

REPORT ON THE
CORPORATE SERVICES DATABASE SYSTEM
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REPORT ON THE
CORPORATE SERVICES DATABASE SYSTEM

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The Corporate Services Database System has been designed for the Marketing Department of the Royal Bank of Canada as an important element in a market evaluation system. Implementation was completed in September, 1977 with complete district participation due to commence in November, 1977. This report consists of a description of both the original problem and the implemented system as well incerpts from the user manual and all relevant system documentation.

The Corporate Services Database System was developed by a systems group of the Systems Department, Royal Bank of Canada. Initial investigation of the problem was done by a business systems analyst of this group. Initial database design was done by this analyst and the author. In the final system, the system administrator and the three edit programs were written by the author. The remaining sections of the system were written by other members of the group.

I would like to thank the Royal Bank of Canada for permission to use the Database System as a project towards the completion of a Masters degree at McGill University. In particular, special thanks go to H. London , C. M. Papion , and S. Del Rio.

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There are two forms of input data needed to evaluate the profitability of corporate accounts. The first set of data consists of contracts negotiated between the Royal Bank and its corporate clients. Each client agrees to use a set of services offered by the Bank at a price agreed upon during the negotiations. The unit price for the service could be fixed for all clients or could vary with estimated usage.

This information, along with various other information (dun's number, business participation, etc) constitutes a contract. The contract as originally specified does not necessarily remain fixed. Services may be added or deleted, the life of the contract may be extended, or any other item on the contract may be modified.

The second set of input data consists of the actual volumes for each service. Actual volumes can be divided into two classes. First, for automated services, volumes are available at monthly intervals from the in-house facilities. For the remainder of the services, manual services, volumes are not collected continuously.

The major requirement for the Database System is to give Marketing the capability to analyze the profitability of corporate accounts. This would include analysing the profitability of both individual contracts and of a particular service across corporate accounts. To satisfy these requirements the major activity of the final system becomes data capture, an activity complicated by differences in the types of data. New contracts and changes to data already on the database are inputted in the district offices

by non-technical staff. The actual volumes are passed to the system on magnetic tape. New contracts are inputted throughout the data cycle; the actual volumes are available on a monthly basis.

Other requirements for the final system include: the ability to access the system on a national basis, the ability for many users to access the system simultaneously, and the necessity of the system being able to handle many different kinds of users. Some users will be clerks whose function will be to enter data. Other users will be analysts whose function will be to analyze the data. The characteristic common to all users will be a lack of knowledge about computers. The system will be required to test every bit of input, accepting valid data and rejecting invalid data. It is an absolute requirement that the system never "bomb" because of some error in input data.

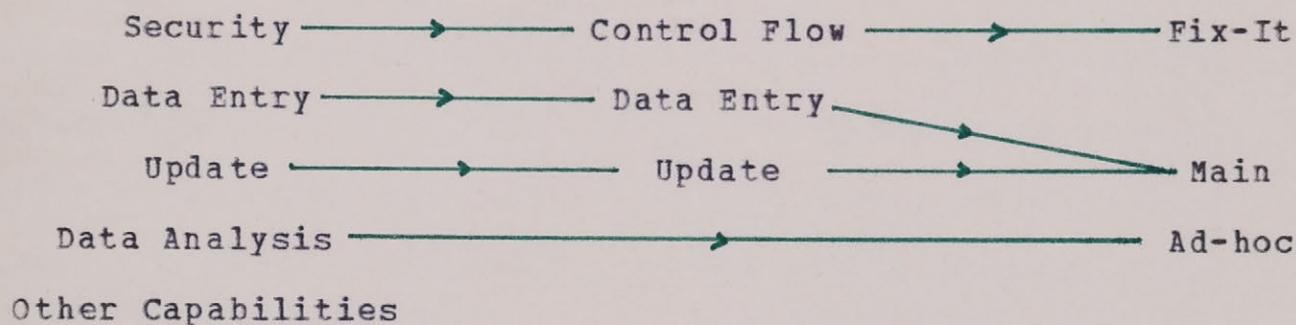
This report is divided into three sections. The first section, System Overview, is a managerial report describing the concepts of the system, and the resources required to run it. The second section, Analysis of the System, is a technical report showing how the CSDS was implemented. The final section, a User Manual, shows how each command is initiated. The relationships between sections is shown in the table below. Security is discussed in the Overview, Analysis shows how the control was implemented, and Fix-It describes how the system administrator can modify the security arrangements as necessary. Data Analysis is not described in the Analysis section since the CSDS only

inter-faces with existing CSC systems. Other capabilities briefly describes some other commands built into the system.

OVERVIEW

ANALYSIS

USER MANUAL



The Corporate Services Database System (CSDS) has been implemented on the CSC time-sharing service. There are presently ten user-numbers with access to the system, with the capability to add as many new numbers as required. Each user-number simulates an independent system; the only interaction between the user-numbers occurs at the time the master database is updated. Before the update run, each district inputs and verifies its own data in isolation from the remainder of the system. When the verification process is completed, the input data is transferred to a central library to await initiation of the update process. To maintain security, head-office has the only user-number from which UPDATE can be run. Each district can, however, access the master database at all times.

System Security

On sign-on to a user-number connected to the CSDS, the user is locked in. The user is prompted for any information required at each step along the way, with the system preparing any files or databases needed. There is no way for a user to break out of the CSDS and enter the CSC operating system. In the event of a programming error, the system will simply restart in command mode. If the user hits the break key, except in the editor, the session is ended and the user is signed-off.

Each user is required to enter a CSDS password at the beginning of a session. This password associates the user

with an activity matrix set up by the system administrator. The matrix specifies a sub-set of activities for which each user is validated. The activity matrix can be changed by the system administrator at any point in time. There is also an activity matrix for the user-number which specifies those activities validated for use on the number. An activity matrix can not be changed to give authorization for an activity "turned off" by the user-number's activity matrix. The user-number activity matrix can only be modified by written request to the Systems Department. Using the user-number activity matrix, UPDATE has been turned-off on all user-numbers except head-office's.

Once a user enters a valid password and is signed-on to the system, relevant information is gathered and stored in a log file. At the end of the session, the information is modified and the cost of the session is added to the record. Using the log file, a track of usage and costs can be kept, and, at the end of each month, a report can be produced giving the costs of each session by project-id.

Data Entry and Verification

Each district is responsible for the entry and verification of its own data. The two types of data entered by the district, new contracts and exceptional changes, follow the same data cycle. Only the cycle for new contracts will be described. Data can be entered via the INPUT command in one of two ways. The first method involves

entering all data on-line using the system editor. This method allows the user the capability to correct any errors introduced by the input process as they occur, the user paying for this ability with large connect charges. The second method is to first enter all data on a cassette tape and then to read the tape on-line. The one drawback with this method is that the cassette can only be used once during a particular month, so that the user must hold off input until the end of the month. After the initial input of data, the user can access and modify the existing data or add new data via the CHANGE command. The process of entering data can be continued for as many sessions as required.

Once all data has been entered on-line, the verification process begins. The actual verification program runs overnight, with the reports being printed on the high-speed terminal of the nearest CSC office. There are four reports produced by the verification process. The first report lists the input data used for the run. The second report concerns contracts which have been accepted. Each contract is accepted or rejected as a whole. If accepted, a contract is stored on a database which is kept on the user-number until the data cycle for the period has been completed. If a contract is rejected, all input data is transferred to an error file from which the user can correct any errors found. A contract report should be given careful attention to ensure that all data is valid since only syntax errors can be detected during the verification process. For example,

if the district code is entered as 004 instead of 008, this would not be detected by the verification process since both are acceptable codes. If an error is detected in an accepted contract, it can be corrected using an exceptional change. The third report gives any error or warnings detected. An error results in the rejection of the contract, while a warning specifies an error in an optional field. If a contract has been accepted, but one or more optional fields contained errors, those fields can be defined at a later date using an exceptional change. The last report lists out the error file. Using the two error reports, all errors in the input data can be corrected, and the data can be verified using the command RERUN. It must be noted, however, that if no errors were found, no error file will be created. In such a case, the data cycle will be considered to have been completed and no additional data will be accepted. To retain the ability to enter new data throughout the the period, a dummy line containing an error should be inserted in the data file.

Update Procedures

Once the data cycle for a district has been completed, the command MERGE is used to transfer the data files from the district's user-number to a central library for use in the update run. When MERGE has been completed, the district's user-number is cleared of all data files and is ready to accept data for the next period even though UPDATE

has not been completed. The update run is initiated by head-office when all districts have entered their data for the period and have run MERGE. Nevertheless, UPDATE can be run even though all districts have not run MERGE; in fact, the update process can be initiated with no new contract or exceptional change data. The actual volumes for the bank's automated services are accumulated and stored on a magnetic tape by the Systems Department in Montreal and then the tape is forwarded to the CSC office in Toronto. Head-office then runs a verification program to transfer the data to a database on its user-number. The update run gathers together all new contract and exceptional change data entered by the districts and, using the actual volumes database, modifies the master database. The update program, in a manner similar to all major programs in the system, runs overnight, the various reports produced being printed on the high-speed terminal in Toronto.

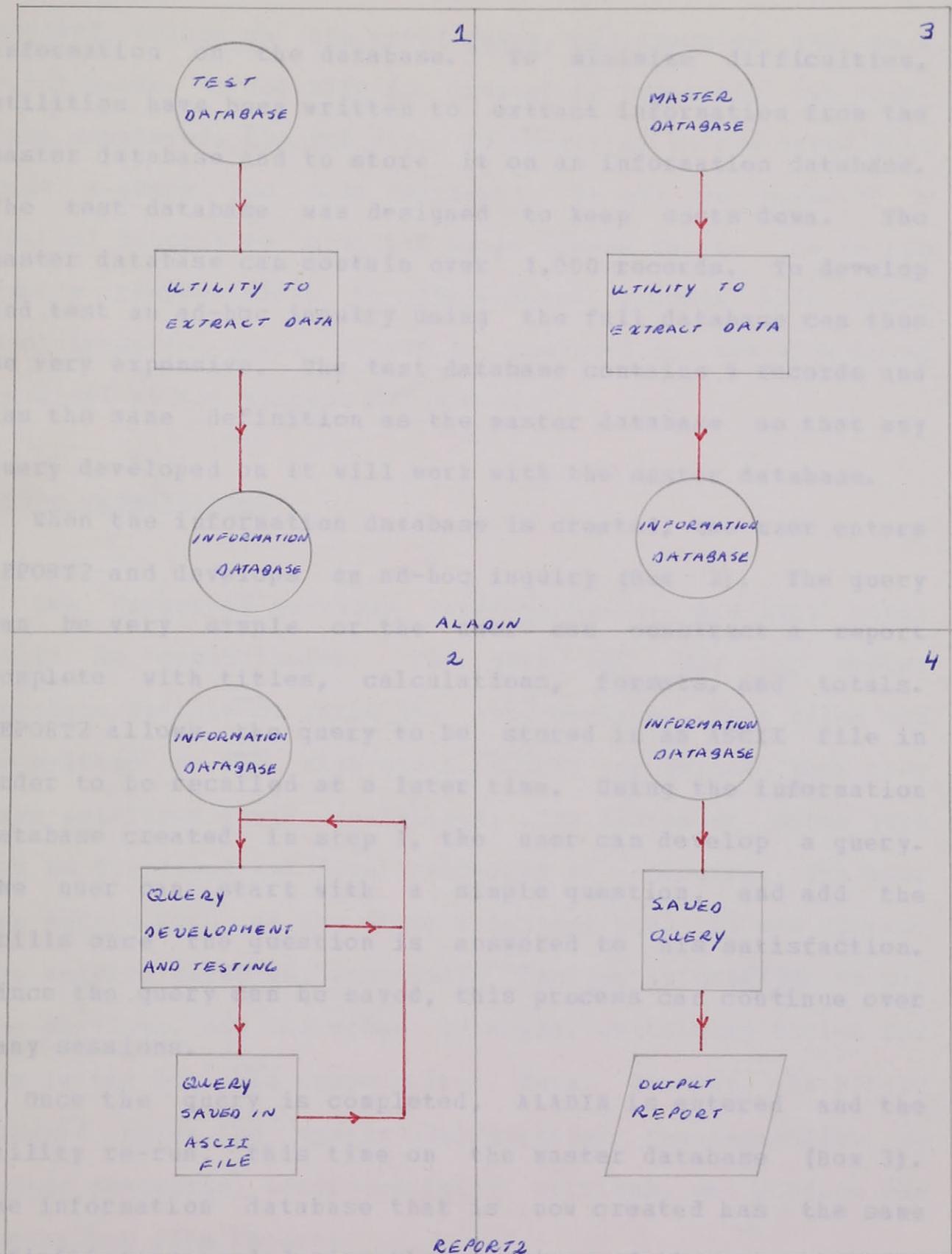
Backup for the system is provided by two tape files. The first contains a copy of the new master database. From this tape the master database can be loaded on-line at any point in time during the month. To minimize costs the master database should be left on-line no more than five days during the month. The second tape file contains the input databases used to create the current master database. This includes the old master database, the actual volumes database, the contract database, and the exceptional change database. If the current version of the master database were to be lost, these databases could be loaded and the

master database re-created.

Data Analysis

The above discussion centered on how the data capture segment of the CSDS works. The remainder of this section will discuss the data analysis capabilities of the CSDS. There are two methods of accessing data from the master database. The first method uses the REPORT command to produce an Analysis Compensation Form for one or more clients on the master database. This form gives the profit from each aspect of a client's activity, followed by the overall return to the bank generated by the entire contract. The second method is to produce unique reports using one of the two ad-hoc inquiry languages available on CSC. The first language, ALADIN, is the more complicated of the two and has been used mainly to provide utilities to extract data from the master database and store it in a more accessible format in an information database. The second language, REPORT2, is the main ad-hoc language presently being used on the CSDS. It is very simple to learn even for non-technical people, but gives the ability to generate quite complex queries. The interaction between the two languages in preparing a query is as follows (see Figure I).

First, a utility is run from Aladin to extract the required information from the test database (Box 1). The master database was designed to minimize storage, so that complications can arise when developing queries to access



DEVELOPMENT OF AN AD-HOC INQUIRY

FIGURE I

information on the database. To minimize difficulties, utilities have been written to extract information from the master database and to store it on an information database. The test database was designed to keep costs down. The master database can contain over 1,000 records. To develop and test an ad-hoc inquiry using the full database can thus be very expensive. The test database contains 4 records and has the same definition as the master database so that any query developed on it will work with the master database.

When the information database is created, the user enters REPORT2 and develops an ad-hoc inquiry (Box 2). The query can be very simple or the user can construct a report complete with titles, calculations, formats, and totals. REPORT2 allows the query to be stored in an ASCII file in order to be recalled at a later time. Using the information database created in step 1, the user can develop a query. The user can start with a simple question, and add the frills once the question is answered to his satisfaction. Since the query can be saved, this process can continue over many sessions.

Once the query is completed, ALADIN is entered and the utility re-run, this time on the master database (Box 3). The information database that is now created has the same definition as used during the creation of the query but the information database now contains data from all clients on the master database.

The ad-hoc query can now be run, either on-line or on a batch basis (Box 4). If run on-line, the user enters

REPORT2, brings up his saved query, and executes it. On a batch basis, a job file is created by prompting the user. Once completed, the job file is submitted to run overnight. Once a query has been completed, it can be moved to a central library to give all users access to it. It is the user's responsibility to purge saved queries when their usefulness is over. Output is produced on the high-speed terminal at the nearest CSC office.

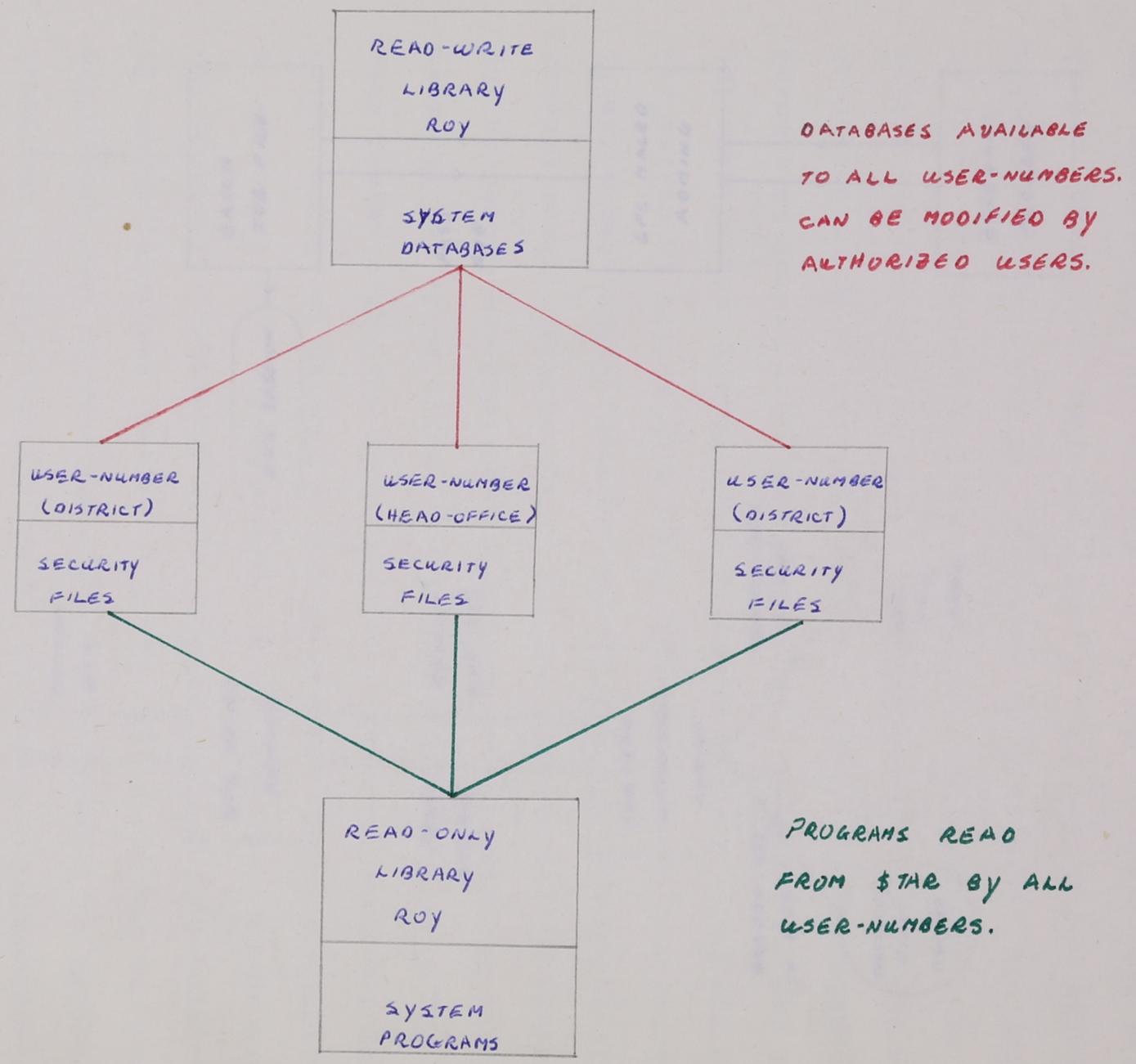
Other Capabilities

The Corporate Services Database System has many other built in capabilities. The user can copy the master database on-line or purge the copy on-line. User files can be printed on the high-speed printer or purged when they have out-lived their usefulness. The status of batch jobs can be displayed and jobs cancelled if necessary. The user can update both of the other databases used in the system: the service database, containing costing information on all the services, and the codes database, containing titles for use in the Analysis Compensation Form. Finally, the FIX-IT command gives the system administrator the capability to change passwords, modify activity matrices, and produce the monthly log file report.

The Corporate Services Database System consists of a series of programs written in Fortran, Cobol, Aladin, and GPS, the CSC operating system language. All system programs are resident on a read-only library, \$STAR, which can be accessed by all user-numbers authorized to use the system. The master database, all other databases used by the system, the input databases transferred from the district's user-numbers by MERGE, and the back-up tapes are all resident on ROY, a read-write library (see Figure II).

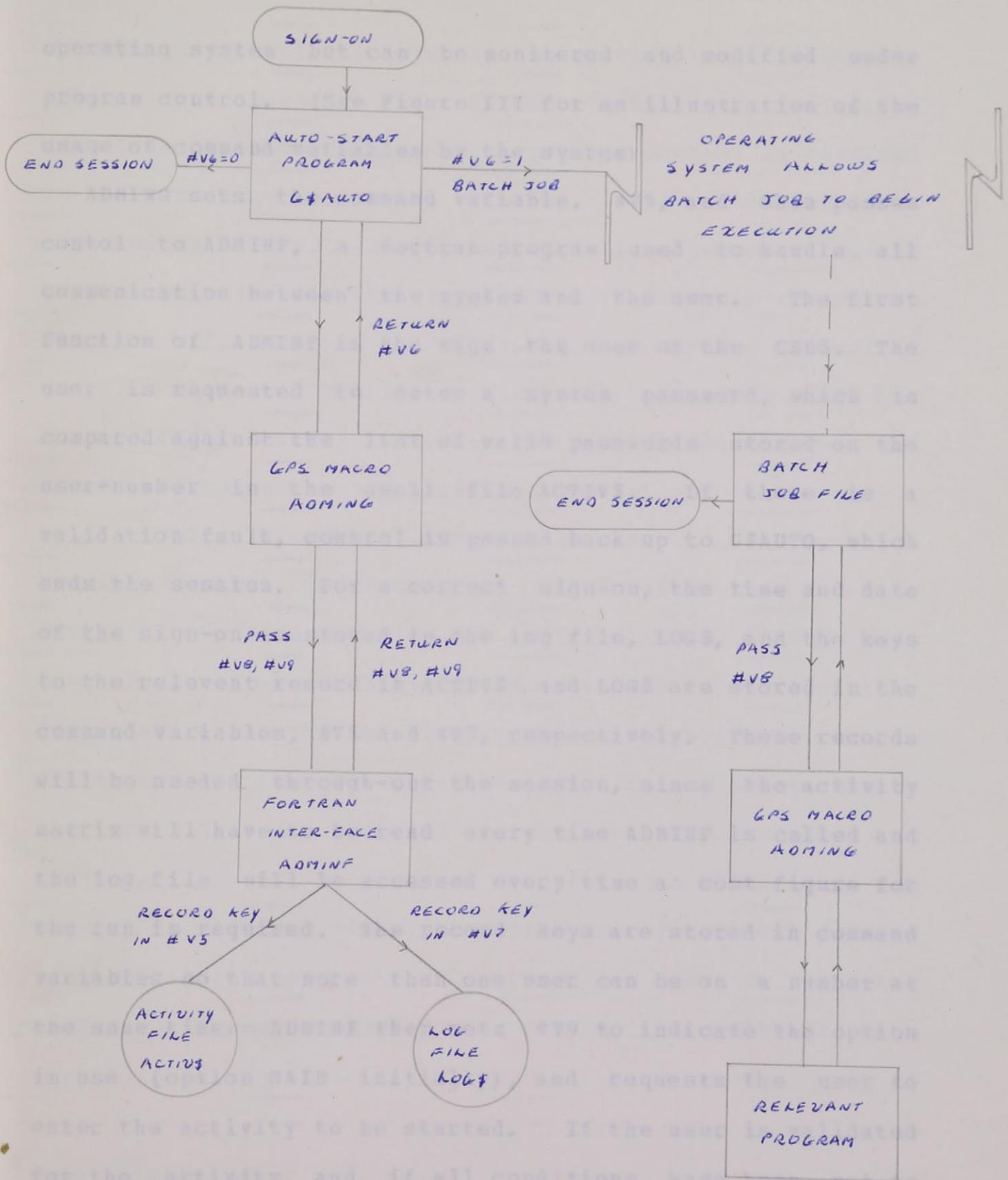
Control Flow

When a user signs on to the CSDS, an auto-start program, G\$AUTO, which is resident on each user-number, begins execution (see Figure III). This program, written in GPS, sets up the file identifications necessary to run the system and then transfers control to ADMING, a GPS macro and the center of the system. (There are two forms of GPS files supported by CSC. The first form, a do-file, consists of a series of operating system commands in which the control flow is always toward the bottom of the file. Branching up in the file is not allowed. Macro files, the second form of GPS files, have similar properties to that of a do-file except that branching is allowed in both directions. ADMING was made a GPS macro to give it the capability to control the system. All other GPS files used are do-files.) Communication between programs is accomplished using system command variables. These variables are not affected by the



SYSTEM LAYOUT

FIGURE II



CONTROL FLOW

FIGURE III

operating system but can be monitored and modified under program control. (See Figure III for an illustration of the usage of command variables by the system)

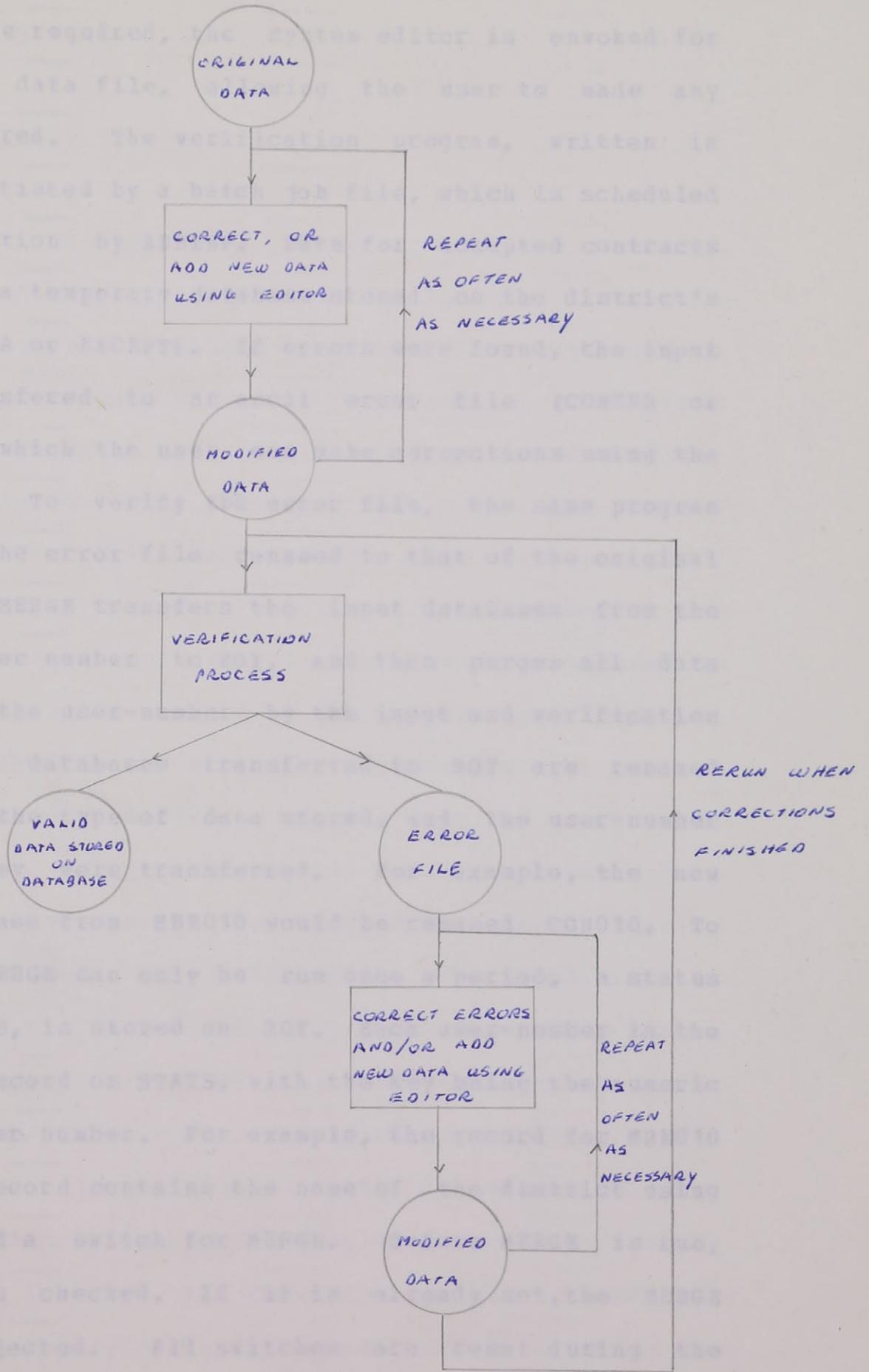
ADMING sets the command variable, #V9, and then passes control to ADMINF, a Fortran program used to handle all communication between the system and the user. The first function of ADMINF is the sign the user on the CSDS. The user is requested to enter a system password, which is compared against the list of valid passwords stored on the user-number in the ascii file ACTIV\$. If there is a validation fault, control is passed back up to G\$AUTO, which ends the session. For a correct sign-on, the time and date of the sign-on is stored in the log file, LOG\$, and the keys to the relevant record in ACTIV\$ and LOG\$ are stored in the command variables, #V5 and #V7, respectively. These records will be needed through-out the session, since the activity matrix will have to be read every time ADMINF is called and the log file will be accessed every time a cost figure for the run is required. The record keys are stored in command variables so that more than one user can be on a number at the same time. ADMINF then sets #V9 to indicate the option in use (option MAIN initially), and requests the user to enter the activity to be started. If the user is validated for the activity, and if all conditions have been met to allow the activity to start, #V8 is set to indicate the activity and control is returned to ADMING. ADMING calls any programs necessary to handle the request, resets #V8 to a null value, and passes control to ADMINF. #V9 specifies

the option currently invoked by the system, re-initiates the option, and prompts for the next activity. If during execution of a program, an error occurs, control is returned to the next line in ADMING. If #V8 is null, then the error occurred in ADMINF, and control will be returned to ADMINF in command mode. If the error occurred in another program, the flow will continue as normal, again returning control to ADMINF. When the session is over, the record in LOG\$ has the costs associated with the session added to it, and control is passed back to G\$AUTO, which signs-off.

If ADMINF discovers on sign-on that it is a batch session, control is returned to G\$AUTO after the log file entry has been made with #V6 set to one. G\$AUTO ends execution, allowing control to be returned to the operating system which permits the batch job file to begin execution. #V8 is set by the job file and ADMING is called to handle the activity. At the end of the job, the log file is updated, control is returned to the job file, and the session is ended. All reports produced by a batch job are printed at the nearest CSC office (as set up when the user-number was received) and set to the relevant bank location.

Data Entry

Figure IV shows the data cycle as described in the previous section. When data is entered, it is placed in the ascii file indicated by the data type (CONREC or EXPREC).



DATA CYCLE

FIGURE IV

If changes are required, the system editor is invoked for the relevant data file, allowing the user to make any changes required. The verification program, written in Aladin, is initiated by a batch job file, which is scheduled to start execution by ADMINF. Data for accepted contracts is stored on a temporary database stored on the district's library (CONTRA or EXCEPT). If errors were found, the input data is transferred to an ASCII error file (CONERR or EXPERR), from which the user can make corrections using the system editor. To verify the error file, the same program is used with the error file renamed to that of the original input file. MERGE transfers the input databases from the district's user number to ROY, and then purges all data files left on the user-number by the input and verification process. The databases transferred to ROY are renamed according to the type of data stored, and the user-number from which they were transferred. For example, the new contract database from MBE010 would be renamed CON010. To ensure that MERGE can only be run once a period, a status database, STATS, is stored on ROY. Each user-number in the CSDS has one record on STATS, with the key being the numeric part of the user number. For example, the record for MBE010 is 10. The record contains the name of the district using the number and a switch for MERGE. Before MERGE is run, this switch is checked. If it is already set, the MERGE request is rejected. All switches are reset during the update process. If the MERGE switch is set to -1, the user-number does not participate in the CSDS, and may not

run MERGE at any time.

Update Procedures

When update is initiated, there are n new contract databases and m exceptional change databases on ROY, with the actual volumes database resident on head-offices user-number (see Figure V). The first step of the update process is to merge the new contract and exceptional change databases, creating one database for each type to be resident on head-office's user-number. The merge procedure is a simple n -way merge. First, all $n+1$ databases are opened. One record from each of the n input databases is read, the records are sorted by the record key (ie dun's number), and the record with the smallest record is then copied on the output database. In the case of two records with equal keys, an error message is given, and one record is rejected. A new output record from the input database from which the record was obtained is then read, and is floated down in the list until it reaches its proper place. The record at the top of the list becomes the new output record. When an end-of-file is reached on a database, its record in the list is given a key with the largest possible value. The MERGE process is completed when the output record has such a value. All databases are then closed, the input databases are deleted, the status records in STATS are reset, and a report is produced showing the origin of each record in the output database. Similarly, a m -way merge is

performed for exceptional changes.

The next step is to update the old master database with

the new data. Each of the three databases is read. The actual values are then merged into the client master. The actual

information is placed in the client master. The actual values are then merged into the client master. The actual

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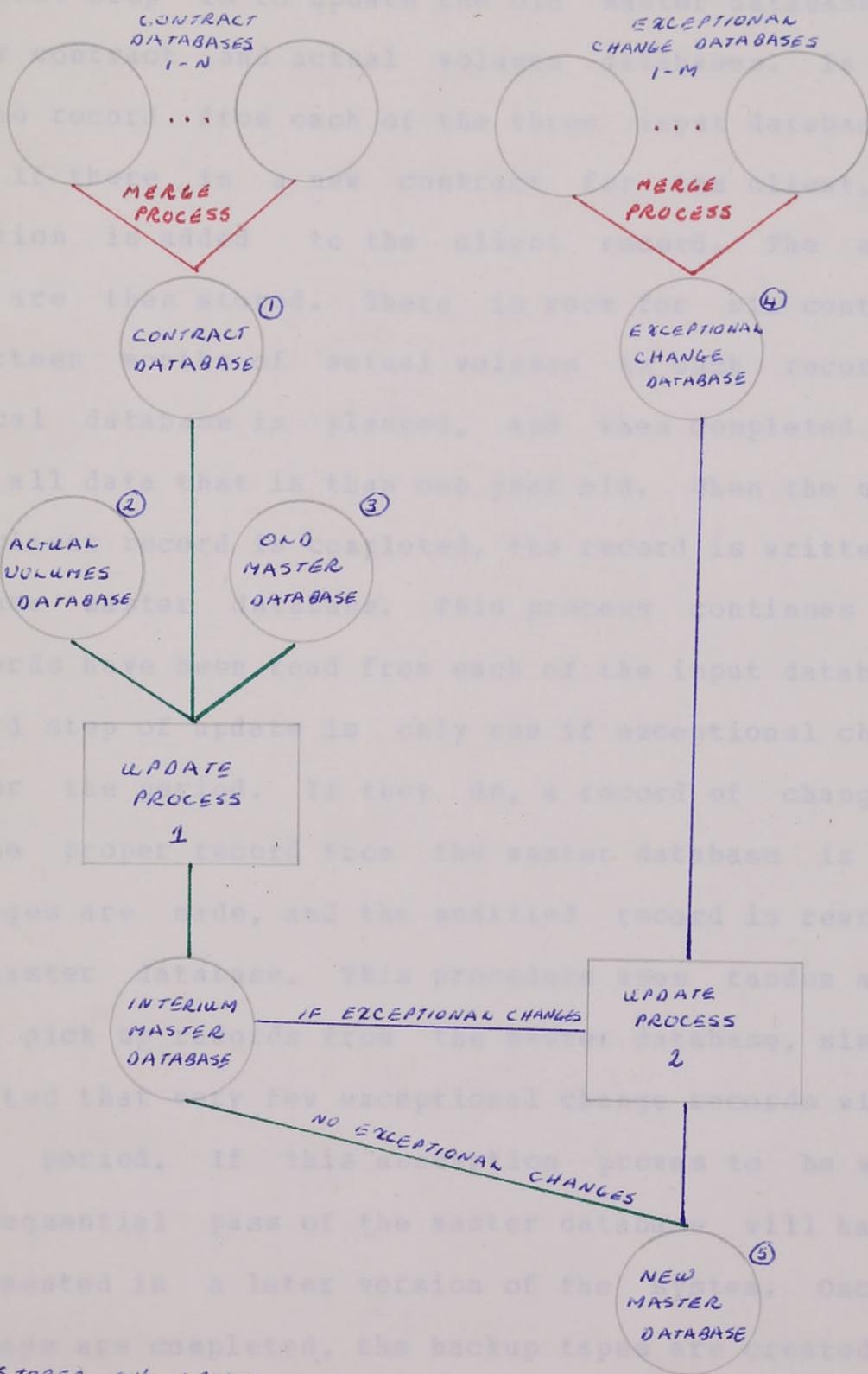
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①-④ : STORED ON UPDATE BACKUP TAPE 1

⑤ : STORED ON UPDATE BACKUP TAPE 2

UPDATE RUN
FIGURE V

performed for exceptional changes.

The next step is to update the old master database with the new contract and actual volumes databases. In this step, one record from each of the three input databases is read. If there is a new contract for the client, the information is added to the client record. The actual volumes are then stored. There is room for six contracts and thirteen months of actual volumes in each record. A historical database is planned, and when completed will contain all data that is than one year old. When the update of the client record is completed, the record is written out to the new master database. This process continues until all records have been read from each of the input databases. The third step of update is only run if exceptional changes exist for the period. If they do, a record of changes is read, the proper record from the master database is read, all changes are made, and the modified record is rewritten to the master database. This procedure uses random access reads to pick up records from the master database, since it is expected that very few exceptional change records will be used per period. If this assumption proves to be wrong, then a sequential pass of the master database will have to be implemented in a later version of the system. Once all three steps are completed, the backup tapes are created, all input databases are deleted, and the various records are outputted via the CSC office in Toronto.

The following pages contain excerpts from the user manual developed for the Corporated Services Database System. The manual is divided into three sections, one for each option in the CSDS. Option Main is used to enter data, to run the verification programs, and the update procedure. Option Ad-hoc allows the user to access the report languages, ALADIN and REPORT2, while Fix-it describes the system administrator commands. Most examples have been removed from this version of the manual. Any data left has been fabricated.

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OPTION: MAIN

Option Main has two primary functions. The first is as the controller of the Corporate Database System. On sign-on, this option is entered and only from MAIN can sign-off be accomplished. Its second function consists of data entry and verification. New contracts and exceptional changes for data on the master database are entered and verified; corrections are made to any errors found and verification is rerun. Finally, input from all the districts is merged and used to update the master database.

Questions and Valid Replies:

1) -COMMAND?

↑

Enter a command by name or number.

Messages

1) THE COMMAND ENTERED IS INVALID, PLEASE RE-ENTER.

The command entered cannot be deciphered. If entered by name, check the spelling. If entered by number, it must be between one and twenty-six.

2) SORRY, YOU ARE NOT VALIDATED FOR THIS ACTIVITY.

The system administrator has turned off this command on your password.

COMMAND: INPUT (1)

"INPUT" allows the user to enter a data file for either New Contracts or Exceptional Changes. Data is entered monthly and therefore this command can only be used once during each update period. If further input is required, use the command CHANGE. Input can be done on-line using the system editor, or if data was entered on a cassette tape, the tape can be read. See the relevant section for instructions in either case. The data must be entered in a specific form. A discussion of the rules follows.

Questions and Valid Replies

1) INPUT "CONTRACT" OR "CHANGES"? ↑

Type of input required. Enter "CONTRACT" for new contracts, "CHANGES" for exceptional changes, or "NONE" to escape from command.

2) INPUT "ON-LINE" OR FROM A "CASSETTE" ? ↑

Enter the data file interactively at the terminal, "ON-LINE", or read a cassette tape, "CASSETTE".

3) PLEASE PREPARE THE CASSETTE FOR INPUT. ENTER "READY" WHEN PREPARED, "END" TO ABORT ACTIVITY. ? ↑

To prepare the cassette, "REWIND" the cassette tape and then press "LOAD". Set the cassette for "PLAYBACK" and put playback on "LINE". The system will start, read, and stop the tape for you. See the section on cassettes for detailed instructions.

Messages

1) INVALID RESPONSE - PLEASE RE-ENTER.

The response to a question is invalid. Enter the valid answer.

Messages (cont'd)

- 2) THE CONTRACT INPUT FILE ALREADY EXISTS - COMMAND IGNORED.

The input file has already been entered for the indicated data type. If you have any corrections, use "CHANGE".

- 3) THE CONTRACT INPUT FILE HAS ALREADY BEEN ENTERED AND VERIFIED; ERRORS WERE DETECTED AND PLACED IN AN ERROR FILE - COMMAND IGNORED

Verification of the indicated input file has already been run. Since some of the contracts contained errors, the input for them was placed in an error file. Use the command "CORRECT" to correct errors and then use "RERUN" to verify the input.

- 4) THE CONTRACT INPUT FILE HAS ALREADY BEEN ENTERED AND VERIFIED; NO ERRORS WERE DETECTED - COMMAND IGNORED.

Verification of the indicated input file has been completed with all data accepted.

Rules for Entering a Contract

Each line in a contract file contains a line identification field, and as many records as can fit on a line. This will vary with the size of each record.

Line Identification

The line identification field contains ten characters. The first nine are the clients dun's number; the last is an end character, "#". If the dun's number is less than nine characters, then the entire line will be rejected.

Example: 000451989#

Record

A record is broken down into a record identifier, all necessary information for the particular field, and an end of record character, "#".

Identifier: Three character field describing the item on the analysis form referenced, followed by a "*". The first character describes the group; the next two the field within a group.

Example: For postal code, use A05*
for payroll, use H69*

Record Information: The information used depends on the field referenced. See Table 3 for detailed instructions. If more than one piece of information is needed, enter a "*" between each item.

Example: 1) dun's number = 000290106
2) cheques processed: monthly volume = 1200
unit price = \$0.10
3) sic code = 7372

Record (cont'd)

Example: 4) Business participation:

Royal Bank = 65% & 73%

Toronto Dominion = 28% & 27%

Imperial Bank of Commerce = 7% & 0%

000290106#B21*1200.0*0.10#A04*7372#

000290106#A03*65*73*004*28*27*010*7*0#

Rules for Entering Exceptional Changes for a Contract

Each line in an exceptional change file contains a line identification field, and as many records as can fit on a line. This will vary with the size of each record. Changes can only be made on data already on the database. (ie a user should not attempt a change on a new contract).

Line Identification

The line identification field contains ten characters. The first nine are the client's dun's number; the last is an end character, "#". For an update to be successful, the dun's number must match with a client already on the database.

Example: 000451989#

Record

A record contains the following information: a record identifier; a change code or codes; all necessary information; and an end of record character, "#".

Identifier

Four character describing the contract to be referenced and the element on that contract to be changed followed by a "*". If the field is contract independent, for example the client's name, then use 0 for the contract number.

To find the contract number for other fields, check the update reports. The contract number will be given for each contract along with the effective contract date. See Table 7 for valid contract numbers for each element.

Change Code

The change code describes the action to be taken. They are:

- 1) ADD - add the element to the contract.
- 2) REP - replace the element with the new info.
- 3) DEL - delete the element from the contract.

Group A requires only the first code of ADD, DEL or REP. For all other items a second code is necessary to indicate whether to change contract information or actual volumes. These codes are:

- 1) INFO - change contract information
- 2) ACTU - change actual volumes

See Table 7 for full information.

Record Information

The information required for exceptional changes is exactly the same as for a new contract (see Table 3) if contract information is to be changed. For actual volumes, a date and a new volume must be given. The date is of the form MMY and the volume is an integer (greater than zero, no decimal point).

Examples

- 1) dun's number = 000290106
- 2) add items deposited: monthly volume = 6300
unit price = \$0.16
- 3) add volume for items deposited: date = June, 1977
volume = 7951
- 4) delete analysis period
- 5) delete volume for deposits regular for May, 1977
- 6) delete contract # 1
- 7) change district code to Quebec/Montreal

All changes are for contract #2.

```
000290106#B18*ADD*INFO*6300.0*0.16#
000290106#2B18*ADD*ACTU*0677*7951#
000290106#2A10*DEL#2B13*DEL*ACTU*0577#
000290106#1A06*DEL#0A09*REP*010#
```

Table 3

Required Information for Elements on New Contracts.

Element Name	Element ID	Rules
Client Name	A01 *	One to forty characters.
Market Identification	A02	Three - character field. See Table 4 for codes and meaning.
Business Participation	A03 *	Enter bank code, previous percentage for each bank used by the client. Royal is assumed to be the first tuple entered, so bank identification is not needed. Each percentage value must be between 0 & 100%. After the Royal, up to three other banks can be entered. See Table 5 for bank codes to be used. Separate each data item by a "*".
Sic Code	A04	Four-digit field between 0 & 9999. Up to five codes can be entered, although only the first will appear on the Analysis Summary Form.
Postal Code	A05 *	Six-character field. A valid postal code has alphabetic characters in the first, third, and fifth positions and numeric characters filling out the field.
Dun's Number	A06 *	Dun's number is used as an identifier; therefore if included, this field is ignored.
Contract Type	A07	Three - character field. For a New contract, enter "XØ" for a Reneg. contract, enter "ØXØ", and for a Lost contract, enter "ØØX". (Ø stands for blank)

Element Name	Element ID	Rules
Client Name	A08	Two six-character fields separated by a "*". Dates are entered as MMDDYY, with January entered as 01. The expired date must be later than the effective date. For a contract to be added to the database its effective date must be later than that of the last contract on the database for that client.
District	A09	Three-character field. See Table 6 for valid codes.
Analysis Period	A10 *	Four six-character fields separated by "*". Dates are entered as MMDDYY; each item must be two characters, eg day 9 as 09. For both present and previous analysis periods, the second date must be later than the first date.
Branch	A11 *	Numeric field from 0 to 999.
Salesman	A12 *	Numeric field from 0 to 999.
Activity and Pricing Services	B13 - B21 *	Two data items separated by "*". The first is the monthly volume (eg enter as 1000.0). The second is unit price. Both must be greater than or equal to zero.
Direct Revenue Summary	D27-D32 *	Two monthly volumes separated by "*". Up to two decimal places accepted.
Net funds Analysis	E34, E35 *	Two monthly volumes separated by "*". Up to two decimal places accepted.
	E36 *	Not allowed
	E37 *	Same as E34

TABLE 3 (cont'd)

Element Name	Element ID	Rules
Net Funds Analysis	E38	Not allowed.
	E39-E40 *	Three data items separated by "*". The first is rated (10%) as 10.0). The next two are monthly volumes with up to two decimal places accepted.
	E41 *	Not allowed.
	E42 *	Three monthly volumes separated by "*". Up to two decimal places accepted.
	E43 *	Not allowed.
	E44 *	Same as E34
Activity & Pricing	F01-F99 *	Same as Group B
Revenue/Expense	174 *	Two data items separated by "*". First item is interest rate (10% or 10.0); Second is volume, up to two decimal places accepted.
	175 - 177 *	Not allowed.
	178 - 179 *	One volume with up to two decimal places.
	180 *	Two volumes separated by "*". Up to two decimal places accepted.
	181 - 185 *	Not allowed.

Notes

- 1) Elements with "*" are not compulsory or for a contract to be accepted. All other elements are required
- 2) Numeric values in group A must be entered as integers (ie no decimal point).

TABLE 4

Market Identification Codes

Internal Code	Enter on Input	Meaning
1	000	unassigned
2	010	undefined division
3	100	undefined corporate
4	110	Business/Industry
5	130	Corporate/Financial
6	150	Corporate/Municipal
7	170	Government/Municipal
8	190	National/Business

TABLE 5

Bank Codes

Internal Code	Enter on Input	Meaning
1	001	Bank of Montreal
2	002	Bank of Nova Scotia
3	003	Royal Bank of Canada
4	004	Toronto-Dominion Bank
5	005	Mercantile Bank
6	006	Banque Canadienne Nationale
7	008	Banque Provinciale
8	010	Canadian Imperial Bank of Commerce
9	016	Bank of British Columbia
10	018	Unity Bank of Canada
11	999	Others

TABLE 6

District Codes

Contract Number	Element	Code	Action & Info.
0	A01	REP	Replace client name with new name given.
0	A02	DEL	Delete client name; no information required.
1-4	A03	REP	Replace Business Participation.
1-4	A07	REP	Replace Contract Type.
1-4	A08	REP	Replace Contract Term.
0	A09	REP	Replace District Code.
1-4	A10	REP	Replace Analysis Period.
		DEL	Delete Analysis Period; no information required.
0	A11	REP	Replace Branch.
1-4	A12	REP	Replace Collector.
		DEL	Delete Collector; no information required.

Internal Code	Enter on Input	Meaning
1	004	Atlantic
2	008	Quebec/East
3	014	Ontario East/North
4	012	Metropolitain Toronto
5	016	Ontario West
6	020	Manitoba
7	024	Saskatchewan
8	028	Alberta
9	032	British Columbia
10	010	Quebec/Montreal

TABLE 7

Exceptional Change Codes

Contract Number	Element	Code	Action & Info.
0	A01	REP	Replace client name with new name given.
0	A02	DEL	Delete client name; no information required.
1-6	A03	REP	Replace Business Participation.
		DEL	Delete field; no information necessary.
0	A04	REP	Replace Sic Code
0	A05	REP	Replace Postal Code.
		DEL	Delete Postal code; no information required.
1-6	A06	DEL	Delete Contract
1-6	A07	REP	Replace Contract Type.
1-6	A08	REP	Replace Contract Term.
0	A09	REP	Replace District Code.
1-6	A10	REP	Replace Analysis Period.
		DEL	Delete Analysis Period; no information required.
0	A11	REP	Replace Branch.
1-6	A12	REP	Replace Salesman.
		DEL	Delete Salesman; no information required.

TABLE 7 (cont'd)

Contract Number	Element	Code		Action & Info.
1-6	Group B to Group I	ADD	INFO	Add new contract information.
			ACTU	Add a new service giving date and volume.
		REP	INFO	Replace contract information with new data entered.
			ACTU	Replace existing actual volume, giving date of volume and new volume.
		DEL	INFO	Delete a service from a contract. No information required.
			ACTU	Delete a volume. Enter the date of the volume.

Notes:

- 1) Separate codes and data items by "*".
- 2) Unless otherwise indicated, contract information is the same as for new contracts.
- 3) A data item might have the correct syntax and pass verify, but will be rejected later. This is because the master database is only opened, and the changes compared with existing data at the time of the update run.

COMMAND: CHANGE (2)

"CHANGE" allows the user to modify an input file before running verification. The system editor is used to add, delete or modify lines in the file.

Question and Valid Replies

- 1) MAKE CHANGES TO "CONTRACT" or "CHANGE"?
? ↑

As a file type to be modified, enter "CONTRACT" for the New Contract file, "CHANGES" for the Exceptional Change file or "NONE" to escape from the command.

Messages

- 1) INVALID RESPONSE - PLEASE RE-ENTER

The response to a question was not acceptable. Enter the valid answer when prompted.

- 2) THE CONTRACT INPUT FILE HAS ALREADY BEEN ENTERED AND VERIFIED; ERRORS WERE DETECTED AND PLACED IN AN ERROR FILE - COMMAND IGNORED.

Verification of the indicated input file has already been run. Since some of the data contained errors, an error file containing this information has been created. Use the command "CORRECT" to correct the errors and then use "RERUN" to verify the error file.

- 3) THE CONTRACT INPUT FILE HAS ALREADY BEEN ENTERED AND VERIFIED NO ERRORS WERE DETECTED - COMMAND IGNORED.

Verification of the indicated input file has been completed with all data accepted.

COMMAND: VERIFY (3)

"VERIFY" is used to check the syntax of the input files for New Contracts, Exceptional Changes and Actual Volumes. The jobs are performed overnight at priority 5 and the output will be printed at the local CSC office. Each job produces various reports which will be discussed in the following pages.

Questions and Valid Replies

- 1) VERIFICATION OF "CONTRACT", "CHANGES" or "ACTUALS"?
? ↑

Enter "CONTRACT" to verify the New Contract input file, "CHANGES" for the Exceptional Change input file, "ACTUAL" for the Actual Volume tape, or "NONE" to escape from the command.

Messages

- 1) INVALID RESPONSE - PLEASE RE-ENTER.

The response to a question was not acceptable. Enter the valid answer when prompted.

- 2) THERE IS NO CONTRACT INPUT FILE ON THE SYSTEM-COMMAND IGNORED.

The indicated input file has not yet been entered. Verification cannot be run.

- 3) VERIFICATION OF THE CONTRACT INPUT FILE HAS ALREADY BEEN RUN.

Verification of the indicated input file has already been run. Since some of the data contained errors, an error file containing this information has been created. Use the command "CORRECT" to correct the errors and then use "RERUN" to verify the error file.

- 4) VERIFICATION OF THE CONTRACT INPUT FILE HAS ALREADY BEEN RUN; NO ERRORS WERE DETECTED - COMMAND IGNORED.

Verification of the indicated input file has been completed with all data accepted.

Verification of Contracts

Reports returned by this activity are:

1) JOB FILE REPORT

This report is automatically produced by the system for a batch job. It contains all system messages produced plus the cost statistics for the job. The job id's of all other reports will appear and all other reports should be checked to ensure that they are indeed for this run.

2) CONTRACT INPUT FILE (CONREC)

- This is a copy of the input used during VERIFY sorted by the line identification field.

3) CONTRACT STATISTICS REPORT (CONSTS)

Statistics produced on the run include the number of cards (or lines) read from CONREC; the number of cards rejected by VERIFY for an invalid line identification field; the number of contracts accepted and stored in the contract database (CONTRA); and the number of contracts rejected. All input for rejected contracts goes into the contract error file to allow for corrections. If there are no rejected lines or contracts, no error file will be produced.

4) ACCEPTED CONTRACT REPORT (EDCORP)

All accepted contracts are shown field by field. These should be verified to ensure that only valid data goes into the master database.

5) CONTRACT ERROR MESSAGE FILE (EDCOER)

There are two types of messages produced by the verification program. The first type are warning messages. These occur for data that cannot be associated with a contract or with errors in non-compulsory fields in GROUP A. The second type are error messages. Any error found in a contract will result in the contract being rejected. If there are no warnings or errors found for a contract, no message will appear for that contract in this report. If a contract has only warning messages appearing, then the following message will be issued, signifying that the contract has been accepted.

CONTRACT ACCEPTED FOR DUN'S ???????????

If the contract has one or more errors, then the following message will appear:

NUMBER OF ERRORS FOUND = ??? CONTRACT REJECTED FOR DUN'S =?????????

All warning and error messages are self-explanatory. Use the rules shown in INPUT to correct any errors detected and then rerun verify (RERUN).

6) CONTRACT ERROR FILE (CONERR)

This file contains all contracts that have been rejected. -If there are no rejected lines or contracts, this file will not be created.

Notes: Once all errors have been corrected, only the contract database will be on the system. From that time until MERGE is run, no further contracts can be entered. To allow for the capability of entering new contracts for the entire period, enter a line that will ensure the error file will be created.

Example

When VERIFY is run, the following message will appear

THE FOLLOWING JOB WILL BE SUBMITTED:

GPS362 VERCON-PNC/STAR 15772

OUTPUT WILL BE READY TOMORROW AT CSC.

15772 is the job id of the run and it appears on the job File Report. The ensuing report (see following output) shows the system starting and running with a return code of zero. Next, the other five reports are shown with their job id's. Finally, the cost of the job is given. If the return code is not zero, or if any other messages appear contact the programming group. In this example, the four contracts shown in INPUT are used as sample data. This example will be continued in CORRECT.

Verification of Exceptional Changes

Reports returned by this activity are:

1) JOB FILE REPORT

This report is automatically produced by the system for a batch job. It contains all system messages produced plus the cost statistics for the job. The job id's of all other reports will appear and all other reports should be checked to ensure that they are indeed for this run.

2) EXCEPTIONAL CHANGE INPUT FILE (EXPREC)

This is a copy of the input used during VERIFY sorted by the line identification field.

3) EXCEPTIONAL CHANGE STATISTICS REPORT (EXPSTS)

Statistics produced on the run include the number of cards (or lines) read from EXPREC; the number of cards rejected by VERIFY for an invalid line identification field; the number of clients for which exceptional changes have been accepted; and the number of clients for which exceptional changes have been rejected. All rejected input is placed in the exceptional change error file. If all data is accepted, no error file will be produced.

4) REPORT ON ACCEPTED EXCEPTIONAL CHANGES (EDEXRP)

All exceptional changes to be submitted to update are displayed in this report. They should be checked to ensure that no fields will be changed by mistake on update.

6) EXCEPTIONAL CHANGE ERROR MESSAGE FILE (EDEXER)

Warning messages in this program are produced only when the line cannot be associated with a client. Any other error found will cause all exceptional changes for that client to be rejected. The messages produced are self-explanatory. Use the rules shown in INPUT to correct any errors detected and then rerun verify (RERUN).

Verification of Exceptional Changes (cont'd)

7) EXCEPTIONAL CHANGE ERROR FILE (EXPERR)

This file contains all clients for which exceptional changes have been rejected. If there are no errors in the input, EXPERR will not be produced.

Note: Once all errors have been corrected, only the exceptional change database (EXCEPT) will be on the system. From that time until MERGE is run, no further data can be entered. To allow for the capability of entering new exceptional changes during the entire period, enter a line that will ensure an error file will be created.

Example

When verify is run, the following message will appear:

THE FOLLOWING JOB WILL BE SUBMITTED:

GPS362 VERCHG-PNC/\$STAR 4828

OUTPUT WILL BE READY TOMORROW AT CSC.

4828 is the job id of the run and it appears on the JOB FILE REPORT. The following report shows the system starting and running with a return code of zero. The other five reports are also shown with their job id's. Finally, the cost of the job is given. If the return code is not zero, or if any other messages are given, contact the programming group. EXPREC shows the input for the run, a series of changes for three contracts on the database. All input for a client is rejected when errors are found in the data for the client.

Verification of the Actual Volumes Tape

This activity will be run once a month by Head-Office. The tape is produced in Montreal by Systems and then transferred to CSC. When HELP is run, the status of the tape will be shown. The tape will be on the system for only one week after delivery to CSC so that VERIFY must be run as soon as possible. Reports produced by a run are:

1) JOB FILE REPORT

This report is automatically produced by the system for a batch job. It contains all system messages produced plus the cost statistics for the job and the job id of ACTSTS.

2) VOLUME STATISTICS FILE (ACTSTS)

This report will summarize the information on the tape. The month for which the tape was produced will be displayed along with the number of records read from the tape and the number of records saved on the actual volumes database (ACTUAL). The number of records on the database is the number of clients for whom actual volumes have been collected. If any other messages appear, contact the programming group.

COMMAND: CORRECT (4)

"CORRECT" allows corrections to the error file produced after a verify run.

Questions and Valid Replies

- 1) CORRECT "CONTRACT" OR "CHANGES" ?
?

↑

Enter "CONTRACT" to correct the New Contract error file; "CHANGES" to correct the Exceptional Change error file; or "NONE" to escape from this command.

Messages

- 1) INVALID RESPONSE - PLEASE RE-ENTER.

The response to a question was not acceptable.
Enter the valid answer when prompted.

- 2) THERE IS NO CONTRACT ERROR FILE ON THE SYSTEM - COMMAND IGNORED

The indicated error file is not on the system.

- 3) VERIFICATION OF THE CONTRACT INPUT FILE HAS NOT BEEN RUN -
COMMAND IGNORED.

The indicated input file has been run through VERIFY.
The data was valid so no error file was created.

COMMAND: RERUN (5)

"RERUN" runs the verify program on the error files.

Questions and Valid Replies

- 1) RERUN "CONTRACT" OR "CHANGES"?
? ↑

Enter "CONTRACT" to rerun the New Contract error file; "CHANGES" to rerun the Exceptional Change error file; or "NONE" to escape from this command.

Messages

- 1) INVALID RESPONSE - PLEASE RE-ENTER

The response to a question was not acceptable.
Enter the valid answer when prompted.

- 2) THERE IS NO CONTRACT ERROR FILE ON THE SYSTEM - COMMAND IGNORED

The indicated error file is not on the system.

- 3) VERIFICATION OF THE CONTRACT INPUT FILE HAS NOT BEEN RUN -
COMMAND IGNORED.

The indicated input file is on the system awaiting the running of VERIFY.

- 4) VERIFICATION OF THE CONTRACT INPUT FILE HAS BEEN COMPLETED -
COMMAND IGNORED.

The indicated input file has been run through VERIFY. All data was valid so no error file was created.

Example

```
COMMAND ? RERUN
```

```
RERUN "CONTRACT" OR "CHANGES"?  
? CONTRACT
```

```
THE FOLLOWING JOB WILL BE SUBMITTED:
```

```
GPS362  RUNCON-PNC/STAR  17356
```

```
OUTPUT WILL BE READY TOMORROW AT CSC.
```

COMMAND: MERGE (6)

"MERGE" moves the databases for New Contracts and Exceptional Changes from the district's user number to a central library for use in updating the master database. Once MERGE has been run, it cannot be initiated again until the update function has been completed.

Questions and Valid Replies

- 1) DO YOU WISH TO CONTINUE?
ANSWER "YES" OR "NO"
? ↑

Messages appearing above this question will give the status of the system. If MERGE is to be run given the current state of the system, enter "YES". Otherwise, enter "NO".

Messages

- 1) WARNING - THERE ARE NO FILES FOR CONTRACT ON THE SYSTEM.

There are no files for the indicated data type on the system. If MERGE is run, the indicated data type will not be used in the UPDATE run for this district.

- 2) THE CONTRACT INPUT FILE HAS NOT BEEN VERIFIED

An input file for the indicated file type is on the system. MERGE cannot be run until it is verified.

- 3) WARNING - THE CONTRACT ERROR FILE STILL EXISTS.

An error file for the indicated file type is still on the system. If MERGE is run the file will be lost.

- 4) MERGE HAS ALREADY BEEN RUN FOR THIS TIME PERIOD.

MERGE cannot be run again until UPDATE is run by head-office.

- 5) DUE TO THE ABOVE ERROR(S), MERGE WILL NOT BE RUN.

Merge cannot be run until the errors are corrected.

- 6) IF MERGE IS RUN, ANY ERROR FILES ON THE SYSTEM WILL BE LOST AND/OR THE DATA TYPE MISSING WILL BE EXCLUDED FROM THE RUN.

A warning message has been issued before. If MERGE is run, one or both of the above possible actions will take place.

- 7) THE SYSTEM IS READY FOR MERGE

Conditions are correct for a run of MERGE.

- 8) MERGE HAS SUCCESSFULLY BEEN RUN.

MERGE has been run with no errors found.

- 9) AN ERROR HAS OCCURED IN MERGE.
PLEASE CONTACT THE PROGRAMMING GROUP.

A system error has occurred. Keep your output and contact the programming group.

- 10) UNABLE TO CHECK STATUS OF THE SYSTEM AT THE PRESENT TIME.

Another district is running MERGE at this time. Please rerun this command in approximately 10 minutes. If this condition re-occurs, contact the programming group.

COMMAND: UPDATE (7)

"UPDATE" takes all input data for the month and applies it to the master database. The input data comes from two sources. The first source is the district offices of Corporate Marketing. Each district inputs all New Contracts and Exceptional Changes for its area. MERGE moves these databases to a central library for use in the UPDATE run. The second source of data is systems. Each month, a tape containing the Actual Volumes will be produced and sent to CSC Toronto. Head-Office will verify the tape to produce an Actual Volumes Database. If some district has not run MERGE, a message will be issued and the option to pursue or not the activity will be given the user. If the Actual Volumes database is not ready, UPDATE cannot be run.

Questions and Valid Replies

- 1) IF UPDATE IS RUN, THOSE DISTRICTS THAT HAVE NOT RUN MERGE WILL BE EXCLUDED FROM THE RUN.
DO YOU WISH TO CONTINUE?

A status report on all districts will appear above this question. If UPDATE is run, then all districts that have not run MERGE will not participate in the UPDATE run. If this is agreeable "YES" OR "NO". To stop the run, enter "NO".

?
↑

Messages.

- 1) THE ACTUAL VOLUMES DATABASE IS NOT ON THE SYSTEM.

The tape containing actual volumes must have been verified before the UPDATE run can be made.

- 2) THE DATA CYCLE FOR CONTRACTS MUST BE COMPLETED BEFORE UPDATE CAN BE RUN.

UPDATE requires that no data files be on the system before the run can be made. Complete the verification process for the indicated file type and then run MERGE.

- 3) UPDATE WILL NOT BE RUN AT THE PRESENT TIME.

Due to the errors given before this message, UPDATE cannot be run. Correct the errors before rerunning this command.

Messages (cont'd)

4) THE FOLLOWING JOB WILL BE SUBMITTED:

GPS362 MASTER-PNC/\$STAR 16503

OUTPUT WILL BE READY TOMORROW AT CSC.

The batch job to run UPDATE has been submitted and will run overnight. The job id is 16503. To check on the status of the job, use STATUS. To cancel the job, use ABORT.

Reports

Reports returned by this command and described on the following pages.

Example

COMMAND ? UPDATE

STATUS OF DISTRICTS

DISTRICT *****	STATUS *****
HEAD OFFICE	HAS NOT RUN MERGE.
SYSTEMS TESTING	HAS NOT RUN MERGE.
ATLANTIC	HAS RUN MERGE.
QUEBEC EAST	HAS NOT RUN MERGE.
ONTARIO EAST/NORTH	HAS RUN MERGE.
METROPOLITAN TORONTO	HAS NOT RUN MERGE.
ONTARIO WEST	HAS NOT RUN MERGE.
MANITOBA	HAS RUN MERGE.
SASKATCHEWAN	HAS RUN MERGE.
ALBERTA	HAS RUN MERGE.
BRITISH COLUMBIA	HAS NOT RUN MERGE.

IF UPDATE IS RUN, THOSE DISTRICTS THAT HAVE NOT RUN MERGE WILL BE EXCLUDED FROM THE RUN.

DO YOU WISH TO CONTINUE?

ANSWER "YES" OR "NO".

? UJJ

? YES

THE FOLLOWING JOB WILL BE SUBMITTED:

GPS362 MASTER-PNC/\$STAR 32973

OUTPUT WILL BE READY TOMORROW AT CSC.

COMMAND: AD-HOC (8)

"AD-HOC" calls up option AD-HOC.

Example

COMMAND? AD-HOC

AD-HOC COMMAND? ↑

Questions and Replies:

1) ENTER CLIENT DUN'S NUMBER WHEN PROMPTED, "END" WHEN FINISHED

When prompted, enter the dun's number of a client for whom an Analysis Form is required. When the list of clients is completed, enter "END".

2) DUN'S #

Enter dun's number.

3) DO YOU WANT THE OUTPUT AT THE TERMINAL?
(THE ALTERNATIVE IS THE HIGH-SPEED PRINTER)
ANSWER "YES" OR "NO"

Enter "YES" for terminal output, "NO" for batch job with output on high-speed printer.

Messages

1) REPORT CANNOT BE RUN UNTIL THE MASTER DATABASE IS COPIED ON-LINE.

Reports are produced from information on the master database. The database must therefore be on-line before REPORT can be run.

2) A BATCH JOB TO PRODUCE REPORTS HAS BEEN SUBMITTED, NO FURTHER REPORTS CAN BE PRODUCED UNTIL THIS JOB IS COMPLETED.

A batch job to produce reports uses a file to store the list of dun's numbers. Until the job has been run, the file is in use and no further reports can be requested.

COMMAND: REPORT (9)

"REPORT" prints out the Analysis Compensation Form for clients on the master database. The forms can be produced on-line at the terminal or as a batch job with the output printed on the high-speed printer at the local CSC office.

Note: Running a single report at the terminal is often unnecessarily expensive. Batch jobs should be run late in the day when no further reports will be needed at the terminal.

Questions and Valid Replies:

- 1) ENTER CLIENT DUN'S NUMBER WHEN PROMPTED, "END" WHEN FINISHED

When prompted, enter the dun's number of a client for whom an Analysis Form is required. When the list of clients is completed, enter "END":

- 2) DUN'S? ↑

Enter dun's number.

- 3) DO YOU WISH THE OUTPUT AT THE TERMINAL?
(THE ALTERNATIVE IS THE HIGH-SPEED PRINTER)
ANSWER "YES" OR "NO"

? ↑

Enter "YES" for terminal output, "NO" for batch job with output on high-speed printer.

Messages

- 1) REPORT CANNOT BE RUN UNTIL THE MASTER DATABASE IS COPIED ON-LINE.

Reports are produced from information on the master database. The database must therefore be on-line before REPORT can be run.

- 2) A BATCH JOB TO PRODUCE REPORTS HAS BEEN SUBMITTED, NO FURTHER REPORTS CAN BE PRODUCED UNTIL THIS JOB IS COMPLETED.

A batch job to produce reports uses a file to store the list of dun's numbers. Until the job has been run, the file is in use and no further reports can be requested.

COMMAND: SERVICE_510

3) THE FOLLOWING JOB WILL BE SUBMITTED:

GPS REPORT - PNC/LIB\$

THE OUTPUT WILL BE READY TOMORROW AT CSC.

Note that the batch job to produce the reports has been submitted.

Three character field associating each schedule with a service. The first character is the group letter and the last two the field number within a group.

eg. 813.

SCHEDULE TYPE

Type of schedule to be given. Enter a 1 for standard unit price or a 2 for benchmark costs. Both types of information are presently on the database, but only benchmark costs are used for the Analysis Compensation Form.

Note: For each service and type of schedule, a maximum of six schedules can be saved on the database.

SCHEDULE DATE

Date at which the schedule was placed on the database. The Analysis Compensation Report uses the schedule with the latest date.

RETROACTIVE DATE

Date at which the schedule becomes effective. It must be on or before the schedule date.

COMMAND: SERVICE (10)

"SERVICE" allows the user to access the services database, containing the cost/price schedules for each service offered by the Royal Bank. Each schedule consists of the following information:

SERVICE FIELD AND NUMBER

Three character field associating each schedule with a service. The first character is the group letter and the last two the field number within a group.

eg. B13.

SCHEDULE TYPE

Type of schedule to be given. Enter a 1 for standard unit price or a 2 for benchmark costs. Both types of information are presently on the database, but only benchmark costs are used for the Analysis Compensation Form.

Note: For each service and type of schedule, a maximum of six schedules can be saved on the database.

SCHEDULE DATE

Date at which the schedule was placed on the database. The Analysis Compensation Report uses the schedule with the latest date.

RETROACTIVE DATE

Date at which the schedule becomes effective. It must be on or before the schedule date.

COMMAND: COPY (11)

"COPY" copies the master database, CLIENT, from tape and places it on-line. This command will only work if the database is not already on the system. Use HELP to check the status of CLIENT.

Note: Because of the cost involved in on-line storage, it is recommended that CLIENT be on the system for a maximum of 5 days per month.

Messages

1) THE DATABASE IS ALREADY ON THE SYSTEM, - COMMAND IGNORED.

The master database is already on-line.

COMMAND: DROP (12)

"DROP" removes the copy of the master database from on-line. The copy of the master database on tape is not affected.

Messages

1) THE DATABASE IS NOT ON THE SYSTEM - COMMAND IGNORED.

There is no copy of the master database on-line to purge.

COMMAND: IDBD (13)

"IDBD" gives a description of all elements in a database.

Questions and Valid Replies:

1) PLEASE ENTER DATABASE NAME: ↑

Enter the name of the database for which a description is required.

Messages

1) FM004 E ABCD - PNC NOT FOUND

The database entered, ABCD, does not exist.

2) ALA281 E INVALID DATABASE

The name entered does not correspond to a database.

It is probably an ascii file (input or error or inquiry or job file).

COMMAND: LIST (14)

"LIST" prints out all save files for a user number. The first field is the name of the file; the second and third the date and time the file was created; the fourth the status of the file (UPDATE means that the file can be modified or purged; READ means the file can only be read) and the fifth is the number of times the file has been used. There are two types of files shown. The first type are system files that cannot be purged. The second type are files created by users of the system. These should be purged when they are no longer of use.

System Files

- ACTIV\$ - activity file containing passwords and activity matrices
- ACTREC - actual volumes input tape
- ACTUAL - actual volumes database
- CONERR - contract error file
- CONREC - contract input file
- CONTRA - contract database
- EXCEPT - exceptional changes database
- EXPERR - exceptional change error file
- \$AUTO - auto-start program
- LOG\$ - file containing history of sign-ons during the month.

These files will appear during the month depending upon the status of the system. All the files are protected and cannot be purged.

COMMAND: PURGE (15)

"PURGE" allows the user to destroy files that are no longer of use. Use LIST to get a catalogue of all files on the system.

Questions and Valid Replies

1) ENTER FILE NAME TO BE PURGED

?
↑

Enter the name of the file to be purged.

Messages

1) THE FILE ENTERED IS A SYSTEM FILE - COMMAND IGNORED

System files may not be purged.

2) FMDI46 E ABCD - PNC/LIB\$ PROTECTED

The file entered, ABCD, is a read-only file and may not be purged.

3) FMD004 E ABCD - PNC/LIB\$ NOT FOUND

The file entered, ABCD, is not on the system.

COMMAND: STATUS (16)

"STATUS" gives the status of a batch job or a file submitted for printing on the high-speed printer at CSC. Inquires can be made for all jobs currently on the system or on a specific job identified by the job number given on submission.

Example:

COMMAND ? STATUS

DO YOU WISH THE STATUS OF ALL BATCH JOBS?
ANSWER "YES" OR "NO".
? YES

```
TT MBE003 08/25/77 09:10:39
/P 08:50:04 08/25/77 GPS MBE003,,JEFF
  ID...15772 NOP...1 UT-BULK
/P 08:49:54 08/25/77 JEFF MBE003 CONREC LIB$
  ID...15908 NOP...2 UT-BULK FORMS-STD1 NDC 1 PL-66
/P 08:49:55 08/25/77 JEFF MBE003 CONSTS LIB$
  ID...15978 NOP...1 UT-BULK FORMS-STD1 NDC 1 PL-66
/P 08:49:56 08/25/77 JEFF MBE003 EDCORP LIB$
  ID...16032 NOP...3 UT-BULK FORMS-STD1 NDC 1 PL-66
/P 08:49:57 08/25/77 JEFF MBE003 EDCCOR LIB$
  ID...16113 NOP...2 UT-BULK FORMS-STD1 NDC 1 PL-66
/P 08:49:58 08/25/77 JEFF MBE003 CONERR LIB$
  ID...16176 NOP...2 UT-BULK FORMS-STD1 NDC 1 PL-66
/P 09:09:48 08/25/77 GPS MBE003,,JEFF
  ID...17356 NOP...1 UT-BULK
/P 09:09:36 08/25/77 JEFF MBE003 CONREC LIB$
  ID...17663 NOP...2 UT-BULK FORMS-STD1 NDC 1 PL-66
/P 09:09:38 08/25/77 JEFF MBE003 CONSTS LIB$
  ID...17712 NOP...1 UT-BULK FORMS-STD1 NDC 1 PL-66
/P 09:09:39 08/25/77 JEFF MBE003 EDCORP LIB$
  ID...17780 NOP...4 UT-BULK FORMS-STD1 NDC 1 PL-66
/P 09:09:40 08/25/77 JEFF MBE003 EDCCOR LIB$
  ID...17797 NOP...1 UT-BULK FORMS-STD1 NDC 1 PL-66
/P 09:09:42 08/25/77 JEFF MBE003 CONERR LIB$
  ID...17909 NOP...1 UT-BULK FORMS-STD1 NDC 1 PL-66
12 QUEUED JOBS FOR YOUR REQUEST
```

COMMAND: SUBMIT (17)

"SUBMIT" sends a file to be printed on the high-speed printer at the local CSC office. To check on the progress of the request, use STATUS; to cancel the request use ABORT.

Questions and Valid Replies

1) PLEASE ENTER FILE NAME: ↑

Enter the name of the file to be outputted.

Messages

1) FMD004 E ABCD - PNC/LIB\$ NOT FOUND

The file entered, ABCD is not on the system.

2) GPS362 ABCD - PNC/LIB\$ 1234

The file ABCD has been submitted for printing with a job id of 1234.

Example:

COMMAND? SUBMIT

PLEASE ENTER FILE NAME: CONERR
GPS362 CONERR-PNC/LIB\$ 44634

COMMAND: JOB (18)

"JOB" constructs and/or submits a batch job file for processing. The file contains a series of stored ad-hoc inquiries using ALADIN or REPORT2 (R2). Once the file has outlived its usefulness, it should be purged.

Questions and Valid Replies

- 1) DO YOU WISH TO SUBMIT FOR PROCESSING AN EXISTING BATCH JOB?
(THE ALTERNATIVE IS TO CREATE A NEW BATCH JOB FILE)
ANSWER "YES" OR "NO"

? ↑

To construct a new job file, answer "NO". If there is an existing job file to run, answer "YES".

- 2) PLEASE ENTER A NAME FOR THE NEW FILE.

? ↑

Enter the name for the new job file.

- 3) YOU WILL NOW BE PROMPTED FOR AN ACTIVITY ("ALADIN" OR "R2") AND AN ASSOCIATED FILE. ENTER "END" FOR ACTIVITY WHEN YOU ARE FINISHED.

Each line of the file requires two input items. The first specifies the report writer to be used, either ALADIN or REPORT2 (R2), and the second gives the file containing the ad-hoc inquiry to be run.

- 4) ACTIVITY ? ↑

Enter the report writer to be used either ALADIN or R2. When finished; enter "END" and the file will be closed.

- 5) FILE ? ↑

Enter the name of the file associated with the inputted activity. If an error was made in the activity, enter "NONE" and the activity will be rejected and the system will ask for the next activity.

- 6) DO YOU WISH TO SUBMIT THIS JOB FOR PROCESSING?
ANSWER "YES" OR "NO"
? ↑

Enter "YES" if the job file constructed is to be submitted immediately for processing.

- 7) PLEASE ENTER THE NAME OF YOUR BATCH JOB FILE.
? ↑

Enter the name of the existing batch job file to be submitted for processing. To escape from this command, enter "NONE"

- 8) PLEASE ENTER THE PRIORITY FOR YOUR JOB.
? ↑

A job can run at a priority between 5 and 9.

9 - less than 30 minutes

8 - less than 1 hour

7 - less than 4 hours

6 - less than 8 hours

5 - as available

The higher the priority, the greater the cost of the job.

Messages

- 1) SORRY, THIS FILE ALREADY EXISTS - PLEASE TRY AGAIN.

The name entered for the new job file already exists on the system; the system will ask for a new name. To escape from the command, enter "NONE".

- 2) INVALID ACTIVITY - PLEASE RE-ENTER

Only ALADIN or R2 are valid. Enter "END" to finish.

- 3) YOUR FILE DOES NOT EXIST - PLEASE RE-ENTER

The file containing the ad-hoc inquiry to be run does not exist on the system. Enter "NONE" to remove last activity entered.

4) NULL FILE - COMMAND TERMINATED

The job file being created has no commands in it.
No file will be saved.

5) THE FOLLOWING JOB FILE HAS BEEN CREATED:

The system then lists the file just created. The last three lines are system commands to log the cost of the run.

6) THE FOLLOWING JOB WILL BE SUBMITTED:

GPS362 JEFF-PNC/LIB\$ 44382

OUTPUT WILL BE READY TOMORROW AT CSC.

The job file, JEFF, has been submitted for processing, job id is 44382. Use STATUS to check the status of the job.

COMMAND: ABORT (19)

"ABORT" allows the user to stop a batch job from being executed.

Questions and Valid Replies

1) PLEASE ENTER JOB ID: ↑

Enter the job id of the batch job to be aborted (job id was given at submission time). Use command STATUS for a list of all batch jobs currently in the system.

Messages

1) GPS355 E 1234 NOT FOUND

There is no batch job with id of 1234 currently in the system.

COMMAND: PASSWORD (20)

"PASSWORD" allows the user to change his system password.

Questions and Valid Replies

1) PLEASE ENTER YOUR NEW PASSWORD: ~~XXXX~~

↑

Enter your new password (one to four characters).

Messages

1) SORRY, YOUR NEW PASSWORD HAS BEEN REJECTED.

The password entered cannot be used. The old password remains in effect.

COMMAND: HELP (21)

"HELP" gives the status of the system at the present time. It outputs the time and date, the option in use, the status of each of the data types, the status of the master database (on-line or on tape), available commands and the cost of the run up to date. Each command is printed along with a "Y" if the command is available or a "N" if it is not.

Example

COMMAND ? HELP

IT IS NOW 13:27:43 ON 10/08/77

THE STATUS OF THE SYSTEM IS AS FOLLOWS:
SYSTEM IS IN OPTION MAIN.

CONTRACT : NO FILES FOUND ON THE SYSTEM
CHANGES : NO FILES FOUND ON THE SYSTEM
ACTUALS : NO FILES FOUND ON THE SYSTEM

THE MASTER DATABASE IS ON-LINE.

THE FOLLOWING COMMANDS ARE AVAILABLE:

INPUT	Y	CHANGE	N	VERIFY	N	CORRECT	N	RERUN	N
MERGE	Y	UPDATE	N	AD-HOC	Y	REPORT	Y	SERVICE	Y
COPY	N	DROP	Y	IDBD	Y	LIST	Y	PURGE	Y
STATUS	Y	SUBMIT	Y	JOB	Y	ABORT	Y	PASSWORD	Y
HELP	Y	INSTRUCT	Y	COST	Y	TIME	Y	OFF	Y
FIX-IT	Y								

COST SUMMARY:

PROJECT ID = JEFF
CONNECT (HOURS) = .00
SRU'S = 12.4
COST (\$) = 2.67

COMMAND: INSTRUCT (22)

"INSTRUCT" gives the list of commands for the option MAIN along with a short explanation on the purpose of each one.

Example

COMMAND ? INSTRUCT

THE FOLLOWING COMMANDS ARE AVAILABLE IN OPTION MAIN OF THE CORPORATE SERVICES DATABASE SYSTEM:

- (1) INPUT - INPUT MONTHLY DATA FOR NEW CONTRACTS OR EXCEPTIONAL CHANGES. INPUT CAN BE ENTERED ON-LINE, OR AN EXISTING CASSETTE TAPE CAN BE READ.
- (2) CHANGE - CORRECT ANY ERRORS MADE IN INPUTTING NEW CONTRACTS OR EXCEPTIONAL CHANGES.
- (3) VERIFY - VERIFY THE NEW CONTRACT, EXCEPTIONAL CHANGE, OR ACTUAL VOLUME INPUT FILE. JOB IS PERFORMED OVER-NIGHT WITH REPORT FILES PRINTED AT CSC.
- (4) CORRECT - CORRECT THE ERROR FILE PRODUCED BY VERIFY.
- (5) RERUN - VERIFY THE ERROR FILE PRODUCED BY VERIFY AFTER CORRECTIONS HAVE BEEN MADE.
- (6) MERGE - MOVE THE DISTRICTS INPUT DATABASES TO A CENTRAL LIBRARY FOR USE IN UPDATE.
- (7) UPDATE - BATCH JOB TO UPDATE THE MASTER DATABASE. REPORTS ARE PRINTED AT CSC.
- (8) AD-HOC - ENTER AD-HOC OPTION.
- (9) REPORT - PRODUCE ANALYSIS COMPENSATION FORM FOR CLIENTS ON THE MASTER DATABASE.
- (10) SERVICE - UPDATE THE SERVICE DATABASE (DATABASE CONTAINS PRICING SCHEDULES).

COMMANDS COST (2)

"COST" prints out the statistics of the run up to the present time. Costs for the run are assigned to the project it shows; the connect time is in hours and is charged at \$15 per hour for an on-line session; CPU's are the number of computer units used by the program. The cost of an CPU is \$0.21 for an on-line session.

- (11) COPY - COPY THE MASTER DATABASE ON-LINE.
- (12) DROP - DROP THE COPY OF THE MASTER DATABASE THAT IS ON-LINE.
- (13) IDBD - ELEMENT DESCRIPTION OF A DATABASE.
- (14) LIST - LIST OF ALL USER FILES ON THE SYSTEM.
- (15) PURGE - PURGE USER FILES.
- (16) STATUS - STATUS OF BATCH JOBS.
- (17) SUBMIT - SUBMIT A FILE FOR PRINTING AT CSC ON THE HIGH-SPEED PRINTER.
- (18) JOB - CONSTRUCT AND/OR SUBMIT A BATCH JOB FILE TO RUN INQUIRIES BATCH.
- (19) ABORT - ABORT A BATCH JOB.
- (20) PASSWORD - CHANGE YOUR PASSWORD.
- (21) HELP - STATUS OF ALL FILES, LIST OF AVAILABLE COMMANDS, AND COST OF SESSION UPTO DATE.
- (22) INSTRUCT - EXPLANATION OF ALL COMMANDS.
- (23) COST - COST OF SESSION UPTO DATE.
- (24) TIME - DATE AND TIME.
- (25) OFF - SIGN-OFF.
- (26) FIX-IT - SYSTEM ADMINISTRATOR.

NOTE: COMMANDS CAN BE ENTERED BY NAME OR NUMBER.

COMMAND: COST (23)

"COST" prints out the statistics of the run up to the present time. Costs for the run are assigned to the project id shown; the connect time is in hours and is charged at \$16 per hour for an on-line session; SRU's are the number of computer units used by the program. The cost of an SRU is \$0.21 for an on-line session, \$0.05 for a batch job at priority 5 and \$0.185 for a batch job at priority 9. The cost figure produced is approximate, and should be used only as an indication of the actual costs incurred.

Example

COMMAND ? COST

COST SUMMARY:

PROJECT ID =	JEFF
CONNECT (HOURS) =	.21
SRU'S =	153.7
COST (\$) =	35.69

COMMAND: OFF (23)

COMMAND: TIME (24)

"OFF" terminates a session and then waits to see if a new session is desired. "TIME" gives the current time and date. Hang-up the telephone and close the terminal. Two sets of statistics are printed at sign-off. The first is for the life and shows the approximate cost of the run.

Example

COMMAND ? TIME

IT IS NOW 14:13:57 ON 08/23/77

COMMAND ? OFF

COST SUMMARY:

PROJECT ID #	OFF
CONSOLE REQUEST #	19
SPU'S	27.8
COST (\$)	7.42

USAGE ON 08/26/77 AT 11:49:05

SPU 2127.4 ELAPSED TIME: 09:04:23

TERMINAL TT200-TTW-01-097 08/26/77 11:49:05

LOGON:

COMMAND: OFF (25)

"OFF" terminates a session and then waits to see if a new session is to be started. If no new session is desired, hang-up the telephone and close the terminal. Two sets of statistics are printed at sign-off. The first is for the log-file and shows the approximate cost of the run. The second is produced by CSC and will be used to issue the monthly bill.

Example

COMMAND ? OFF

COST SUMMARY:

PROJECT ID =	JEFF
CONNECT (HOURS) =	.10
SRU'S =	27.8
COST (\$) =	7.42

USAGE ON 08/26/77 AT 11:49:05

SRU'S:27.4 ELAPSED TIME: 00:06:23

TERMINAL TT2003-TT36-01-097 08/26/77 11:49:05

LOGON:

COMMAND: FIX-IT (26)

"FIX-IT" calls up option FIX-IT.

Example

COMMAND? FIX-IT

ADMINISTRATOR COMMAND? ↑

OPTION: AD-HOC

Option AD-HOC gives the user unlimited access to the data collected on the master database for analysis purposes. The two database manipulators, ALADIN and REPORT2 can access the database and extract information based on an inquiry prepared by the user. Since experimenting with ad-hoc inquiry can be expensive, additional capabilities have been provided. A small sample database, DEMOLD, is on the system and should be used in the preparing of inquiries. Once the report format and content is acceptable, the query can be applied against the master database. Inquiries can be done on-line or through batch processing. The command JOB constructs a batch job file to run an inquiry on a delayed basis, with the results printed on the high speed printer at the local CSC office.

Questions and Valid Replies

1) AD-HOC COMMAND? ↑

Enter a command by name or number.

Messages

1) THE COMMAND ENTERED IS INVALID, PLEASE RE-ENTER.

The command entered cannot be deciphered. If entered by name, check the spelling. If entered by number, it must be between one and seventeen.

2) SORRY, YOU ARE NOT VALIDATED FOR THIS ACTIVITY.

The system administrator has turned off this command on your password.

DEMOLD and CLIENT

DEMOLD and CLIENT are the two databases used for ad-hoc inquiry. DEMOLD is a test database containing four clients, CLIENT is the master database. They have the same definition, so that an inquiry produced with DEMOLD will run on CLIENT. Therefore DEMOLD should be used during the testing of all new inquiries minimize costs. The contents of DEMOLD are the clients shown under command INPUT. The definition of the databases is as follows:

DATA BASE:CLIENT MINIMUM RECORD SIZE:18 MAXIMUM RECORD SIZE:2004
 NUMBER OF ELEMENTS:82 KEY ELEMENTS:DUN SIZE:1 WORDS

ELEMENT: NAME	TYPE	SCALE	MAX NO MV OR DIM	SIZE (BYTES)	IF SUBELEMENT: PARENT	ST POS
DUN	INT			FL (4)		
NAME	CHAR			VL (40)		
MARKET ID	NUMS			FL (2)		
BUSINESS PART	CHAR		REP 30	FL (9)	BUSINESS PART	1
CONTRACT NUM	NUMS		REP 30	FL (1)	BUSINESS PART	2
BANK ID	NUMS		REP 30	FL (2)	BUSINESS PART	4
PREVIOUS	NUMS		REP 30	FL (3)	BUSINESS PART	7
PROJECTED	NUMS		REP 30	FL (3)	BUSINESS PART	
SIC	NUMS		REP 6	FL (4)		
POSTAL CODE	CHAR			FL (6)		
REGION	CHAR			FL (1)	POSTAL CODE	1
SUB REGION	CHAR			FL (2)	POSTAL CODE	2
AREA CODE	CHAR			FL (3)	POSTAL CODE	1
STREET CODE	CHAR			FL (3)	POSTAL CODE	4
DISTRICT	NUMS			FL (2)		
BRANCH	INT			FL (4)		
CONTRACT	CHAR		REP 6	FL (40)		
CONTRACT TYPE	NUMS		REP 6	FL (1)	CONTRACT	1
CONTRACT TERM	NUMS		REP 6	FL (12)	CONTRACT	2
EFFECTIVE DATE	NUMS		REP 6	FL (6)	CONTRACT	2
EFFECTIVE MONTH	NUMS		REP 6	FL (2)	CONTRACT	2
EFFECTIVE DAY	NUMS		REP 6	FL (2)	CONTRACT	4
EFFECTIVE YEAR	NUMS		REP 6	FL (2)	CONTRACT	6

EXPIRY DATE	NUMS	REP 6	FL (6)	CONTRACT	8
EXPIRY MONTH	NUMS	REP 6	FL (2)	CONTRACT	8
EXPIRY DAY	NUMS	REP 6	FL (2)	CONTRACT	10
EXPIRY YEAR	NUMS	REP 6	FL (2)	CONTRACT	12
ANALYSIS PERIOD	NUMS	REP 6	FL (24)	CONTRACT	14
PRESENT FROM	NUMS	REP 6	FL (6)	CONTRACT	14
PRESENT TO	NUMS	REP 6	FL (6)	CONTRACT	20
PREVIOUS FROM	NUMS	REP 6	FL (6)	CONTRACT	26
PREVIOUS TO	NUMS	REP 6	FL (6)	CONTRACT	32
SALESMAN	NUMS	REP 6	FL (3)	CONTRACT	38
B GROUP	CHAR	REP 511	FL (11)		
B CON NUM	NUMS	REP 511	FL (1)	B GROUP	1
B NUM	NUMS	REP 511	FL (2)	B GROUP	2
B VOLUME	INT	REP 511	FL (4)	B GROUP	4
B PRICE	SPFP 4	REP 511	FL (4)	B GROUP	8
D GROUP	CHAR	REP 511	FL (19)		
D CON NUM	NUMS	REP 511	FL (1)	D GROUP	1
D NUM	NUMS	REP 511	FL (2)	D GROUP	2
D PREVIOUS	DPFP 2	REP 511	FL (8)	D GROUP	4
D PROJECTED	DPFP 2	REP 511	FL (8)	D GROUP	12
E GROUP	CHAR	REP 511	FL (27)		
E CON NUM	NUMS	REP 511	FL (1)	E GROUP	1
E NUM	NUMS	REP 511	FL (2)	E GROUP	2
E RATE	DPFP 3	REP 511	FL (8)	E GROUP	4
E PREV AVERAGE	DPFP 2	REP 511	FL (8)	E GROUP	12
E PROJ AVERAGE	DPFP 2	REP 511	FL (8)	E GROUP	20
F GROUP	CHAR	REP 511	FL (11)		
F CON NUM	NUMS	REP 511	FL (1)	F GROUP	1
F NUM	NUMS	REP 511	FL (2)	F GROUP	2
F VOLUME	INT	REP 511	FL (4)	F GROUP	4
F PRICE	SPFP 4	REP 511	FL (4)	F GROUP	8
H GROUP	CHAR	REP 511	FL (11)		
H CON NUM	NUMS	REP 511	FL (1)	H GROUP	1
H NUM	NUMS	REP 511	FL (2)	H GROUP	2
H VOLUME	INT	REP 511	FL (4)	H GROUP	4
H PRICE	SPFP 4	REP 511	FL (4)	H GROUP	8
I GROUP	CHAR	REP 511	FL (27)		
I CON NUM	NUMS	REP 511	FL (1)	I GROUP	1
I NUM	NUMS	REP 511	FL (2)	I GROUP	2
I RATE	DPFP 3	REP 511	FL (8)	I GROUP	4
I PREVIOUS	DPFP 2	REP 511	FL (8)	I GROUP	12
I PROJECTED	DPFP 2	REP 511	FL (8)	I GROUP	20
ACTUALS	CHAR	REP 511	FL (55)		
SERVICE REP	CHAR	REP 511	FL (3)	ACTUALS	1
SERVICE FIELD	CHAR	REP 511	FL (1)	ACTUALS	1
SERVICE NUM	NUMS	REP 511	FL (2)	ACTUALS	2
JANUARY	INT	REP 511	FL (4)	ACTUALS	4
FEBRUARY	INT	REP 511	FL (4)	ACTUALS	8
MARCH	INT	REP 511	FL (4)	ACTUALS	12
APRIL	INT	REP 511	FL (4)	ACTUALS	16
MAY	INT	REP 511	FL (4)	ACTUALS	20
JUNE	INT	REP 511	FL (4)	ACTUALS	24
JULY	INT	REP 511	FL (4)	ACTUALS	28
AUGUST	INT	REP 511	FL (4)	ACTUALS	32
SEPTEMBER	INT	REP 511	FL (4)	ACTUALS	36
OCTOBER	INT	REP 511	FL (4)	ACTUALS	40
NOVEMBER	INT	REP 511	FL (4)	ACTUALS	44
DECEMBER	INT	REP 511	FL (4)	ACTUALS	48
SAVE13	INT	REP 511	FL (4)	ACTUALS	52

COMMAND: PACKAGE (1)

"PACKAGE" is an instructional package for users of REPORT2. A summary of the various commands that go into constructing a query are explained and examples are given using the database DEMOLD. The user is also given a chance to formulate and run a query.

This command is not entirely stand-alone. It is therefore recommended that a beginner have an experienced user as a guide through the program.

Note: A file named CORP is used during the running of this command to store the users query. It should be purged after the activity is completed unless the inquiry is to have further use.

COMMAND: ALADIN (2)

"ALADIN" allows the user to run utilities for ad-hoc inquiry. The organization for the master database itself is not entirely suited to ad-hoc inquiry. The utilities extract information from specifically designed for this purpose. Each utility takes all information from GROUP A and one other GROUP from the Analysis form and places it in a sub-database: SUBGPB, SUBGPD, ... etc...

For more experienced users, ALADIN can also be used as a report writer.

ALADIN signifies it is ready to receive a command by printing "^". To run a utility, enter

RUN UTILITY-NAME

where "UTILITY-NAME" is the name of the utility. To end this activity, enter EXIT.

Messages

1) SYSTEM READY ON PROMPT "^" - ENTER "EXIT" TO END.

When the "^" is printed, the system is ready to accept commands. Enter "EXIT" to end this activity.

List of Utilities

UTILITIES HAVE BEEN WRITTEN TO FACILITATE THE PROCESS OF WRITTING AD-HOC INQUIRIES. THESE UTILITIES SEPARATE OUT FROM EITHER THE MASTER DATABASE OR A SMALL TEST DATABASE ONE GROUP BY LINE NUMBER. THE TEST DATABASE CONTAINS 4 SAMPLE CLIENTS AND SHOULD BE USED WHILE PREPARING THE INQUIRY. ALL UTILITIES TAKE GROUP "A" AND ONE OTHER AND PLACE THE INFORMATION IN A "SUBGP?" DATABASE, WHERE "?" DEPENDS ON THE GROUP INVOLVED.

THE FOLLOWING UTILITIES ARE FOR THE TEST DATABASE:

- (1) DUMGPB - EXTRACTS GROUP "B", PRODUCES "SUBGPB".
- (2) DUMGPD - EXTRACTS GROUP "D", PRODUCES "SUBGPD".
- (3) DUMGPE - EXTRACTS GROUP "E", PRODUCES "SUBGPE".
- (4) DUMGPF - EXTRACTS GROUP "F", PRODUCES "SUBGPF".
- (5) DUMGPH - EXTRACTS GROUP "H", PRODUCES "SUBGPH".
- (6) DUMGPI - EXTRACTS GROUP "I", PRODUCES "SUBGPI".

THE FOLLOWING UTILITIES ARE FOR THE MASTER DATABASE:

- (1) CLIGPB - EXTRACTS GROUP "B", PRODUCES "SUBGPB".
- (2) CLIGPD - EXTRACTS GROUP "D", PRODUCES "SUBGPD".
- (3) CLIGPE - EXTRACTS GROUP "E", PRODUCES "SUBGPE".
- (4) CLIGPF - EXTRACTS GROUP "F", PRODUCES "SUBGPF".
- (5) CLIGPH - EXTRACTS GROUP "H", PRODUCES "SUBGPH".
- (6) CLIGPI - EXTRACTS GROUP "I", PRODUCES "SUBGPI".

TO RUN A UTILITY, ENTER "RUN UTILITY-NAME". WHEN YOU ARE FINISHED, ENTER "EXIT".

COMMAND: REPORT2 (3)

"REPORT2" is the major tool used for ad-hoc inquiries. It allows the construction of queries to extract data from one client record, from a sub-set of all clients based on one or more criteria, or from all clients in the master database. PACKAGE gives an on-line example of the more important commands in the REPORT2 language. For a complete discussion of REPORT2, see the attached manual.

Once a query has been built and tested, it can be saved in a file for further use. The file can be run on-line or by using the command JOB. In a batch mode the output is produced at the local CSC office. Since the number of files will tend to grow, it is recommended that LIST be run to check the files on the system and that all files that have lost their usefulness be purged as soon as possible.

Messages

1) SYSTEM READY ON PROMPT "^" - ENTER "EXIT" TO END.

When the " " is printed, the system is ready to accept commands. Enter "EXIT" to terminate this activity.

OPTION: FIX-IT

Use of the various commands in the system is controlled by the user's activity matrix. The system administrator, using the above mentioned option, can modify the contents of the activity file. Records in this file, consisting of a password and activity matrix, can be entered, deleted or modified. When entering an activity matrix use the Activity Input Form (sample follows). To complete the form, enter a one next to each command that the user is authorized to use. If he is not authorized to use a command, enter a zero. Multiply each entry by the adjacent factor, and add the three results per box to get a number between zero and seven. A total of twelve digits will be obtained (including the first three zeroes). If less than twelve digits are entered, the system will ask for the rest of the digits.

This option also allows the system administrator to dump the data in the log file. This file contains all sign-on's during the month and the associated costs. This command should be run on the last day of the month and the output compared with the actual bill from CSC.

Questions and Valid Replies

1) ADMINISTRATOR COMMAND? ↑

Enter a command by name or number

Messages

1) THE COMMAND ENTERED IS INVALID, PLEASE RE-ENTER.

The command entered is invalid. If entered by name, check the spelling. If entered by number, it must be between one and thirteen.

ACTIVITY INPUT FORM

PASSWORD						
ACTIVITY	ENTER 0 or 1	MULTIPLY BY	ACTIVITY MATRIX	ENTER 0 or 1	MULTIPLY BY	ACTIVITY MATRIX
			0			0
			0			0
			0			0
FIX-IT	0	4		0	4	
OFF		2			2	
TIME		1			1	
COST		4			4	
INSTRUCT		2			2	
HELP		1			1	
PASSWORD		4			4	
ABORT		2			2	
JOB		1			1	
SUBMIT		4			4	
STATUS		2			22	
PURGE		1			1	
LIST		4			4	
IDBD		2			2	
DROP		1			1	
COPY		4			4	
SERVICE		2			2	
REPORT		1			1	
AD-HOC		4			4	
UPDATE		2			2	
MERGE		1			1	
RERUN		4			4	
CORRECT		2			2	
VERIFY		1			1	
CHANGE		4			4	
INPUT		2			2	
		1			1	

COMMAND: NEW (1)

"NEW" enters a new record consisting of a password and activity matrix in the activity file. The record is rejected if the password already exists in the file. The activity matrix entered is then altered by the system as follows:

- 1) The matrix is compared with the master matrix for the number. Any activity turned off in the master activity matrix is turned off in the entered matrix.
- 2) The command OFF is authorized for all users.

Questions and Valid Replies:

- 1) PLEASE ENTER THE RECORD'S PASSWORD: **XXXX**
↑

Enter the new record's password.

- 2) NOW ENTER THE NEW ACTIVITY MATRIX AS 12 OCTAL DIGITS.
? ↑

Enter the new record's activity matrix. Enter all 12 digits, including leading zeroes.

Messages

- 1) SORRY, YOUR NEW PASSWORD HAS BEEN REJECTED.

The password is already being used. The record entered has been rejected.

COMMAND: DELETE (2)

"DELETE" removes a record from the activity file.

Questions and Valid Replies

- 1) PLEASE ENTER THE RECORD'S PASSWORD" WWWW
↑

Enter the password of the record to be deleted.

Messages

- 1) YOU CANNOT PURGE YOUR OWN RECORD.

The record of the current user cannot be purged.

- 2) THE RECORD FOR THE PASSWORD ENTERED CANNOT BE FOUND.

There is no record with the entered password on the activity file. Use command ALL to display all records on the file.

COMMAND: Matrix (3)

"MATRIX" replaces the activity matrix for a given record. The password for the desired record is entered along with the new activity matrix for the record. The new matrix is rejected if the record cannot be found in the file. The activity matrix is altered by the system as follows:

- 1) The matrix is compared with the master matrix for the number. Any activity turned off in the master activity matrix is turned-off in the entered matrix.
- 2) The command OFF is authorized.
- 3) If the record to be changed is for the current user, the command FIX-IT is authorized.

Questions and Valid Replies

- 1) PLEASE ENTER THE RECORD'S PASSWORD: **XXXX**
↑

Enter the password for the record to be modified.

- 2) NOW ENTER THE NEW ACTIVITY MATRIX AS 12 OCTAL DIGITS
?↑

Enter the new activity matrix for the record. Enter all 12 digits including leading zeroes.

Messages:

- 1) THE RECORD FOR THE PASSWORD ENTERED CANNOT BE FOUND.

There is no record on the activity file with the given password. To check all records on the file, use the command ALL.

COMMAND: DISPLAY (4)

"DISPLAY" outputs the activity matrix for the record corresponding to the entered password.

Questions and Valid Replies

1) PLEASE ENTER THE RECORD'S PASSWORD: WWWW

↑

Enter the password for the record whose activity matrix is required.

Messages

1) THE RECORD FOR THE PASSWORD ENTERED CANNOT BE FOUND.

There is no record on the activity file with the given password. To check all records on the file, use the command ALL.

2) THE RECORD FOR THE ENTERED PASSWORD IS 123412341234

"123412341234" is the activity matrix for the indicated record.

COMMAND: ALL (5)

"ALL" dumps all records, passwords and activity matrices, in the activity file. To interpret an activity matrix, reverse the process of building a matrix using the Activity Input Form.

NOTE: The output produced is confidential information and should be treated accordingly.

Example:

ADMINISTRATOR COMMAND? ALL

RECORDS IN ACTIVITY FILE ARE:

PASSWORD	MATRIX
*****	*****
JEFF	000177777777
SUZI	000177777777
MLEE	000177777777
JERY	000177777777

ADMINISTRATOR COMMAND? END

COMMAND: CODES (6)

"CODES" allows the user to access the codes database. Data can be entered, deleted, modified or displayed. If a message appears which is not self-explanatory please contact the programming group.

NOTE: This database is used in the preparation of the Analysis Form and in many other programs. To ensure that no errors will occur, notify head-office if any changes are made to it. Head Office should notify Systems for the necessary program alterations.

COMMAND: LOG (7)

"LOG" outputs a report on all sign-ons since the last run of this command. LOG should be run on the last working day of each month, and the output compared with the monthly bill from C.S.C. This internal report is not completely accurate. It is there only to give an indication of costs incurred during the month.

Messages

1) THE FOLLOWING JOB WILL BE SUBMITTED:

GPS362 LOGG-PNC/STAR 40838

OUTPUT WILL BE READY TOMORROW AT CSC.

This job has been submitted to run at priority 5. To check the status of the job, use command INQUIRE, job-id 40838. The job can be aborted using the command ABORT.

COMMAND: GPS (13)

"GPS" is a command designed to help recovery in case of a system error. It is protected by a security code and should not be used except by the programming team.

Questions and Valid Replies:

1) PLEASE ENTER THE SECURITY CODE: **XXXX**
↑

Enter the security code for the command. If the code entered is invalid, the command is ignored.

Messages

1) INVALID SECURITY CODE - COMMAND IGNORED

The security code entered was invalid.

ACCOPRESS®

NO. 2507

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BG - BLACK	BA - TANGERINE
BD - GREY	BB - ROYAL BLUE
BU - BLUE	BX - EXECUTIVE RED
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