

OS-DMS

**Ohio Scientific
Data Base Management
System**

Preliminary

Accounts Receivable

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Ohio Scientific Software
License Registration Form

OS-DMS License Number _____

Factory Date _____

Computer Dealer _____

Date _____

End User Name _____

Company _____

Address _____

City, State _____

Zip _____

Date _____

Computer Serial Number _____

Computer Configuration _____

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PREFACE

The OS-DMS Nucleus and supporting business packages make up an extremely powerful Data Base Management System and Inquiry System that lend themselves to a wide range of small business applications. Generally, any collection of information of primary importance to a business can be placed in this system. To clarify the application of OS-DMS an explanation is necessary of a Data Base Management System and an Inquiry System.

Fundamentally, a data base is a collection of data. The data can be any information that is of value to a person, business or agency using the system. The data may be as varied as real estate files, inventories, personnel files, or automotive sales. Typically, data is usually kept in filing cabinets, card files, desk drawers, etc. Information in these categories are prime targets for a data base management system.

In order to make use of the data base, some type of data manager is necessary. The management portion of a data base management system does just as the name implies. The user has the ability to access the information of the data base in a manner which makes the data useful. The user has the ability to enter, remove, or edit information in the files to keep it current with present activities. The user also may change the order of information in a file to suit a particular application.

When the user needs information, or a decision based on information in the file, a report of some kind will be generated.

The report is usually of a specific format and may be printed either to a CRT terminal or a printer (typewriter). The user, in some cases, may set specific conditions related to the report. Examples of conditions are inventory items over a certain amount, age analysis of accounts receivable or payable, or houses costing between two dollar amounts.

Query, the Ohio Scientific inquiry system, allows communication with the computer in English. While it appears that the computer understands the questions and statements entered by the operator, it actually decodes key words. The rest of the words in the statement entered are for the operator; to reduce the aura of mystery associated with computers. Usually, questions and statements would be requesting specific information or telling the computer to generate a report based on information presently in the file.

The emergence of OS-DMS makes computers immediately usable for the untrained small businessman. The system finally brings the use of microcomputers down to the level of non-programmers. It means that virtually untrained computer users can take advantage of the speed and efficiency of a computer in their daily activities.

OS-DMS ACCOUNTS RECEIVABLES SYSTEM

INTRODUCTION

The OS-DMS Accounts Receivable System is a management information package designed to provide the user with specific information showing who has owed him how much money for how long. Through its use, the businessman can control such items as overpayments, COD sales and customer credits. It specifically utilizes an OS-DMS compatible master file along with highly modified OS-DMS utilities for specific tasks. The accessing techniques utilized allow a high degree of expansion and flexibility in the system without reprogramming.

The functions built into the system include an updating program that handles all the normal data entry, report writers that produce an A/R journal, an age analysis, a detailed age analysis, a customer list, customer statements, and master file dumps. Automated creation of the master file is part of the system, as is a backup procedure that makes it easy for the operator to protect the data. An editing program is part of the system to enable quick changes of any item in the A/R master file.

It should be noted that since this system is built on the base OS-DMS data management system, programs in the nucleus of the system may be used to expand on the capabilities listed above. This feature gives the user a great amount of flexibility in the final design of his system.

The specific capabilities of each part of the fixed system are explained in further detail on the following pages.

ACCOUNTS RECEIVABLE STARTUP PROCEDURE

1. Make sure that the computer, the terminal and the printer are turned on.
2. Insert the Accounts Receivable diskette into the top disk drive.
3. Push the reset button on the computer.
4. type a D on the keyboard.
5. Follow the instructions that appear on the terminal.

OS-DMS ACCOUNTS RECEIVABLE SYSTEM

OPERATIONAL OVERVIEW

In the normal office environment, the flow of funds - both incoming and outgoing - is a normal occurrence. Part of this flow is in cash, which generally signifies the completion of a transaction, but part of it is also done through credit: delivery of goods or services for the promise of future payment.

Accounts receivable is that portion of financial record-keeping concerned with how much money a given company is owed, who owes it the money, and when the debts must be paid.

The OS-DMS accounts receivable system is designed to fit into this office environment in the following manner.

Invoices are sent to purchasers on a regular basis. As they are sent, the person performing the accounts receivable clerical function (the clerk) enters the invoice numbers, dates, general ledger account numbers and amounts of the new invoices on the computer (posts the data) through the console keyboard. In order to enter these invoices, some new customers must ordinarily be put on the computer to accompany the transaction data. This entails entering their names, addresses and other static information into the computer through the same console keyboard.

Along with all this billing, of course, payments of previously sent bills are being received. When these payments come in, they are posted into the proper accounts and erase the applicable records of funds due. The cycle is continuous and, in most situations, smooth in its operation, but peaks will appear in seasonal industries and the like.

All this information being entered into the computer is retained in the equipment for only a short period of time. For future access, the data is stored in individual customer records in an accounts receivable master file on disks (floppy or fixed) held in the disk drive unit(s) of the computer. The data may then be recalled at some future point in time to indicate its presence or be further processed.

The process of entering this information also leaves a record for the office personnel to reference. A printed input journal is produced as an audit trail so that both the clerk and the person overseeing the operation of the accounts receivables (the manager) can readily tell what processing has been performed and when it occurred.

Once the invoices have entered into the computer, they are available for further processing. Payments may be received on them, they may be modified or they may be deleted. They may also be listed in various formats, used as subject matter for statistical reports, or processed further. The following are some of the products available with this system.

The accounts receivable journal. This is a report showing the specifics of all invoices for each customer requested. It may be

run for specific customers or for all customers on the file. It may be printed on paper or on the console terminal depending on the needs of the user. These needs may be for a billing roster, a picture of the entire receivables situation, or management information about a particular customer. Due to its detailed contents, full file printouts of this can be lengthy and should not be printed too frequently.

The master file dump. This report prints accounts receivable master file records for historical storage or management information needs. It lists the entire contents of each accounts receivable record requested in a predetermined format. Two routines exist to print this listing - one to print the entire file and one to print selected master records chosen by varied conditions. The full file printout of this can be very lengthy.

The age analysis printouts. These runs are useful for both management information and historical purposes. This system provides two types of aged reports - one showing each customer's situation at a glance and the other showing the aging status of each invoice in detail as well as the total customer analysis. These reports give management personnel a useful tool with which they may make knowledgeable decisions, since with these reports it is possible to see cash flows, forecast income and interpret figures intelligently.

The accounts receivable statements. These are sent to the customers on a periodic basis to inform them of their current financial positions with us. The accounts receivable journal makes a fine statement journal for this printout, as its contents are the same as those printed here.

Provisions have also been made available in this system to provide protection for the information so vital to its operation. Whenever any activity causes changes to occur in the data held on the disks, the files should be systematically copied to backup disks for safety. An option in the system provides for this necessary action.

OS-DMS ACCOUNTS RECEIVABLE SYSTEM

RECOMMENDED IMPLEMENTATION PROCEDURES

The diskette being released with the OS-DMS Accounts Receivable System on it contains files that are probably too small for most production operations. With this in mind, the following procedures are recommended to create production diskettes for the accounts receivable system:

1. Using the standard OS-65U utility program 'COPIER', duplicate the issued diskette in its entirety onto a blank diskette. Save the original in case something happens to the new diskette.
2. Using the standard OS-65U utility program 'DELETE', remove the file 'ARMST0' from the work diskette. This is the accounts receivable master file made for the released A/R diskette.
3. Pack the work diskette with the standard OS-65U utility program 'PACKER'.
4. Using 'COPIER' again, duplicate the diskette for protection.
5. Make whatever changes are desired in the programs. The headings, passwords and other user-oriented changes should be made now. There is a remark statement in the first several lines of each program containing only the date of the last update to that program. Update this line, showing when the update was made and what was changed.
6. Make the decisions necessary to create a new accounts receivable master file. Build it, using menu option # 8.
7. Using 'COPIER' again, make at least one, but preferably two copies of the diskette. These are to be the production backup copies. The 'work diskette' should be copied to these after each production run of any updating program using menu option # 11. After any program changes, and at least once a month, copy the entire diskette for backup purposes.

THE MENU FOR THE OS-DMS ACCOUNTS RECEIVABLE SYSTEM

The menu presented on the next page presents to the operator a selection of actions available within this computer system. The decision as to what to run at what time is the user's, but the following explanation is intended as a guide.

Option 1 is the normal data input routine. It will probably be run frequently in most installations.

Options 2, 6, 7 and 10 are periodic jobs and are run at least once in each accounting cycle.

Options 3, 4, 5, 9 and 11 are non-scheduled operations and may be run as often as needed or desired. It is advised that the backup run (Option # 11) be made at least once a day on each day the files are updated in any way. Once a month, files with finalized data should be backed up and kept in long-term storage areas.

Option 8 should only be needed at long-range intervals, such as when the structure of the file is changed or the file size must be increased.

Option 12 is used only to exit from the system and run non-accounts-receivable programs.

These schedules are not firmly fixed. The input runs may only have to be run once a month. Some of the runs may never have to be run. Depending on the way the user wants to run the system, the schedules may vary from period to period. The user may also wish to add more runs to the system or change those included here. One of the prime benefits of an operating system like OS-DMS is that the programs in the nucleus can be used on files such as the accounts receivable master used in this system. With this in mind, the user may design his own reports and modify the system to his particular needs.

OS-DMS ACCOUNTS RECEIVABLES

1. A/R MASTER UPDATE
2. PRINT A/R JOURNAL
3. COMPLETE A/R MASTER DUMP
4. CONDITIONAL A/R MASTER DUMP
5. A/R MASTER EDIT
6. PRINT A/R AGE ANALYSIS
7. PRINT DETAILED A/R AGE ANALYSIS
8. CREATE NEW A/R MASTER FILE
9. PRINT CUSTOMER LIST
10. PRINT CUSTOMER STATEMENTS
11. BACKUP A/R MASTER FILE
12. EXIT A/R SYSTEM

ACCOUNTS RECEIVABLE MASTER UPDATE

This program is the medium through which all data is normally input to the system. It handles the addition of new customers, the placement of invoices and the receipts of payments on the master file.

PROCEDURES

1. Select the A/R Master Update by typing a 1 for the menu selection. Enter the password and date as requested.
2. When the menu of updating options appears, enter the number of the desired selection. Enter pertinent data as it is requested. Maximum entry lengths are indicated by lines of dashes, each representing a character.
3. If the selection number is 2 or 3, a request for customer identification or record number will appear. If alphabetic data is entered, the computer will search for a record containing an identical group of characters to those entered. The entire name does not have to be entered in most cases. If a number is entered, the computer will present the operator with the record in that position on the file. No matter which method is used, the computer will either present a record fitting the specifications or indicate why the record was not found. If the operator chooses to reject the presented record as not being the one desired, the computer will return to the search until all possibilities have been presented.
4. A printout of all activity is created during the run in order to document what has taken place. This should be saved to assist clerks in tracing the flow of information. This report requires 132 column paper. A sample is on the next page.

The capacity of the master file is determined when the file is first created. If overflow should occur, expansion is possible through the creation of a new master file and the use of the merge/load utility.

This receivables system is designed to handle both invoice payments and overpayments by the customers. Credit balances are kept for the latter, and may be offset against new orders.

| ACTION | CUSTOMER | INV NUM | INV DATE | ACCT # | AMOUNT |
|--------------|---|-----------------|----------|--------|---------|
| NEW CUSTOMER | JONES & JONES CONSTRUCTION CO | 30445 | 01/12/79 | 4010 | 3998.50 |
| NEW CUSTOMER | EDWIN A WILLIAMS & ASSOCIATES | 29815 | 01/16/79 | 4010 | 407.80 |
| NEW INVOICE | ASSOCIATED PRODUCERS INC | 30573 | 01/16/79 | 4010 | 300.45 |
| NEW INVOICE | ASSOCIATED PRODUCERS INC | 39887 | 01/19/79 | 4010 | 3559.68 |
| RECEIVE PYMT | CAROLINA SHIPPERS COOP INC | (CHECK # 33579) | | | 2000.00 |
| | 2000.00 APPLIED TO # 30046-A DATED 01/15/79 | | | | |
| RECEIVE PYMT | ASSOCIATED PRODUCERS INC | (CHECK # 66045) | | | 9500.00 |
| | 359.00 APPLIED TO # 2203 DATED 01/15/79 | | | | |
| | 7888.95 APPLIED TO # 2207 DATED 01/17/79 | | | | |
| | 350.75 APPLIED TO # 2210 DATED 01/20/79 | | | | |
| | 300.45 APPLIED TO # 30573 DATED 01/16/79 | | | | |
| | 600.85 APPLIED TO # 39887 DATED 01/19/79 | | | | |

// END RUN //

PRINT ACCOUNTS RECEIVABLE JOURNAL

This program prints a detailed listing of all the invoices posted to a given customer, printing totals by customer and at the end of the run.

PROCEDURES

1. Select the A/R Journal Printer by typing a 2 for the menu selection. Answer the questions as presented.

This program requests choices as to whether the operator wishes to get this report on the terminal or printer and whether the entire file should be listed. If run on the printer, this report may be put on 80-column paper.

ACCOUNTS RECEIVABLE JOURNAL

DATE 1/31/79

PAGE 1

| CUSTOMER NAME | INV NUMBER | INV DATE | ACCT # | AMOUNT |
|-------------------------------|------------|-----------------|--------|----------|
| ASSOCIATED PRODUCERS INC | 39887 | 01/19/79 | 4010 | 2958.83 |
| ASSOCIATED PRODUCERS INC | 26774 | 12/05/78 | 4010 | 256.57 |
| ASSOCIATED PRODUCERS INC | 22346 | 10/12/78 | 4010 | 322.46 |
| | | CUSTOMER TOTAL: | | 3537.86 |
| CAROLINA SHIPPERS COOP INC | 30046-A | 01/15/79 | 4010 | 451.50 |
| | | CUSTOMER TOTAL: | | 451.50 |
| JONES & JONES CONSTRUCTION CO | 30445 | 01/12/79 | 4010 | 3998.50 |
| JONES & JONES CONSTRUCTION CO | 26559 | 11/20/78 | 4010 | 3004.50 |
| | | CUSTOMER TOTAL: | | 7003.00 |
| EDWIN A WILLIAMS & ASSOCIATES | 29815 | 01/16/79 | 4010 | 407.80 |
| | | CUSTOMER TOTAL: | | 407.80 |
| | | GRAND TOTAL: | | 11400.16 |

PRINT COMPLETE ACCOUNTS RECEIVABLE MASTER DUMP

This program prints a formatted listing of all entries in every master file record in the A/R master.

PROCEDURES

1. Select the complete A/R Master Dump by typing a 3 for the menu selection. Enter the date when requested.

This report requires 132 column paper.

OS-DMS ACCOUNTS RECEIVABLE MASTER FILE LISTING

1/31/79

CMPNY # 1010

(RECORD # 1)

CONTACT: MR H. JOHNSON

COMPANY: ASSOCIATED PRODUCERS INC

STREET : P O BOX 3847

CITY : ATLANTA

STATE: GA ZIP: 30306 LINK BACK: 0 LINK FORWARD: 5

| INV NUM | INV DATE | ACCT # | BALANCE | INV NUM | INV DATE | ACCT # | BALANCE | INV NUM | INV DATE | ACCT # | BALANCE |
|---------|----------|--------|---------|---------|----------|--------|---------|---------|----------|--------|---------|
| 39887 | 01/09/79 | 4010 | 2958.83 | 26774 | 12/05/78 | 4010 | 256.57 | 22346 | 10/12/78 | 4010 | 322.46 |
| 0 | 0 | 0 | 0.00 | 0 | 0 | 0 | 0.00 | | | | |

COMMENTS: 0

CMPNY # 2350

(RECORD # 2)

CONTACT: N/A

COMPANY: CAROLINA SHIPPERS COOP INC

STREET : ROUTE 29

CITY : GASTONIA

STATE: NC ZIP: 27603 LINK BACK: 0 LINK FORWARD: 0

| INV NUM | INV DATE | ACCT # | BALANCE | INV NUM | INV DATE | ACCT # | BALANCE | INV NUM | INV DATE | ACCT # | BALANCE |
|---------|----------|--------|---------|---------|----------|--------|---------|---------|----------|--------|---------|
| 30046-A | 01/15/79 | 4010 | 451.50 | 0 | 0 | 0 | 0.00 | 0 | 0 | 0 | 0.00 |
| 0 | 0 | 0 | 0.00 | 0 | 0 | 0 | 0.00 | | | | |

COMMENTS: 0

CMPNY # 3050

(RECORD # 3)

CONTACT: MS GLADYS JONES

COMPANY: JONES & JONES CONSTRUCTION CO

STREET : 1193 BROADWAY

CITY : CHICAGO

STATE: IL ZIP: 60602 LINK BACK: 0 LINK FORWARD: 0

| INV NUM | INV DATE | ACCT # | BALANCE | INV NUM | INV DATE | ACCT # | BALANCE | INV NUM | INV DATE | ACCT # | BALANCE |
|---------|----------|--------|---------|---------|----------|--------|---------|---------|----------|--------|---------|
| 30445 | 01/12/79 | 4010 | 3998.50 | 26359 | 11/20/78 | 4010 | 3004.50 | 0 | 0 | 0 | 0.00 |
| 0 | 0 | 0 | 0.00 | 0 | 0 | 0 | 0.00 | | | | |

COMMENTS: 0

CMPNY # 4003

(RECORD # 4)

CONTACT: N/A

COMPANY: EDWIN A WILLIAMS & ASSOCIATES

STREET : SUITE 10

CITY : WASHINGTON

STATE: DC ZIP: 20013 LINK BACK: 0 LINK FORWARD: 0

| INV NUM | INV DATE | ACCT # | BALANCE | INV NUM | INV DATE | ACCT # | BALANCE | INV NUM | INV DATE | ACCT # | BALANCE |
|---------|----------|--------|---------|---------|----------|--------|---------|---------|----------|--------|---------|
| 29815 | 01/16/79 | 4010 | 407.80 | 0 | 0 | 0 | 0.00 | 0 | 0 | 0 | 0.00 |
| 0 | 0 | 0 | 0.00 | 0 | 0 | 0 | 0.00 | | | | |

COMMENTS: 0

CMPNY # 1010

(RECORD # 5)

CONTACT: MR H. JOHNSON

COMPANY: ASSOCIATED PRODUCERS INC

STREET : P O BOX 3847

CITY : ATLANTA

STATE: GA ZIP: 30306 LINK BACK: 1 LINK FORWARD: 0

| INV NUM | INV DATE | ACCT # | BALANCE | INV NUM | INV DATE | ACCT # | BALANCE | INV NUM | INV DATE | ACCT # | BALANCE |
|---------|----------|--------|---------|---------|----------|--------|---------|---------|----------|--------|---------|
| 0 | 0 | 0 | 0.00 | 0 | 0 | 0 | 0.00 | 0 | 0 | 0 | 0.00 |
| 0 | 0 | 0 | 0.00 | 0 | 0 | 0 | 0.00 | | | | |

COMMENTS: 0

PRINT CONDITIONAL ACCOUNTS RECEIVABLE MASTER DUMP

This program prints a formatted listing of all entries in selected master file records in the A/R master.

PROCEDURES

1. Select the conditional A/R master dump by typing a 4 for the menu selection. Enter the date when requested.

2. Refer to Appendix A (Master File Record Format) for field label(s) to be entered as response(s) for the questions about what the conditions will be.

With this program, considerable flexibility may be put into the selection of the masters to be printed. This report requires 132-column paper. The format is identical to that of the complete master file dump.

ACCOUNTS RECEIVABLE EDIT

This program has the ability to look for, display and/or modify any data in any field in the accounts receivable master file. Other than checking for overly long entries, no input validation is performed by this program. A printout is made of the old and new values of each modified field so that changes are documented.

PROCEDURES

1. Select the A/R edit by typing a 5 for the menu selection. Enter the password when requested.

2. When the "Record Selection Techniques" request is made, the following responses will produce the accompanying activities:

"A" - Sets up addition of a new record at the end of the file.

"(a number)" - Displays the contents of the record with this sequential position in the file.

"L" - Looks for specific data in a specific field within records of the master file. Asks for label of field to be checked and then asks for contents to be searched for.

"S" - String search. Asks for character string to search for.

The "S" differs from the "L" in that the "S" search looks at the entire record for its match whereas the "L" looks at only one field. The "S" also looks for any given data string, but the "L" must have an exact match for the contents of the named field. In either case, an equal match results in a display of the record which held the matching data, and the operator may indicate whether or not this is the record desired. A negative response continues the search.

"/" - The slash terminates the program.

3. When the "Field Label or Number" request is made, a numeric response displays the contents of the field in that sequential position within the record. A carriage return by itself displays field number 1. A slash returns control to the "Record Selection Techniques" request. The entry of a field name (see Appendix A) displays the contents of that field.

4. When any of the responses in the paragraph produce the display of a field, the following responses will produce these specific actions:

A carriage return by itself leaves the data in the field intact and produces a display of the contents of the next field. An asterisk erases the field contents and goes to the next field. A slash leaves the data in the field intact and returns to the "Field Label or Number" request. Any other data input replaces the data displayed.

The flexibility and power of the editor are so great as to

require one word of warning. The data which is entered must be exactly what is desired on the disk. No editing or rearranging is provided for the operator.

OS-DMS EDITING JOURNAL. FILE NAME: ARMST0. DATE: 1/31/79. TIME: 3:48
=====

RECORD #: 3 FIELD #: 2 FIELD LABEL: CONTACT
OLD: MS GLADYS JONES
NEW: MR HAROLD SMITHERTON

RECORD #: 1 FIELD #: 4 FIELD LABEL: STREET
OLD: P O BOX 3847
NEW: 18295 ALLENDALE AVE S W

PRINT ACCOUNTS RECEIVABLE AGE ANALYSIS

This program prints a report showing which customer has owed the user how much for how long and what percentage of the debt has been outstanding for how long. Grand totals of both amounts and percentages are also shown at the end of the report. An option is available to print specific customers or the entire file. This report requires 132 column paper.

PROCEDURES

1. Select the A/R Age Analysis by typing a 6 for the menu selection. Answer the questions as requested.

If a date on the file is either an impossible figure (i.e. containing data such as month number 13) or is later than the report date as entered at the start of the run, a date error is shown on the report and the report date is utilized in place of the date containing the error.

ACCOUNTS RECEIVABLE AGE ANALYSIS

DATE 01/31/79

PAGE 1

| CUSTOMER NAME | TOTAL BALANCE | 0-30 BALANCE | 31-60 BALANCE | 61-90 BALANCE | OVER-90 BALANCE |
|--------------------------------|---------------|--------------|---------------|---------------|-----------------|
| ASSOCIATED PRODUCERS INC | 3537.86 | 2958.83 | 256.57 | 0.00 | 322.46 |
| PERCENTAGES OF CUSTOMER TOTAL: | 100.00 | 83.63 | 7.25 | 0.00 | 9.11 |
| CAROLINA SHIPPERS COOP INC | 451.50 | 451.50 | 0.00 | 0.00 | 0.00 |
| PERCENTAGES OF CUSTOMER TOTAL: | 100.00 | 100.00 | 0.00 | 0.00 | 0.00 |
| JONES & JONES CONSTRUCTION CO | 7003.00 | 3998.50 | 0.00 | 3004.50 | 0.00 |
| PERCENTAGES OF CUSTOMER TOTAL: | 100.00 | 57.09 | 0.00 | 42.90 | 0.00 |
| EDWIN A WILLIAMS & ASSOCIATES | 407.80 | 407.80 | 0.00 | 0.00 | 0.00 |
| PERCENTAGES OF CUSTOMER TOTAL: | 100.00 | 100.00 | 0.00 | 0.00 | 0.00 |
| GRAND TOTALS: | 11400.16 | 7816.63 | 256.57 | 3004.50 | 322.46 |
| PERCENTAGES OF GRAND TOTAL: | 100.00 | 68.56 | 2.25 | 26.35 | 2.82 |

PRINT ACCOUNTS RECEIVABLE DETAILED AGE ANALYSIS

This program prints a report indicating which invoice owed by which customer has been outstanding for how long and what the value of the invoice is. Totals are maintained by customer and for the entire run. Percentages of what is owed for how long are shown for the grand total breakdown. An option is available to print specific customers or the entire file. This report requires 132 column paper.

PROCEDURES.

1. Select the A/R Detailed Age Analysis by typing 3a-7 for the menu selection. Answer the questions as requested.

If a date on the file is either an impossible figure (i.e. the file is containing data such as month number 13) or is later than the report date as entered at the start of the run, a date error is shown on the report and the report date is utilized in place of the date containing the error.

ACCOUNTS RECEIVABLE DETAILED AGE ANALYSIS

DATE 01/31/79

PAGE 1

| CUSTOMER NAME / INVOICE # | TOTAL BALANCE | 0-30 BALANCE | 31-60 BALANCE | 61-90 BALANCE | OVER-90 BALANCE |
|-------------------------------|---------------|--------------|---------------|---------------|-----------------|
| ASSOCIATED PRODUCERS INC | | | | | |
| 39687 | 2958.83 | 2958.83 | | | |
| 26774 | 256.57 | | 256.57 | | |
| 22346 | 322.46 | | | | 322.46 |
| CUSTOMER TOTAL: | 3537.86 | 2958.83 | 256.57 | 0.00 | 322.46 |
| CAROLINA SHIPPERS COOP INC | | | | | |
| 30046-A | 451.50 | 451.50 | | | |
| CUSTOMER TOTAL: | 451.50 | 451.50 | 0.00 | 0.00 | 0.00 |
| JONES & JONES CONSTRUCTION CO | | | | | |
| 30445 | 3998.50 | 3998.50 | | | |
| 26559 | 3004.50 | | | 3004.50 | |
| CUSTOMER TOTAL: | 7003.00 | 3998.50 | 0.00 | 3004.50 | 0.00 |
| EDWIN A WILLIAMS & ASSOCIATES | | | | | |
| 29815 | 407.80 | 407.80 | | | |
| CUSTOMER TOTAL: | 407.80 | 407.80 | 0.00 | 0.00 | 0.00 |
| GRAND TOTALS: | 11400.16 | 7816.63 | 256.57 | 3004.50 | 322.46 |
| PERCENTAGES OF GRAND TOTAL: | 100.00 | 68.56 | 2.25 | 26.35 | 2.82 |

BACKUP ACCOUNTS RECEIVABLE MASTER FILE

This program is designed to copy the latest version of the A/R master file (in disk unit A) onto a backup copy (in disk unit B). The backup copy must have been created as such at an earlier time and be at least as big as the file being copied.

PROCEDURES

1. Select the A/R master file backup by typing an 11 for the menu selection. The program will halt to allow the operator to place the disks in their proper units. NOTE: This program copies the A/R master from disk unit A to disk unit B. Make sure which disk is where, since no distinction is made as to which file is being written over.

PRINT CUSTOMER STATEMENTS

This program is designed to print customer statements from the A/R master. The program prints the statements on unruled 8-1/2" by 11" continuous forms.

PROCEDURES

1. Select the A/R Statement Printer by typing 10 for the menu selection. Enter the date when requested.

=====

O H I O S C I E N T I F I C , I N C

1333 S. CHILLICOTHE ROAD, AURORA, OHIO, 44202
(216) 562-3101

S T A T E M E N T O F A C C O U N T

AS OF 1/31/79

TO: ASSOCIATED PRODUCERS INC
P O BOX 3847
ATLANTA, GA 30306

ATTN: MR H. JOHNSON

=====

| INV NUMBER | INV DATE | ACCT # | AMOUNT |
|------------|----------|--------|----------|
| 39887 | 01/19/79 | 4010 | 2958. 83 |
| 26774 | 12/05/78 | 4010 | 256. 57 |
| 22346 | 10/12/78 | 4010 | 322. 46 |

TOTAL BALANCE DUE: 3537. 86

=====

PRINT CUSTOMER LIST

This program prints a listing of the customers on the file along with their customer numbers and the record numbers of their master file records. The listing is printed sequentially in the order of the master file.

PROCEDURES

1. Select the customer list printer by typing a 9 for the menu selection. Enter the date when requested.

This listing may be run on 80-column paper.

ACCOUNTS RECEIVABLE CUSTOMER LIST

DATE 1/31/79

PAGE 1

| CUSTOMER NAME | CUSTOMER NUMBER | RECORD NUMBER |
|-------------------------------|-----------------|---------------|
| ASSOCIATED PRODUCERS INC | 1010 | 1 |
| CAROLINA SHIPPERS COOP INC | 2350 | 2 |
| JONES & JONES CONSTRUCTION CO | 3050 | 3 |
| EDWIN A WILLIAMS & ASSOCIATES | 4003 | 4 |

CREATE NEW ACCOUNTS RECEIVABLE MASTER FILE

This program is designed to build an accounts receivable master file with the exact specifications provided by the user. It is only run when the system is first installed or when the capacities or capabilities of the system change and either the size or the structure of the master file is affected by the change.

PROCEDURES

1. Select the A/R master file create by typing an 8 for the menu selection.

2. To the question concerning the maximum number of customers on the file, enter a number large enough to cover all customers with outstanding balances plus some percentage for repeat customers without a current balance plus some room for growth.

3. To the question concerning average number of invoices per customer, experience must play a major role in determination of the figure. What the computer will do with this response is to set up each master record with the capacity of containing this number of invoices at any one time. Excesses of this number will be taken care of by the customer's file being made up of multiple master records linked together. If most of the customers have only one outstanding invoice, but ten percent of them have five or so, a compromise might be made on the quantity to be answered. Each situation is different.

4. To the question concerning additional fields, each situation also differs. If a user needs fields in his master record for telephone number, extra address lines, comments or whatever, he may create them here. It should be noted, however, that with the exception of the master file dumps and the editor, no programs in this system contain any means of processing these fields. Appendix A should be consulted to determine the contents of a standard master file record prior to adding extra fields.

5. The computer will now calculate the size of the record and the amount of space the file will require on the disk. These figures are displayed for the operator's approval. If the sizes and configuration are satisfactory, the approval will result in the computer attempting to create the file. The operator may also return to the questions and give other answers to experiment with different master file sizes and/or configurations.

6. Once the approval has been given to construct the file, the computer attempts to create it. The attempt will fail if either of the following conditions exist:

A. Insufficient room exists on the disk to accommodate the requested file.

B. A file already exists on the disk with the same name as the file being created. This is a safety feature, making it impossible to destroy a current version of the file by accident. The current version must be deliberately taken off

the disk prior to the running of this program.

UPDATE ACCOUNTS RECEIVABLE MASTER - "ARUPDT"

This program is a heavily modified derivative of the OS-DMS general-purpose editor "EDMAFL". Most of the routines from the original program are in this version, but some of them have been changed to a great degree.

This program is a tightly controlled editor. It contains three separate processing routines, which, in both the coding and the processing, share the same routines and, in some cases, dovetail into each other. Modification of the logic in this program should only be done after careful study of what the side effects will be.

The program layout is as follows (by line numbers):

1-699: Housekeeping and file opens.

700-997: Selection of routine to follow.

999-1360: Edit and update routine with branches deciding which way to go based on situation. Note that 1199-1226 is sometimes used as a conditional disk-write subroutine dependent on JX or JW.

2000-2120: Simple search routine.

3000-3340: Portions of update routines.

4000-4050: Continuation of simple search routine.

10000-10080: Read current record subroutine.

10100-10180: Print current record subroutine (controlled).

30000-50090: Disk error and end-of-job routines.

53000-53140: Date edit subroutine.

60000-60050: Insert invoice in existing master routine.

60055-60190: Find linked master or build linkage to new master routine.

60200-60620: Payment posting routine.

60700-60870: Input validation routines.

60900-60920: Simple search routine for reusable master (only used after file has been filled).

61000-61170: Pack down invoices within masters routine.

61200-61220: Routine to show overpayment on receipt and set up routine to add invoice (credit memo).

Print device is specified in line 70.

Disk unit for master file is specified in line 300.

Passwords are found in lines 60 and 50090.

The maximum number of masters per customer is specified in line 502. This is used to assign the size of a table. The absolute limit of the number of invoices a given customer can support is this figure times the number of invoices per master assigned when the file is built.

PRINT ACCOUNTS RECEIVABLE JOURNAL - "ARJRNL"

This program is derived from the OS-DMS conditional record access routine "IFGETI".

The general program layout is that all the housekeeping and file opens are completed before line 700. From that point to line 990 are numerous routines and subroutines utilized in the input and output operations, end-of-file conditions, error detection, etc.

The print device is specified in line 68.

The disk unit used for the master file is specified in line 91.

Passwords are found in lines 110 and 51160.

COMPLETE ACCOUNTS RECEIVABLE MASTER FILE DUMP - "ARDMPA"

This program is derived from the OS-DMS conditional record access routine "IFGETI". In this particular case, the conditions have been set so that all items will print.

The general program layout is that all the housekeeping and file opens are done prior to line 700. From this point to line 950 is the logic that makes this program unique. Above 950 are numerous routines and subroutines utilized in the input and output, end-of-file conditions, error detection, etc.

The print device is specified in line 6.

The disk unit used for the master file is specified in line 80.

Passwords are found in lines 110 and 51160.

CONDITIONAL ACCOUNTS RECEIVABLE MASTER FILE DUMP - "ARDMPB"

This program is derived from the OS-DMS conditional record access routine "IFGETI".

The general program layout is that all the housekeeping and file opens are done prior to line 700. From this point to line 950 is the logic that makes this program unique. Above 950 are numerous routines and subroutines utilized in the input and output, end-of-file conditions, error detection, etc.

The print device is specified in line 6.

The disk unit used for the master file is specified in line 80.

Passwords are found in lines 110 and 51160.

PERFORM FILE MAINTENANCE ON THE ACCOUNTS RECEIVABLE MASTER FILE -
"AREdit"

This program is very similar to the OS-DMS general-purpose editor "EDMAFL". It differs primarily in that the master file name and password are specified in the coding rather than from the keyboard.

The print device is specified in line 370.

The disk unit for the master file is specified in line 300.

Passwords are found in lines 60, 320 and 50090.

PRINT ACCOUNTS RECEIVABLE AGE ANALYSIS - "ARAGED"

This program is derived from the OS-DMS conditional record access routine "IFGETI".

The general program layout is that all the housekeeping and file opens are done prior to line 700. From this point to line 1100 is the logic that makes this program unique. Above 1100 are numerous routines and subroutines utilized in the input and output, end-of-file conditions, error detection, etc. There is a detailed date edit between 52000 and 52170, and there is a specific record lookup from 53000 to the end of the program.

The print device is specified in line 68.

The disk unit used for the master file is specified in line 93.

Passwords are found in lines 110 and 51160.

PRINT DETAILED ACCOUNTS RECEIVABLE AGE ANALYSIS - "ARDTAG"

This program is derived from the OS-DMS conditional record access routine "IFGETI".

The general program layout is that all the housekeeping and file opens are done prior to line 700. From this point to line 1100 is the logic that makes this program unique. Above 1100 are numerous routines and subroutines utilized in the input and output, end-of-file conditions, error detection, etc. There is a detailed date edit between 52000 and 52170, and there is a specific record lookup from 53000 to the end of the program.

The print device is specified in line 68.

The disk unit used for the master file is specified in line 93.

Passwords are found in lines 110 and 51160.

BACKUP ACCOUNTS RECEIVABLE MASTER FILE - "ARCOPY"

This program is almost identical to the OS-65U general utility copier "COPYFI". It differs primarily in that the master file name and password are specified in the coding rather than from the keyboard.

The printer is not used in this run.

The disk unit for the disk to be copied from is specified in line 80.

The disk unit for the disk to be copied to is specified in line 150.

The name of the file to be copied is in line 760.

Passwords are found in lines 830 and 1260.

PRINT A/R STATEMENTS - "ARSTMT"

This program is derived from the OS-DMS conditional record access routine "IFGETI". In this particular case, the conditions have been set so that all items will print.

The general program layout is that all the housekeeping and file opens are done prior to line 700. From this point to line 990 is the logic that makes this program unique. Above 990 are numerous routines and subroutines utilized in the input and output, end-of-file conditions, error detection, etc.

The print device is specified in line 68.

The disk unit used for the master file is specified in line 90.

Passwords are found in lines 110 and 51160.

PRINT CUSTOMER LIST - "ARVLST"

This program is derived from the OS-DMS conditional record access routine "IFGETI". In this particular case, the conditions have been set so that all items will print.

The general program layout is that all the housekeeping and file opens are done prior to line 700. From this point to line 990 is the logic that makes this program unique. Above 990 are numerous routines and subroutines utilized in the input and output, end-of-file conditions, error detection, etc.

The print device is specified in line 68.

The disk unit used for the master file is specified in line 90.

Passwords are found in lines 110 and 51160.

CREATE NEW ACCOUNTS RECEIVABLE MASTER FILE - "ARCREA"

This program is derived from the OS-DMS general file create "DBMFCR". This program has considerable modification in that it not only has its file name and password imbedded in the coding, but it builds completely variable-length records and asks the operator's approval of what it has created.

The printer is not used in this program.

The disk unit for the master file is specified in line 59.

Passwords are found in lines 66, 339, 345, 350, 500.

APPENDIX A

ACCOUNTS RECEIVABLE MASTER FILE RECORD LAYOUT

The layout following this explanation is that of a representative OS-DMS accounts receivable master file record. In the run that built this record, the number of invoices per master was stated as 3 and the number of extra fields was 2 (phone number and extra address).

The maximum length of each field is indicated by the number of dashes beside the label for that field.

The layout of an accounts receivable master record in the OS-DMS system is comprised of four sections.

1. The static information. This data, such as the name and address information, is found in the first seven fields of the record.

2. The linkage information. These two fields, numbers 8 and 9, chain the masters to each other when a given customer needs more capacity than average. The first master in any chain will have a link backwards of zero, and the last master in a chain will have a link forwards of zero. The contents of the linkage fields are record numbers.

3. The invoice information. Each invoice has four fields of information concerning it in the file - the invoice number, date, account number (for the general ledger) and amount. The number of invoices in each given master file record is determined when the file is constructed at the implementation of the system. Determination of how many invoices should be on each master file record is extremely important to the efficient use of disk space.

4. The extra fields. With this system, the user has the capability of adding fields to the end of the record. The only limitation to what he adds is the capacity of the disk.

Practical consideration should be weighed when setting up a master file. Fields such as phone numbers are useful, but whether they belong in the computer is sometimes debatable. Likewise, the number of invoices put in a given master record is debatable. If the average customer has two invoices outstanding, but ten percent of the customers have ten, a compromise of about four will probably work best. The effects of the linkage on system operation are as follows:

Each master record contains 161 allocated positions for static data, 34 allocated positions per invoice within the master plus whatever space is needed to hold the additional fields desired. This shows that excessive linking is wasteful because the static data requires almost as much space as five invoice entries. On the other hand, long records are wasteful because many invoice slots will be unused. The optimal size for any given master is up to the user.

FILE: ARMST

FIELD

1 COMPANY NUM
2 CONTACT
3 COMPANY
4 STREET
5 CITY
6 STATE
7 ZIP
8 LINK BACK
9 LINK FWD
10 INV NUM 1
11 INV DATE 1
12 INV ACCT 1
13 BALANCE 1
14 INV NUM 2
15 INV DATE 2
16 INV ACCT 2
17 BALANCE 2
18 INV NUM 3
19 INV DATE 3
20 INV ACCT 3
21 BALANCE 3
22 PHONE NUM
23 EXTRA ADDR

CONTENTS

APPENDIX B

GENERAL INPUT FORMATS AND EDITING

Several of the routines utilized in this system perform careful edits on the dates input to them from the console, as some of these dates are later used in calculations and should not be allowed to be filled with meaningless material. The following rules apply to dates entered in this system:

The format is month/day/year. Leading zeroes are not necessary. Either slashes, dashes or commas may be entered for separators. There is a reasonableness check for years between 1977 and 1985 in the routine. February 29 is valid.

The money edit is also rigid. If the amount is negative, a minus sign must be the first character. One decimal point is allowed. Other than the numerics, these are the only characters allowed.

Zip codes are checked for numerics.

APPENDIX C

SPACE REQUIREMENTS OF A/R MASTER FILE

The size of an accounts receivable master file record is very flexible, dependent on how many invoices are contained within each master record, the numbers and sizes of additional fields included in each record and the number of customers on the file. For this reason, the routine that creates this file has an option for the operator to change specifications as often as needed prior to starting the actual creation.

Utilization of formulas to estimate the approximate sizes can be extremely time-consuming. For approximations, the following samples are those calculated by the system.

| <u>Number of Customers</u> | <u>Invoices Per Customer</u> | <u>Additional Fields</u> | <u>Additional Field Length</u> | <u>Total Length</u> |
|------------------------------------|--------------------------------------|------------------------------|------------------------------------|-------------------------|
| 50 | 2 | 0 | 0 | 12,895 |
| 50 | 5 | 0 | 0 | 18,739 |
| 50 | 10 | 1 | 10 | 29,041 |
| 100 | 2 | 0 | 0 | 25,295 |
| 100 | 5 | 0 | 0 | 36,839 |
| 100 | 10 | 1 | 10 | 57,191 |
| 200 | 2 | 0 | 0 | 50,095 |
| 200 | 5 | 0 | 0 | 73,039 |
| 200 | 10 | 1 | 10 | 113,491 |
| 400 | 2 | 0 | 0 | 99,695 |
| 400 | 5 | 0 | 0 | 145,439 |
| 400 | 10 | 1 | 10 | 226,091 |

Approximate 8-Inch Floppy Disk Capacities

| | | | | |
|-----|----|---|----|---------|
| 980 | 2 | 0 | 0 | 243,535 |
| 675 | 5 | 0 | 0 | 244,989 |
| 433 | 10 | 1 | 10 | 244,670 |

