal exit for too many cost records on new MTD file.
X306	Displays faulty RO.
X310 - X313	Normal Termination Exit.
X400 - X421	Formats header records for unmatched RO's.
X430 - X433	Compares header records.
X440	Clear internal table.

Paragraph Numbers	Functions
X445	Checks if any labor entry was made in table for each RO.
X450 - X459	Writes new header record and builds 02 records.
X550 - X515	Process RO Format-2 cards.
X580	Changes hold area test data.
X590	Reformates date received
X600	Calculates turn around character.
X620	Creates new table entry from Format-2 records.
X625	Creates new table entry from Format-3 records.
X650	Copies old MTD to new MTD.
X670	Tests for EOF on both files.
X700 - X721	Internal sort for table.
X730	Updates MTD header record.
X760 - X787	Combines old MTD file with internal table entries when another set is encountered on the edited RO file.
X800	Writes new MTD file.
X810 - X813	Compares dates in table to RO Format-2 and 3 card dates.

Paragraph Numbers	Functions
X820	Updates first 9 fields of cost records on MTD file.
X830 - X833	Rejects duplicate header records.
X900 - X990	Input/Output routines.

SECTION 3.2.5

REPAIR MONTH-TO-DATE UPDATE

REPORT LAYOUTS

(Record C unts are all that are generated)

```
*** TOTALS FOR EMRP02--MTD UPDATE ***
NORMAL JOB TERMINATION
RECORDS READ EDIT-RCS   000213
RECORDS READ OLD-FILE   000000
RECORDS WRITTEN NEW-FILE   000267
             END OF EMRP02
```

SECTION 3.3

REPAIR HISTORY UPDATE

EMRP03

SECTION 3.3.1

REPAIR HISTORY UPDATE

PROGRAM NARRATIVE

Repair History Update
Program Narrative

This program is run on a monthly basis and takes all repairs on the month-to-date repair file and merges them into the two year history file. Continuation repairs are added to existing totals, while new repairs create additional records.

The first time this program is run there is no history file as input. Any time thereafter there is a history file as input with an updated history file as output. Any transaction that is more than two years old is deleted from the file so as to maintain only a current two year history.

Additional narrative can be found at the beginning of the program specifications.

SECTION 3.3.2

REPAIR HISTORY UPDATE

PROGRAM SPECIFICATIONS

SPECIFICATIONS - REPAIR HISTORY FILE UPDATE

Purpose:

The purpose of this program is to update the repair-history file using the month-to-date repair file.

Processing:

Both the month-to-date and repair-history files are maintained in the following format (in ascending order):

1. Equipment number
2. Repair order number
3. Repair type

Each group of record types 1 and 2 which have the same equipment and repair order numbers are to be considered as a 'set'.

There are two possibilities that can occur when comparing the two files to one another:

1. No match between 'sets'.
2. A match between 'sets'.

Under the first possibility if the month-to-date tests lower a new 'set' must be created for the new history file. Otherwise the old history file 'set' is copied to the new history file. As each 'set' of the old history history file is read, the date completed field is tested to see if it is over 2 years old, if it is, the entire 'set' is bypassed on the old history file and a new set must be created using the month-to-date file as if it had tested lower.

When a match is found and the history set is valid (i.e. not over 2 years old), the fields of the type-1 record in history file (header record for the set) are overlayed with any corresponding non-blank fields from the month-to-date header record of the 'set'. The exception being downtime-hours which is added instead of being moved.

As each cost record (type 2) is read, the repair types are compared. If they are equal the costs are added to their respective fields on the history file from the month-to-date file. The new history record for that repair type is not written until all the month-to-date records for that set with the same repair type is read and the costs are added to the new record. The first nine fields of the new header record that are saved, are used to create or overlay the first nine fields of the cost records. When a different repair type is encountered on the month-to-date file, the new history record is now written on the new file. The next cost record from the old history file is then read and the process begins again. The two files are merged, together in ascending order when the repair type for the corresponding 'sets' do not match-up.

The program will abort upon encountering a condition of over 20 different repair types for any one set on the new history file.

SECTION 3.3.3

REPAIR HISTORY UPDATE

DEFINITIONS

Selected Switches, Counters and Data Items Used in EMRPØ3

Switches, Counters Data Items	Use
SKIP-YEARTD-SW	Set on when next record on YTD file is not to be read.
MTD-EOF-SW	Set on when MTD file reaches an EOF condition.
YEARTD-EOF-SW	Set on when YEARTD file reaches an EOF condition.
YTD-REJECT-SW	Set on when YEARTD record set is over 2 years old.
TERM-SW	Set to a value of +2 when both input files are at an EOF condition.
REC-TEST-SW	Set to different values depending on the following conditions: MTD file = YEARTD file set to 0 MTD file YEARTD file set to 1 MTD file YEARTD file set to 2
REPAIR-TYPE-SW	Set on each time a new repair type is encountered in order to zero out cost counter.
MTD-HOLD-REC.	Work area for MTD header records.
MTD-HOLD-REC-2	Work area for MTD cost records.
YEARTD-HOLD-REC	Work area for YEARTD header record.

Switches, Counters Data Items	Use
YEARTD-HOLD-REC-2	Work area for YEARTD cost record.
YTD-HOLD-REC	Work area for new YEARTD records.
HEADER-SAVE-FLDS	Hold area for first 9 fields of each record.
TODAYS-DATE	Current date from system is placed here.
COST-HOLD-FLD	Costs for each repair type is totaled here.

SECTION 3.3.4

REPAIR HISTORY UPDATE

PARAGRAPH EXPLANATIONS

Program Concept

The following is a conceptualized idea of how the Repair Order 2 Year History program functions. It is not intended to be a detailed description of the program. It should be used as a guide when using the actual program listing and input data.

Paragraph Numbers	Function
X100	Initialization.
X200	Reads first record on both input files.
X203	Reads MTD file.
X205	Reads old YTD file.
X208	Sets repair-type-sw for write outline.
X210	Compares header records.
X215	Compares repair types.
X220	Checks for end of job condition.
X300	Displays normal termination message.
X303 - X309	Displays the different abort messages.
X310	Closes files.
X400 - X403	Checks for 2 year old records.
X410 - X413	Skips over 2 year old records on YTD file.

Paragraph Numbers	Functions
X450	Updates header record for new YTD file.
X470	Compares header records.
X500 - X503	Copies MTD record to YTD file.
X520 - X523	Copies YTD file.
X530 - X539	Writes YTD file from MTD records.
X550	Writes from YTD record.
X600	Adds costs from MTD records to YTD record.
X900 - X960	Input-Output routines.

SECTION 3.3.5

REPAIR HISTORY UPDATE

REPORT LAYOUTS

(Program produces totals only)

```
CUTPUT FOR EMRP03--YTD UPDATE
NORMAL JOB TERMINATION
MTD RECS READ 00267
OLD YTD RECS READ  00000
NEW YTD RECS WRITTEN00267
       END OF EMRP03
```

SECTION 3.4

REPAIR ACTIVITY PROGRAM

EMRP07

SECTION 3.4.1

REPAIR ACTIVITY PROGRAM

PROGRAM NARRATIVE

Repair Activity Program
Program Narrative

The Repair Activity Program will provide a detailed listing of maintenance and repairs for all vehicles or selected vehicles. The dates for repairs can be specified, and only those repairs performed during the specified time period will be listed. The two year history file will be used in most cases, but the month-to-date file can also be input, since both files are in the same format.

The program is run on request since a large amount of output is possible if all repairs are listed.

Additional narrative can be found in the program specifications.

SECTION 3.4.2

REPAIR ACTIVITY PROGRAM

PROGRAM SPECIFICATIONS

PROGRAM SPECIFICATIONS
Report Program EMRP07

Purpose

The purpose of this program is to provide a detailed maintenance and repair order listing for all vehicles or selected vehicles. Selection can take place on equipment number and dates of repairs.

System Input

1. Inventory Master File
2. Month-to-date Repair file or two year history file

System Outputs

1. Maintenance Repair Activity Listing

Processing

1. Read the parameter card to check what type of listing is being requested. The card looks as follows:

Position Number	Contents
1 - 6	EMRP07
7	Blank
8 - 13	Equipment # or Blank
14- 80	Blank

2. Edit the card for valid equipment. If field is blank, the entire report is to be generated.
3. Read the equipment inventory file.
4. Produce report headings prior to any detailed listings if necessary.
5. Move the following information from the inventory master.

A) Equipment

B) Chassis Make

C) Description

D) APWA Code

E) BILL Code

F) Date in Service

G) Expected Life

H) Current Meter

I) Meter Usage This Month

6. It is then necessary to compute the expected retirement meter reading and date. Using the date-in-service as the start date and the current meter reading (provided the meter failure flag hasn't been set) it is then possible to estimate the expected retirement figures based on an average to this date.
7. A routine is needed to determine month, year of retirement. This will compute number of months currently in service in order to estimate the final date. This routine should be kept as simple as possible and documented so that it may be used in other programs needing this type of computation.
8. Check the month-to-date repair file for a match on this vehicle. If a match is found, the individual repair order(s) must be listed.
9. For each repair on a vehicle, give the date of service, meter

reading, repair numbers and shop number only once.

10. List each individual work code separately with the description of each code coming from an internal table of descriptions.
11. List labor hours and cost, parts cost, commercial costs and total cost for each repair type (work code).
12. Produce a subtotal line with a single asterisk for each repair order.
13. Compute the monthly cost per meter unit and life-to-date cost per meter unit.
14. Produce a subtotal line with two asterisks for current month's costs.
15. Produce a subtotal line with four asterisks for life-to-date costs.
16. Go to Step 3.

SECTION 3.4.3

REPAIR ACTIVITY PROGRAM

DEFINITIONS

Selected Switches, Counters and Data Elements Used by EMRPØ 7

Switches, Counters Data Elements	Use
END-MAST-FILE-SW	1-Indicates the end of the master file has been reached.
END-MTD-FIL-SW	1-Indicates the end of the month-to-date repair order file.
ON-MASTER-SW	3-Indicates that the equipment number is not on the master file.
MTD-EQPNO-SAVEAREA	Hold area for the equipment number of the repair order month-to-date file.
MAST-EQPNO-SAVEAREA	Hold area for the equipment number of the Equipment Inventory master file.
MILES-IN-OPER-CM	Hold area for the number of miles the vehicle was in operation for the current month.
MTD-METER-PRTA	Hold area for first six digits of the mileage from the month to date file.
LAST-EQPNUM-WRTN	1-Indicates that the last equipment number has been processed and written out.
MSTR-MN-RECV	Hold area for the month the piece of equipment was received. This area is used in calculating the expected retirement meter and expected retirement date.
MSTR-DY-RECV	Hold area for the day the equipment was received This area is used in calculating the expected retirement meter and expected retirement date

Switches, Counters Data Elements	Use
MSTR-YR-RECV	Hold area for the year the equipment was received. This area is used in calculating the expected retirement meter and expected retirement date.
TDY-MON	Hold area for the current month which is used in calculating the equipment's expected retirement date.
TDY-DAY	Hold area for the current day.
TDY-YR	Hold area for the current year which is used in calculating the vehicles expected retirement date.
T-MON-4-YRS-REM	Hold area used in calculating exptected retirement meter and expected retirement date for vehicles.
T-MON-REM	Hold area used in calculating expected retirement meter and date.
T-NUMMON-USED SOFAR	Hold area used in calculating the expected retirement meter and date
T-NUM-USABLE-MON	Hold area used in calculating the expected retirement meter and date.
MULTIP-RESULT	Hold area used in calculating the expected retirement meter and date.
DIVISN-RESULT	Hold area used in calculating the expected retirement meter

Switches, Counters Data Elements	Use
	and date.
CRNT-METR-SPLITTER	Hold area for the current meter reading.
E-LIFE-N-MON	Hold area containing the estimated life of the vehicle in months.
E-LIFE-IN-MILES	Hold area containing the estimated life of the vehicle in miles.
E-LIFE-NMILES-BY-1000	Hold area which contains the estimated life in miles multiplied by 1000.
E-Life-N-HOURS	Hold area containing the estimated life of the equipment in hours.
E-LIFE-NHOURS-BY-100	Hold area which contains the estimated life in hours multiplied by 100.
WRKA-START-DATE	Hold area containing the starting period date which is used in checking the validity of the repair order date.
WRKA-ENDING-DATE	Hold area containing the ending period date which is used in checking the validity of the repair order date.
NO-COSTREC-FOUND	0-Indicates that a cost record for that particular repair order number was not found.
WRIT-HD5-HD6-AGN	1-Indicates that the header lines 5 and 6 should be written again.

Switches, Counters Data Elements	Use
	0-Indicates that writing of header lines 5 and 6 should be suppressed.
FIRST-COST-REC	1-Indicates that the first cost record for that repair order number is being processed.
READ-MAST-AGN	1-Indicates that the master file should be read again.
DO-NOT-READ-MAST	1-Indicates that reading of the master file should be bypassed.
REPR-TAB-SUB	Subscript used in accessing the Repair Type Table.
TOTCST-CNTR	Hold area for total cost of labor, parts and commercial costs.
SUBTOT-LABHRS	Hold area for total labor hours per vehicle.
SUBTOTCST-CNTR	Hold area for total costs per vehicle. That is labor, parts, commercial costs.
SUBTOT-LABCST	Hold area for total labor cost per vehicle.
SUBTOT-PRTCST	Hold area for total parts cost per vehicle.
SUBTOT-COMCST	Hold area for total commercial cost per vehicle.
FINLTOT-CST-CNTR	Hold area for life to date total cost per vehicle. Used in calculating cost per meter unit life to date.

Switches, Counters Data Elements	Use
TABL-EQPNUM-SAVE	Save area for the equipment number that is taken from the equipment number table.
FIRST-EQPNUM-SW	0-Indicates that the first equipment number on the month to date file has been read.
MTD-EQPNO-SAVEAREA2	Save area for the equipment number from the month to date file.
REPR-ORDNUM-SAVE	Save area for the repair order number.
REPR-ORDNUM-SAVE 2	Save area for the repair order number
PAG-NUMB-VALUE	Hold area for the page number of the listing.
TABLE-SWTCH1	Subscript used in building and searching the equipment number table. Also used in sorting the equipment number table.
PRNT-ALL-REPR-SW	1-Indicates that all repairs are to be printed.
END-BLD-EQP-TABL	0-Indicates that the equipment number table has been exceeded.
TABLE-SWTCH2	Hold area used in building and sorting the equipment number table.
SUBTOT-4DATALINE	Hold area for the vehidles total costs.
CHANGE-IN-RO-SW	0-Indicates that a new repair order for that particular vehicle is being processed.

Switches, Counters Data Elements	Use
CSTPERMETRUNIT-LTD	Hold area for the equipment's cost per meter unit life to date.
SRTTAB-INDEX1	Subscript used in sorting the equipment number table.
SRTTAB-INDEX2	Subscript used in sorting the equipment number table.
SRTTAB-END-SWTCH	1-Indicates the end of the sort of the equipment number table.
HEADERS-WRITTN-SW	0-Indicates that header lines 5 and 6 are to be written out before the next detail line.
HOLD-EQPMT-NUMB	Save area for the equipment number. This area is used in sorting the equipment number table.
SORT-TABLE-SW	1-Indicates that an equipment number table is presented and that it is to be sorted.
GOOD-REC-SWTCH	3-Indicates that the month to date record has a valid start date and will be processed.
SKIP-RO-SUB-SW	1-Indicates that processing of the current repair order read is to be bypassed.
DIVD-CRNT-METR	Hold area for the current meter reading of the equipment being processed. This area is used in calculating the expected retirement meter.

Switches, Counters Data Elements	Use
EXP-RETR-METR-CNTR	Hold area for the value of the expected retirement meter of the vehicle.
T-NUM-MN-USED	Hold area used in calculating the expected retirement date and meter of the vehicle.
TOT-MON-REM	Hold area used in calculating the expected retirement date and meter of the vehicles.
NUMB-MILES-REMAIN	Hold area used in calculating the expected retirement date and meter of the vehicle.
DAT4-MTD-COMP-MNTH	Hold area used in calculating whether the repair order date is valid for that particular run.
MASTR-LIN-WRITN	0-Indicates that the master data line has to be written.
TOTCST-LTD-CNTR	Hold area used in calculating the cost per meter unit life to date.
NO-SHOP-ACTIV-SW	1-Indicates that there is no repair activity for that vehicle.
LINE-COUNTR	Save area used in determining how many lines are written per page.
LIN-CNTR-TOT	Save area used in determining how many lines are written per page.
SHP-LIN2-SW	1-Indicates that the shortened data line of repair information is to be written.
SUBTOT-LIN-WRITTN-SW	1-Indicates that the sub-total cost for that particular repair order has been written.

SECTION 3.4.4

REPAIR ACTIVITY PROGRAM

PARAGRAPH EXPLANATIONS

PROGRAM CONCEPT

The following is a conceptualized idea of how the Maintenance and Repair Activity listing program functions. It is not intended to be a detailed document, but rather a reference to be used with the program specifications, the actual program listing and the input data.

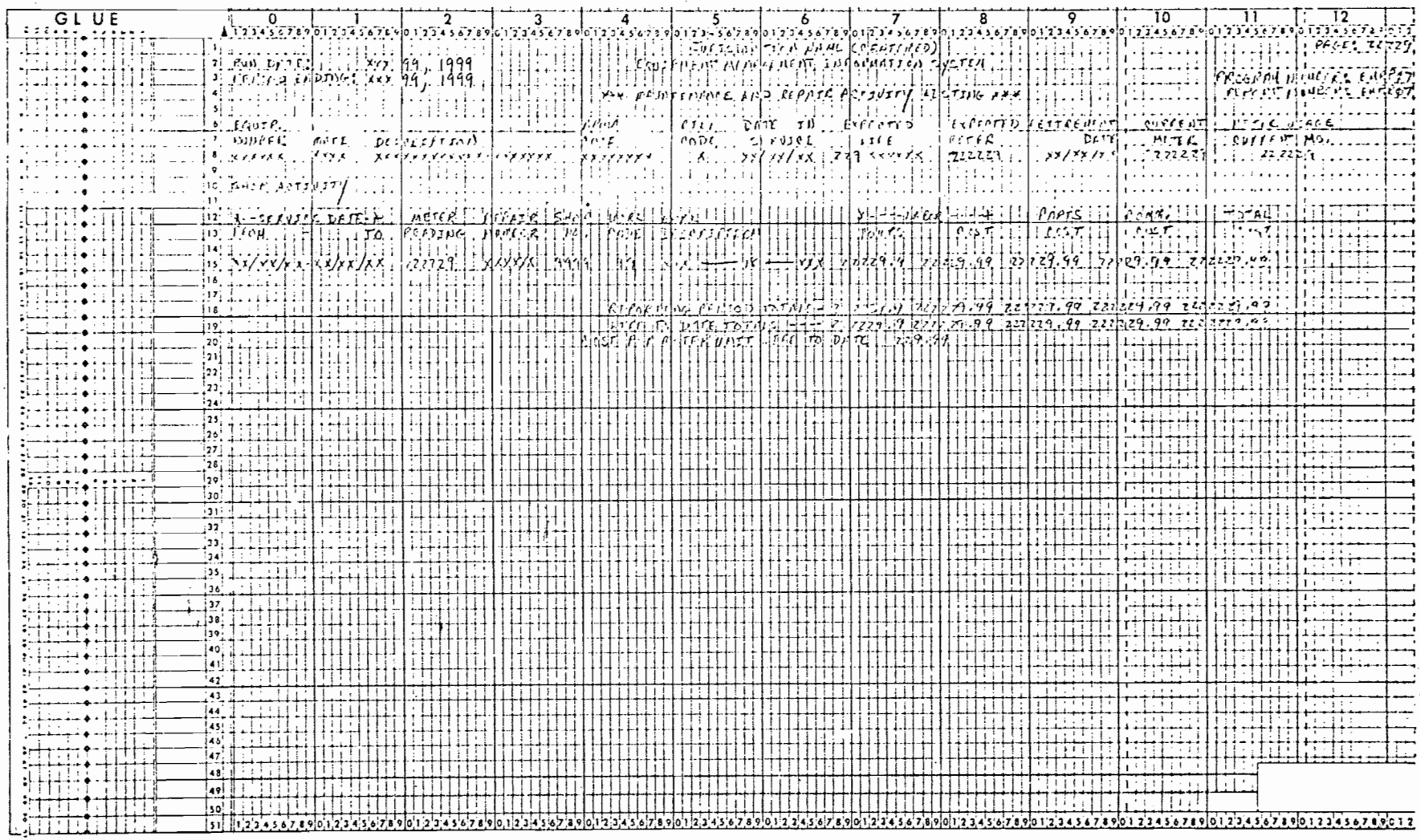
Paragraph Numbers	Function
X-100	Initialization Routine
X-200	Read and build the equipment number table if conditions warrant selection of certain vehicles, otherwise perform routines which list all repair orders on vehicles.
X-295	Messages displayed when an error condition occurs.
X-399	END OF JOB.
X-400	Starting and ending period dates moved to hold areas.
X-420	Routines involving the procedures to list all activity for the given time period.
X-445	Routine to build data line of master record information.
X-450	Routines to list out selected vehicles that had or did not have activity against them in the given time period.
X-470	Routines designed to compute the expected retirement meter.
X-485	Routines designed to check whether the repair order date falls within the allotted time period, i.e., between the starting period and ending period date.

Paragraph Numbers	Function
X-490	Routine to calculate the cost per meter unit life to date.
X-492	Routines which display those vehicles which do not appear in the master file or in the month-to-date file.
X-495	Routines to write out total lines when a new equipment number is encountered.
X-496	Routine to add totals for new repair orders that are encountered.
X-500	Routine to build the equipment number table from those selected.
X-501	Routine to sort the equipment number table in ascending order.
X-700	Various routines used to write header lines and data lines.
X-900	Input-output subroutines
X-980	Opening and closing of input and output files.

SECTION 3.4.5

REPAIR ACTIVITY PROGRAM

REPORT LAYOUTS



SECTION 3.5

REPAIR SHOP PERFORMANCE

EMRP11

SECTION 3.5.1

REPAIR SHOP PERFORMANCE

PROGRAM NARRATIVE

Repair Shop Performance
Program Narrative

This program will produce a summary report of shop performance based on actual data accumulated from repair orders for the month. It also maintains a shop history for the previous year so that comparisons can be made for showing trends in shop performance.

Data for the current period is compared against last period, and this year-to-date totals are compared against last year-to-date totals. Upon reviewing the information provided by this report the fleet manager may request detailed information from the repair activity program.

Additional narrative may be found at the start of the program specifications.

SECTION 3.5.2

REPAIR SHOP PERFORMANCE

PROGRAM SPECIFICATIONS

PROGRAM SPECIFICATIONS - REPORT PROGRAM EMRP11

Purpose:

The purpose of this program is to produce a shop performance report comparing this period with last period and this year to date with last year to date.

Processing:

There are three (3) inputs to this program:

1. Month-to-date repair order file - sorted in ascending order on facility number and repair order number.
2. Old report history file - sorted in ascending order on facility number, file not present on first run of program.
3. Parameter Cards - of which there are 2 types
   A. Date card - which is edited in the following manner:

Card Column(s)	Contents
1-6	EMRP11
7	Blank
8-9	Month (99)
1Ø	"/"
11-12	Day (99)
13	"/"
14-15	Year (99)
16-8Ø	Blank

The month is used to determine the month that is being up dated.

B. The following card (s) contain the shop number and number of employees in each shop. They are in the following format:

Ten groups of 7 digits each cols 1-4

shop number, cols 5-7 number of employees.

There can be more than one (1) card containing this information. The only change needed to program is to change the table size, which is now 10.

Each record on the old report file contains 2ØØ characters and each record is used to generate one (1) line of the report. Each change in facility number (shop number) creates a new page of the report.

During processing, there are three (3) possibilities that may arise during the up-dating procedure. They are:

1. A match exists between the facility numbers on the old report file and the month to date RO file.
2. A record exists on the old report file but not on the month to date RO file.
3. A record exists on the RO file but not on the old report file.

If there is an old report file as input, the first record is checked to make sure that the pointer for the month field on the record is one (1) less than the month on the date card. If this test fails, the job is aborted and the following message is printed out:

LAST UP DATE WAS (alphabetic name of month)
UP DATE BEING PERFORMED IS (alphabetic name of month)
JOB TERMINATED

If the test passes, processing continues in the following manner:

MATCH ON BOTH FILES

The month to date RO file is read in order to obtain all the repair orders for the facility. While obtaining the RO's, the following totals are gathered:

1. Labor hours
2. Expenditures - labor, parts, commerical, total
3. Work performed - number of unique RO numbers, P. M's road calls, emergency repairs, scheduled and unscheduled repairs, number of times turn around time was accomplished in 24 hours or in 24 to 48 hours.

After all the totals have been accumulated, the processing of the report file begins.

COMMON ENTRY POINT

1. The contents of the month field (pointer) is moved to the last period field of the report line.
2. Pointer is increased by one (1) and moved to pointer. This happens only the first time a record is read.
3. The contents of month field (pointer) is added to the last year-to-date field of the record.
4. The current information is added to this year-to-date field of the record.
5. The current information is added to this year-to-date field (pointer).
6. The following information is moved to the report line:
    a. Current information to this period field
    b. Last year-to-date to last-year field
    c. This year-to-date to this-year field
7. A report line is printed.
8. An updated record is written on the report file and 1 line of report is written.
9. Obtain next record from old report file if present. If facility number is the same as previous record, program goes back and starts over at COMMON ENTRY POINT of the program. If it is different control goes back to MATCH ON BOTH FILE section of program.

INFORMATION ON OLD FILE AND NO MATCHING RECORDS ON MTD - FILE

This is the second condition that can be run across during program processing. In this instance, all total fields for this period are zeroed out. Processing then goes to the COMMON ENTRY POINT of the program. The MTD record that was read is saved until a new facility number is found, then records are compared again.

INFORMATION ON MTD FILE WITH NO MATCH ON REPORT FILE

This is the last condition that can be encountered when processing the two files. When this condition arises, the old history file that was read is saved. A new report record is created for each line of the report. The facility number and pointer are moved to their respective fields on the new record. The pointer is calculated by subtracting 1 from the month that was on the parameter card. All the rest of the fields are zeroed out on each record. Processing then goes to the COMMON ENTRY POINT of the program. Processing continues until a new facility number is encountered. At this point the records are compared again.

SECTION 3.5.3

REPAIR SHOP PERFORMANCE

DEFINITIONS

SELECTED SWITCHES, COUNTERS AND DATA ELEMENTS USED BY EMRP11

Switches, Counters Data Elements	Use
Page - cnt	Page number accumulator.
RO-cnt	Determines number of unique repair orders per set.
PM-cnt	Determines number of PM repair orders per set.
RDCALL-CNT	Determines number of road calls per set.
SCHD-CNT	Determines number of scheduled repairs per set.
UNSCHD-CNT	Determines number of unscheduled repairs per set.
LABOR-COST	Accumulator for labor costs per set.
PARTS-COST	Accumulator for parts costs per set.
COMM-COST	Accumulator for commercial costs per set.
AVE-LR-HRS	Accumulator for average labor hours per set.
AVE-COST	Accumulator for average costs per set.
PER-CENT	Used in final percentage work finished in 24 or 24 to 48 hours.
EMER-CNT	Determines number of emergency repair orders per set.
RECS-RD-OLD-CNT	Counts number of old history records read.

Switches, Counters Date Elements	Use
RECS-RD-MTD-CNT	Counts number of month-to-date records read.
RECS-PRT-CNT	Counts number of records written on new file.
Parm-cnt	Counts number of parameter cards read.
HRS-24-CNT	Counts number of repairs finished in 24 hours.
HRS-48-CNT	Counts number of repairs finished in 24 to 48 hours.
LABOR-HRS	Accumulator for labor hours per set.
Ave-LR-TYD	Determines average labor hours per repair order for current year.
AVE-LR-LYD	Determines average labor hours per repair order for past year.
TOTAL-COST	Accumulator for total costs per set.
AVE-COSTT	Determines average cost per repair order for current year.
AVE-COSTL	Determines average cost per repair order for past year.
POINTER-SUB	Determines month to be updated.
POINT-SUB	Determines last month updated.
TABLE-SUB	Parameter card subscript.
TAB-SUB	Used to build facility table.
FAC-SUB	Used to search facility table.
HIST-EOF-SW	Set on when old history file is at an end of file condition.

Switches, Counters Date Elements	Use
MTD-EOF-SW	Set on when month-to-date file is at end of file condition.
NORM-TERM-SW	Set to 2 when both input files are at end of file conditions.
ABORT-SW	Set on when an abort condition is met.
NO-MTD-SW	Set on when month-to-date file is not to be read.
HIST-READ-SKIP-SW	Set on when history file is to be bypassed.
NEW-YEAR	Set to user organization's beginning fiscal year.
RO-TEST-NUM	Used in determining number of unique repair orders.
HIST-REC-In	History record is read into this area.
HIST-REC-OUT	New history record is written from this area.
MTD-Record	Month-to-date file is read into this area.
HIST-SAVE-AREA	Hold area for history record.

SECTION 3.5.4

REPAIR SHOP PERFORMANCE

PARAGRAPH EXPLANATIONS

Program Concept Detail Information:

The following is a conceptualized idea of how the shop performance report program functions. It is not intended to be a detailed document, but rather a reference to be used with the program specifications, the actual program listing, and the input forms.

Paragraph Numbers	Function
X 100	Initialization
X 200	Sets header date
X 205	Reads history file
X 210	Reads month-to-date file
X 215	Compares records of both files
X 220	Matched record routine
X 300	Abnormal job termination routine
X 310	Normal job termination routine
X 315	End of job heading routines
X 400	New report from month-to-date file
X 420	Copy old history file records
X 450-X 465	Common month-to-date record processing routine
X 500-X 552	Report writing routine
X 600	Heading routine
X 650	Sub-heading routine
X 660	Average hour routine
X 665	Average cost routine
X 700-X-715	Parameter card edit routine
X 730-X 735	Pointer check routine
X 750	Common write routine
X 800-X 805	Table search routine
X 900-X 990	Input-output routines

SECTION 3.5.5

REPAIR SHOP PERFORMANCE

REPORT LAYOUTS

RUN DATE: DEC 20, 1995
PERIOD ENDING: DEC 20, 1995

METROPOLITAN DADE COUNTY
PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM
SHOP PERFORMANCE REPORT

PAGE: 9999
PROGRAM NUMBER: EMMR11
REPORT NUMBER: EMRR11

SHOP NUMBER - 9999 *****

ITEM	THIS PERIOD	LAST PERIOD	THIS YEAR TO DATE	LAST YEAR TO DATE
NO OF EMPLOYEES	99 — 99	99 — 99	N/A	N/A
LABOR HOURS	99 — 99	99 — 99	99 — 99	99 — 99
EXPENDITURES ($)				
LABOR	$999 — 99.99	$999 — 9.99	$99 — 9.99	$99 — 9.99
PARTS	$999 — 99.99	$999 — 9.99	$99 — 9.99	$99 — 9.99
COMMERCIAL COSTS	$999 — 99.99	$999 — 9.99	$99 — 9.99	$99 — 9.99
TOTAL	$999 — 99.99	$999 — 9.99	$99 — 9.99	$99 — 9.99
WORK PERFORMED				
REPAIR ORDERS	99 — 99	99 — 99	99 — 99	99 — 99
PM INSPECTIONS	99 — 99	99 — 99	99 — 99	99 — 99
ROAD CALLS	99 — 99	99 — 99	99 — 99	99 — 99
SCHEDULED REPAIRS	99 — 99	99 — 99	99 — 99	99 — 99
UNSCHEDULED REPAIRS	99 — 99	99 — 99	99 — 99	99 — 99
EMERGENCY REPAIRS	99 — 99	99 — 99	99 — 99	99 — 99
PERFORMANCE STATISTICS				
AVE. LAB. HR. / RO	99 — 99	99 — 99	99 — 99	99 — 99
AVE. $ / RO	$99 — 9.99	$99 — 9.99	$99 — 9.99	$99 — 9.99
% COMPLETED IN 24 HRS.	9 — 9	9 — 9	N/A	N/A
% COMPLETED 24-48 HRS.	9 — 9	9 — 9	N/A	N/A

3.5.5-1

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SECTION 3.6

REPAIR SHOP PERFORMANCE BY TYPE OF REPAIR

EMRP12

SECTION 3.6.1.

REPAIR SHOP PERFORMANCE BY TYPE OF REPAIR

PROGRAM NARRATIVE

Shop Performance by Type of Repair
Program Narrative

This program produces a more detailed report of shop performance based on the type of repairs performed in the shop. There is a summary of each repair type per shop so that additional comparisons may be made between shops.

The current months data for each shop is used to update the report history file and comparisons are made between the current period and last period. There is also another comparison between this year-to-date and last year-to-date so that trends may be identified by the equipment manager and possibly the shop foreman.

Additional narrative may be found at the start of the program specifications.

SECTION 3.6.2

REPAIR SHOP PERFORMANCE BY TYPE OF REPAIR

PROGRAM SPECIFICATIONS

PROGRAM SPECIFICATIONS

SHOP PERFORMANCE BY REPAIR TYPE REPORT GENERATOR
(REPORT EMRR 12)

Purpose:

The program is used to produce a Shop Performance by Repair Type Report. It used the month-to-date Repair Order File to update the report history file. Besides producing a printed report, it also provides an updated report history file.

Inputs:

There are three (3) inputs to this program.

1. Repair Order Month-to-Date File

Sorted in the following ascending order:

Column	Item
30-33	Facility number
14-15	Repair type
7-12	Repair order number

2. Old Report History File.

The history file is in the same order except there is no repair order number.

3. Card Input.

A control card giving the month that is to be updated. It is in the following format:

Column	Item
1-6	EMRP12
7	Blank
8-13	Date 'MM/DD/YY'
14-80	Blank

Output:

1. Updated Report History File.

2. Printed Report

   Three repair types per page, in addition a new page is started when there is a change in shop number.

Processing:

On the month-to-date file there may be multiple records having the same repair type within a group of records having the same facility number, which is known as a "repair group'. The report history file contains only one (1) record for each repair type for each shop number.

Updating Procedure:

The first step in the program that is accomplished after the files are opened is to verify that the contents of the pointer of the first old report history record is one (1) less than the month on the parameter card that was read in. If this test fails, the following messages are printed out:

LAST UPDATE WAS (alphabetic name of month)

UPDATE BEING PERFORMED IS (alphabetic name of month)

JOB TERMINATED

If the verification of the month was accomplished satisfactorily, mainline processing can now be started

First all the type-1 (header record) records for the month-to-date file are bypassed. Upon encountering the first type-2 (cost record) records, the program assumes all the rest of the records on the file are cost records.

There are three conditions that can be encountered after the comparison of records on the two files:

1. A match exists between a record on the old report history files and a record on the month-to-date file. (Match is based on facility number and repair type only.)

2. Record is on the old report history file but not on the month-to-date file.

3. Record is on the month-to-date file but not on the old report history file.

1. MATCHED RECORDS:

For each "repair group" on the month-to-date (excluding any cost records in which the day position in the date-completed field contains 'XX', this file correcting record is processed differently as will be explained later) the records are processed as follows:

A. The number of unique repair order numbers is totaled.

B. For each unique repair order, if the work class is equal to 'X' (a scheduled repair), one (1) is added to a work class counter.

C. Labor costs, parts costs, commercial costs and labor hours are totaled separately.

After the totals for the "repair group" is accumulated, the old report history file is updated as follows:

A. The contents of the history file pointer is used as an index to the previous month in the months table of each record to move

the appropriate month's information to the previous month field on the print line. Only after the first read, another pointer is set to one (1) more than the history file pointer.

P. If the history pointer is equal to twelve (12), the THIS-YEAR-TO-DATE and LAST-YEAR-TO-DATE fields on the history record are zeroed out, and the updated pointer is set to one (1).

C. The contents of the month field (pointer) is added to the LAST-YEAR-TO-DATE field.

D. The new total for the current data is moved to the month field (updated pointer) on the history record and to the current period data field on the print line.

E. The new total is also added to the THIS-YEAR-TO-COME DATE field on the history record.

F. The contents of the month field (pointer) is moved on the print line.

G. The contents of the THIS-YEAR-TO-DATE and LAST-YEAR-TO-DATE fields are moved to their respective fields on the print line.

H. A new history file record is written along with a report line.

I. Processing now returns to the comparing of records routine to start the cycle over again.

This next section explains how file correcting records from the month-to-date file are processed. The month and year in the date-completed field of the record indicates the period that is to be corrected.

If the year is equal to the present year, the original pointer field is saved and the month on the record is used as the pointer to add the costs to the correct month on the history record and to the THIS-YEAR-TO-DATE field.

If the year on the month-to-date record is for the previous year and the month is greater than the month that is currently being updated, the pointer is saved and reset to the transaction month allowing the costs to be added to the correct month's field.

If the correction is for the previous year and the transaction month is less than the update month, the costs are added only to the LAST-YEAR-TO-DATE field on the history record.

After a file correcting transaction has been processed, the program resumes to the normal processing of records.

2. RECORD ON HISTORY FILE BUT NOT ON MONTH-TO-DATE FILE:

The same processing takes place for this situation as when there is a match between records on the two files,

except that the month field (updated pointer) on the history file is zeroed out and zeros are moved to the THIS-PERIOD field on the print line.

3. RECORD ON MONTH-TO-DATE FILE BUT NOT ON HISTORY FILE:

In this situation a new history record is created from the month-to-date file. First all the fields on the history are zeroed out. Then the shop number and repair type from the month-to-date record are moved to their respective fields on the print line and new history record. The update run month is moved to the history pointer field and is used as the index for the updating procedures which are the same as in the matched records condition.

SECTION 3.6.3

REPAIR SHOP PERFORMANCE BY TYPE OF REPAIR

DEFINITIONS

SELECTED SWITCHES, COUNTERS AND DATA ELEMENTS USED BY EMRP12

Switches, Counters Data Elements	Use
TAB-SUB	Subscript for Update-cost-table.
READ-SUBSC	Subscript for Repair-type-table.
CRNT-MON-MINUS-1	Used to check for valid updating month.
POINTTR	Subscript for last month's data.
POINTR	Subscript for current month's data.
CHANGE-YR	Denotes the month that is the end of user fiscal year.
MTD-RO-EOF-SW	Denotes end-of-file status of repair order file.
OLD-REPHIST-EOF-SW	Denotes end-of-file status of old history file.
NO-MTD-FILE-SW	Used to skip reading the month-to-date file when old history file is being copied and the matched records routine is encountered.
NORM-TERM-SW	Signals that the normal termination steps are to be taken.
SKIP-HIST-RD-SW	When new history records are being created from MTD file, switch is used to by-pass the read statement in the OUT-IN routine.

Switches, Counters Data Elements	Use
TOTAL-UNIQ-RO	Grand total counter for unique repair order numbers.
SEP-TOT-UNIQ-RO	Counter for number of unique repair order numbers per repair group.
SEP-TOT-LAB-CST	Counter for labor cost for each repair group.
SEP-TOT-PRT-CST	Counter for parts cost for each repair group.
SEP-TOT-OUTSD-CST	Counter for commercial cost for each repair group.
SEP-TOT-LAB-HRS	Counter for labor hours for each group.
ROS-READ	Total of repair orders read.
RPTHIST-RECS-READ	Total of old history records read.
RPTHIST-RECS-WROTE	Total of new history records written.
SEP-TOT-WK-CL	Total number of schedule repair accomplished.
PRINT-CNT	Allows 3 history records to be printed per page.
GRAND-TOT-THIS	Total of all costs for repair group and updates the last history record of each group.
HOLD-AREAS	Temporary save areas.
UPDATE-COST-TABLE	Used with file correcting transactions.
WRKA-MTD-COST-REC	Month-to-date records are read into this work area.
MONTH-TABLE	Contains alphabetic names of months.

Switches, Counters Data Elements	Use
DATE-HOLD-AREA	Reformats current date and parameter date.
WRKA-REPORT-HIST-RECI	Work area for history records.
PARM-IN	Parameter cards work area.

SECTION 3.6.4

REPAIR SHOP PERFORMANCE BY TYPE OF REPAIR

PARAGRAPH EXPLANATIONS

Program Concept:

The following is a conceptualized idea of how the shop performance by repair type program functions. It is not intended to be detailed document, but rather a reference to be used with the program specifications and the actual program listing.

Paragraph Number	Function
X-100	Initialization.
X-200	Reads parameter card and sets header date.
X-205	Reads old history file.
X-210	Reads month-to-date file.
X-215	Compares records and performs the appropriate functions from compared results.
X-300	Writes abort messages and terminates program abnormally.
X-310	Writes program totals and terminates program normally.
X-400	Builds new record from month-to-date file.
X-425	Copies old history records to new history file.
X-450 - X-459	Performs matched records function.
X-500 - X-536	Format report lines.
X-600 - X-606	File correcting transaction routine.
X-650	Heading routine.
X-700	Writes report lines, writes new history records and, when necessary, reads old history file.

Paragraph Number	Function
X-800	Checks for correct update month.
X-875 - X-880	Clears counters and sets switches.
X-890	Clears table.
X-905 - X-951	Input/Output routines.

SECTION 3.6.5

REPAIR SHOP PERFORMANCE BY TYPE OF REPAIR

REPORT LAYOUTS

RUN DATE: DEC 20, 1975
PERIOD ENDING: DEC 20, 1975

PTI/APWA

METROPOLITAN DADE COUNTY
EQUIPMENT MANAGEMENT INFORMATION SYSTEM

*** SHOP PERFORMANCE ANALYSIS BY TYPE OF REPAIR ***

PAGE: 999
PROGRAM NUMBER: EMRP12
REPORT NUMBER: EMRR12

SHOP NO - 9999

REPAIR TYPE - 99 ***
XX —— XX

	THIS PERIOD	LAST PERIOD	THIS YEAR TO DATE	LAST YEAR TO DATE
REPAIR ORDERS				
TOTAL	99 —— 99	99 —— 99	99 —— 99	99 —— 99
SCHEDULED	99 —— 99	99 —— 99	99 —— 99	99 —— 99
LABOR HOURS	99 —— 99	99 —— 99	99 —— 99	99 —— 99
REPAIR COSTS				
LABOR	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99
PARTS	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99
COMMERCIAL	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99
TOTAL	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99

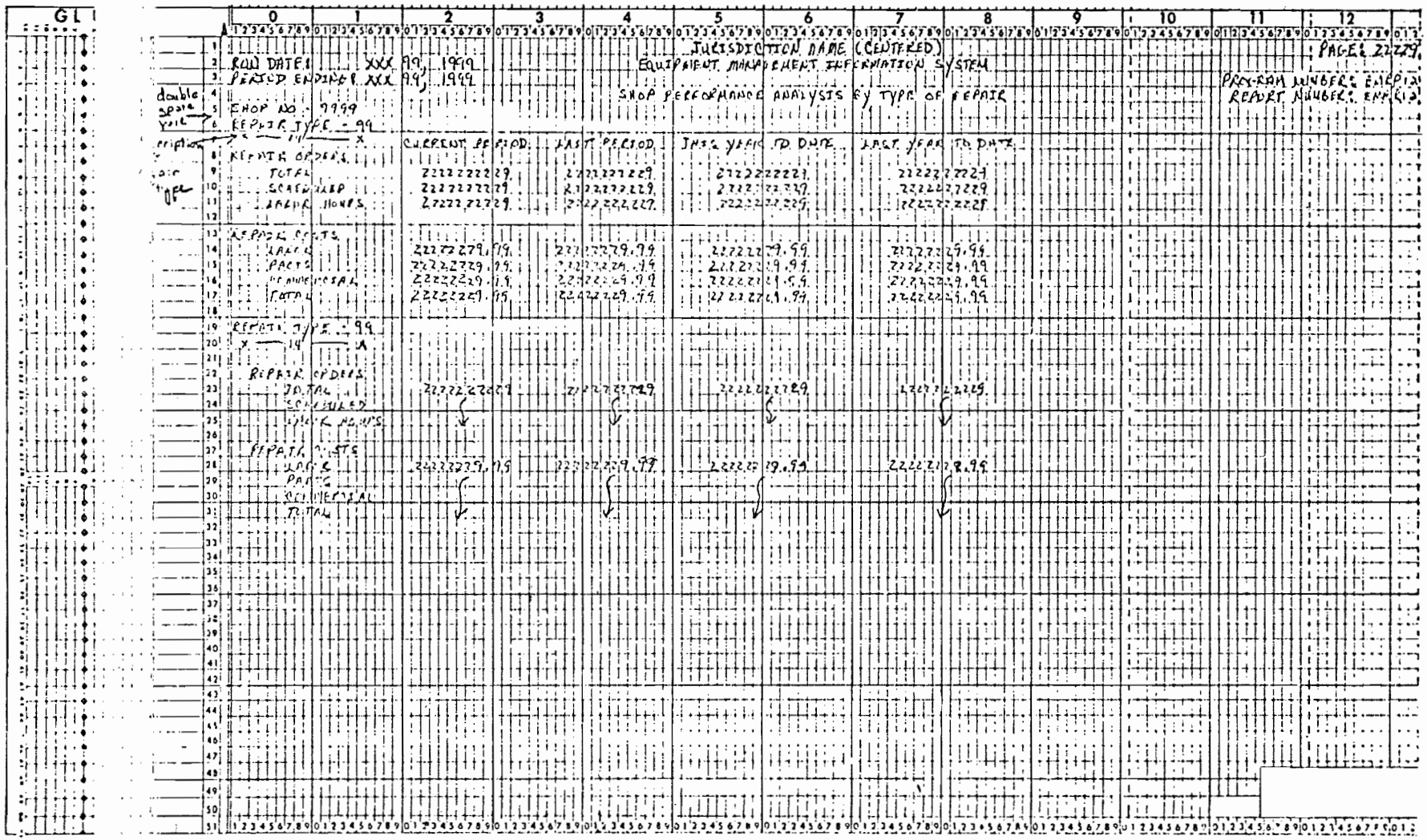
REPAIR TYPE - 99 ***
XX —— XX

	THIS PERIOD	LAST PERIOD	THIS YEAR TO DATE	LAST YEAR TO DATE
REPAIR ORDERS				
TOTAL	99 —— 99	99 —— 99	99 —— 99	99 —— 99
SCHEDULED	99 —— 99	99 —— 99	99 —— 99	99 —— 99
LABOR HOURS	99 —— 99	99 —— 99	99 —— 99	99 —— 99
REPAIR COSTS				
LABOR	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99
PARTS	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99
COMMERCIAL	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99
TOTAL	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99

REPAIR TYPE - 99 ***
XX —— XX

	THIS PERIOD	LAST PERIOD	THIS YEAR TO DATE	LAST YEAR TO DATE
REPAIR ORDERS				
TOTAL	99 —— 99	99 —— 99	99 —— 99	99 —— 99
SCHEDULED	99 —— 99	99 —— 99	99 —— 99	99 —— 99
LABOR HOURS	99 —— 99	99 —— 99	99 —— 99	99 —— 99
REPAIR COSTS				
LABOR	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99
PARTS	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99
COMMERCIAL	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99
TOTAL	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99	$99 —— 9.99

*Number of forms per pad may vary slightly



SECTION 3.7

REPAIR SHOP REPORT BY CAUSE OF REPAIR

EMRP13

SECTION 3.7.1

REPAIR SHOP REPORT BY CAUSE OF REPAIR

PROGRAM NARRATIVE

Shop Report by Cause of Repair
Program Narrative

The Cause of Repair program takes current period repair order data and produces a comparison report on the cause of repairs. This report can be used by the equipment manager to identify problems that his shop may be experiencing. Excessive breakdowns, too many road calls and others would be indicated on this report.

Comparisons are made between this period and last period, and this year-to-date and last year-to-date to aid in showing trends that may be developing.

Additional narrative may be found at the beginning of the program specifications.

SECTION 3.7.2

REPAIR SHOP REPORT BY CAUSE OF REPAIR

PROGRAM SPECIFICATIONS

CAUSE OF REPAIR REPORT

PROGRAM SPECIFICATIONS

I. Inputs

A. Month-to-date Repair Order File (EMRFØ 6)

Sorted ascending in the following order:

Column	Item
22-29	APWA Code - This is a variable field (program is set for first 2 digits only)
1-13	Equipment number, Repair Order number, Record type.

B Old Report History File (EMRF17)

II. Outputs

A. New Report History File (EMRF17) 500 by the records.

B Printed Report.

III. Processing

The first action taken after the files are opened is to read a date card containing the following information, which is edited by the program:

Column	Item
1-6	EMRP13
7	Blank
8-9	Month
10	Slash
11-12	Day
13	Slash
14-15	Year
16-80	Blank (not edited)

If the control card does not pass the edit the program ends processing at that point. Once the control card passes the edit, the first

record on the old report history file (if not the first time program is run) is read in order that the month update pointer can be compared to the month on the control card.

If the pointer is not one (1) less than the control card month, the following message is printed out and processing stops at this point:

LAST UPDATE WAS (alphabetic name of month)
JOB TERMINATED

Normal processing begins if the correct month is being processed.

There are three (3) logical circumstances that the program can run across during monthly processing, which are:

1.) A match is found between records on the old report history file and the month-to-date repair file.

2.) A record exists on the old report history file and there is no matching record on the month-to-date repair file.

3.) A record exists on the month-to-date repair file and there is no matching record on the old report history file.

The remaining portion of this section explains how the program handles the above three (3) mentioned conditions.

"I" Processing - Match on both files.

Step 1 - All repairs for the matched APWA code are obtained for the current period, and for each cause of repair found, totals are accumulated for the following 3 items -

number of repairs
labor hours
labor cost

Step 2 - The class totals are added to the class total accumulators on the record.

Step 3 - The prior month's totals are moved to the last period print line location and into a work table.

Step 4 - Last years totals for the current month are added to the last year-to-date fields and move into a work table.

Step 5 - The last-year-to-date totals are moved to the work table and to the appropriate print line positions.

Step 6 - The current information is moved to the current months entry on the history record and print positions.

Step 7 - The current information is added to this-year-to-date fields.

Step 8 - This-year-to-date fields are moved to the print line.

Step 9 - The percentages for the current period and this-year-to-date are calculated in the following manner:

a) Current month field on the record (there are 3) are divided by the appropriate class total for that field (# repair orders, cost, labor hours).

b) Each this-year-to-date field (there are 3) is divided by its running total.

Step 10 - Line of report is printed and a new history record is written.

Each cause of repair has two print-lines and history records associated with it. The first record contains the different totals for each of the 3 report items.

The second record contains the information needed to find the percentages for the second line of the report. The rest of this section deals with the second record in the group.

Step II - The current class-totals are moved to the current-month field on the record.

Step 12 - The 6 percentages found in STEP 9 are now moved into the correct print positions.

Step 13 - The last-year-to-date totals that were moved into the work table in STEP 5 are moved into the last-year-date fields of the second record.

Step 14 - The percentages for last-period and last-year-to-date are now calculated in the following manner:

a) Last period information that was moved into the work table in STEP 3 is divided by the information in the prior months field on the record.

b) Last-year-to-date information that was moved into the work table in STEP 4 is divided by the last-year-to-date information on record 2.

Step 15 - The percentages found are moved to the correct print positions, then a line is printed and a new history record is written.

"2" Processing - Record exists on history file with no match on history file.*

Step 1 - The current history record that was read is moved to a hold area.

Step 2 - All total fields on the history record are zeroed out so as to build a new record.

Step 3 - Processing continues at type "I" processing's Step 2.

---

*In this condition, no old history record is read after the first line of report is printed as is the case when a match if found or as in "2" processing.

SECTION 3.7.3

REPAIR SHOP REPORT BY CAUSE OF REPAIR

DEFINITIONS

PROGRAM DEFINITIONS

SELECTED SWITCHES, COUNTERS AND DATA ITEMS

Selected Switches, Counters and Data Items	Use
APWA-FSTZ	Test area for APWA class.
RPR-NO-HOLD	Repair Order number test area.
POINTR	Pointer for current month being updated.
PNTR-1	Pointer for prior month that was updated.
MTD-EOF-SW	Repair Order file end-of-file switch.
RPRT-EOF-SW	History file end-of-file switch.
PARM-EOF-SW	Parameter card end-of-file switch.
SKIP-OLD-FILE-SW	Bypasses read statement for old history file in certain circumstances.
TERM-SW	Signals program to end when all data is processed.
MTD-RECS-IN	Counts number of MTD repair records read
RPRT-RECS-IN	Counts number of old history records read.
RPRT-RECS-OUT	Counts number of new history records written.
LINE-CNTR	Counts number of lines printed per page.
MAX-LINES	Set to a value of 32 lines per page (counts every 2 lines as 1)

Selected Switches, Counters and Data Items	Use
NAME-TABLE	Contains alphabetic names of repair causes.
REASON-IN-TABLE	Contains valid reason-in repair characters.

SECTION 3.7.4

REPAIR SHOP REPORT BY CAUSE OF REPAIR

PARAGRAPH EXPLANATIONS

PARAGRAPH EXPLANATIONS

Program Concept

The following is a conceptualized idea of how the Cause-of-Repair program functions. It is not intended to be a detailed document, but rather a reference to be used with the program specifications, the actual program listing and the input forms.

Paragraph Numbers	Function
1ØØ-INIT	Open files, edits control card and clears counters.
2ØØ-OLD-FILE-FST-RD	Obtains first record on old file (if any) and tests to insure proper update is taking place.
21Ø-BEGIN-NORMAL-PROCESSING	APWA table is loaded and main processing begins at this point.
215-OBTAIN-MTD	First read of month-to-date repair order file.
22Ø-TEST-RECS	Main test for matched records (APWA).
225-RECORDS-EQUAL	Actual comparing of repair cause types accomplished here.
23Ø-PREPARE-REPORT	Finishes reading old history file after all MTD records for matched APWA class has been processed.
3ØØ-INVALID-UPDT	Aborts job for improper update.
31Ø-NORMAL-TERMINATION	Prints out totals for records processed by an update
32Ø-ABORT-EXIT	Paragraph 3ØØ-INVALID-UPDT jumps to this point. Normal termination falls thru closes files and ends program.
4ØØ-PRNT-FROM-TAB THRU 4ØØ-EXIT	Prints information from internal table when old file hits another APWA class and there is still information from MTD repair file for old matched APWA class.

Paragraph Numbers	Function
425-ADD-NEW-REC THRU 425-EXIT	Adds new APWA class to file when there is no match on old file or no old file exists.
45Ø-COPY-OLD-REC THRU 45Ø-EXIT	Copies old file APWA class when MTD APWA class is greater than old file.
5ØØ-APWA-TOTALS THRU 5ØØ-EXIT	Accumulates totals from MTD repair file for each APWA class.
52Ø-ADD-NEW-CAUSE THRU 52Ø-EXIT	Adds another record to new file for a repair cause from MTD file if there is no corresponding repair cause on old file.
53Ø-COPY-OLD-CAUSE THRU 53Ø-EXIT	Copies repair cause from old history file if there is no corresponding cause on the MTD file.
54Ø-SET-HEADINGS THRU 54Ø-EXIT	Sets up headings with proper APWA code and description.
55Ø-PRINT-RTN THRU 55Ø-EXIT	Updates the history file, writes new history records and prints report.
6ØØ-IO-RTN THRU 6ØØ-EXIT	Performs the actual I/O routines.
65Ø-CLR-CNTRS THRU 65Ø-EXIT	Zeros out counters after each APWA class is finished.
7ØØ-HEADING-RTN THRU 71Ø-EXIT	Prints heading information.
72Ø-FIND-CAUS-TYPE THRU 72Ø-EXIT	Finds repair cause type using the MTD repair file.
73Ø-FIND-APWA-DESC THRU 73Ø-EXIT	Finds APWA code description from APWA class code.
75Ø-CLEAR-YEAR-TOTS THRU 75Ø-EXIT	Clears year-to-date fields on history record when new year begins.
8ØØ-FIND-REASON-NAME THRU 8ØØ-EXIT	Finds repair cause description and places it in print line.

Paragraph Numbers	Function
81Ø-LOAD-APWA-TABLE THRU 81Ø EXIT	Reads APWA file and builds internal APWA table.
875-EDIT-CARD THRU 875-EXIT	Reads and edits program control card. Calculates correct month pointer for the update.
9ØØ-OPEN-FILES THRU 99Ø-EXIT	Handles all the actual I/o operations.

SFCTION 3.7.5

REPAIR SHOP REPORT BY CAUSE OF REPAIR

REPORT LAYOUT

CARRIAGE CONTROL TAPE CHAN

METROPOLITAN DADE COUNTY
RUN DATE: XXX 99, 1999 — PTI/AMSA EQUIPMENT MANAGEMENT INFORMATION SYSTEM — PAGE: ZZZZ9
PERIOD ENDING: XXX 99, 1999 — XXX CAUSE OF REPAIR REPORT XXX — PROGRAM NUMBER: EMRR13
REPORT NUMBER: EMRR13

AMSA CLASS CODE - XX - XXXXXXXXXXXX

CAUSE OF REPAIR	THIS PERIOD				LAST PERIOD				THIS YEAR TO DATE				LAST YEAR TO DATE			
	REPAIRS NUMBER	%	LABOR HOURS	%	REPAIRS NUMBER	%	LABOR HOURS	%	REPAIRS NUMBER	%	LABOR HOURS	%	REPAIRS NUMBER	%	LABOR HOURS	%
XXXXXXXXXXXX	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9
XXXXXXXXXXXX	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9	ZZZZZ9	ZZ9

*Number of terms per pad may vary slightly

8.7.5-1

APPENDIX A

FILE DESCRIPTIONS

AND

RECORD LAYOUTS

FILE DESCRIPTION FORM

SYSTEM NAME; PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONET NAME: Repairs

FILE NAME: Repair Order Transaction File EMRFØ1, EMRFØ2, EMRFØ4

VOLUME DEVICE: Cards/Disk

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 8Ø

RECORDS PER BLOCK: 1Ø

FILE RETENTION:

a. TEMPORARY [x]

b. PERMANENT [ ] RETENTION PERIOD:_____

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 8ØØ

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1 per transaction

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRUØ1	Sequential
EMRPØ1	"
EMRPØ2	"

RECORD LAYOUT Format 1 "AA" or "BB"

FILE NAME: Repair Order Transaction File RECORD LENGTH: 80

FILE NUMBER: EMRF01, EMRF02, EMRF04 BLOCKING FACTOR: 10

Field Number	Field Name	Position	Length	Picture or Remarks
1	Equipment Number	1-6	6	X(6)
2	Repair Order Number	7-12	6	9(6)
3	Record Identifier	13-14	2	X(2) "AA" or "BB"
4	Facility Number (Shop)	15-18	4	9(4)
5	Meter Reading	19-25	7	9(6)V9
6	Work Class	26	1	X(1) "X", "Y", or "Z"
7	Bill to User	27	1	X(1) blank or "Y"
8	Road Call	28	1	X(1) blank or "Y"
9	Warranty Work	29	1	X(1) blank or "Y"
10	Reason for Work	30	1	X(1) "A" thru "U"
11	Date Received	31-39	9	9(8)X(1) month/day AM hours/min./PM
12	Date Completed	40-48	9	9(8)X(1) same as received
13	Downtime	49-53	5	9(5) hours/min HHH/MM
14	Organization Code 54-59	54-59	6	9(6) Placed in record by Edit Program
15	APWA Code	60-67	8	X(8) NOT KEYPUNCHED
16	Filler	68-80	13	X(13)

RECORD LAYOUT Format 2 "LR"

FILE NAME: Repair Order Transaction File RECORD LENGTH: 80

FILE NUMBER: EMRF01, EMRF02, EMRF04 BLOCKING FACTOR: 10

Field Number	Field Name	Position	Length	Picture or Remarks
1	Equipment Number	1-6	6	X(6)
2	Repair Order Number	7-12	6	9(6)
3	Record Identifier	13-14	2	X(2) "LR" Labor Record
4	Filler	15	1	X(1)
5	Employee Number (1)	16-24	9	9(9)
6	Filler	25	1	X(1)
7	Hrs./Tenths	26-28	3	9(3) HHT
8	Filler	29	1	X(1)
9	Repair Type	30-31	2	9(2)
10	Filler	32	1	X(1)
11	Employee Number (2)	33-41	9	9(9)
12	Filler	42	1	X(1)
13	Hrs/Tenths	43-45	3	9(3) HHT
14	Filler	46	1	X(1)
15	Repair Type	47-48	2	9(2)
16	Filler	49	1	X(1)
17	Employee Number (3)	50-58	9	9(9)
18	Filler	59	1	X(1)
19	Hrs/Tenths	60-62	3	9(3) HHT
20	Filler	63	1	X(1)
21	Repair Type	64-65	2	9(2)

RECORD LAYOUT Format 2 "LR" (cont'd)

FILE NAME: Repair Order Transaction File RECORD LENGTH: 8Ø

FILE NUMBER: EMRFØ1, EMRFØ2, EMRFØ4 BLOCKING FACTOR: 1Ø

Field Number	Field Name	Position	Length	Picture or Remarks
22	Filler	66-80	15	X(15)

RECORD LAYOUT Format 3 "PT" or "CM"

FILE NAME: Repair Order Transaction File RECORD LENGTH: 80

FILE NUMBER: EMRFØ1, EMRFØ2, EMRFØ4 BLOCKING FACTOR: 10

Field Number	Field Name	Position	Length	Picture or Remarks
1	Equipment Number	1-6	6	X(6)
2	Repair Order Number	7-12	6	9(6)
3	Record Identifier	13-14	2	X(2) "PT" or "CM"
4	Repair Type (1)	15-16	2	9(2)
5	Cost (1)	17-22	6	9(4)V99
6	Filler	23	1	X(1)
7	Repair Type (2)	24-25	2	9(2)
8	Cost (2)	26-31	6	9(4)V99
9	Filler	32	1	X(1)
10	Repair Type (3)	33-34	2	9(2)
11	Cost (3)	35-40	6	9(4)V99
12	Filler	41	1	X(1)
13	Repair Type (4)	42-43	2	9(2)
14	Cost (4)	44-49	6	9(4)V99
15	Filler	50	1	X(1)
16	Repair Type (5)	51-52	2	9(2)
17	Cost (5)	53-58	6	9(4)V99
18	Filler	59	1	X(1)
19	Repair Type (6)	60-61	2	9(2)
20	Cost (6)	62-67	6	9(4)V99
21	Filler	68-80	13	X(13)

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Employee Rate File (EMRFØ3)

VOLUME DEVICE: Cards

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 8Ø

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY [ ]

b. PERMANENT [x] RETENTION PERIOD: Continuous

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: N/A

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1 per shop employee

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRPØ1	Sequential

RECORD LAYOUT

FILE NAME: Employee Rate File RECORD LENGTH: 80

FILE NUMBER: EMRFØ3 BLOCKING FACTOR: 1

Field Number	Field Name	Position	Length	Picture or Remarks
1	Employee Number	1-9	9	9(9)
2	Filler	10	1	x(1)
3	Hourly Rate	11-14	4	9(2)V9(2)
4	Filler	15-80	66	x(66)

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Equipment Inventory Master (EMIFϕ4)

VOLUME DEVICE: Tape

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.): 1st

RECORD FORMAT: Fixed Length

RECORD LENGTH: 7ϕϕ

RECORDS PER BLOCK: 4

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT [x] RETENTION PERIOD: 6 weeks

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 28ϕϕ

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1 per vehicle

CREATING PROGRAM: EMIPϕ2

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRPϕ1	Sequential
EMRPϕ7	"

DATE: June 27, 1975

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master Record Length: 700

FILE NUMBER: EMIF04 BLOCKING FACTOR: 4

FIELD NO.	DATA ELEMENT NAME	POSITIONS	LENGTH	PICTURE OR REMARKS
1	Equipment Number	1-6	6	X(6)
2	APWA Code	7-14	8	Refer to APWA Manual
3	Organization Code	15-20	6	X(6)
4	Use Status Code	21	1	"blank, 1, 2, 3"
5	Date Received	22-27	6	MMDDYY
6	Estimated Life	28-30	3	S999V
7	Estimated Life Code	31	1	"1-3"
8	Salvage Value	32-36	5	S99999V
9	Purchase Order Amount	37-44	8	S9(6)V99
10	Unit Depreciation Amount	45-50	6	S999V999
11	PM Interval-Months	51-52	2	S99V
12	PM Interval-Meter Units	53-57	5	S9(5)V
13	PM Sequence	58-65	8	X(8)
14	PM Pointer	66	1	"1-8"
15	Assigned PM Location	67-70	4	X(4)

DATE: June 27, 1975

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master Record Length: 7ØØ

FILE NUMBER: EMIFØ4 BLOCKING FACTOR: 4

FIELD NO.	DATA ELEMENT NAME	POSITIONS	LENGTH	PICTURE OR REMARKS
16	Meter Unit	71	1	"H", "M" or "X"
17	Bill Accident Repairs	72	1	"Y" or "N"
18	Billing Basis	73	1	"R" or "D"
19	Insurance Schedule	74-76	3	X(3)
2Ø	Normal Duty Hours Per Month	77-79	3	S999V
21	Seasonal Usage	8Ø	1	X
22	Flat Rate	81-86	6	S9999V99
23	Flat Rate	87	1	"M", "D" or "C"
24	Basic Use Rate	88-93	6	S999V999
25	Use Rate B	94-99	6	S999V999
26	Use Rate B Units	1ØØ-1Ø4	5	S9(5)V
27	Use Rate C	1Ø5-11Ø	6	S999V999
28	Use Rate C Units	111-115	5	S9(5)V
29	Old Equipment Number	116-121	6	X(6)
3Ø	Date Released	122-127	6	MMDDYY

DATE: June 27, 1975

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master Record Length: 7ØØ

FILE NUMBER: EMIFØ4 BLOCKING FACTOR: 4

FIELD NO.	DATA ELEMENT NAME	POSITIONS	LENGTH	PICTURE OR REMARKS
31	Old Property Control Number	128-135	8	X(8)
32	GVWR-Pounds	136-141	6	S9(6)V
33	Improvement Added-Current Month	142-148	7	S99999V99
34	Improvement Added-Life to Date	149-156	8	S999999V99
35	Fuel Tank Capacity	157-159	3	S999V
36	Fuel Type	16Ø	1	X
37	Description	161-18Ø	2Ø	X(2Ø)
38	Fund Number	181-192	12	X(12)
39	Inspection Frequency-Months	193-194	2	S99V
4Ø	Assigned Service Location	195-198	4	X(4)
41	Highway Code	199	1	"1-3"
42	Chassis Mfr. Code	2ØØ-2Ø3	4	X(4)
43	Chassis Model Number	2Ø4-21Ø	7	X(7)

DATE: June 27, 1975

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master Record Length: 7ØØ

FILE NUMBER: EMIFØ4 BLOCKING FACTOR: 4

FIELD NO.	DATA ELEMENT NAME	POSITIONS	LENGTH	PICTURE OR REMARKS
44	Chassis Serial Number	211-23Ø	2Ø	X(2Ø)
45	Chassis Model/Year	231-232	2	last two digits of year
46	Title Number	233-241	9	X(9)
47	Property Control Number	242-249	8	X(8)
48	Purchase Order Number	25Ø-257	8	X(8)
49	License Tag Number	258-266	9	X(9)
50	Domicile Code	267-27Ø	4	X(4)
51	Body Mfr. Code	271-274	4	X(4)
52	Body Model Number	275-282	8	X(8)
53	Body Serial Number	283-3Ø2	2Ø	X(2Ø)
54	Body Model Year	3Ø3-3Ø4	2	last two digits of year
55	Current Meter Reading	3Ø5-311	7	S999999V9
56	Meter Reading Last Month	212-318	7	S999999V9
57	Meter Failure Flag	319	1	"Ø" or "1"
58	Meter Reading at Failure	32Ø-326	7	S999999V9

DATE: June 27, 1975

PTJ/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master Record Length: 7ØØ

FILE NUMBER: EMIFØ4 BLOCKING FACTOR: 4

FIELD NO.	DATA ELEMENT NAME	POSITIONS	LENGTH	PICTURE OR REMARKS
59	Meter Units Operated Current Month	327-332	6	S99999V9
6Ø	Meter Units Operated Last Month	333-338	6	S99999V9
61	Meter Units Operated - Life to Date	339-345	7	S999999V9
62	Date Last Status Change	346-351	6	MMDDYY
63	Downtime Hours-CM	352-355	4	S999V9
64	Downtime Hours-LTD	356-361	6	S99999V9
65	Insurance Cost-CM	362-366	5	S999V99
66	Insurance Cost-YTD	367-372	6	S9999V99
67	Insurance Cost-LTD	373-379	7	S99999V99
68	Current Book Value	38Ø-387	8	S999999V99
69	Depreciation-CM	388-393	6	S9(4)V99
7Ø	Depreciation-YTD	394-4ØØ	7	S9(5)V99
71	Depreciation-LTD	4Ø1-4Ø8	8	S9(6)V99
72	Fuel Consumption (Gal.)-CM	4Ø9-413	5	S9999V9
73	Fuel Consumption (Gal.)-YTD	414-419	6	S9(5)V9

DATE: June 27, 1975

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master Record Length: 7ØØ

FILE NUMBER: EMIFØ4 BLOCKING FACTOR: 4

FIELD NO.	DATA ELEMENT NAME	POSITIONS	LENGTH	PICTURE OF REMARKS
74	Fuel Consumption (Gal.)-LTD	42Ø-426	7	S9(6)V9
75	Fuel Cost - CM	427-432	6	S9999V99
76	Fuel Cost - YTD	433-44Ø	8	S9(6)V99
77	Fuel Cost - LTD	441-448	8	S9(6)V99
78	Oil Consumption (Qts.)-CM	449-45l	3	S99V9
79	Oil Consumption (Qts.)-YTD	452-455	4	S999V9
8Ø	Oil Consumption (Qts.)-LTD	456-46Ø	5	S9999V9
81	Oil Cost - CM	46l-465	5	S999V99
82	Oil Cost - YTD	466-472	7	S9(5)V99
83	Oil Cost - LTD	473-479	7	S9(5)V99
84	Misc. Cost - CM	48Ø-484	5	S999V99
85	Misc. Cost - YTD	485-49l	7	S9(5)V99
86	Misc. Cost - LTD	492-498	7	S9(5)V99
87	Number Repair Orders - CM	499-5ØØ	2	S99V
88	Number Repair Orders - LTD	5Øl-5Ø3	3	S999V
89	Number Road Calls - CM	5Ø4-5Ø5	2	S99V

DATE: June 27, 1975

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master Record Length 700

FILE NUMBER: EMIF04 BLOCKING FACTOR: 4

FIELD NO	DATA ELEMENT NAME	POSITION	LENGTH	PICTURE OR REMARKS
90	Number Road Calls - LTD	506-508	3	S999V
91	Scheduled Labor Hours - CM	509-513	5	S9(4)V9
92	Scheduled Labor Hours - LTD	514-519	6	S9(5)V9
93	Total Labor Hours - CM	520-524	5	S9(4)V9
94	Total Labor Hours - LTD	525-530	6	S9(5)V9
95	Labor Cost - CM	531-537	7	S9(5)V99
96	Labor Cost - LTD	538-545	8	S9(6)V99
97	Parts Cost - CM	546-552	7	S9(5)V99
98	Parts Cost - LTD	553-560	8	S9(6)V99
99	Commercial Cost - CM	561-567	7	S9(5)V99
100	Commercial Cost - LTD	568-575	8	S9(6)V99
101	Accident Cost - CM	576-583	8	S9(6)V99
102	Accident Cost - LTD	584-591	8	S9(6)V99
103	Warranty Cost - CM	592-599	8	S9(6)V99
104	Warranty Cost - LTD	600-607	8	S9(6)V99
105	Billed Amount - CM	608-614	7	S9(5)V99

DATE: June 27, 1975

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master Record Length: 7ØØ

FILE NUMBER: EMIFØ4 BLOCKING FACTOR: 4

FIELD NO	DATA ELEMENT NAME	POSITION	LENGTH	PICTURE OR REMARKS
1Ø6	Billed Amount - YTD	615-621	7	S9(5)V99
1Ø7	Billed Amount - LTD	622-629	8	S9(6)V99
1Ø8	Miles or Hours per Gallon	63Ø-635	6	S999V999
1Ø9	Date Last PM	636-641	6	MMDDYY
11Ø	Meter Last PM	642-648	7	S9(6)V9
111	Type of Last PM	649	1	"A, B, or C"
112	Date Last State Inspection	65Ø-655	6	MMDDYY
113	Total Repair Cost - YTD	656-663	8	S9(6)V99
114	Filler	664-7ØØ	37	X(37)

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repair

FILE NAME: Control Card for EMRPØ2, EMRFØ5

VOLUME DEVICE: Cards

FINE ORGANIAATION: Sequential

FILE NUMBER OF VOLUME (FIRST. SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY [x]

b. PERMANENT [ ] RETENTION PERIOD:_____

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 8Ø

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1 card

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRPØ2	Sequential

RECORD LAYOUT

FILE NAME: Control Card RECORD LENGTH: 80

FILE NUMBER: EMRPØ2, EMRFØ5 BLOCKING FACTOR: 1

Field Number	Field Name	Position	Length	Picture or Remarks
1	Input File Control	1-3	3	X(3) "Yes" or "No"
2	Filler	4-80	77	X(77)

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWL EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repair

FILE NAME: Month-to-Date Repair File EMRFϕ6, EMRFϕ8, EMRF12, EMRF16

VOLUME DEVICE: Tape

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.): 1st

RECORD FORMAT: Fixed Length

RECORD LENGTH: 9ϕ

RECORDS PER BLOCK: 1ϕ

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT [x] RETENTION PERIOD: 6 weeks

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 9ϕϕ

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 2ϕ records per repair

CREATING PROGRAM: EMRPϕ2

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRPϕ2	Sequential
EMRPϕ3	Sequential
EMRP11	Sequential
EMRP12	Sequential
EMRP13	Sequential

EMRUϕ2, EMRUϕ3, EMRUϕ4

RECORD LAYOUT Format 1

FILE NAME: Month-to-Date Repair RECORD LENGTH: 90

FILE NUMBER: EMRF06, EMRF08, EMRF12, EMRF16 BLOCKING FACTOR: 10

Field Number	Field Name	Position	Length	Picture or Remarks
1	Equipment Number	1-6	6	X(6)
2	Repair Order Number	7-12	6	9(6)
3	Record Type	13	1	9(1) "1"
4	Identification Code	14-15	2	X(2) "AA" or "BB"
5	Organization Code	16-21	6	9(6)
6	APWA Code	22-29	8	X(8)
7	Facility Number (Shop)	30-33	4	9(4)
8	Start Date	34-39	6	9(6) MMDDYY
9	Completion Date	40-45	6	9(6) MMDDYY
10	Work Class	46	1	X(1) "X", "Y", or "2"
11	Meter Reading	47-53	7	9(6)V9
12	Road Call	54	1	X(1) blank or "Y"
13	Warranty	55	1	X(1) blank or "Y"
14	Reason Brought In	56	1	X(1) "A" thru "U"
15	Downtime Hours	57-60	4	99(3)V9
16	Turn Around Code	61	1	9(1) "1" thru "3"
17	Bill to User	62	1	X(1) blank or "Y"
18	Filler	63-90	28	X(28)

RECORD LAYOUT Format 2

LE NAME: Month-to-Date Repair RECORD LENGTH: 90

LE NUMBER: EMRF06, EMRF08, EMRF12, EMRF16 BLOCKING FACTOR: 10

Field Number	Field Name	Position	Length	Picture or Remarks
1	Equipment Number	7-6	6	X(6)
2	Repair Order Number	7-12	6	9(6)
3	Record Type	13	1	9(1) "2"
4	Repair Type	14-15	2	9(2)
5	Organization Code	16-21	6	9(6)
6	APWA Code	22-29	8	X(8)
7	Facility Number (Shop)	30-33	4	9(4)
8	Start Date	34-39	6	9(6) MMDDYY
9	Completion Date	40-45	6	9(6) MMDDYY
10	Labor Costs	46-52	7	S9(5)V99
11	Parts Cost	53-59	7	S9(5)V99
12	Commercial Cost	60-66	7	S9(5)V99
13	Labor Hours	67-70	4	S9(3)V9
14	Work Class	71	1	X(1) "X", "Y", or "2"
15	Filler	72-90	19	X(19)
		A-21		

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Repair History File EMRFØ7, EMRF18

VOLUME DEVICE: Tape

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.): 1st

RECORD FORMAT: Fixed Length

RECORD LENGTH: 9Ø

RECORDS PER BLOCK: 1Ø

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT [x] RETENTION PERIOD: 6 weeks

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 9ØØ

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 2Ø per repair

CREATING PROGRAM: EMRPØ3

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRPØ3	Sequential
EMRPØ7	Sequential
EMRUØ5	Sequential

RECORD LAYOUT

LE NAME: Repair History File

LE NUMBER: EMRFØ7, EMRF18

RECORD LENGTH: 9Ø

BLOCKING FACTOR: 1Ø

Field umber	Field Name	Position	Length	Picture or Remarks
	FORMAT is the same as the Month-to-Date File -		EMRFØ6	

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Shop Performance History File EMRFØ9

VOLUME DEVICE: Tape

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FORST, SECOND, ETC.): 1st

RECORD FORMAT: Fixed Length

RECORD LENGTH: 2ØØ

RECORDS PER BLOCK: 15

FILE RETENTION:

a. TEMPORARY ☐

n. PERMANENT [x] RETENTION PERIOD 6 weeks

RECOPD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 3ØØØ

MAXIMUM NUMBEP OF LOGICAL RECORDS ON FILE: 16 per shop

CREATING PROGRAM: EMRP11

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRP11	Sequential

RECORD LAYOUT

FILE NAME: Shop Performance History File RECORD LENGTH: 200

FILE NUMBER: EMRF09 BLOCKING FACTOR: 15

Field Number	Field Name	Position	Length	Picture or Remarks
1	Shop Number	1-4	4	9(4)
2	Month Pointer	5-6	2	9(2) "01" thru "12"
3	This Year-to-Date Total	7-16	10	9(10) or 9(8) V99
4	Last Year-to-Date Total	17-26	10	9(10) or 9(8) V99
1-16	Month Files-Occurs 12 times	27-146	120	9(10) or 9(8) V99
17	Filler	147-200	54	X(54) Spaces

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Control Card for Program EMRP11 (EMRF1Ø)

VOLUME DEVICE: Card

FINE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 8Ø

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY [x]

b. PERMANENT [ ] RETENTION PERIOD: _____

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 8Ø

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRP11	Sequential

RECORD LAYOUT

FILE NAME: ! Control Card for EMRP11 RECORD LENGTH: 8Ø

FILE NUMBER: EMRF1Ø BLOCKING FACTOR: 1

Field Number	Field Name	Position	Length	Picture or Remarks
1	Program Name	1-6	6	X(6) "EMRP11"
2	Filler	7	1	X(1) Space
3	Month of Run	8-9	2	9(Ø2)
4	Slash	10	1	X(1) "/"
5	Day of Run	11-12	2	9(Ø2)
6	Slash	13	1	X(1) "/"
7	Year of Run	14-15	2	9(Ø2)
8	Filler	16-80	65	Spaces

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Shop Employee Counte (EMRF11)

VOLUME DEVICE: Cards

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY [ ]

b. PERMANENT [x] RETENTION PERIOD: Continuous

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1 per every 10 shops

CREATING PROGRAM: N/A

REFERENCING PROGRAMS(S):

PROGRAM	ACCESS METHOD
EMRP11	Sequential

RECORD LAYOUT

FILE NAME: Shop Employer Counts for EMRP11 RECORD LENGTH: 80

FILE NUMBER: EMRF11 BLOCKING FACTOR: 1

Field Number	Field Name	Position	Length	Picture or Remarks
1	Facility Number (Shop)	1-4	4	9(04)
2	Number of Employees	5-7	3	9(03)
		Fields 1&2 total of	repeat for a 10 times	
	Filler	71-80	10	X(10) Spaces

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Report History File by Type of Repair (EMRF13)

VOLUME DEVICE: Tape

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): 1st

RECORD FORMAT: Fixed Length

RECORD LENGTH: 2ØØ

RECORDS PER BLOCK: 1Ø

FILE RETENTION:

a. TEMPORARY [ ]

b. PERMANENT [x] RETENTION PERIOD: 6 weeks

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 2ØØØ

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 4 per repair type per shop

CREATING PROGRAM: EMRP12

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRP12	Sequential

RECORD LAYOUT

TITLE NAME: Report History File by Type of Repair RECORD LENGTH: 200

TITLE NUMBER: EMRF13 BLOCKING FACTOR: 10

Field Number	Field Name	Position	Length	Picture or Remarks
1	Shop Number	1-4	4	9(Ø4)
2	Rep: Type	5-6	2	9(Ø2)
3	Month Pointer	7-8	2	9(Ø2) "Ø1" thru "12"
4	This Year-to-Date Totals	9-18	1Ø	9(1Ø) or 9(8) V99
5	Last Year-to-Date Totals	19-28	1Ø	9(1Ø) or 9(8) V99
6-17	Month Totals Repeat 12 times	29-148	12Ø	9(1Ø) or 9(8) V99
18	Month of Last Update	149-150	2	9(Ø2)
19	Year of Last Update	151-152	2	9(Ø2)
2Ø	Filler	153-2ØØ	48	X(48)

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Control Card for EMRP12 (EMRF14)

VOLUME DEVICE: Cards

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 8Ø

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY ☒

b. PERMANENT ☐

RETENTION PERIOD: _____

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 8Ø

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRP12	Sequential

RECORD LAYOUT

FILE NAME: Control Card for EMRP12 RECORD LENGTH: 8Ø

FILE NUMBER: EMRF14 BLOCKING FACTOR: 1

Field Number	Field Name	Position	Length	Picture or Remarks
1	Program Name	1-6	6	X(6) "EMRP12"
2	Filler	7	1	X(Ø1)
3	Run Month	8-9	2	9(Ø2)
4	Filler	10	1	X(Ø1) "/"
5	Run Day	11-12	2	9(Ø2)
6	Filler	13	1	X(Ø1) "/"
7	Run Year	14-15	2	9(Ø2)
8	Filler	16-80	65	X(65)

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Control Card for EMRP13 (EMRF15)

VOLUME DEVICE: Cards

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 8Ø

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY [x]

b. PERMANENT [ ] RETENTION PERIOD: _____

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 8Ø

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRP13	Sequential

RECORD LAYOUT

FILE NAME: Control Card for EMPR13 RECORD LENGTH: 8Ø

FILE NUMBER: EMRF15 BLOCKING FACTOR: 1

Field Number	Field Name	Position	Length	Picture or Remarks
1	Program Name	1-6	6	X(6) "EMRP13"
2	Filler	7	1	X(1)
3	Run Month	8-9	2	9(Ø2)
4	Filler	1Ø	1	X(1) "/"
5	Run Day	11-12	2	9(2)
6	Filler	13	1	X(1)"/"
7	Run Year	14-15	2	9(2)
8	Filler	16-8Ø	65	X(65)

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Report History File by Cause of Repair (EMRF17)

VOLUME DEVICE: Tape

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): 1st

RECORD LENGTH: 5ØØ

RECORDS PER BLOCK: 5

FILE RETENTION:

a. TEMPORARY [ ]

b. PERMANENT [X]

RETENTION PERIOD: 6 weeks

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 25ØØ

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 3 per cause of repair per shop

CREATING PROGRAM: EMRP13

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRP13	Sequential

RECORD LAYOUT

FILE NAME: Report History Record Layout RECORD LENGTH: 5ØØ

FILE NUMBER: EMRF17 BLOCKING FACTOR: 5

Field Number	Field Name	Position	Length	Picture or Remarks
1	APWA CODE	1-8	8	X(Ø8)
2	RPRT-POINTR	9-10	2	9(Ø2)
3	RPRT-RPR-CAUSE	11	1	X(Ø1)
4	RPRT-LN-ENTRS	12-431	420	
5	RPRT-TYD			S9(8) V99
6	RPRT-LYD (occurs 3 times)			S9(8) V99
7	RPRT-MTHS			S9(8) V99 occurs 12 times
8	RFPRT-CLASS-TOTALS	432-5ØØ		
9	FILLER			X(69)

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Control Cards for EMRPØ7 (EMRF19)

VOLUME DEVICE: Cards

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 8Ø

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY [X]

b. PERMANENT [ ] RETENTION PERIOD: _____

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 8Ø

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRPØ7	Sequential

RECORD LAYOUT

FILE NAME: Control Card for EMRP07 RECORD LENGTH: 80

FILE NUMBER: EMRF19 BLOCKING FACTOR: 1

Field Number	Field Name	Position	Length	Picture or Remarks
1	Program Name	1-6	6	X(6) "EMRPØ7"
2	Filler	7	1	X(1)
3	Period Starting Month	8-9	2	9(Ø2)
4	Filler	10	1	X(1) "/"
5	Period Starting Day	11-12	2	9(Ø2)
6	Filler	13	1	X(Ø1) "/"
7	Period Starting Year	14-15	2	9(Ø2)
8	Filler	16	1	X(Ø1) Space
9	Period Ending Month	17-18	2	9(Ø2)
10	Filler	19	1	X(Ø1) "/"
11	Period Ending Day	20-21	2	9(Ø2)
12	Filler	22	1	X(Ø1)"/"
13	Period Ending Year	23-24	2	9(Ø2)
14	Filler	25-80	56	X(56) Spaces

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

RECORD LAYOUT

E NAME: Control Card for EMRP07 RECORD LENGTH: 80

E NUMBER: EMRF19 BLOCKING FACTOR: 1

Field Number	Field Name	Position	Length	Picture or Remarks
1	Program Name	1-6	6	X(6) "EMRPØ7"
2	Filler	7	1	X(1)
3	Period Starting Month	8-9	2	9(Ø2)
4	Filler	10	1	X(1) "/"
5	Period Starting Day	11-12	2	9(Ø2)
6	Filler	13	1	X(Ø1) "/"
7	Period Starting Year	14-15	2	9(Ø2)
8	Filler	16	1	X(Ø1) Space
9	Period Ending Month	17-18	2	9(Ø2)
10	Filler	19	1	X(Ø1) "/"
11	Period Ending Day	20-21	2	9(Ø2)
12	Filler	22	1	X(Ø1) "/"
13	Period Ending Year	23-24	2	9(Ø2)
14	Filler	25-80	56	X(56) Spaces

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Repairs

FILE NAME: Select Card(s) for EMRPØ7 (EMRT2Ø)

VOLUME DEVICE: Cards

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 8Ø

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY

b. PERMANENT

RETENTION PERIOD: _____

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 8Ø

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 5Ø

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMRPØ7	Sequential

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

RECORD LAYOUT

TITLE NAME: Select Cards for EMRPO7 RECORD LENGTH: 8Ø

TITLE NUMBER: EMRF2Ø BLOCKING FACTOR: 1

Field Number	Field Name	Position	Length	Picture or Remarks
1	Equipment Number	1-6	6	Either Equip. # X(6)or "ALL" (Left justified)
2	Filler	7-80	74	X(74) Spaces

APPENDIX B

SAMPLE FORMS

PTI/APWA Equipment Management System

Form No: EMRDØ1

REPAIR ORDER FORM

Form AV-132 Rev. 6/75

EQUIP. NUMBER (1-6) | R. O. NUMBER (7-12, AA 13, BB 14) | FACILITY (15-18) | METER READING (19-25, /10)

(CHECK ONE ONLY) Col. 26

WORK CLASS: SCHEDULED (x) | NON-SCHEDULED (y) | EMERGENCY (z)

USER ORG.

W H. DESC.

BILL TO USER (v) ☐ 27 | ROAD CALL (v) ☐ 28 | REPAIR COVERED BY WARRANTY (v) ☐ 29

Repair Types (for information only)

Body & Cab Maintenance	Heating & Ventilation	01
	Cab Fixtures	02
	Instruments & Gauges	03
	Glass	04
	Air Conditioning	05
	Cab Metal	06
	Mounted Body	07
Chassis	Axles – Front	11
	Axles – Rear	12
	Brakes	13
	Frame	14
	Steering	15
	Suspension	16
	Tires/Tracks	17
	Wheels/Bogies	18
Drive Train	Clutch	23
	Drive Shaft(s)	24
	Power Take Off	25
	Transmission – Main	26
	Transmission – Aux. & Trans. Case	28
	Chain Drive	29
Electric System	Charging System	31
	Cranking System	32
	Ignition System	33
	Lighting System	34
	Battery	35
Engine	Air Intake System	41
	Cooling System	42
	Exhaust System	43
	Fuel System	44
	Power Plant	45
	Pollution Control	46
Accessories/ Attachments	Accessories – General	51
	Accessories – Electrical	52
	Expendable Items	53
	Power Tail Gate	55
	Radio Equipment	56
	Winches	58
	Vehicle Coupling System	59
	Buckets	61
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	PM–A	95
	PM–B	96
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	Mounted System Lubrication	98
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LABOR (LR - Col. 13-14)

ON	OFF	EMPLOYEE NUMBER	HRS. /10	REPAIR TYPE	COST

INSTRUCTIONS:

REASON BROUGHT IN (CHECK ONE ONLY) (COL. 30)

BREAKDOWN	(A)
ACCIDENT	(B)
DAMAGE IN OPERATION	(C)
THEFT/ VANDALISM	(D)
DAILY SCHEDULE	(E)
NEEDED DURING PM OR OTHER WORK	(F)
SEASONAL PREPARATION	(G)
DRIVER'S REQUEST	(H)
MANAGEMENT REQUEST	(J)
REWORK	(K)
PREDELIVERY MAKE READY	(L)
MODIFICATIONS	(M)
CONVERSION	(N)
SPECIAL STUDY	(P)
PREVENTIVE MAINTENANCE	(R)
RECALL	(S)
STATE INSPECTION	(T)
WARRANTY	(U)

PARTS (PT - Col. 13-14)

QTY.	PART #	NO. OR DESCRIPTION	UNIT COST	REPAIR TYPE	TOTAL COST

MECHANIC COMMENTS:

WORK STARTED: MO. / DAY / YR. (31-34) TIME HOUR (35-38) MIN. (39) AM / PM

COMPLETED (40-43) TIME HOUR (44-47) MIN. (48) AM / PM

OPERATING TIME LOST (HRS) HOUR (49-53) MIN.

COMMERCIAL COST (CM - Col. 13-14)

VENDOR NAME	INVOICE #	LABOR $	PARTS $	REPAIR TYPE	TOTAL $

TOTAL COMMERCIAL	
TOTAL DIRECT LABOR	
TOTAL MATERIALS	
TOTAL JOB COST	

OUT OF SERVICE DATE: TIME: AM / PM

WORK AUTHORIZATION:

WORK COMPLETED (APPROVAL):

B-1

Form No: EMRDØ:

DATE_____

PTI/APWA Equipment Management System

EMPLOYEE RATE SETTING FORM

EMPLOYEE NUMBER (1-9)	HOURLY RATE (10-13)*	EMPLOYEE NAME	Check One			**
			A	C	D	

* - Triangle indicates decimal in hourly rate

** - A = Add, C = Change, D = Delete

_____

Authorized Signature

END

DATE

FILMED

1-3-78

NTIS