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ABSTRACT

This booklet describes the Registration Management System, an online computer system developed as one part of a family of educational management systems. The system promotes the rapid collection and storage of course enrollment data and student demographic data through the use of remote timesharing computer terminals located at individual schools. The booklet is organized into two sections--a brief general description and a user's guide, which provides a detailed explanation of how to use the system. Numerous examples of various program functions and output are presented throughout the user's guide. (Author/JG)

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EA 007 353

PROJECT SIMU-SCHOOL

DALLAS COMPONENT

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REGISTRATION MANAGEMENT SYSTEM: GENERAL DESCRIPTION AND USERS GUIDE

Research Report No. 75-619

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EXECUTIVE SUMMARY

Objectives of the Project: The Registration Management System is an on-line computer system used to collect, verify, store, and retrieve demographic and course request data for each student registering for the following quarter or year.

The system promotes the rapid collection and storage of accurate data by checking course requests for validity and allowing student demographic data to be updated at computer response speeds. The counselor in conference with a student supplies information to the District computer by keying data into a teletypewriter. This avoids the data resubmission and accompanying delay times associated with detecting and correcting erroneous data in batch computer runs at an off-site computer center. If a student requests a course that is not being taught, requests a course for which he is not eligible, or requests too many or too few courses, the system will immediately issue an error message.

Mass registration capability by grade and sex reduces individual registration time. For example, all tenth grade boys could be registered into tenth grade Boys P. E. and tenth grade English using only two commands.

The system aggregates and compares course request data by listing and enumerating answers to such questions as:

1. Which students are taking all of the following courses: Advanced Band, Honors Math, and Stagecraft?

2. How many tenth grade girls are of the American Indian race?

The system expedites parent approval by printing the counselor-approved course requests and the standard parental approval paragraph on a "tear-off" sheet for each student before he leaves the counselor's office.

An initial version of this system was tested at T. W. Browne Junior High School in the spring of 1974 to collect course registration data for this year. The current version of the program is being pilot tested this Spring at W. W. Samuell High School to collect course registration data for the three quarters of next year.

THE REGISTRATION MANAGEMENT SYSTEM

I. SYNOPSIS

The Registration Management System (RMS) was designed to decentralize and speed up the school enrollment management process by providing enrollment management tools at the local school level. This objective is accomplished by employing remote, time-sharing computer terminals in the local schools. RMS permits each school to collect and process its own student course requests and to instantly update its student demographic data base.

RMS programs are written in Time Sharing FORTRAN IV language. The system is designed to assist the education administrators to quickly:

A. Collect student course enrollment request data

B. Detect and report input typing or data errors

C. Execute massive modifications to existing student enrollment requests very quickly and easily

D. Detect and report illegal course requests (e.g., boy in girl's P.E. class, 7th grader in 9th grade class)

E. Detect and report requests with too few or too many credit hours

F. Generate on-the-spot course enrollment tallys

G. Make instantaneous corrections to the student demographic data base

2. INPUT REQUIREMENTS

RMS requires a file of students (which includes their pertinent demographic data and their course enrollment requests).

RMS also requires a file of the names of the courses into which the students can request enrollment. If these two files do not exist, they may be created in part or in whole by typing in the data via the remote teletype terminals. Similarly, any data existing in these files can be updated or corrected using these same terminals.

3. TEACHING MACHINE CONCEPT

In order to accept all degrees of terminal operator proficiency, RMS includes a built-in teaching machine which responds differently depending upon the experience of the typist (or operator). For inexperienced operators, it asks questions using complete sentences and generally types out helpful hints to the user. For an average operator, it shortens its questions and gives only a few helpful reminders. For experienced operators, it uses terse symbols and phrases to minimize conversation time. RMS permits the operators to promote or demote themselves from one experience level to another. The instructions which RMS types to the "Novice" operator are so complete that an instruction book is not necessary. As the experience level of the operator improves, RMS spends less and less time teaching the operators or conversing with them.

4. OPERATION AND CONTROL OF RMS

The operator controls the activities of RMS by requesting one of 17 one-letter "options". Each option performs one major student enrollment activity. When any option task is completed, RMS asks for its next option.

5. OUTPUT REPORTS

Since RMS maintains a continual dialog with the terminal operator, most output reports are short and pertain generally to the list of courses requested by one student. A few of its longer reports are as follows:

5.1 OPTION T (TALLY REQUESTS IN ALL COURSES)

For Option T RMS counts the number of students who have requested each course, then it prints out the list of courses and shows for each course:

1. Course number
2. Abbreviated name of the course
3. Period control, i.e., credit hours for the course
4. Sex restrictions (if any) for the course
5. Grade level for which the course is taught (e.g., 8 = 8th grade, 12 = high school senior)
6. Semester code (which indicates the semesters or quarters in which the course is offered)
7. Tally or number of students who have requested the course.

5.2 OPTION L (COUNT ALL STUDENTS IN SAME COURSES)

For Option L RMS searches and finds all students who have requested the same course or the same courses (the operator types in the list of courses when RMS asks for it). RMS will just print the total number of students common to those listed courses or it will also print the identification of each student who requested all of those courses. It permits the operator to specify NAMES for identification of the students by name or TOTAL for just the total number of students. Under the NAMES operation it prints the following information for each student:

1. Student Identification Number
2. Student Sex
3. Grade (1=1st, 12=high school senior)

5.3 OPTION F (FIND ALL ERRORS IN ONE GRADE)

For Option F RMS asks the operator to indicate one grade. Then RMS inspects the enrollment requests for every student in that grade. It checks for:

1. Boy enrolled in Girls class
2. Student enrolled in course which is offered for another grade
3. Too many or too few credit hours (period control)

5.4 Student requesting a course that is not being offered. The printed report only contains the names of those students who fail one of the above tests.

Since tne teletype terminal is silent while it is looking at student records which contain no errors and only prints something when it discovers an error, the operator may wonder if the computer has broken down when it is silent. In order to alleviate the operator's fears, RMS counts each student. Every time the count reaches a number divisible by 100, it prints out the count (600,700, 800, etc.) to let the operator know that it is still alive.

THE REGISTRATION MANAGEMENT SYSTEM

USERS GUIDE

Project Simu-School

Dallas Independent School District

REGISTRATION MANAGEMENT SYSTEM

USERS GUIDE

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THE REGISTRATION MANAGEMENT SYSTEM

I. SYNOPSIS

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E. Detect and report requests with too few or too many credit hours

F. Generate on-the-spot course enrollment tallys

G. Make instantaneous corrections to the student demographic data base

The various programs which comprise RMS were written in: Time-Sharing Fortran IV.

They were implemented and successfully tested using the enrollment of the 1,789-student T. W. Browne Junior High School of the Dallas Independent School District, Dallas, Texas in May of 1974. The RMS programs can be stored on disc, and all files associated with it are designed to be stored on disc also.

Since the basic student demographic files were normally maintained and processed at the Region 10 Texas Education Agency, an extracted version was obtained from Region 10. This became the student base file for RMS. In order to keep the Region 10 data base in step with the daily updated RMS data base, an "updating deck" of cards was periodically produced and transmitted back to the Region 10 computing center.

2.0 Input Structure

RMS is a data base management system. The main data base is file "STU043", where "043" is the school identification number for T. W. Browne Junior High School. For other schools similar files would be employed using their own 3-digit numeric identification substituted for "043". Since RMS is a time-sharing system there are no input card format requirements. The input-output conversation rules at the teletype terminal are extremely simple:

When RMS wishes the terminal operator to type in some information or to answer a question it:

1) Types the question
2) Types a question mark
3) Waits for the operator to type the reply.

The question mark is the signal that RMS is awaiting some action by the operator.

2.1 Input Equipment

Any type of remote terminal may be employed. The programs are formated for use with a 72-character wide display employing all upper case alphabetic (plus numeric) characters.

2.2 Computer Programs

The computer program in RMS is named "OLCREQ" (On-Line Course Request).

2.2.1 Program Storage Requirements

Program Name	Number of Records in Source Program	Number of Records in Object Program	Words* per Record
OLCREQ	2021	426	10

* Word Length = 48 Bits

2.2.2 Program Inputs And Outputs

Program Name	Inputs	Outputs
OLCREQ	File "COU043" File "STU043" File "IDX043"	File "TRX043" Updated "STU043" Updated "IDX043"

2.2.3 Sequence Of Program Executions

1. Obtain 9-channel tape "STUDNT/MASTER" containing student data base from Region 10.

2. Since Region 10 could not create a 7-channel magnetic tape and since the Dallas School computer could only use 7-channel tapes it was necessary to go to a commercial computer faculty to have the data on the Region 10 tape translated into a 7-channel data format and record on a 7-channel tape named "STUDNT/MASTER".

3. Execute program "TAPSTU" to create disc files "STU000" and "IDX000" from the data on the 7-channel tape.

4. Execute program "COPSTU" to create disc files "STU043" and IDX043" from files "STU000" and "IDX000".

5. Optional: Execute program "SEESTU" to inspect some selected data records of "STU043" to verify that the correct data had been obtained from Region 10. (This is the first convenient point in the process where a printed formatted output of the data base could be obtained on the local teletype terminal.)

6. Execute program "OLCREQ" to:

   A. Insert student course requests into file "STU043".

   B. Modify student demographic data in file "STU043".

   C. Create the list of course offerings file "COU043".

7. ? Execute program "OLCPUN" to create an 80-column card-image file of student course requests (named "STUPUN").

8. Execute standard computer utility program to punch the contents of file "STUPUN" as a punched card deck (for transmittal to Region 10 so that they can update their students data base).

Note: Steps 7, 8 and 9 would not be needed in other environments where the local school's remote teletype terminal could converse directly with the "official" computer student data base.

9. Daily or periodically execute standard computer utility program to punch the contents of file "TRX043" as a punched card deck for transmittal to Region 10 (to update their student data base). File "TRX043" is an 80-column card-image transaction file of all changes to either the student course requests or to the student demographic data. File "TRX043" is created automatically whenever program "OLCREQ" is executed.

2.3 Data Files

All data files are designed to be resident on disc storage during the execution of the programs.

Data File Name	Used With Program	R=Random S=Sequential	P=Permanent T=Temporary	I=Inspected C=Created M=Modified
COU043	OLCREQ	S	P	M
IDX043	OLCREQ	R	P	M
INQ043	OLCREQ	S	P	I
STU043	OLCREQ	R	P	M
TRX043	OLCREQ	S	P	C

2.3.1 Data File Storage Requirements

File Name	Number of Records	Words Per Record 48 Bits Per Word
COU043	88	10
IDX043	201	30
*INQ043	Approx. 40	10
STU043	4000	30
TRX043	2500	10

*This file is hand-created from the terminal prior to executing OLCREQ It is only required for one part of Option Q. Since it contains data of variable length it has no specified size.

2.3.2 File Formats

File Name	Character Positions	Symbolic Name in Program	Description
COU043		N	Course Number
	3-18	TT (1 to 3,N)	Course Title
	19-24	TT (4,N)	Not Used
	25-30	TT (4,N)	Period Control
	36	TT (5,N)	Sex
	37-42	TT (6,N)	Grade
	43-48	TT (7,N)	Semester
IDX043	Record #0 (Free Form School Identification)		
	Records #1 Thru 100 As Shown Below		
	1-6		Number 1st Student I.D.

	7-12		2nd Student I.D. Number
	....		....
	235-240		40th Student I.D. Number
	Records #101 Thru 200 As Shown Below		
	1-6		1st Student 1st 6 characters of Last Name
	....		....
	235-240		40th Student 1st 6 characters of Last Name
INQ043	(Free Form) Record Header		Student I.D. Number or Student Name (with Slashes)
INQ043	(Free Form) Detail Record		Course Numbers and Semester Numbers (with Slash Separators)
STU043	1-6	ISN	Student I.D. Number
	7-9	IACT	Student Activity
	10-34	SNAME	Student Name
	35-59	PNAME	Guardian Name
	60-65	ADDR(1)	Street Number
	66-67	ADDR(2)	Street Name Prefix
	68-82	ADDR(3,4,5)	Street Name
	83-84	ADDR(6)	Street Suffix
	85-101	ADDR(7,8,9)	City Name
	102-106	ADDR(10)	ZIP CODE
	107-114	ADDR(11,12)	TELEPHONE
	115-121	ADDR(13,14)	EMERGENCY TELEPHONE
	122-125	ADDR(15)	Apartment Identifier
	126	ADDR(16)	Same Mail Address
	127	ISEX	SEX
	128	IRACE	RACE

	129-130	I GRADE	GRADE
	131-133	IADV	Advisor Number
	134-131	IREQ(1-16)	16 Course Requests
	182-197	ISEM(1-16)	16 Semester Identifiers
TRX043	1	IP	Card Type Identifier ("E", "F", or "G')
	2-4	ISC	School Identifier ("043")
	5-10	ISN	Student ID Number
	(11-14),(19-21),(26-28), (33-35), (40-42), (47-49), 54-56), 61-63)	IREQ(I)	8 course Requests
	17, 24, 31, 38, 45, 52, 59, 66,	ISEM(I)	8 Semester Identifiers
	11, 15-16, 18, 22-23, 25, 29,-30, 32, 36-37, 39, 42-43, 46, 50-51,53,57-58, 60, 64-65, 67-71		(BLANKS)
	72-73	R,O	Constant="RO"
	74-79	MO,DA,YR,	Date (MMDDYY).
	80	C	Constant= "C"

3.0 System Operation

3.1 Human Engineering Features

The program OLCREQ has been "human engineered" to present its questions and its replies in such detail and in such sequences as to virtually preclude operator confusion or misunderstanding. For example, only one syntactic character is every used, namely, the slash (/) mark. Thus when typing in a name the system will advise the operator "FORMAT=FIRST NAME(SLASH)MIDDLE INITIAL(SLASH)LAST NAME" and will check when one types in "JOHN/Q/PUBLIK" to verify that the slashes were present.

The program leads the operator through various sequences of dialog. Whenever the system asks for more instructions it always provides a list of acceptable replies so the operator need only select the desired one and type it in. Whenever the system is in a repetitive loop asking for another name or another number it always displays the exit character which will break the loop and return the system to a higher level control point.

Example:

"NEXT STUDENT NAME (EXIT=***)"

"NEXT STUDENT NUMBER (EXIT = Ø)"

The program OLCREQ is designed to be effective with varying experience or intelligence levels of operators. As such, it contains the essential elements of a teaching machine for instructing its terminal operators.

OLCREQ recognizes 3 levels of operator experience: novice, average, expert. There are three sets of answers and three sets of questions for every one of the 17 dfferent tasks (called "OPTIONS") which OLCREQ can be instructed to perform (one set each for novice, average, and expert).

"Expert" questions and answers are very cryptic, assuming that the operator knows all of the system data input format requirements etc., and are executed with the fewest number of typed characters consistent with unambigous operation.

"Average" questions and answers employ longer phrases and some helpful reminders to keep the terminal operator from forgetting important format details.

"Novice" questions and answers employ sentences and provide additional instructions. It takes the place of an operator's manual and provides helpful suggestions to instruct the operator in becoming proficient. All classes of operation employ extensive error detection routines for finding illegal or operator-caused data input errors. The extent of the error slogans thus produced is either long (for novice), medium (for average) or crytic (for expert).

At sign-on time the operator is advised of the three operator-experience levels and is requested to identify her experience level. Thus, the system adjusts itself to the current operator's proficiency.

Thereafter, at any time, the operator may promote or demote himself or herself by simply executing Option E, the operator experience option. The inclusion of this self-teaching feature permits any person to become a productive terminal operator with a minimum amount of instruction, and provides a continuity of instruction that is always available to help upgrade operating proficiency.

Figure 3.1-A documents the actual conversation between OLCREQ and a Novice operator. Whenever the computer requires an answer from the operator it

```
RUN OLCHEO
 RUNNING


PLEASE ENTER TODAYS DATE AS FOLLOWS
FORMAT=MONTH(2DIGITS)(SLASH)DAY(2DIGITS)(SLASH)YEAR(2DIGITS)
?11/15/74
STUDENT FILE HEADER
    43    T W BROWNE JUNIOR HIGH  DALLAS                 T 7523304      A10 174

INDEX FILE HEADER
    43    T W BROWNE JUNIOR HIGH  DALLAS                 TX7523304
 TOTAL NUMBER OF STUDENTS=  1812

SKIP ADVICE TO NEW OPERATORS ?  (YES,NO)
?NO

THIS SYSTEM RECOGNIZES 3 LEVELS OF OPERATOR EXPERIENCE.
THE  EXPERT  LEVEL RECEIVES ONLY CRYPTIC PRINTOUTS.
THE  AVERAGE  LEVEL RECEIVES LONGER PRINTOUTS WITH
              HELPFUL SUGGESTIONS.
THE  NOVICE  LEVEL RECEIVES STILL LONGER PRINTOUTS WITH
             MORE COMPLETE INSTRUCTIONS.

YOU CAN PROMOTE OR DEMOTE YOURSELF AT ANY TIME BY
REQUESTING THE  EXPERIENCE  OPTION (OPTION E) .

I WILL NOW EXECUTE OPTION E.

OPTION E.   OPERATOR EXPERIENCE LEVEL
HOW DO YOU CLASSIFY YOURSELF (EXPERT,AVERAGE,NOVICE)
?NOVICE

SWITCHING TO NOVICE  EXPERIENCE LEVEL



THESE OPTIONS ARE AVAILABLE TO YOU.
A=MASS REQUEST TO ALL OF ONE GRADE  O=TYPE LIST OF OPTIONS
C=CHANGE COURSE OFFERINGS           P=PRINT REQUEST AT SKYLINE
E=EXPERIENCE LEVEL                  Q=QUICK COURSE INPUT ONLY
F=FIND ALL FORMS IN ONE GRADE       S=STOP THIS PROGRAM
I=COUNT ALL INACTIVE STUDENTS
K=CHANGE STUDENT DATA               T=TALLY REQUESTS IN ALL COURSES
L=LIST STUDENTS IN EACH COURSE      U=UNREQUESTED STUDENT LIST
M=SELECTIVE MASS REQUEST            W=WITHDRAW/REINSTATE STUDENTS
N=ADD NEW STUDENT RECORD            X=COUNSELOR HI-SPEED INPUT

(O=LIST OF OPTIONS)

WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,X) 1812
?A
```

Figure 3.1-A

types a question mark as the first character on the line and then waits while the operator types the reply on that line. In this example the operator answered "NO", "NOVICE", and "A".

Part of the "human engineering" in OLCREQ consists of allowing the operator to respond with any alphanumeric character without causing abnormal program termination. After the character is received it is examined and tested for its numeric or alpha identity. If a non-numeric character is detected when a numeric character is required then OLCREQ will notify the operator that an error has been made and request that she re-type the last entry. Input-checking operations of this type are handled in a subroutine named READER contained within OLCREQ.

Part of the human engineering concept in OLCREQ is to permit a large amount of different kinds of data to be typed in at one time. Rather than to ask "SEX" and wait for the operator to type "B" or "G" (Boy or Girl) and then to have the computer ask "RACE" and then wait for the operator to type the reply and then to have the computer ask "GRADE" and then wait for the operator to type the reply, etc., a whole series of questions are asked which can all be answered at one time. The operator merely types the syntactic character "slash mark" (/) between each of the data fields. All of this is explained to the NOVICE operator as shown by Figure 3.1-B which occurs during one part of the execution of Option N.

The contents of each typed-in field (sex, race, grade, etc.) is then checked for reasonableness before being accepted. Rejected fields cause typed-out notice of the reason for its rejection so that the operator may enter the data again correctly.

```
WHICH OPTION (A,C,F,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z)        1817
?N

OPTION N.

ADD NEW STUDENT TO FILE.      (EXIT=STUDENT I.D.=0)

FORMAT=STUDENT I.D./FIRST NAME/MIDDLE INITIAL/LAST NAME/

(DO NOT FORGET TO TYPE IN THE SLASHES)
?206550/MARTHA/Q/ADAMS/
206550 MARTHA    Q ADAMS

THANK YOU.    NEXT WE NEED DEMOGRAPHIC DATA.
GUARDIAN TYPE RELATIONSHIP    (1,2,3,4)
?1
GUARDIAN RELATIONSHIP    (1,2,3,4,5,6,7,8,9)
?2
GUARDIAN NAME
FORMAT=FIRST NAME/MIDDLE INITIAL/LAST NAME/
?JOHN/Q/ADAMS/
JOHN      Q ADAMS

DO YOU WANT INSTRUCTIONS ON HOW TO ENTER DEMOGRAPHIC DATA    (YES,NO)
?YES


1.   EACH PIECE  OF INFORMATION SUCH AS
     SEX,GRADE,PHONE NUMBER,CITY,STREET, ETC.
     IS CALLED A DATA FIELD.
2.   A DATA FIELD OCCUPIES THE SPACE BETWEEN 2 SLASH MARKS (/).
3.   I WILL TYPE A FORMAT LINE.      THIS FORMAT LINE CONTAINS
     THE NAMES OF THE DATA FIELDS (SEPARATED BY SLASHES).
4.   THEN, ON THE NEXT LINE I WILL WAIT WHILE
     YOU TYPE IN THE DEMOGRAPHIC DATA YOU WISH TO ENTER
     (BEING SURE TO SEPARATE EACH FIELD WITH A SLASH MARK).
5.   IF YOU DO NOT WISH TO ENTER ANY DATA INTO THE FIRST
     DATA FIELD (SEX=B OR G) YOU JUST TYPE A SLASH MARK (/).
     (EVERYTHING UP TO THE FIRST SLASH IS SEX AND YOU DID
     NOT TYPE ANYTHING UP TO THE FIRST SLASH SO SEX IS
     NOT CHANGED.
6.   THE NEXT DATA FIELD IS RACE. HERE YOU ENTER ONE LETTER
     (A,N,I,C, OR O) FOLLOWED BY A SLASH.
     HERE AGAIN IF YOU WISH TO SKIP THE RACE FIELD JUST
     TYPE THE SLASH.  (NEVER FORGET THE SLASH MARKS.)


FORMAT=SEX/RACE/GRADE/ADVISOR/STREET NR/PREFIX/STREET/SUFFIX/CITY/
ZIP/PHONE/EMERG PHONE/APARTMENT/DIFFERENT MAIL ADD(Y,N)/


HERE ARE SOME EXAMPLES YOU COULD HAVE TYPED.

B///413/////DALLAS//////  (CHANGED SEX,ADVISOR,CITY)

////53/N/GREEN/AV///247332OL//// (CHANGED STREET, PHONE)

I AM NOW READY FOR YOUR INPUT.


FORMAT=SEX/RACE/GRADE/ADVISOR/STREET NR/PREFIX/STREET/SUFFIX/CITY/
PHONE/EMERG PHONE/APARTMENT/DIFFERENT MAIL ADD(Y,N)/
```

Figure 3.1-B

3.2 Operator/OLCREQ Communications

3.2.1 How OLCREQ Asks The Operator Questions

When OLCREQ wishes the operator to answer its question or to type in more data, etc., it types the question it wishes answered. Then it types a question mark on the left margin of the next line and waits.

The lonely question mark at the left of the page is the signal that OLCREQ is now waiting for the operator to type in the reply. After the reply has been typed (immediately to the right of the question mark) one must press the CARRIAGE RETURN key. That key is the signal to OLCREQ that the operator has completed the answer and is now waiting for OLCREQ to continue.

3.2.2 Getting OLCREQ To Start

To start executing program OLCREQ, the operator:

1. Turns the LINE/OFF/LOCAL switch on the teletype to "LINE."
2. Picks up the adjacent telephone.
3. Dials the telephone number of the time-sharing computer.
4. Listens for the "ready tone" signal from the computer.
5. Places the telephone handset into the acoustic coupler (which connects the telephone to the teletype) and waits for the computer to type its introductory remarks on the teletype.
6. Types in the "user number", then the secret password and waits for the computer to verify authorization to use that computer.
7. At that point one can cause the computer to execute any one of many programs stored in the memory of the computer.
8. In this case, to execute (or RUN) program OLCREQ the operator merely types in "RUN OLCREQ."
9. Program OLCREQ will then start "running."
10. Since the program may have not been used for days or months it needs to get oriented so it asks the operator what day it is (see Fig. 3.1-A).

    If one had typed in an illegal or impossible date OLCREQ would have indicated so and then requested the correct date again.

11. OLCREQ then verifies that the necessary data files STU043, IDX043, COU043 and TRX043 are present in the computer memory bank. (It cannot function without them.)
12. It then reads the first record in STU043 which contains the name of the school and prints it out on the teletype for the operator to inspect.
13. It then similarly prints out the name of the school which is present on the "index" file IDX043 for additional verification.
14. OLCREQ does not yet know if it is speaking to a new or an experienced operator so it proceeds to ask if it should skip its advice to new operators. (In Fig. 3.1-A the operator answered "NO" so it describes its 3 levels of operator experience.)
15. OLCREQ then requires the operator to classify oneself (In Fig. 3.1-A the operator types in "NOVICE.")
16. It then lists all of the options available to the operator and asks the operator which option to execute. (In Fig. 3.1-A the operator requested Option A.)

By way of comparison, Fig. 3.2.2-A shows what would happen if the operator had answered "YES", "EXPERT" and "A" respectively. The reduction in typed lines and the improvement in speed of operation is quite evident.

Note that the number 1812 at the end of "WHICH OPTION" is the number of students. It is just another double check that the correct data file is being used.

```
RUN OLCAEC
 RUNNING


PLEASE ENTER TODAYS DATE AS FOLLOWS
FORMAT=MONTH(2DIGITS)(SLASH)DAY(2DIGITS)(SLASH)YEAR(2DIGITS)
?11/15/74
STUDENT FILE HEADER
    43    T W BROWNE JUNIOR HIGH  DALLAS                 1 7523304       A103174

INDEX FILE HEADER
    43    T W BROWNE JUNIOR HIGH  DALLAS                 1X7523304
 TOTAL NUMBER OF STUDENTS=  1312

SKIP ADVICE TO NEW OPERATORS ?  (YES,NO)
?YES

OPTION E.    OPERATOR EXPERIENCE LEVEL
HOW DO YOU CLASSIFY YOURSELF (EXPERT,AVERAGE,NOVICE)
?EXPERT

SWITCHING TO EXPERT EXPERIENCE LEVEL

WHICH OPTION (A,C,D,E,I,K,L,M,N,O,P, ,S,T,U,W,Z) 1 12
?A
```

Figure 3.2.2-A

3.2.3 Getting OLCREQ To Stop

To stop program OLCREQ, the operator merely requests it to execute "Option S" (this is the "STOP" option).

3.3 Description of Operator Options

The operator controls the operation of OLCREQ by requesting it to execute an "OPTION" (identified as OPTION A, OPTION E, OPTION, K, etc.).

If the operator should ever forget the various options available, he or she just requests OPTION 0 and OLCREQ will type out a catalog of all the options available.

Figure 3.3-A shows what happens if the operator requests a non-existent option. (Option B was requested. Since there is no Option B, OLCREQ advises the operator and then repeats its question "WHICH OPTION?").

```
(O=LIST OF OPTIONS)

WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?B
I DO NOT RECOGNIZE OPTION B

(O=LIST OF OPTIONS)

WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?
```

Figure 3.3-A

3.3.1 Option A: Mass Request To All Of One Grade

Option A permits mass erasures from (and mass insertions into) the records of all students who are of a specified sex (Boy or Girl) and who are in a specified grade (8, 9, 10, 11, 12). In Fig. 3.3.1-A the operator requested Option A specifying B (boys) and 8 (8th grade). OLCREQ then requests the operator to type in a list of course numbers followed by their "semester number" and, for the novice operator, types a sample format for use as a guide. One must be sure to include the syntactic separator mark (slash) following each course number and each semester number. One can type as many courses (with their semester numbers) as possible on one line. In Fig. 3.3.1-A the operator only wanted all 8th grade boys to request one course (751) whose semester number was 4. (In the Dallas schools a semester number of 4 indicates a two semester course while a semester number of 7 indicates a one semester course.)

OLCREQ then pauses while it compares the course number which the operator had requested against the official list of courses as contained in file COU043. If the operator had inadvertantly typed a non-existent course number OLCREQ would have so indicated.

It then types back the list of courses it had received from the operator and also prints the title of each course for operator confirmation of this list. (The operator possibly could have mistyped one or more course numbers). It then waits until the operator types in YES or NO for confirmation. The program then examines every student record in file STUØ43. Whenever it finds a record which meets these 2 requirements of sex and grade it will:

1. Erase all existing course requests in that record
2. Insert the specified list of course numbers as the only legitimate course requests.

```
(0=LIST OF OPTIONS)

WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?A
OPTION A. MASS REQUEST FOR ALL OF ONE GRADE AND ONE SEX

(E=EXIT)  SEX TO BE SCHEDULED  (B,G,OR E)
?B
 GRADE TO BE SCHEDULED
?8
COURSE REQUESTS TO BE INSERTED
FORMAT=(COURSE NUMBER/SEMESTER/ . . .
?751/4/

COURSE     T I T L E          GRADE SEX SEM P.C
------ ------------------ ----- --- --- ---

   751  FE BOY 8               8   B   4   1  MAY HAVE GRADE CONFLICT
                  0 PERIOD CONTROL= 1 INSTEAD OF 12.
 IS THE COURSE LIST CORRECT     (YES,NO)
?YES
   100
   200
   300
   400
   500
   600
   700
   800
   900
  1000
  1100
  1200
  1300
  1400
  1500
  1600
  1700
  1800
I=  1413   MAX=  1812
   8TH GRADE,   287 BOY  PUPILS SCHEDULED


(0=LIST OF OPTIONS)

WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?
```

Figure 3.3.1-A

It requires perhaps 5 minutes or more in order to examine each student record in STU043 (depending upon the number of students in the file). An operator sitting in front of a lifeless teletype for one minute or more may start to worry. One may wonder if the telephone line has gone dead or if the computer has stopped. Therefore, in order to allay fears, OLCREQ switches to its "PLACEBO" mode. In this mode it counts each student record which it examines. Each time it counts 100 records it prints out the number. This accomplishes 2 things. It lets the operator know that it is not dead and it lets one gauge how much longer it will take the computer to comply with the present command. In Fig. 3.3.1-A the reader will see the numbers

100

200

300

400

...

up to 1800 which the PLACEBO operation generated.

The program OLCREQ then types out the actual number of pupils whose schedules were thus modified by Option A. It will then permit the operator to select another option.

Because it erases all previous course requests in the selected records Option A is very powerful and should always be executed before other options such as K, N, Q, or Z. Otherwise, if these other options are executed before Option A is executed, OLCREQ will print out a warning to the operator as follows: "CAUTION. Option A is very powerful. It erases every course for every student of that grade and sex. It will supercede any corrections in Options K, or N, or Q, or Z. Be sure to do all Option A work before starting Options K, N, Q, or Z." Knowing

that the operator will get bored while waiting for this warning to be printed out EVERY time OPTIONS A,K,N,Q, or Z are requested, OLCREQ will only print out the warning once per program execution. In Figure 3.2.2-A to the right of the STUDENT FILE HEADER one will see printed "A103174." The letter "A" indicates that this "Option A" warning has already been printed once before so it will never again be printed. (The first time that OLCREQ is used there is a blank instead of the letter A there.) The data 103174 shows the last date (November 31, 1974) that the file STU043 had been updated. This date is another double check that the operator may use to see that the computer contains the latest version of the STU043 data file.

Option A is particularly useful for grades 7 and 8 where large numbers of students must take standard prescribed courses.

3.3.1.1 Option A Error Exits

The following error exits are provided for Option A:

1. For "sex" if the operator types anything other than B or G it will start Option A over again.
2. When it asks "Is the course list correct" and the operator answers with "NO" OLCREQ will then jump back to "COURSE REQUESTS TO BE INSERTED."
3. Option A temporarily jumps to error checking subroutine "CORSEL" which checks for and reports:
   A. An illegal course number
   B. An illegal semester number for that course
   C. A Boy's request for a Girls' Course (or vice versa)
   D. Student in a particular grade requesting a course for an inappropriate grade

E. Selecting more than 16 courses

F. A course which is not followed by its semester number

G. A course number which contains a minus prefix

3.3.2 Option C: Change Course Offerings

Option C permits additions, deletions, and modifications to the list of authorized courses (in file COUØ43). Before changes are entered the operator can request a print-out of the existing contents of the file. One is also offered the opportunity to list the contents of the file after changes have been effected.

For each course the file will contain:

A. Course number

B. Course title (free form)

C. Period control (hours per day of credit)

D. Sex restrictions if any (B, G, or blank)

E. Grade

F. Semester identification (4=all year, 7=half year)

Illegal values of Course Number, Sex, Grade or Semester will cause a warning to be printed out. Upon completion, OPTION C will permit the operator to select another option.

Fig. 3.3.2-A shows the operator/OLCREQ dialog. The operator did not want a list of courses printed out at first. (If so, the list would have been similar to the list at the bottom of the figure.) The operator deleted course 117 by inserting a minus sign in front of it. (Note that when a course is deleted the other information is not typed.) The operator added course 206 and then indicated no more course changes by typing in the exit number +999.

Fig. 3.3.2-A was the dialog for a NOVICE operator. Fig. 3.3.2-B is the same dialog for an expert operator. Notice its brevity. (It expects the operator to know the correct format, etc.)

```
(0=LIST OF OPTIONS)

WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?C
OPTION C.  CHANGE COURSE OFFERINGS.
 DO YOU WANT A  LIST OF ACTIVE COURSES (YES/NO)
?NO



(COURSE=+999 IS EXIT,   NEGATIVE IS DELETE,  POSITIVE IS ADD)

FORMAT IS
(+-)COURSE NUMBER  (ASTERISK) SEMESTER(WHICH IS 4 OR 7)
SEX (B OR G OR BLANK)  GRADE (2DIGITS)
PERIOD CONTROL (2DIGITS)
TITLE (18 DIGITS FREE FORM)

EXAMPLE        +950*480902P.E. BOYS 9TH


NEXT COURSE INPUT  (+999=EXIT)
?-117
DELETED.

NEXT COURSE INPUT  (+999=EXIT)
?+206*4 07021EXAS HISTORY GEO

NEXT COURSE INPUT  (+999=EXIT)
?+999
ONE MOMENT WHILE I STORE THESE CHANGES.
DO YOU WANT TO SEE THE REVISED LIST     (YES,NO)
?YES
```

COR	T I T L E	P.C	SEX	GRADE	SEM	REQUESTS
105	ENG LANG ART 7B	2		7	4	0
106	ENG LANG ART 7	2		7	4	0
109	ENG LANG ART 8B	2		8	4	0
110	ENG LANG ART 8	2		8	4	0
113	ENGLISH 1A	2		8	4	0
116	ENGLISH 1B	2		9	4	0
119	ENGLISH11A	2		9	4	0
138	CORR READING	2		0	4	0
156	LANG ARTS 7CS	2		7	4	0
157	LANG ARTS 8 CS	2		8	4	0
158	ENGLISH 1 CS	2		9	4	0
166	SPEECH 7	1		7	7	0
181	ART 7	1		7	7	0
183	ART 1	2		9	4	0
206	TEXAS HISTORY GEO	2		7	4	0
211	AM HIST CITZ 8	2		8	4	0
214	WLI GEO STUD	2		9	4	0
217	WLD HIST STUD	2		9	4	0
260	GEN SHOP 8	2		8	4	0

Figure 3.3.2-A

```
OPTION C.  CHANGE COURSE OFFERINGS.
 DO YOU WANT A  LIST OF ACTIVE COURSES (YES/NO)
?NO

NEXT COURSE INPUT  (+999=EXIT)
?-117
DELETED.

NEXT COURSE INPUT  (+999=EXIT)
?+206*4 0702 TEXAS HISTORY GEO

NEXT COURSE INPUT  (+999=EXIT)
?+999
ONE MOMENT WHILE I STORE THESE CHANGES.
DO YOU WANT TO SEE THE REVISED LIST    (YES,NO)
?NO

WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) ISI.
?
```

Figure 3.3.2-B

3.3.3 Option E: Change Experience Level

OPTION E is described in detail in Section 3.1, HUMAN ENGINEERING FEATURES. The program always executes Option E automatically at sign-on. Thereafter it may be executed whenever the operator wishes to be promoted or demoted. If promoted prematurely the operator will soon discover that its cryptic instructions are too confusing. That is when the operator should demote herself or himself to the level (NOVICE or AVERAGE) which matches knowledge and understanding of the system.

OPTION E will print out the name of its newly selected experience level (NOVICE, AVERAGE, EXPERT) and then switch to that mode of operation. It will then permit the operator to select another option. Figure 3.3.3-A illustrates Option E in which the operator classifies oneself as NOVICE while Figure 3.3.3-B illustrates Option E in which the operator classifies oneself as EXPERT. Notice the reduction of descriptive lines in the EXPERT mode.

```
WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?E

OPTION E.   OPERATOR EXPERIENCE LEVEL
HOW TO YOU CLASSIFY YOURSELF (EXPERT,AVERAGE,NOVICE)
?NOVICE

SWITCHING TO NOVICE  EXPERIENCE LEVEL


THESE OPTIONS ARE AVAILABLE TO YOU.
A=MASS REQUEST TO ALL OF ONE GRADE    O=TYPE LIST OF OPTIONS
C=CHANGE COURSE OFFERINGS             P=PRINT REQUEST AT SKYLINE
E=EXPERIENCE LEVEL                    Q=QUICK COURSE INPUT ONLY
F=FIND ALL ERRORS IN ONE GRADE        S=STOP THIS PROGRAM
I=COUNT ALL INACTIVE STUDENTS
K=CHANGE STUDENT DATA                 T=TALLY REQUESTS IN ALL COURSES
L=LIST STUDENTS IN SAME COURSES       U=UNREQUESTED STUDENT LIST
M=SELECTIVE MASS REQUESTS             W=WITHDRAW/REINSTATE STUDENTS
N=ADD NEW STUDENT RECORD              Z=COUNSELOR HI-SPEED INPUT

(O=LIST OF OPTIONS)

WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?
```

Figure 3.3.3-A

```
WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?E

OPTION E.   OPERATOR EXPERIENCE LEVEL
HOW DO YOU CLASSIFY YOURSELF (EXPERT,AVERAGE,NOVICE)
?EXPERT

SWITCHING TO EXPERT  EXPERIENCE LEVEL

WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?
```

Figure 3.3.3-B

3.3.4 Option F: Find All Errors In One Grade

Option F requests the operator to type in one grade number. It then examines every student record in file STUØ43, stopping only at those records which show a student activity code of zero (meaning an ACTIVE student) and a grade number equal to the number which the operator had typed in.

When the system stops at a student record, it examines each course request number for any errors regarding that course, such as:

1. Illegal course number (not in COUØ43)
2. Course Sex and Student Sex not identical
3. Course Grade and Student Grade not identical
4. Illegal Semester
5. Duplicate course numbers
6. Period Control total not equal to 12.

When errors 4 or 5 (above) are encountered the program will:

A. Erase the course request (if illegal semester) and notify the operator

B. Replace one of the duplicate courses with a zero and notify the operator.

Option F employs the PLACEBO mode (see Section 3.3.1).

Upon completion OPTION F prints out "SEARCH COMPLETE" and then permits the operator to select another option.

Fig. 3.3.4-A shows the operation of Option F.

```
WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?F
OPTION F.    SEARCH ALL POSSIBLE SCHEDULE ERRORS
             FOR ONE GRADE.

GRADE=
?6
    100
    200
    300
    400
    500

129711 MARTIN    KELEK                  501 MAY HAVE GRADE CONFLICT
STUDENT I.D. 129711 PERIOD CONTROL= 9 INSTEAD OF 12.
STUDENT I.D. 129712 PERIOD CONTROL=10 INSTEAD OF 12.

129717 JAMES     PSCHOEN                750 POTENTIAL SEX CONFLICT
STUDENT I.D. 129717 PERIOD CONTROL=13 INSTEAD OF 12.
STUDENT I.D. 129724 PERIOD CONTROL=10 INSTEAD OF 12.
STUDENT I.D. 129726 PERIOD CONTROL=10 INSTEAD OF 12.

129798 STEVEN    MWHEELER               476 MAY HAVE GRADE CONFLICT

129798 STEVEN    MWHEELER               479 COURSE IS NOT OFFERED
STUDENT I.D. 129798 PERIOD CONTROL=14 INSTEAD OF 12.
    600
    700
    800
    900
   1000
   1100
   1200

153570 KELLY     ARICHARDSON            475 MAY HAVE GRADE CONFLICT
   1300

166807 STEVEN    TMALVERN               750 POTENTIAL SEX CONFLICT
STUDENT I.D. 166807 PERIOD CONTROL=13 INSTEAD OF 12.
   1400
   1500
   1600
   1700

277488 DARLY     KJACKSON               749 POTENTIAL SEX CONFLICT
   1800


 SEARCH COMPLETE

(0=LIST OF OPTIONS)

WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?
```

Figure 3.3.4-A

3.3.5 Option I: Count All Inactive Students

Option I inspects every student record in file STUØ43 stopping only at those records whose Student Activity Flag (character positions 7, 8, 9) contents are NOT zero. Prior to this inspection the operator is given the choice (NAMES, TOTAL) as to whether she or he wishes the name of every inactive student printed on the terminal (plus the total number), or whether just the total number of all inactive students is to be printed on the terminal. Upon completion OPTION I permits the operator to select another option.

3.3.6 Option K: Change Student Data

OPTION K first checks for the presence of the OPTION A flag (Section 3.3.1) and prints the standard warning if it is NOT present.

OPTION K permits the operator to select any student record in file STUØ43 and then to change any information contained within that record. Initially the operator is asked whether the wish is to identify all students by their Student I. D. number or by their name (NUMBER or NAME). Thereafter, as each name (or number) is typed in, that student's record is retrieved.

Changes are made to the data and the record is stored back into file STUØ43. Simultaneously, an 80-character (punched card image) record is created and stored in the Transaction File TRXØ43.

As each student record is retrieved the operator is given 3 choices of action:

D=Demographic data

C=Course Request data

N=No changes.

If choice "C" is selected the operator is given an opportunity to examine the current list of course requests. Then it is permissible to type in any additions or deletions by simply typing a series of numbers separated by the syntactic character "slash mark" (/). If any of these typed-in numbers are negative, then that course number is deleted. It is NOT necessary to precede the other numbers with a "+" sign. However, every "added" course must be followed by

A. A slash mark "/"

B. A one-digit semester number (4 or 7)

C. Another slash mark "/".

An error slogan will be typed out for each:

1. Added course which is not followed by a semester identifier

2. Added course which is followed by an invalid semester character

3. Added course which is not contained in the list of authorized courses (file COUØ43)

4. "Deleted" course which had not been present in the student record.

Under all of these situations the erroneous course changes will be ignored but the remainder of the course changes will be executed.

There is another class of course changes which WILL be executed, but a warning will be typed concerning them. These are changes in which the:

1. Student's sex conflicts with the course sex

2. Student's grade conflicts with the course grade.

The new revised list of course requests (along with the period control and semester number for each course) will then be printed out automatically (followed by a warning message if the period control total does not exactly equal 12).

The "Potential Sex Conflict," "Potential Grade Conflict" and "Period Control Not Equal 12" are warning messages only. They do NOT prevent the student from requesting the course.

If the operator had not wished to make any course request changes (but just wanted to see what courses the student had already requested) she or he would simply have typed a zero (followed by a slash mark) instead of the list of course numbers. Fig. 3.3.6-A illustrates Option K in which the operator selects:

A. Student Numbers instead of Names

B. Course data instead of Demographic data.

The operator attempted to add course 750 (PE GIRL) when the student was a boy. It accepted the course request but printed the "Potential Sex Conflict" warning. An attempt to add course 302 was made when the student had already selected course 302. In this case, it refused to accept that course and printed the warning that the "duplicate" course was "erased." With the addition of the new course the period control total was now raised from 12 to 13. Since this is above the limit of 12 a warning was printed to that effect.

```
OPTION K.    CHANGE STUDENT REQUESTS .

DO YOU WANT TO ENTER THE STUDENTS BY NAME,
OR BY STUDENT I.D. NUMBER (NAME/NUMBER)
?NUMBER

NEXT STUDENT NUMBER    (EXIT=0)
?166807

 166807 STEVEN    T MALVERN                          IX=1392
L=CHANGE DEMOGRAPHIC DATA, C=CHANGE COURSE REQUEST DATA, N=NO CHANGE

WHICH (L,C,OR N)
?C
   DO YOU WANT TO INSPECT THE CURRENT DATA (YES,NO)
?YES

SEMESTER=    4    4    4    7    4    0    7    4    4    0
COURSE   = 106  302  206  353  465    0  166  594  749    0
PE  CONT=    2    2    2    1    2    0    1    1    1    0
   TOTAL PERIOD CONTROL=   12

TYPE IN COURSE CHANGES AS
COURSE NUMBER (SLASH) SEMESTER NUMBER (SLASH)

ENTER AS MANY COURSES AS WILL FIT ON ONE LINE.
NOTE- IF A COURSE IS TO BE DELETED INSERT A MINUS SIGN
BEFORE THE COURSE NUMBER.
DELETED COURSES DO NOT USE SEMESTER NUMBERS

EXAMPLE-      1243/4/-462/463/7/4791/4/-328/1724/2/  (NO CHANGES=0)
?750/4/302/4/

COURSE    T I T L E        GRADE SEX SEM P.C
------------------- ----- --- --- ---

   106  ENG LANG ART 7        7        4    2

   302  MATHEMATICS 7         7        4    2  DUPLICATE COURSE ERASED.

   206  TEXAS HISTORY GEO     7        4    2

   353  LIFE SCIENCE 7        7        7    1

   465  PAT BEG 6-8          -0        4    2

   750  PE GIRL 7             7    G   4    1  POTENTIAL SEX CONFLICT

   166  SPEECH 7              7        7    1

   594   STUDY HALL           0        4    1

   749  PE BOY 7              7    P   4    1
STUDENT I.D. 166807 PERIOD CONTROL=13 INSTEAD OF 12.

NEXT STUDENT NUMBER    (EXIT=0)
?0

(0=LIST OF OPTIONS)

WHIC  OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
```

Figure 3.3.6-A

When OLCREQ asked for the "next student number (EXIT=0)" the operator did not wish to make changes to any other student records so a zero was typed. This caused an "exit" and OLCREQ then asked for the next Option.

Figure 3.3.6-B illustrates what happens when (in contrast to Fig. 3.3.6-A) the operator requested student identification by NAME (instead of number). Course 476 was entered which is a 9th grade course while the student is a 7th grade student. This caused the warning to be printed. Course 479 was also typed in. However, since course 479 was not listed as an authorized course (in file COU043) a warning was printed. In both cases however, the course requests were entered on the record. Course 479 did not add anything to the period control total but course 476 did add 2 points thus causing the "Period Control = 14 instead of 12" warning to be printed.

Had the operator selected activity "D" (Demographic changes) a chance would have been given to view (or not to view) the current contents of the demographic data. Then one would be instructed to enter the new demographic data separating each data field with a syntactic character "slash mark" (/) as shown in Figure 3.1-B.

The operator can selectively change or not change the content of any field simply by typing or not typing data characters between the appropriate slash marks. Any illegal data will cause the printout of a warning identifying the illegal data field. Simultaneously, any illegal data will be ignored and not cause any change to the current data existing in that particular data field. The content of any data field which is actually changed during the process will be captured and also recorded in the 80-column card-image Transaction File TRXØ43 (for future punching and transmittal to Region 10 as updating cards).

OPTION K. CHANGE STUDENT REQUESTS

```
DO YOU WANT TO ENTER THE STUDENTS BY NAME,
OR BY STUDENT I.D. NUMBER (NAME/NUMBER)
?NAME

NEXT STUDENT NAME      (EXIT=***)

FORMAT-FIRST NAME/MIDDLE INITIAL/LAST NAME/
?STEVEN/N/WHEELER/

 129798 STEVEN   M WHEELER                    IX= 572
D=CHANGE DEMOGRAPHIC DATA, C=CHANGE COURSE REQUEST DATA, N=NO CHANGE

WHICH (D,C,OR N)
?C
   DO YOU WANT TO INSPECT THE CURRENT DATA (YES,NO)
?YES

SEMESTER=   4   4   4   7   4   0   7   4   4   0
COURSE  = 106 302 206 353 465   0 166 594 749   0
PER CONT=   2   2   2   1   2   0   1   1   1   0
   TOTAL PERIOD CONTROL=  12

TYPE IN COURSE CHANGES AS
COURSE NUMBER (SLASH) SEMESTER NUMBER (SLASH)

ENTER AS MANY COURSES AS WILL FIT ON ONE LINE.
NOTE-  IF A COURSE IS TO BE DELETED INSERT A MINUS SIGN
BEFORE THE COURSE NUMBER.
DELETED COURSES DO NOT USE SEMESTER NUMBERS

EXAMPLE-      1243/4/-462/463/7/4791/4/-328/1724/2/  (NO CHANGES=0)
?476/7/479/7/

COURSE    T I T L E          GRADE SEX SEM P.C
------ ------------------- ----- --- --- ---

   106  ENG LANG ART 7        7        4   2

   302  MATHEMATICS 7         7        4   2

   206  TEXAS HISTORY GEO     7        4   2

   353  LIFE SCIENCE 7        7        7   1

   465  [illegible] BEG 6-8   0        4   2

   476  [illegible] BEG [illegible]   [illegible]        4   2  MAY HAVE GRADE CONFLICT

   166  [illegible] 7         7        7   1

   594  STUDY HALL            0        4   1

   749  [illegible] 7         7   B    4   1

   479                        0        0   0  COURSE IS NOT OFFERED
STUDENT I.D. 129798 PERIOD CONTROL=14 INSTEAD OF 12.

NEXT STUDENT NAME      (EXIT=***)
```

Figure 3.3.6-B

```
FORMAT-FIRST NAME/MIDDLE INITIAL/LAST NAME/
```

Finally, the current contents of the demographic data will be typed out, thus allowing the operator to visually inspect the final product of the data corrections.

OLCREQ does NOT permit one to tamper with either the Student I.D. Number or the student name. If such change is imperative, it will be necessary to use Option N and add the student as a new student using the newly corrected Student I.D. number and/or the new spelling of his name. One would then use Option W to withdraw (inactivate) the original student record. Upon the completion of changing one student record, OPTION K will immediately request that the next student be identified, etc. If the operator wishes to exit from OPTION K it is necessary to:

A. Type a zero for the student number (if using NUMBER)

B. Or type "***" (3 asterisks if using NAME).

As a result of the exit OPTION K will then permit the operator to select another option.

3.3.7 Option L: List Students in Same Courses

OPTION L asks the operator whether a simple total count or a list of each student name plus a total count is wanted. The operator is then asked to type in a list of course numbers. (See Fig. 3.3.7-A)

OLCREQ selects the first course number from this typed-in list of courses. It then examines every student record in file STUØ43, stopping at each one which contains that course number as a requested course.

If NAMES had been requested, it will print out the:

1. Student I. D. number
2. Sex
3. Grade
4. Student name
5. ****** (if the student is inactive)

If TOTAL had been requested it would inhibit such printing.
Upon reaching the end of the file it will print out the total number of active students who requested that course.

OLCREQ will then select the next course number on the typed-in list and repeat the search through the entire file STUØ43, etc., until the list is exhausted. At that time it will permit the operator to select another option.

```
(O=LIST OF OPTIONS)

WHICH OPTION (A,C,E,F,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?L
OPTION L.    COUNT ALL STUDENTS IN EACH COURSE.

DO YOU WANT STUDENT NAMES PRINTED OR JUST THE TOTAL NUMBER (NAMES,TOTAL)
?NAMES
TYPE IN THE LIST OF COURSES (SEPARATED BY COMMAS)    (EXIT=Q)
(FILL OUT THE LINE WITH COMMAS)
?764,503,478,465,,,
```

3.3.8 Option M: Selective Mass Requests

OPTION M first checks for the presence of the OPTION A flag (Section 3.3.1) and prints the standard warning if it is NOT present. OPTION M requests the operator to type in a list of courses which are to be added or deleted using the same minus sign notation for deletion and the same slash (/) separator characters, etc., as described in OPTION K (Section 3.3.6).

It then verifies that each is a valid course number in file COUØ43 and prints out errors if detected. It then prints the name and course number of the (valid) courses that had been typed in, and asks the operator if that list is correct before continuing.

It then asks whether the operator wishes to identify the selected students by name or by Student I.D. number (NAME or NUMBER). Then, as each student's name (or I.D. number) is typed in, OLCREQ retrieves the student record from file STUØ43 and inserts and/or deletes the above specified courses in that student record. It then types out the current list of courses for that student for verification purposes and requests that the next student name (or Student I. D. number) be typed in.

To exit from OPTION M the operator must:

A. type a zero for the next Student I.D. number (if using NUMBER)

B. or type "***" (3 asterisks if using NAME).

As a result of the exit, OPTION K will then permit the operator to select another option.

3.3.9 Option N: Add New Student Record

OPTION N first checks for the presence of the OPTION A flag (Section 3.3.1) and prints the standard warning if it is NOT present.

OPTION N then asks the operator to type in the new student's I. D. number and his first name, middle initial, and last name. It inserts the student I. D. number into the I. D. portion of the index file IDXØ43 and inserts the first 6 characters of the student's last name into the [illegible] portion of index file IDXØ43.

OPTION N then requests the operator to enter the student demographic data in the same manner that OPTION K requested demographic data.

OPTION N then stores the new student record and continues the process by asking for the I. D. number and name of the next new student, etc.

Figure 3.1-B illustrates the essential features of OPTION N as seen by a NOVICE operator.

All student records generated by OPTION N are automatically flagged as pertaining to an ACTIVE student (characters 7, 8, 9 of the student record are set to zeroes).

Exit from OPTION N is accomplished by typing a zero for the student I. D. number.

As a result of the exit OPTION N then permits the operator to select another option.

3.3.10 Option C: Type List of Options

OPTION 0 will type out a list of the 17 available options. OPTION 0 is automatically executed once at sign-on for NOVICE and AVERAGE experience level operators. Thereafter it is only executed when selected by the operator (see Figure 3.1-A).

3.3.11 Option P: Print Results at Computer Center

OPTION P causes the student file STUØ43 to be printed at the computer center on its high speed page printer. For this purpose the essential information in each student record is condensed into 132 characters and appears as one line of the printed output.

The operator is requested to wait while the information is transmitted to the printer. Upon completion, the following message appears on the operator's terminal:

"SCHEDULES SENT TO PRINTER.
PLEASE TELEPHONE THE SKYLINE COMPUTER OPERATOR.
TELL HIM YOUR USER NUMBER AND ASK HIM TO SEND THE LISTING TO YOU AT YOUR SCHOOL."

OPTION P then permits the operator to select another option.

3.3.12 Option Q: Quick Course Input Only

OPTION Q first checks for the presence of the OPTION A flag (see Section 3.2.1) and prints the standard warning if it is NOT present.

OPTION Q is designed as a streamlined version to input student course requests. It first asks whether the operator wishes to identify students by their student I. D. number or by their name (NUMBER or NAME).

It then asks the operator to identify the first student and retrieves that student's record from file STUØ43. The operator then is requested to type in the series of numbers which identify the course requests which are separated by slash marks as described under OPTION K.

The course requests or course request changes are tested for validity and executed if they represent valid courses in the Course Offering file COUØ43.

A streamlined type-out of the current course requests for that student is then printed on the terminal. The next student's name or I. D. number is then requested and the process continues.

While this is a speeded-up method for inputting a large volume of student requests, there is still some time delay when the system asks the operator to type in a student or a list of courses and then pauses while this is done.

A super-speeded up version is available and the operator is given an opportunity to select it when OPTION Q asks the operator:

"DO YOU WANT TO USE THE PRE-RECORDED DATA FILE NAMED INQØ43 INSTEAD OF HAVING ME ASK YOU FOR EACH NEW STUDENT. (YES, NO)'

If the operator answers "YES" then OPTION Q ceases to look to the operator's terminal for answers. Instead, it reads one record from file INQØ43 each time it requires an answer. This means that the operator (or someone else) has had to create the contents of file INQØ43 prior to this operation of OPTION Q.

Since OPTION Q only asks two questions per student it is very easy to anticipate these two questions.

The first question is to identify the student by name or number. Hence the first record in INQØ43 is a student I. D. number or his name.

The second question is always a request for a list of courses or course changes separated by slash marks.
Hence the second record in INQØ43 is a list of course numbers separated by slashes.

Record # 3 in INQØ43 is the next student's I.D. number or his name
Record # 4 in INQØ43 is his list of courses
Record # 5 is the next student's I. D. number or his name
Record # 6 is his list of courses.

File INQØ43 is just a card-image file created under the standard time-sharing Text Editing feature of the computer

File INQØ43 can be built by the remote terminal operator days or even minutes before initiating OLCRLO and subsequently OPTION Q

During the INQØ43 operation of OPTION Q, all questions ("NEXT STUDENT" or "COURSE CHANGES") generated by OPTION Q are typed on the remote terminal

(even though the operator cannot answer the question because OPTION Q reads its answer from the next record in file INQØ43).

In addition, every answer which OPTION Q receives from file INQØ43 is also typed on the operator's terminal. Thus the operator is kept fully aware of the progress of the program even though control has been relinquished to file INQØ43.

The result of this type of operation is that OPTION Q operates so rapidly that the terminal is typing continuously with no interruptions and no pauses (much faster than the operator could possibly type replies to questions).

Since the exit from OPTION Q is either:

A. a zero for student I. D. number (if NUMBER is used)

B. or "***" (3 asterisks if NAME is used)

it therefore becomes necessary for the operator to have planned ahead and typed either zero or "***," as applicable, in the last record of INQØ43.

Upon executing the exit, OPTION Q ceases to look to file INQØ43 for answers and instead looks to the operator's terminal for all replies. It then permits the operator to select another option.

3.3.13 Option S: Stop This Program

OPTION S causes program OLCREQ to:

A. Close all files

B. Store today's date in record zero of file STUØ43 for reference purposes

C. Stop all further execution of OLCREQ.

3.3.14 Option T: Tally Requests in All Courses

OPTION T will create a counter for each possible 3-digit course identity number. It will then inspect every record in file STUØ43. If the student activity flag indicates an active student (characters 7, 8, 9 equal zero) it then examines that student's list of course requests. Each course request is used to augment its corresponding "counter" by one.

After all records in STUØ43 have been examined OPTION T will print out a list of all courses and (from the counters) the number of students who have requested each course (see Fig. 3.3.14-A).

OPTION T will then permit the operator to select another option.

WHICH OPTION (A,C,F,E,I,K,L,M,N,O,P,Q,S,T,U,W,Z) 1812
?T
OPTION T. TALLY REQUESTS IN ALL COURSES

PLEASE WAIT

COR	TITLE	P.C	SEX	GRADE	SEM	REQUESTS
105	ENG LANG ART 7B	2		7	4	128
106	ENG LANG ART 7	2		7	4	327
109	ENG LANG ART 8B	2		8	4	90
110	ENG LANG ART 8	2		8	4	336
113	ENGLISH 1A	2		8	4	51
116	ENGLISH 1B	2		9	4	78
119	ENGLISH11A	2		9	4	27
13[illegible]	CORR READING	2		0	4	0
156	LANG ARTS 7CS	2		7	4	144
157	LANG ARTS 8 CS	2		8	4	134
158	ENGLISH 1 CS	2		9	4	61
166	SPEECH 7	1		7	7	569
181	ART 7	1		7	7	558
183	ART 1	2		9	4	67
206	TEXAS HISTORY GEO	2		7	4	593
211	AM HIST CITZ [illegible]	2		8	4	611
214	WLD GEO STUD	2		9	4	27
217	WLD HIST STUD	2		9	4	115
260	GEN SHOP 8	2		8	4	284
264	DRAFTING GEN	2		9	4	13
270	ELECTRIC GEN	2		9	4	1
274	METALWORKING 1	2		9	4	1
278	POWER MECH 1	2		9	4	1
280	WOOD GENERAL	2		9	4	18
29[illegible]	SP ED	8		-0	4	1
300	MATHEMATICS 7A	2		7	4	0
301	MATHEMATICS 7B	2		7	4	124
302	MATHEMATCS 7	2		7	4	337
305	STRET & SHRIN 7	2		7	4	140
306	MATHEMATICS 8B	2		8	4	82
307	MATHEMATICS 8	2		8	4	341
308	MATHEMATICS 8C	2		8	4	145
311	FUND OF MATH 1	2		9	4	72
316	INTRO ALGEBRA	2		9	4	75
320	ALGEBRA 1A& 2A	2		8	4	43
327	ALGEBRA 1	2		9	4	95
332	GEOMETRY 1A	2		9	4	25
353	LIFE SCIENCE 7	1		7	7	601
356	EARTH SCI 8	1		8	7	569
362	ISCS 1	2		9	4	200
365	PHYSICAL 1A	2		8	4	42
366	PHYSICAL SCI 1	2		9	4	59
370	BIOLOGY A	2		9	4	7
402	HOMEMAKING [illegible]	2		8	4	288
403	HOMEMAKING 1	2		9	4	117
420	GEN BUSINESS	2		9	4	51
452	MUSIC 7	1		7	7	526
453	MUSIC 8	1		8	7	135
454	CHORUS ILY	2		9	4	53
455	CHORUS ALT	1		9	4	12
[illegible]	BAND REG 6-8	2		0	4	13

Figure 3.3.14-A

3.3.15 Option U: List Unrequested Students

OPTION U will inspect every record in file STUØ43.

If the student activity flag indicates an active student (characters 7, 8, 9 equal zero) it will then examine that student's list of course requests. If that student had not requested any courses, then the name will be added to the list of Unrequested Students which prints out on the terminal.

If the operator wishes, a list can be requested of all Unrequested Students regardless of their grade or can be requested for only one grade.

After OPTION U has typed the list, it permits the operator to select another option.

3.3.16 Option W: Withdraw/Reinstate Students

OPTION W is used to change the status of the student activity flag (characters 7, 8, 9 of each record in file STUØ43).

OPTION W asks whether the operator wants to withdraw or reinstate students (W or R). It then asks whether the students will be identified by:

A. Student I. D. number (NUMBER)

B. Or by student name (NAME).

It then requests the name (or I. D. number as applicable) of the next student. After the operator types in the name (or number as applicable) OPTION W will find the record in file STUØ43 for that student and change its student activity flag.

It will then request the identity of the next student, etc.

To exit from OPTION W the operator must:

A. type a zero for student I. D. number (if using NUMBER)

B. or type *** (3 asterisks if using NAME).

As a result of the exit, OPTION W will permit the operator to select another option.

3.3.17 Option Z: Counselor Hi-Speed Input

OPTION Z first checks for the presence of the OPTION A flag (see Section 3.3.1) and prints the standard warning if it is NOT present.

OPTION Z is designed for the occasions when students come to see their counselor who is assumed to have a remote terminal in his office.

OPTION Z asks whether the operator (counselor) wishes "tear-off" sheets or not. It then asks whether the students will be identified by student I.D. number or by name (NUMBER or NAME).

It then requests the first student's name. After finding the student's record in file STUØ43, it then prints his current demographic and course request information. The counselor then discusses this information with the student and, if the data is incorrect the counselor corrects the data immediately using the terminal. After the corrections have been made OPTION Z then prints out a neat, tear-off copy of the most up-to-date demographic and course request information. The counselor tears this sheet from the teletype and gives it to the student who then concludes the interview with an unambiguous typed document of his course selections for the next term, along with a list of his current demographic data.

To exit from OPTION Z the operator must:

A. type a zero for student I. D. number (if using NUMBER)

B. or type *** (3 asterisks if using NAMES).

As a result of the exit OPTION Z then permits the operator to select another option.

```
OPTION Z.    COUNCELOR HI-SPEED INPUT

DO YOU WANT STUDENT TEAR-OFF SHEETS  (YES,NO)
?YES

DO YOU WANT TO ENTER THE STUDENTS BY NAME,
OR BY STUDENT I.D. NUMBER (NAME/NUMBER)
?NUMBER

NEXT STUDENT NUMBER    (EXIT=0)
?511602

 511602 JOHN      H CRONSHEY                    IX=1816
GUARDIAN=WALTER    W CRONSHEY          SEX=B  RACE=C  GRADE= 8  ADV= 85
1804  /S /SHADOW          /LA/EULESS            /75322/
PHONES 2674066 /2834454/23A / /

SEMESTER=    4    0    4    4    7    7    4    0    0    0
COURSE  = 100    0  211  307  356  453  214    0    0    0
PER CONT=    2    0    2    2    1    1    2    0    0    0
   TOTAL PERIOD CONTROL=  10

TYPE IN COURSE CHANGES AS
COURSE NUMBER (SLASH) SEMESTER NUMBER (SLASH)

ENTER AS MANY COURSES AS WILL FIT ON ONE LINE.
NOTE-  IF A COURSE IS TO BE DELETED INSERT A MINUS SIGN
BEFORE THE COURSE NUMBER.
DELETED COURSES DO NOT USE SEMESTER NUMBERS

EXAMPLE-      1 /3/4/-462/463/7/4791/4/-328/1724/2/  (NO CHANGES=0)
?183/4/
            183 MAY HAVE GRADE CONFLICT
            214 MAY HAVE GRADE CONFLICT
/TEAR TAPE OFF.  THEN DEPRESS CARRIAGE RETURN.(***=SKIP PRINTOUT)

?
    STUDENT--  JOHN      H  CRONSHEY

COURSE    TITLE          GRADE SEX SEM P.C
------ ------------------ ----- --- --- ---

   100  ENG LANG ARTS 8      8        4   2

   183  ART 1                9        4   2  MAY HAVE GRADE CONFLICT

   211  AM HIST CITY 8       8        4   2

   307  MATHEMATICS 8        7        7   2

   356  EARTH SCI 8          8        7   1

   453  MUSIC 8              8        7   1
```

Figure 3.3.17-A