

INTELLIGENT KEY ENTRY[®] SYSTEM

SUPERVISOR
TRAINING GUIDE



**INTELLIGENT KEY ENTRY[®] SYSTEM
SUPERVISOR TRAINING GUIDE**

INTRODUCTION

This material is provided as an aid for instructors who are teaching the operation of the INFOREX Intelligent Key Entry System. It is designed to provide INFOREX users with useful supplementary documentation to assist them in their training needs. Operations are covered here in briefest form to outline a suggested plan of information. Full details of any operation may be found in the appropriate INFOREX Manuals.

TABLE OF CONTENTS
February 7, 1972

I. OPERATOR SECTION

Data Entry	I-1	1.21.72
Verification	I-4	1.21.72
Balance Verification	I-5	1.21.72
Verification Corrections	I-8	1.21.72
Display Functions	I-10	1.21.72
Balance Accumulation	I-11	1.21.72
Recompute	I-13	1.21.72
Program Control Codes and Field Definitions	I-14	2. 7.72

II. SUPERVISOR SECTION

Store Programs	II-1	2. 7.72
Program Control Modification	II-3	2. 7.72
Cascading Programs	II-4	2. 7.72
Display Functions	II-7	2. 7.72
Packed Records	II-8	2. 7.72
Dup Error Correction	II-9	2. 7.72
Job Control Statements	II-12	2. 7.72
Batch Controlling Procedure	II-14	2. 7.72
Search	II-15	2. 7.72
Jobfile Format	II-16	2. 7.72
Searching the Jobfile	II-17	2. 7.72
Store or Modify Tape Labels	II-18	2. 7.72
Tape Label Requirements	II-19	2. 7.72
Transfer Disc to Tape	II-20	2. 7.72
Tape Continue and Beginning of Tape	II-22	2. 7.72
End of Tape	II-25	2. 7.72
Tape Record Count	II-27	2. 7.72
"95% Full"	II-28	2. 7.72
Cancelling Data	II-29	2. 7.72
Transfer File (Xferfile)	II-31	2. 7.72

III. EXPANDED TAPE PROCESSING

Expanded Tape Processing	III-1	2. 7.72
Tape File Search	III-2	2. 7.72
Tape Record Search	III-4	2. 7.72
Tape Update	III-5	2. 7.72
Transfer Data From Tape to Disc	III-7	2. 7.72
Transfer Tape to Disc	III-8	2. 7.72
Transfer Programs to Tape	III-9	2. 7.72
Transfer Program Tape to Disc	III-10	2. 7.72

IV. BLOCKING

Blocking Disc to Tape	IV-1	2. 7.72
Unblocking Tape to Disc	IV-2	2. 7.72

V. INTERVAL TIMER

Interval Timer	V-1	2. 7.72
----------------	-----	---------

Appendix A.

GLOSSARY OF COMPUTER

Glossary of Computer-Related Terms	A-1	1.21.72
------------------------------------	-----	---------

Appendix B.

SYSTEM COMPONENTS

Keystation	B-1	2. 7.72
Keyboard	B-2	2. 7.72
Supervisor's Panel on Control Unit	B-6	2. 7.72

Appendix C.

QUIZZES

Operator Quiz	C-1	1.21.72
Lead Operator Quiz	C-4	1.21.72
Tape Quiz	C-6	1.21.72

I. OPERATOR SECTION

DATA ENTRY

To Begin Data Entry:

Switches:

AUTO SKIP-DUP - OFF
PROGRAM SELECT - P1 or P2
PROGRAM CONTROL - ON
GEN/CHECK - Whichever required
64/48 - 64

START D, JOBNAME(XX), OPR ENTER

(XX) - Batch Number (Two Digits)
OPR - Operator Identification (Maximum 3 Characters)

"MESSAGE"

Switches:

AUTO SKIP-DUP - ?
64/48 - ?

RESET

Begin keying

To Interrupt Data Entry:

I DBL END Messages should be "INTERRUPTED". If message is "NO JCS END" hold the DBL key and depress the END key.

To Continue Data Entry:

START CD, JOBNAME(XX), OPR ENTER

(Same procedure as regular data entry)

To End Data Entry:

DBL END

DATA ENTRY MESSAGES

Message	Cause	Action
"PROCEED"	System is ready to accept data.	<u>RESET</u> - begin keying.
"NAME USED"	Jobname and batch number already used.	See supervisor to assign another batch number or use JCS to continue data entry (CD).
"NO JCS"	<u>ENTER</u> depressed prior to depressing <u>START</u> key.	<u>RESET</u> - depress <u>START</u> key and rekey JCS.
"NO JCS END"	<ol style="list-style-type: none"> 1. Data entry is already started and the <u>START</u> key was depressed. 2. <u>DBL</u> was not held down during depression of <u>END</u>. 	<ol style="list-style-type: none"> 1. <u>RESET</u> - begin keying data. 2. <u>RESET</u> - <u>DBL END</u>.
"95% FULL"	No more available disc space.	Notify Supervisor.
"INVALID KEY"	64/48 switch in 48 and a special character was keyed.	<u>RESET</u> - adjust switch if necessary and rekey.
"NO PROGNAME"	There is no program in the system with that name.	Check spelling of progname or notify supervisor.
"STAT NOT I"	"CD" attempted on job that was not interrupted.	Rekey JCS using appropriate statement.
"ERROR"	<ol style="list-style-type: none"> 1. The JCS is incorrect. 2. A check digit field is incorrect. 	<ol style="list-style-type: none"> 1. Be sure all commas are keyed. 2. Key correct check digit number.

DATA ENTRY MESSAGES (Continued)

Message	Cause	Action
"NOT LZERO"	<u>LEFT-ZERO</u> key depressed in a field not designated for Left-Zero.	<u>RESET</u> - use the appropriate key.
"FIELD FULL"	Left-Zero, Balance or Alpha Right Boundary Field contains the maximum number of characters.	In a Left-Zero or Balance Field, depress <u>LEFT-ZERO</u> , Dash or Ampersand key as desired. In an Alpha-Right Boundary field, depress the <u>SKIP</u> key.
"DBL KEY"	<u>DBL</u> key held down and one character was keyed. System is waiting for second character to be keyed. (Hexadecimal)	Hold <u>DBL</u> key and depress the numeric "1". <u>BWD CHAR</u> and rekey correct character.
"NO RECORDS"	CD attempted on a batch that was ended before the first record was entered.	Notify supervisor for cancellation of the batch.

VERIFICATION

To Begin Verification:

Switches:

AUTO SKIP-DUP - OFF
PROGRAM SELECT - P1 or P2
PROGRAM CONTROL - ON
GEN/CHECK - Whichever required
64/48 - 64

START V, JOBNAME (XX), OPR ENTER

(XX) - Batch Number (Two Digits)
OPR - Operator Identification (Maximum 3 Characters)

"MESSAGE"

Switches:

AUTO SKIP-DUP - ?
64/48 - ?

RESET

Begin keying

To Interrupt Verification:

DBL END Message should be "INTERRUPTED". If message is
"NO JCS END" hold the DBL key and depress the END key.

To Continue Verification:

START CV, JOBNAME (XX), OPR ENTER
(Same procedure as regular verification)

To End Verification:

The system ends automatically and gives total record count and total error count and any applicable balance totals.

To Re-Verify:

START RV, JOBNAME (XX), OPR ENTER
(Same procedure as regular verification)

BALANCE VERIFICATION

To Verify all balance fields and other fields programmed for verification:

START B ,JOBNAME(XX) ,OPR ENTER

To Interrupt Balance Verification:

DBL END

To Continue Balance Verification:

START CB ,JOBNAME(XX) ,OPR ENTER

To Re-Balance Verify:

START RB ,JOBNAME(XX) ,OPR ENTER

To End Balance Verify:

(automatically ended)

Notes:

1. Verify the Balance Field as any Left Zero Field would be verified.
2. To make a correction in the Balance Field, DBL VER COR in the first column of the Balance Field and rekey the amount as in Data Entry.
3. To Delete a Record that contains a Balance Field, key, or use FWD FIELD key to advance to the first position of the Balance Field DBL VER COR (to remove that amount from the accumulator), BWD FIELD to column 001 and depress the DBL and the DEL keys together.
4. Possible reasons for an out-of-balance condition after verification is complete:
 - Data input documents are incorrect.
 - Data Entry operator change a Balance Field without doing VER COR procedure (see *Note on Balance Accumulation page I-11 and Recompute page I-13.)

VERIFICATION MESSAGES

Message	Cause	Action
"PROCEED"	System is ready to verify data.	<u>RESET</u> - begin keying.
"NOT IN JOBFILE"	Specified Jobname (XX) is not in the Jobfile.	Correct missing batch number or wrong batch number or wrong Jobname.
"NO JCS"	<u>ENTER</u> depressed prior to depressing <u>START</u> key.	<u>RESET</u> - depress <u>START</u> key.
" NO JCS END"	<ol style="list-style-type: none"> 1. Verification is already started and the <u>START</u> key was depressed. 2. <u>DBL</u> key was not held down during the depression of the <u>END</u> key. 	<ol style="list-style-type: none"> 1. <u>RESET</u> - begin verifying data. 2. <u>RESET</u> - <u>DBL END</u>
"NO PROGNAME"	There is no program in the system with that name.	Check spelling of Progname or notify supervisor.
"JOBNAME BUSY"	<ol style="list-style-type: none"> 1. "CV" attempted while specified job is already being verified. 2. Batch has been verify interrupted. 	<ol style="list-style-type: none"> 1. Check for correct batch number or see supervisor. 2. Key <u>START</u> CV instead of <u>START</u> V.
"DBL KEY"	<u>DBL</u> key held down and only one character was keyed. System is waiting for second character to be keyed (Hexadecimal).	Hold <u>DBL</u> key and depress the number "1". "ERROR" message will appear. <u>RESET</u> and key correct character.

VERIFICATION MESSAGES (Continued)

1.21.72

I-7

Message	Cause	Action
"ERROR"	<ol style="list-style-type: none"> 1. The JCS is incorrect. 2. A key was depressed that was different from the original character keyed during data entry. 	<ol style="list-style-type: none"> 1. Be sure all commas are keyed. 2. Display the original record. If a correction is necessary, refer to page entitled "VERIFICATION CORRECTIONS". If no correction is necessary, <u>RESET</u> - rekey.
"STAT NOT I"	"CV attempted on job that was not verify interrupted.	Rekey JCS using appropriate statement.
"STAT C"	"V" attempted on job that is completely verified.	Rekey JCS using appropriate statement.
"STAT NOT C"	"RV (RB)" attempted on job that was not completely verified.	Rekey JCS using appropriate statement.'
"INVALID KEY"	<ol style="list-style-type: none"> 1. 64/48 switch in 48 and a special character was keyed. 2. <u>DBL VER COR</u> used twice in the same field. 	<ol style="list-style-type: none"> 1. <u>RESET</u> - adjust switch if necessary and rekey. 2. <u>RESET</u> - key correct data.
"NO RECORDS"	"B" attempted on a job that contains balance fields that was never interrupted.	Notify supervisor to have data entry operator momentarily interrupt the job.

VERIFICATION CORRECTIONS

To Correct One Column:

Depress the correct character and the RESET key. After the correct character has been depressed three times the record will be changed. Sight verify to be sure it is right.

To Correct One Field:

At the first error position of the field that is to be corrected, depress the DBL and the VER COR keys. Now you are in "Data Entry" mode (for that one field only). DBL and VER COR keys must be depressed for each field that is to be changed. Sight verify or BWD FIELD and re-verify each field that was changed.

To Delete an Extra Record:

1. Display the Original Record to ensure that it is the record to be deleted.
2. BWD FIELD to Column 001
3. Depress DBL and DEL keys together (DEL is the upper case of the SKIP key).
4. The extra record will be gone and the record count will be adjusted by one.

Note: The first record of a batch may not be deleted; if it is attempted, message will be "NO UPDATE". To correct this situation, re-enter the second record over the first record and then delete the second record.

To Insert A Missing Record:

1. Perform a DBL BW REC. (The inserted record will follow the record presently displayed.)
2. BWD FIELD to Column 001 and depress DBL INSERT (INSERT is the blank key next to the LEFT ZERO key).
3. Message will be "PROCEED".
4. Depress RESET.
5. Depress the proper program level key.
6. Turn AUTO-DUP switch OFF.
7. Key the missing record, including all dup fields. Fields programmed for non-verify will be skipped; therefore, BWD FIELD and then key the fields that were skipped.
8. Depress ENTER, if necessary.
9. Turn AUTO-DUP switch ON and continue normal processing.

Note: A record may not be inserted immediately before or after the first record of a batch. The inserted record and the record immediately preceding the inserted record will not be located in a "search" mode. However, they will be located in a "page" mode. Missing records may be inserted during data entry, verify and file page or search job types.

*To Use a Program With a Name that is Different than the Jobname:

Switches:

AUTO SKIP-DUP	-	OFF
PROGRAM SELECT	-	P1 or P2
PROGRAM CONTROL	-	ON
GEN/CHECK	-	Either
64/48	-	64

1. START P, PROGNAME ENTER

This brings the desired program to the keystation.

2. START D;JOBNAME(XX), OPR ENTER

This brings desired job to the keystation without its normal program control.

Note: The "D" (in 2 above) can be replaced with these other jobtypes:

CD;
V;
CV;
RV;
B;
CB;
RB;
K;
F;

*Possible reasons for using the procedure above:

1. When more than four levels of format control are needed for a particular job.
2. When various formats are being used for the same type of job. Example:
The Jobname is PAYROLL, but the program names are W2, SALARY, HOURLY, NEWHIRE, ADDCHG, etc.

OPERATOR DISPLAY FUNCTIONS

<u>DISP</u> 1	Program level 1.
<u>DISP</u> 2	Program level 2.
<u>DISP</u> 3	Program level 3.
<u>DISP</u> 4	Program level 4.
<u>DISP</u> A	Auxiliary programmed data.
<u>DISP</u> R	Data entry or verify record counts.
<u>DISP</u> E	Number of records corrected during verify.
<u>DISP</u> O	(Alpha O) Original record to be verified. In data entry <u>DISP</u> O shows only those columns of the previous record, that were keyed beyond the present position of the cursor.
<u>DISP</u> B	Balance total accumulated.
<u>DISP</u> C	Negative balance total accumulated. (Credit Balance.)
<u>DISP</u> L	Program level being used.
<u>DISP</u> J	Last JCS entered at the keystation.

BALANCE MESSAGES

Message	Cause	Action
"FIELD FULL"	Too many digits were keyed in the balance field.	<u>RESET</u> . Depress <u>LEFT ZERO</u> and (if amount is wrong) <u>BWD FIELD</u> and <u>DBL VER COR</u> and rekey field.
"INVALID KEY"	<ol style="list-style-type: none"> 1. <u>FWD CHAR</u> or <u>FWD FIELD</u> key was depressed. 2. <u>VER COR</u> key was depressed twice in a row without the use of the <u>LEFT ZERO</u> key. 	<ol style="list-style-type: none"> 1. <u>RESET</u> and proceed with appropriate key. 2. <u>RESET</u> and proceed with appropriate key.

RECOMPUTE

Recompute causes the system to go through all records of the batch and re-add all figures in the balance fields as defined by the Program Control.

- Step# 1. START K, JOBNAME(XX) DBL ENTER (No Operator ID)
2. "PROCEED"
3. RESET
4. Turn on AUTO SKIP-DUP switch and key ENTER
5. "END OF FILE"
6. RESET
7. DBL END
"BALANCE AMOUNTS" are displayed without a record count.

Use this procedure only when all records of the batch have balance fields in the same columns.

1. If the first record of the batch is a "header" (or batch) record and it is not to be figured in the Recompute, depress FW REC once before turning AUTO SKIP-DUP on then depress ENTER. (Step #4 above.)
2. If the batch record is to be figured but was keyed in different columns from the rest of the balance records, follow Steps 1-3. On step #4 depress the program level that the batch record was keyed in before turning on the AUTO SKIP-DUP switch, ENTER.
3. If every record of the batch does not contain a balance field but the ones that do have a balance field were keyed in P1 or P2, do steps #1-3 above but on step #4 do not turn AUTO SKIP-DUP switch ON. Key ENTER with the P1-P2 switch in the appropriate position for each record with an amount and key FW REC for each record that does not have an amount.
4. If every record of the batch does not contain a balance field, and the ones that do have a balance field were keyed in P3 or P4, do steps #1-3 above after keying in a special program control with a balance field in the necessary columns and all other columns containing Auto Fwd Field, (3PPPP). Key ENTER for each record with an amount and key FW REC for each record that does not have an amount.

Note: Modification of records will not be allowed during a "Recompute".
Backward records are also not allowed.

PROGRAM CONTROL CODES AND FIELD DEFINITIONS

<u>TYPE OF FIELD</u>	<u>VERIFY</u>	<u>NON-VERIFY</u>
ALPHA	1CCCC	1AAAA
ALPHA RIGHT BOUNDARY	2CCCC	2AAAA
AUTO AUX	4CCCC	
AUTO DUP ALPHA	ØCCCC	
AUTO DUP NUMERIC	ØVVVV	
AUTO FORWARD FIELD		3PPPP
AUTO INCREMENT		ØPPPP
AUTO SKIP	-VVVV	
BALANCE 1	2PPPP	2PPPP
BALANCE 2 (Feature)	2QQQQ	2QQQQ
CHECK DIGIT 10 or 7	3VVVV A*	3&&&& A*
CHECK DIGIT 11 or 7	4VVVV A*	4&&&& A*
LEFT ZERO	2VVVV	2&&&&
NUMERIC	ØVVVV	Ø&&&&

<u>SINGLE CHARACTER FIELD</u>	<u>VERIFY</u>	<u>NON-VERIFY</u>
ALPHA	1	
AUTO AUX	4	
AUTO DUP NUMERIC	Ø	
AUTO FORWARD FIELD		3
AUTO SKIP		
NUMERIC	Ø	

<u>END RECORD</u>	<u>CODE</u>
SINGLE LEVEL	E
CASCADING LEVEL	L

*In check digit fields, the last character of the field may be programmed Alpha which forces the data entry operator to depress the numeric shift key. This helps to insure accuracy to an even larger degree.

II. SUPERVISOR SECTION

TO STORE PROGRAMS

1. To Create Program Level One :

START P1 ENTER

Key in appropriate program control codes (including the "E" if less than 125 columns are being used).

Sight check the program to ensure accuracy.

ENTER (If 125 character records are being used, ENTER is not depressed.)

2. To Create Program Level Two :

START P2 ENTER

Key in appropriate control codes. ENTER

3. To Create Program Levels 3 and 4 Follow the Procedure Above :

4. To Create Auxiliary Program : (If auxiliary data is to be used, program 3 and 4 cannot be used.)

START A ENTER

Key desired data in the appropriate columns. ENTER

5. If Auxiliary Program and Levels 3 and 4 Are Not To Be Used :

START P3 ENTER

space ENTER (Depress the space bar once)

START P4 ENTER

space ENTER

6. To Store the Program :

START SP,PROGNAME ENTER

Note : The PROGNAME may contain a maximum of 8 characters, alpha or numeric or both. It must not contain any spaces, slashes (/), asterisks (*), or punctuation (commas, periods, etc.). If the PROGNAME (Jobname) begins with the letter "V", the system will not allow the job to be transferred to tape unless it is completely verified. If the second character of the PROGNAME is a "P" or a "Q" and the packed records option is enabled, the system will assume that this job is to be packed. "P" packs by 2, "Q" packs by 4. (See page II-8 "Packed Records")

STORE PROGRAM MESSAGES

Message	Cause	Action
"STORED"	All levels of the specified program and program name are stored and ready for use at any keystation.	<u>RESET</u> and proceed to next task.
"NO JCS"	<u>ENTER</u> was keyed prior to depressing <u>START</u> . Usually because operator failed to key " <u>START P1 ENTER</u> " or whichever level was desired.	<u>RESET</u> - key desired JCS, <u>ENTER</u> and rekey specified format level.
"ERROR"	<ol style="list-style-type: none"> 1. The JCS was miskeyed (Example : The P1 key was depressed instead of the <u>P</u> character and then the digit one (1) key. 2. An invalid character was used in keying the program codes. 	<ol style="list-style-type: none"> 1. Re-enter appropriate JCS. 2. Correct the erroneous character(s) and depress <u>ENTER</u>.
"PROGDIR FULL"	The program directory already contains 128 program names.	Various. (See Expanded Tape Processing page III-9 for storing programs on tape.)
"NAME USED"	There is already a program stored in the "PROGDIR" with that name.	Use a different PROGNAME or begin another task.

PROGRAM CONTROL MODIFICATION

1. START P, PROGNAME ENTER No batch (XX). This brings the program that is to be changed to the keystation.

2. START M1 ENTER Whichever ones you want to change.
 M2 Change only one level at a time.
 M3
 M4
 MA
 MW
 MR

The program control will be displayed for the selected level.

3. Depress FWD CHAR to position the cursor under the character(s) to be modified. Key in the change(s).

4. Depress ENTER.

The screen will be blank after ENTER is depressed.

5. After all changes have been made, START XP, PROGNAME DBL ENTER. This cancels the old program from the disc.

6. Immediately do a START SP, PROGNAME ENTER from the same keystation to store the new revised program (usually under the same PROGNAME as the original program). Do not use any batch numbers during this procedure. Perform all of the above steps from the same keystation. Do not use this keystation for any other functions until steps 1 thru 6 have all been completed.

CASCADING PROGRAMS

Cascading programs allows the system to automatically proceed from one program level to another without depressing either the P1/P2 or the P2/P4 key. The program levels may be chained together (cascaded) in any sequence, using up to four levels, as desired. At least two levels must be used. The program level sequence will automatically repeat throughout the application. Example: From P1 to P2 to P3 and back to P1, etc.

- Note:
- a. Auto-dup and auto-increment fields must be in the same columns in each of the levels used.
 - b. The maximum record length is 122 characters instead of 125.
 - c. The chained sequence can be over-ridden, one program level at a time, by the depression of the P1/P3 or P2/P4 keys.
1. To create a cascaded program, key in each program level as usual with the following exceptions:
 - a. Use an "L" instead of an "E" at the end of each level of program control.
 - b. Following the "L", use a two digit code. The first digit of this code is the NEXT program level to be selected, and the second digit defines the PRIOR program level that was used.
 - c. Example: To cascade from P1 to P2 to P3 to P4.
Program level one ends with L24
Program level two ends with L31
Program level three ends with L42
Program level four ends with L13
 2. Cascading Table: The following Cascading Table is presented to assist in creating a cascaded program. The table contains all available chaining combinations. To code programs using the table:
 - a. Select the desired sequence from the columns entitled CASCADE SEQUENCE as follows:
 - (1) Select the first program level to be used from the column entitled "FROM".
 - (2) Next, select from the "TO" columns the program level(s) to be chained.
 - b. Key the codes into the corresponding program levels from the columns entitled "P1, P2, P3, P4", preceding each two digit code with the letter "L".

CASCADING PROGRAMS TABLE

Cascade Sequence				Codes by Program Level (Precede with "L")			
FROM	TO	TO	TO	P1	P2	P3	P4
P1	P2			22	11		
P1	P2	P3		23	31	12	
P1	P2	P4		24	41		12
P1	P2	P3	P4	24	31	42	13
P1	P2	P4	P3	23	41	14	32
P1	P3			33		11	
P1	P3	P2		32	13	21	
P1	P3	P4		34		41	13
P1	P3	P2	P4	34	43	21	12
P1	P3	P4	P2	32	14	41	23
P1	P4			44			11
P1	P4	P2		42	14		21
P1	P4	P3		43		14	31
P1	P4	P2	P3	43	34	12	21
P1	P4	P3	P2	42	13	24	31
P2	P1			22	11		
P2	P1	P3		32	13	21	
P2	P1	P4		42	14		21
P2	P1	P3	P4	32	14	41	23
P2	P1	P4	P3	42	13	24	31
P2	P3				33	22	
P2	P3	P1		23	31	12	
P2	P3	P4			34	42	23
P2	P3	P1	P4	43	34	12	21
P2	P3	P4	P1	24	31	42	13
P2	P4				44		22
P2	P4	P1		24	41		12
P2	P4	P3			43	24	32
P2	P4	P1	P3	34	43	21	12
P2	P4	P3	P1	23	41	14	32

CASCADING PROGRAMS TABLE

Cascade Sequence				Codes by Program Level (Precede with "L")			
FROM	TO	TO	TO	P1	P2	P3	P4
P3	P1			33		11	
P3	P1	P2		23	31	12	
P3	P1	P4		43		14	31
P3	P1	P2	P4	23	41	14	32
P3	P1	P4	P2	43	34	12	21
P3	P2				33	22	
P3	P2	P1		32	13	21	
P3	P2	P4			43	24	32
P3	P2	P1	P4	42	13	24	31
P3	P2	P4	P1	34	43	21	12
P3	P4					44	33
P3	P4	P1		34		41	13
P3	P4	P2			34	42	23
P3	P4	P1	P2	24	31	42	13
P3	P4	P2	P1	32	14	41	23
P4	P1			44			11
P4	P1	P2		24	41		12
P4	P1	P3		34		41	13
P4	P1	P2	P3	24	31	42	13
P4	P1	P3	P2	34	43	21	12
P4	P2				44		22
P4	P2	P1		42	14		21
P4	P2	P3			34	42	23
P4	P2	P1	P3	32	14	41	23
P4	P2	P3	P1	43	34	12	21
P4	P3					44	33
P4	P3	P1		43		14	31
P4	P3	P2			43	24	32
P4	P3	P1	P2	23	41	14	32
P4	P3	P2	P1	42	13	24	31

SUPERVISOR-DISPLAY FUNCTIONS

- DISP 1 Program level 1.
- DISP 2 Program level 2.
- DISP 3 Program level 3.
- DISP 4 Program level 4.
- DISP A Auxiliary programmed data.
- DISP R Data entry or verify record counts.
- DISP E Number of records corrected during verify.
- DISP O (Alpha O) Original record to be verified. In data entry, DISP O shows only those columns, of the previous record, that were keyed beyond the present position of the cursor.
- DISP B Balance total accumulated.
- DISP C Negative balance total accumulated. (Credit balance.)
- DISP L Program level currently being used.
- DISP J Last JCS entered at the keystation.
- DISP D Number of cylinders remaining on the Disc.
- DISP T Number of entries in the "XFERFILE".
- DISP S System status (For Field Engineers on request).

Display Functions for Special Features

- DISP Q Communications status.
Multi-System Supervisor status.
- DISP V Communications stop parameters.
Multi-System Supervisor stop parameters.
- DISP W Printer W1 record.
Reformat R1 record.
- DISP A Printer W2 record.
Reformat R2 record.

PACKED RECORDS

By using the "packed" records option, the system will allow 20,000, 29 character records to be keyed on the disc, or it will allow 10,000, 61 character records.

This procedure will "pack" two or four "logical" records into one physical record on the disc. A "logical" record can be defined as one actual data record. A "physical" record can be defined as one 125 column Inforex record. Two or four "logical" records will be displayed on the CRT at one time. The system will keep a "logical" record count.

The REFORMAT feature is required if it is necessary to "unpack" these records as they are transferred from the disc to the tape.

If the last "logical" record is not at the end of the "physical" record, the operator must turn the AUTO SKIP-DUP switch OFF and depress ENTER before performing a DBL END.

If a "logical" record is to be deleted, the operator must fill it with spaces, since a "logical" record can not be deleted in the normal manner.

A "logical" record may be inserted only between "physical" records. The inserted record would be filled with from one to three blank "logical" records.

To pack by 4:

1. Key program controls in the normal manner, except in column 030 (or before), create an auto-skip field through column 031. Put a "3" in column 032. Repeat program codes from columns 001-032 into columns 033-064. Repeat them again into columns 065-096. Repeat the codes from columns 001-029 into columns 097-125.
2. The second character of the program name must be a "Q".

To pack by 2:

1. Key program controls in the normal manner, except in column 062 (or before), create an auto-skip field through column 063. Put a "3" in column 064. Repeat program codes from columns 001-061 into columns 065-125.
2. The second character of the program name must be a "P".

Note: The term "Packed Records" is not synonymous with the computer terms "Packed Decimals" or "Packed Hexadecimals".

DUP ERROR CORRECTION

1. There are two basic types of dup errors:
 - A. Complete - the dup error is present throughout the entire batch.
 - B. Partial - the dup error is present in a portion of the batch.
2. For complete dup error corrections only:
 - A. Create a P1 Program (START P1 ENTER)
 - (1) Use Auto Forward Field (3 followed by P's) until the first column of the dup error is reached.
 - (2) Use Auto Aux (4 followed by C's) for all columns to be changed.
 - (3) Key an "E" after the last column changed.
 - (4) ENTER
 - B. Create an Auto Aux Program (START A ENTER)
 - (1) Using the space key, advance to the first column to be changed.
 - (2) Key in the corrected data in all columns as specified by the Auto Aux codes in P1.
 - (3) ENTER
 - C. Bring the batch to be corrected to the keystation containing the newly created program, using the following JCS.

START F;JOBNAME(XX) ENTER (All Switches Up)

"PROCEED"

RESET - The system will automatically change all records in the batch and will end automatically when corrections are complete.

DUP ERROR CORRECTION (Continued)

3. For partial dup error corrections only:

A. If dup error is contained in first portion of the batch:

(1) Use procedure of steps 2A and 2B for creating a P1 program and an Aux program, respectively, with the following change
Step 2A (3) - Key a ~~Ø~~E (space E) after the last column changed.

(2) Bring batch to keystation using the following JCS.

START F;JOBNAME(XX) ENTER (All Switches Up)

"PROCEED"

RESET

(3) The operator must depress the space bar for every record to be corrected.

(4) After the last record to be changed is corrected, depress DBL END.

B. If dup error is contained in middle or last portion of the batch:

(1) Use step 3A (1) for creating a P1 program and an Aux program.

(2) Bring batch to keystation and search for the first record of the dup error using the following JCS and with all switches up except AUTO SKIP-DUP.

START F;JOBNAME(XX),COL ENTER

COL = Column to search in. Always three digits
(001, 028, etc.)

"PROCEED"

RESET

DBL SEARCH DATA ENTER

DATA = Particular information to search for starting
in the column specified above. When
DBL SEARCH is depressed, the column
counter will show the column specified by COL.

DUP ERROR CORRECTION (Continued)

- (3) Record will display.
- (4) Turn AUTO SKIP-DUP switch ON and depress space bar for each record to be corrected.
- (5) After the last record to be changed is corrected, depress DBL END.

JOB CONTROL STATEMENTS

DATA SETS

<u>START</u> D, JOBNAME (XX), OPR <u>ENTER</u>	Start Entry
<u>START</u> CD, JOBNAME (XX), OPR <u>ENTER</u>	Continue Data Entry
<u>START</u> V, JOBNAME (XX), OPR <u>ENTER</u>	Start Verify
<u>START</u> RV, JOBNAME (XX), OPR <u>ENTER</u>	Start Reverify
<u>START</u> CV, JOBNAME (XX), OPR <u>ENTER</u>	Continue Verify or Reverify
<u>START</u> B, JOBNAME (XX), OPR <u>ENTER</u>	Start Balance Verify
<u>START</u> RB, JOBNAME (XX), OPR <u>ENTER</u>	Start Re-Balance Verify
<u>START</u> CB, JOBNAME (XX), OPR <u>ENTER</u>	Continue Balance or Re-Balance Verify
<u>START</u> K, JOBNAME (XX) <u>DBL</u> <u>ENTER</u>	Start Recompute
<u>START</u> F, JOBNAME (XX), <u>ENTER</u>	Bring Data File & Program:
<u>START</u> F, JOBNAME (XX), COL <u>ENTER</u>	Page Only
	Search
<u>START</u> F;JOBNAME (XX) <u>ENTER</u>	Bring Data File Only:
<u>START</u> F;JOBNAME (XX), COL <u>ENTER</u>	Page Only
	Search

PROGRAMS

<u>START</u> P, PROGNAME <u>ENTER</u>	Bring Program Only
<u>START</u> Px <u>ENTER</u> (x = 1, 2, 3, 4)	Create Programs
<u>START</u> A <u>ENTER</u>	Create Auxiliary Program
<u>START</u> Mx <u>ENTER</u> (x = 1, 2, 3, 4, A, W, R)	Modify Programs
<u>START</u> SP, PROGNAME <u>ENTER</u>	Store Programs
<u>START</u> XP, PROGNAME <u>DBL</u> <u>ENTER</u>	Cancel Programs

CANCEL

<u>START</u> XD, JOBNAME (XX-XX) <u>DBL</u> <u>ENTER</u>	Cancel Transferred Data
<u>START</u> XI, JOBNAME (XX-XX) <u>DBL</u> <u>ENTER</u>	Cancel Untransferred Data
<u>START</u> XF <u>DBL</u> <u>ENTER</u>	Clear XFERFILE

JOB CONTROL STATEMENTS (Continued)

TAPE

<u>START DT, JOBNAME(XX, XX-XX)*LLL ENTER</u>	Disc to Tape
<u>START DT, LABELS ENTER</u>	Write Labels Only
<u>START TC ENTER</u>	Tape Continue
<u>START TE ENTER</u>	Tape End Reflector
<u>START CT, JOBNAME(XX)*LLL ENTER</u>	Continue Transfer (second reel)
<u>START TV ENTER</u>	Tape Verify (record count)
<u>START TX DBL ENTER</u>	Tape Rewind (cancel)
<u>START SL, Tlyy ENTER</u>	Store Label yy = 01 -16
<u>START ML, Tlyy ENTER</u>	Modify Label yy = 01 -16

BLOCKING

START DT, JOBNAME(XX, XX-XX)*LLL/BB ENTER Disc to Tape with Blocking

EXPANDED TAPE PROCESSING

<u>START TD, JOBNAME(XX), RRRR*LLL/BB ENTER</u>	Tape to Disc (unblocking)
<u>START TF, COL ENTER</u>	Tape File Search
<u>START TR, COL ENTER</u>	Tape Record Search
<u>START PT, Identifier DBL ENTER</u>	Programs to Tape
<u>START TP, Identifier DBL ENTER</u>	Tape Programs to Disc
<u>START DD ENTER</u>	Copy Disc to Tape
<u>START DR ENTER</u>	Restore Disc from Tape

BATCH CONTROLLING PROCEDURE

1. When a batch of work is completely verified, place it in the designated area.
2. Mount a tape on the tape drive.
 - a. If it is a new tape, advance the tape to load point by depressing "Tape Load" button on the Control Unit. Initiate the first transfer of data using a "complete" disc to tape or "first" disc to tape (page II-20).
 - b. If it is a tape that is having batches added onto it, position the tape at load point and immediately key "START TC ENTER". The tape will advance to the last batch that was written on tape and will be in position to begin transferring additional batches.
3. Make all necessary entries onto the "Log Sheet."
4. Write appropriate EXTERNAL tape labels.
5. When the system has transferred the specified batches, remove the tape (and the write ring) for later processing.
6. Cancel all batches that have been transferred.
7. Mark "Log Sheet" accordingly.
8. Place batches that have been transferred and cancelled in the designated area.

SEARCH

Switches:

AUTO SKIP-DUP - OFF
PROGRAM SELECT - P1 or P2
PROGRAM CONTROL - ON
GEN/CHECK - Either
64/48 - 64

General Search Procedure:

1. START F, JOBNAME(XX), COL ENTER COL = Column to search in.
Always three digits
"PROCEED" (001, 029, etc.)

RESET

DBL SEARCH DATA ENTER

DATA = Particular information to search for starting in the column above. When DBL SEARCH is depressed, the column counter will show the column specified by COL.

Desired record will display

2. Search forward for the same data in another record: DBL SEARCH FW REC
3. Search forward in the same columns for different data:
DBL SEARCH DATA FW REC
4. Search from the beginning of the file, in the same columns, for different data: DBL SEARCH DATA ENTER
5. Page forward through the file: FW REC
6. Page backward through the file: DBL BW REC
7. End Search: DBL END

JOBFILE FORMAT

JOBNAME(XX)	OPR	OPR	DXX	VX	TXX
DRXXX	VRXXX	ERXXX	DMMM	VMMM	
BPXXXXXXXXXXXX					
WX					001

<u>Columns</u>	<u>Description</u>
01-12	Jobname; (XX) = Batch Number
15-17	OPR = Data Entry Operator Identification
19-21	OPR = Verify Operator Identification
23	D
24	Data Entry Status: S = Started; I = Interrupted; C = Complete
25	File Job Status F = File Job in process; or blank
27	V
28	Verify Status S = Started; I = Interrupted; C = Complete
30	T
31	Tape Transfer Status: S = Started; P = Parity Error; C = Complete; X = End of Tape (EO Number of times the batch was transferred to tape (1-9)
32	
33-34	DR
35-38	XXXX = Number of Records Entered
41-42	VR
43-46	XXXX = Number of Records Verified
49-50	ER
51-54	XXXX = Number of Records Corrected During Verify
56	D
57-59	MMM = Elapsed Time for Data Entry (Feature)
61	V
62-64	MMM = Elapsed Time for Verify (Feature)
65-66	BP
67-78	XXXXXXXXXXXX = Balance Total
97	W
98	Printer Status: (Feature) S = Started; C = Complete; X = Aborted

SEARCHING THE JOBSITE

Switches:

AUTO SKIP-DUP	-	OFF
PROGRAM SELECT	-	P1 or P2
PROGRAM CONTROL	-	ON
GEN/CHECK	-	Either
64/48	-	64

Particular Job and Batch:

START F;JOBFILE,001 ENTER

DBL SEARCH,JOBNAME (XX) ENTER

Verify Complete:

START F;JOBFILE,028 ENTER

DBL SEARCH C ENTER

DBL SEARCH FW REC

Etc.

DBL END

Tape Transfer Complete:

START F;JOBFILE,031 ENTER

SEARCH C ENTER

DBL SEARCH FW REC

Etc.

DBL END

To End Search:

DBL END

STORE OR MODIFY TAPE LABELS

The maximum number of tape labels that may be stored is 16.

1. To Store a Label:

START SL, Tlyy ENTER yy = Label Number 01 thru 16.

Key in label exactly as it is to be written on tape. ENTER

Note: (a) "ERROR message will appear if label number above sixteen (16) is used.

(b) If SL is used on a label number that has been previously keyed, the second label will replace the original.

2. To Modify a Label or to View a Label:

START ML, Tlyy ENTER yy = Label Number to be changed or viewed.

Use FWD CHAR key to advance to the column to be modified. Key in the change, ENTER. If label was only to be viewed, DBL END.

3. To Transfer Labels Only to Tape:

START DT, LABELS ENTER

"PROCEED"

RESET

Tlyy ENTER

DATA ENTER

DBL END

Note: No actual data will be transferred but the word "DATA" must be specified. Tape marks and TI (rewind) may be specified if desired. Labels may also be keyed in free form during the "ENTER LABELS" routine.

TAPE LABEL REQUIREMENTS

	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
TL01																
TL02																
TL03																
TL04																
TL05																
TL06																
TL07																
TL08																
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
TL09																
TL10																
TL11																
TL12																
TL13																
TL14																
TL15																
TL16																

JOBNAME

TL01	
TL02	
TL03	
TL04	
TL05	
TL06	
TL07	
TL08	

JOBNAME

TL09	
TL10	
TL11	
TL12	
TL13	
TL14	
TL15	
TL16	

TRANSFER DISC TO TAPE

There are four (4) types of Disc to Tape Transfers:

1. **COMPLETE** All batches of data for the job are ready and are to be transferred to tape using one JCS including any required header and trailer labels and tape marks.
2. **FIRST** Only the first batches of the job are ready to be transferred to tape including header labels. This is similar to "complete" but the trailer labels are omitted.
3. **MIDDLE** More batches of the job are ready to be transferred to tape. This is similar to "complete", but the header labels are omitted.
4. **LAST** The last batches of the job are ready to be transferred to tape. This is similar to "complete", but the header labels are omitted.

COMPLETE	FIRST	MIDDLE	LAST
1. <u>START</u> DT, JOBNAME(XX-XX)*LLL <u>ENTER</u>	Similar to COMPLETE but with the indicated steps "omitted".		
2. "ENTER LABELS" "BOT"			
3. <u>RESET</u>			
4. Header labels and tape marks (as required)		OMIT	OMIT
5. <u>DATA ENTER</u>			
6. Trailer labels and tape marks (as required)	OMIT	OMIT	
7. <u>TI ENTER</u> (Optional, Rewinds Tape)	OMIT	OMIT	
8. <u>DBL END</u>			

Examples:

COMPLETE	FIRST	MIDDLE	LAST
1. <u>START</u> DT, PAYROLL (01-20) *080 <u>ENTER</u>	<u>START</u> DT, PAYROLL (01-10) *080 <u>ENTER</u>	<u>START</u> DT, PAYROLL (11-15) *080 <u>ENTER</u>	<u>START</u> DT, PAYROLL (16-20) *080 <u>ENTER</u>
2. "ENTER LABELS" "BOT"	"ENTER LABELS" "BOT"	"ENTER LABELS"	"ENTER LABELS"
3. <u>RESET</u>	<u>RESET</u>	<u>RESET</u>	<u>RESET</u>
4. <u>TL01 ENTER</u> <u>TM ENTER</u>	<u>TL01 ENTER</u> <u>TM ENTER</u>		
5. <u>DATA ENTER</u>	<u>DATA ENTER</u>	<u>DATA ENTER</u>	<u>DATA ENTER</u>
6. <u>TM ENTER</u> <u>EOF ENTER</u> <u>TM ENTER</u>			<u>TM ENTER</u> <u>EOF ENTER</u> <u>TM ENTER</u>
7. <u>TI ENTER</u> (Rewind)			<u>TI ENTER</u> (Rewind)
8. <u>DBL END</u>	<u>DBL END</u>	<u>DBL END</u>	<u>DBL END</u>

TRANSFER DISC TO TAPE (Continued)

Note:

1. Up to 29 batches can be transferred with one JCS provided the JCS does not exceed column 050.
2. Batches do not necessarily have to be sequential. Example: to transfer batches of Payroll 01 and 10 thru 15 and 18, define as Payroll (01, 10-15, 18).
3. An asterisk after the right parentheses, which encloses the batch numbers, allows record length to be specified.
4. After receiving the "ENTER LABELS" message and during the actual keying of any desired labels, only one (1) backward record will be permitted. When a backward record has been done, the label that is being viewed may not be modified. If a modification is required the entire disc to tape JCS must be cancelled and rekeyed. The disc to tape JCS may be cancelled, at any time, prior to keying of DBL END. This is accomplished by:
 - (a) Keying an alpha X in column 001 and then, with cursor in column 002, depress DBL END.
 - (b) Rekey the entire disc to tape JCS.
5. The system will perform an automatic TI (without the rewind) after every disc to tape operation. To rewind the tape however, a TI ENTER is required during the "ENTER LABELS" routine.

TAPE CONTINUE (TC) AND BEGINNING OF TAPE (BOT)

1. Tape Continue

A START TC ENTER is required only if some batches of a job are already on tape and the tape is being remounted (or repositioned after a rewind) to add more batches. A START TC ENTER will position the tape after the last batch previously written on tape.

2. Beginning of Tape (BOT)

When a DT JCS is keyed while the tape is positioned at the reflective marker at the beginning of tape (BOT), the following message is displayed.

"ENTER LABELS"
"BOT"

TC Required

If the operator is adding batches to batches already on the tape and forgot to position the tape with a TC, she does the following:

RESET

X DBL END (cancel present DT JCS)

START TC ENTER (position tape at end of the last batch)

START DT, JOBNAME(XX)*LLL ENTER (rekey JCS)

TC Not Required

If the operator is putting the first batch of a new job on tape and does not need to reposition the tape with a TC, she does the following:

RESET

Enter header labels and tape marks (as required)
Proceed with the rest of the DT

DISC TO TAPE MESSAGES

Message	Cause	Action
"ENTER LABELS"	System accepted DT JCS and is ready to accept appropriate labels.	<u>RESET</u> and key in appropriate labels. If no labels are required, <u>RESET</u> and <u>DBL END</u> .
"NOT READY"	DT attempted without write ring in tape.	Mount proper tape with ring in place.
"BOT"	<ol style="list-style-type: none"> DT attempted with tape at the load point. Warning that tape is positioned at "BEGINNING OF TAPE". 	<ol style="list-style-type: none"> (a) If tape has good data present and more data is to be added, <u>START TC ENTER</u>. Then perform normal transfer. (b) If it is a new tape with no data present, perform normal transfer. Variable.
"STAT C"	Batch has already been transferred to tape.	<ol style="list-style-type: none"> If batch is to be retransferred, treat "STAT C" message as though it were an "ENTER LABELS" Message. If batch is not to be retransferred, <u>RESET</u> and key an alpha X in column 001 and <u>DBL END</u> with cursor in 002.
"TAPE BUSY"	The tape drive is currently in use.	<u>RESET</u> and when tape drive is available re-enter transfer statement.
"STAT NOT C"	Data set is in process, not DC (and "VC" if required).	Re-enter transfer statement when batch is ready.

DISC TO TAPE MESSAGES (Continued)

Message	Cause	Action
"NOT IN JOBFIL"	Jobname and/or batch number specified not in the jobfile. 1. Jobname misspelled. 2. Batch number incorrect. 3. Batch has been cancelled. 4. Batch never was entered.	Re-enter JCS with correct Jobname and/or batch number. <u>Note</u> : Check that parenthesis were keyed properly.
"ERROR"	1. This condition usually occurs when there is no comma after the "DT." 2. More than 29 batches were specified in JCS. 3. JCS exceeds column 050. 4. Jobname contains an invalid character. 5. TX attempted without <u>DBL ENTER</u> .	1. Re-enter JCS. 2. Re-enter JCS. 3. Re-enter JCS. 4. Check jobname. (Refer to sheet entitled "Stored Programs.") 5. Re-enter JCS.

END OF TAPE

When the End of Tape reflective marker is reached prior to the completion of a data transfer, the transfer of data will terminate.

The JOBFIL status of the batch that was actually in process will be "TX". "TX" indicates that the batch is only partially transferred and any batches that were specified after this one batch have not been processed at all. The JOBFIL status of these remaining batches will be "TS". The attempt of any further disc to tape transfer on this tape will result in the "EOT" message.

1. Perform the following JCS to permit the transfer of any trailer labels that are required to terminate computer room processing of this tape:

START TE ENTER

"PROCEED"

Trailer labels and tape marks (as required) ENTER

TI ENTER (to rewind tape)

DBL END

2. Mount a new tape and perform the following JCS to complete the transfer of the batch that has the "TX" status, using all required header labels:

START CT, JOBNAME(XX)*LLL ENTER

"ENTER LABELS"

RESET

Header labels and tape mark (as required) ENTER

DATA ENTER

DBL END

3. Perform a normal disc to tape transfer for all of the remaining batches which have the "TS" status.

END OF TAPE MESSAGES

Message	Cause	Action
"ERROR"	CT JCS attempted on a batch that does not have a "TX" status.	Rekey CT JCS with appropriate batch number.
"PROCEED"	TE JCS is accepted.	Enter proper trailer labels.
"ENTER LABELS"	CT JCS is accepted.	Enter proper header labels and the word "DATA."

TAPE RECORD COUNT

The tape validate or tape record count function (TV) will count the number of records on tape and check parity up to the first tape mark (TM) read. A separate TV JCS must be keyed to count the number of records up to each TM.

1. START TV ENTER

(a) Counts from load point to the first TM

(b) Counts labels as data records, for example:

Label }
TM } count = 1

Data }
TM } count = number of data records

Data }
Label } count = number of data records + 1 (Label)
TM }

2. If the Expanded Tape Processing (ETP) feature is on the system, the TV will add 1 to the record count; thus the above example would be changed as follows:

Label }
TM } count = 2

Data }
TM } count = number of data records + 1

Data }
Label } count = number of data records + 2
TM }

3. To rewind the tape after a tape verify:

START TX DBL ENTER

Notes:

- a. Do not use TV to position tape to add more data because the tape stops AFTER a tape mark.
- b. If a parity error (PTY) is displayed, see page III-5 ETP Tape Update to correct the parity error.
- c. If a tape is blocked, a TV counts the number of blocks plus any labels plus one.

"95% FULL"

When an operator receives a "95% Full" message, she should report the message to the supervisor immediately.

This message indicates that only 15 cylinders of disc space are available for data entry. Once this message appears, START D job control statements are not allowed, that is, if an operator attempts to begin data entry on a new batch of work, she will receive an error message. However, START CD statements will be accepted.

When only 8 cylinders of disc remain, START CD job control statements will also be rejected; but the operators will be allowed to enter records under JCS's entered before the last 8 cylinders of disc were reached.

When the disc is full (no cylinders remain) all data entry stops. At this point, batches must be transferred to tape and then cancelled from disc to create room for further data entry. Verification is never disabled so batches may be verified before the transfer to tape.

To prevent the operators from being idle while batches are transferred to tape and then cancelled, the supervisor should begin transfers when the "95% full" message first appears.

CANCELLING DATA

There are two basic types of Data Cancelling:

1. Cancel Data that has been transferred to tape (XD). (Under normal operation XD would be the only jobtype used.)

START XD, JOBNAME(XX,XX-XX,XX) DBL ENTER

"CANCELLED"

Example:

START XD, PAYROLL(20, 10-15) DBL ENTER

"CANCELLED"

2. Cancel Data that has not been transferred to tape. (not normally used)

START XI, JOBNAME(XX,XX-XX,XX) DBL ENTER

"CANCELLED"

Example:

START XI, PAYROLL(11-14, 16-18) DBL ENTER

"CANCELLED"

3. Notes:

- a. Batches do not have to be sequential.
- b. Up to 99 batches of the same jobname may be cancelled with one JCS.
- c. The cancel JCS cannot go beyond column 064.

CANCEL DATA-MESSAGES

Message	Cause	Action
"JOBNAME BUSY"	XD JCS issued while Jobfile status of batch is DS or DI or DCF.	Re-enter JCS when Jobfile status is as desired.
"STAT NOT C"	Jobfile status of batch is <u>not</u> TC.	Re-enter appropriate JCS when desired.
"STAT C"	XI JCS issued for a batch that is valid for XD JCS.	Enter XD JCS.

TRANSFER FILE (XFERFILE)

Description

The XFERFILE is 91 records long consisting of the JOBFILE record of each batch transferred to tape. The entry into the XFERFILE is made when a batch has been successfully transferred to tape. The purpose of this option is to retain the status information of completed jobs without having to also retain the data on the disc.

Display

The third from last record in the jobfile will have the jobname XFERFILE. The data record (DR) count in this jobfile record will show the number of entries (jobfile records) in the XFERFILE. To display the XFERFILE record that is in the jobfile:

DISP T

Transfer

The XFERFILE is functionally identical to the jobfile. It can be searched or paged, cannot be updated, and can be transferred to tape. A tape transfer of the XFERFILE will include only the completed records. Only one jobfile record will be written into the XFERFILE, regardless of the number of times the batch is transferred to tape. Any desired tape labels may also be transferred. To transfer the XFERFILE to tape:

START DT,XFERFILE ENTER

Cancel

The XFERFILE can be cleared by the supervisor at a convenient or logical point and must be cleared when it is full. If the XFERFILE is full and a DT JCS is issued, the data will be transferred and the jobfile records will overlay, (write over) the last XFERFILE record. The jobfile status of these batches will still be TC. The instruction to cancel the entries from the XFERFILE is:

START XF DBL ENTER

The XF function requires approximately seven (7) seconds of dedicated system time. The operators do not have to END or INTERRUPT their jobs, but they will not be allowed to key during the XF operation.

- Note:
1. The Transfer File option requires two data cylinders for storing the XFERFILE.
 2. The Transfer File option will reserve an additional jobfile cylinder, thus allowing for 120 jobfile records.
 3. The maximum number displayed with the DISP D function will be 166.

III. EXPANDED TAPE PROCESSING

EXPANDED TAPE PROCESSING

1. TF - Tape File Search

On tape, a file is a group of records between tape marks. In doing a file search, the operator searches for the first record of a specific file. Under a TF, the Inforex system only reads the first record of each file so it is impossible to see or to change any other record in the file.

2. TR - Tape Record Search

Once the TF search has located the desired file, the operator does a TR search to locate any particular records she wishes to check or to change. A TR can not search outside of one file. To search in another file for a particular record, use the TF search to locate the file and then a TR search to find the record(s) desired.

3. TR - Tape Record Update

After the tape has been positioned at the desired record, the record may be updated (changed) without using the disc.

4. TD - Transfer Records from Tape to Disc

Records on tape may be transferred to batches on disc.

5. PT - Transfer Programs from Disc to Tape

- a. Back-up protection
- b. To update the program from one system to another
- c. When more than 128 programs are required to process a greater variety of data

6. TP - Transfer Programs from Tape to Disc

7. DD - Copy Disc to Tape

All the data on disc may be copied to tape. This is normally requested by the Inforex field engineer in preparation for preventative maintenance.

8. DR - Restore Disc from Tape

All the data is reloaded from tape to disc

TAPE FILE SEARCH

1. To search for a specific file:

START TF, COL ENTER

"PROCEED"

RESET

DBL SEARCH DATA ENTER

COL = Column to search in.
Always three digits
(001 or 028, etc.)

DATA = Particular information to search
for starting in the column above.
When DBL SEARCH is depressed,
the column counter will show the
column specified by COL.

Record will display.

2. Search forward for another specific file: DBL SEARCH DATA FW REC
3. Go forward to the first record of the next file: FW REC
4. Go backward to the first record of the previous file: DBL BW REC
5. Search for another file and have the tape start searching at the beginning of the tape: DBL SEARCH DATA ENTER
6. End the tape file search task: DBL END

Notes: If there is only one file on a tape, the TF is needed only if one or more tape marks are at the beginning of the tape in front of the data records (file). When a tape mark is present, the TF search is used to position the tape after the tape mark in the first record of the file. If more than one tape mark is present, after the TF use a FW REC to pass each tape mark. If there are no tape marks, only the TR search is used.

TAPE SEARCH MESSAGES

Message	Cause	Action
"END OF FILE"	Two consecutive tape marks found.	Variable
"EOT"	End of Tape	Variable
"IN PROCESS"	Tape is searching for specified data.	None
"COLUMN ERROR"	An invalid column was keyed in the JCS (or no column was specified).	Re-enter JCS

TAPE RECORD SEARCH

1. To search for a specific record:

START TR, COL ENTER

"PROCEED"

RESET

DBL SEARCH DATA ENTER

COL = Column to search in.
Always three digits
(001 or 028, etc.)

DATA = Particular information to search
for starting in the column above.
When DBL SEARCH is depressed,
the column counter will show the
column specified by COL.

Record will display.

2. Search forward for another specific record: DBL SEARCH DATA FW REC
3. Go forward for next record: FW REC
4. Go backward to previous record: DBL BW REC
5. Search from the beginning of the file for another specific record:
DBL SEARCH DATA ENTER
6. End the tape search task: DBL END
7. When positioning tape for:

Tape to disc - record on screen will transfer

Disc to tape - record on screen will not be written over

Tape count (TV) - record on screen will be counted

TAPE UPDATE

1. The updated record will be the same length as the original tape record. If a program containing the proper field definitions is desired, retrieve the program controls by keying START P, PROGRAMNAME ENTER
2. There must be a write ring in the tape. If there is no ring, message will be "NO UPDATE".
3. PROGRAM CONTROL switch ON if desired
4. Use TF and/or TR procedure to position tape
5. Use FWD Field or FWD CHAR key to proceed to desired column or field, key in desired data and depress ENTER. Record will be changed and next record will appear.
6. To end this task: DBL END
7. To rewind tape: START TX DBL ENTER
8. To correct "PTY" error found on tape during a "TV"

Assume: a. A proper program is in the keystation
b. PROGRAM CONTROL switch is ON
c. Screen is displaying "START TV" "PTY"

RESET

START TR,001 ENTER

"PROCEED"

RESET

BW REC

FW REC

FW REC

Record with bad parity will be displayed on the screen as the system's best effort to read the record. Rekey the entire record as it should have been (or if it "looks" right, rekey the entire record anyway).

TAPE UPDATE (Continued)

The system will automatically enter the new record when it senses the "E" in the program control (or after column 125 is keyed) or depressed ENTER

9. If the tape is blocked, records cannot be modified.
10. Records on tape cannot be "deleted" in the normal manner. If a record is to be removed, space out the entire record.
11. A program that contains a balance field may not be used to correct the tape when the correction is to be made within a balance field or in any field after the balance field.

TRANSFER DATA FROM TAPE TO DISC

There are many variable factors to consider when transferring data from tape to disc:

Is the tape blocked? (If the tape is blocked, see section IV, entitled "Blocking".)

Is the tape unblocked?

What is the record length?

Are multiple batches with the same number of records to be created?

Where, on the tape, is the first record that is to be transferred?

a. Is the TF search necessary?

b. Is a TR search necessary?

TRANSFER TAPE TO DISC

JCS to Create One Batch on Disc

START TD, JOBNAME (XX), RRRR ENTER

(XX) = Batch number (Precede with zero)

RRRR= The number of records to be transferred. (Precede with zeros)

- Notes:
1. Do not specify over 4000 records in one JCS.
 2. The system will first check to ensure that enough cylinders (spaces) are available on the disc for the specified number of records.
 - a. If enough cylinders are not available, the system will not accept the JCS and will display the message "95% FULL".
 - b. If there are enough cylinders, the system will transfer the specified records and momentarily display each record during transfer. Upon completion, the system will display the number of records transferred.
 3. If the system encounters a tape mark before it has completely transferred the specified number of records, the transfer will terminate and the system will display the number of records actually transferred.
 4. If another tape to disc JCS is to be performed at this time, reposition the tape using TF or TR jobtypes before performing the next "TD" JCS.

JCS to Create Multiple Batches on Disc

START TD, JOBNAME (XX), RRRR@NN ENTER

(XX) = The first batch number to be created. (Precede with zero)

RRRR = The number of records to be written in each batch. (Precede with zeros)

@NN = The number of batches to be created. (Precede with zero)

Note: Use this procedure only when the same number of records are to be in each batch, or if each batch is separated by a tape mark. If each batch is separated by a tape mark, specify the number of records that is equal to the largest batch on tape. The system will truncate each of the smaller batches when it encounters the separating tape marks.

TRANSFER PROGRAMS TO TAPE

1. The write ring must be in place before transfer of programs to tape can be accomplished:

START DT, LABELS ENTER

"ENTER LABELS"

RESET

TM ENTER

TM ENTER

DATA ENTER

TI ENTER (To rewind)

DBL END

2. START PT, IDENTIFIER DBL ENTER

Tape will automatically rewind when transfer is completed. The "Identifier" can be from one to eight positions long. (suggest that you use the word "PROGDIR" as the identifier). This "IDENTIFIER" becomes a header label on tape and must be used to transfer these programs back onto the disc.

3. START PT, 2nd IDENTIFIER DBL ENTER

More than one set of programs may be transferred onto the same tape by using different "IDENTIFIERS". With the tape initially portioned at load point, the system will automatically pass over the first set of programs and will write the new identifier and new programs on tape. When the transfer of the second set of programs has been completed, the tape will automatically rewind.

Notes:

1. Transferring will take approximately three minutes of dedicated system time, No one will be allowed to key.
2. All 128 programs that are in the system will be transferred onto tape. If there are less than 128 programs, blanks will be written in the unused positions of the tape.

TRANSFER PROGRAM TAPE TO DISC

1. The program tape must not have a write ring in place. Assume tape is at load point.

START TP, IDENTIFIER DBL ENTER

System will search for the specified identifier and will transfer all programs associated with the identifier onto the disc.

Notes:

1. Transferring will take approximately two minutes of dedicated system time. No one will be allowed to key.
2. All 128 programs on the tape will replace all of the programs currently in the system. If there are less than 128 programs on the tape, blanks will be inserted in the unused positions of the disc.

IV. BLOCKING

BLOCKING DISC TO TAPE

START DT, JOBNAME(XX)*LLL/BB ENTER

*LLL = Data record length--three places--precede with zeros.
/BB = Blocking Factor--two places--precede with zero.

The blocking factor is the number of records that are to be written in one whole segment on the tape. It is a two-digit number, preceded with a zero (if necessary).

The maximum number of characters that can be transferred in one block is 800.

For Example: If 80-column records are to be blocked, the maximum blocking factor is 10 ($80 \times 10 = 800$) or if 125-column records are to be blocked the maximum blocking factor is 06 ($125 \times 06 = 750$).

- Notes:
1. If "packed" records are being used, the maximum number of characters that can be transferred in one block is 720.
 2. If Honeywell Compatibility is being used, the maximum number of characters is 640.
 3. If both "packed" records and "compatibility" are installed, the maximum block size is 400 characters.
 4. If there are not enough records to fill the last block, a "short" block will be written.
 5. A "short" block can be "padded" with any one of the 256 Hexadecimal characters (through Field Engineering).
 6. When multiple batches are transferred together, one block may contain the last records of one batch and the first records of the next batch.

UNBLOCKING TAPE TO DISC

1. It is necessary to know what blocking factor was used when the tape was created.
2. JCS to create one batch on disc.

START TD, JOBNAME(XX), RRRR*LLL/BB ENTER

(XX) = Batch number to be created

, RRRR = The number of records to be written in each batch (precede with zeros)

*LLL = Record length (precede with zeros)

/BB = Block (unblock) factor

Example: To write batch 15 of Payroll from tape onto disc with 150 records, 80 columns long when the tape was originally blocked by 10.

START TD, PAYROLL(15), 0150*080/10 ENTER

3. JCS to Create Multiple Batches on Disc

START TD, JOBNAME(XX), RRRR*LLL/BB@NN ENTER

@NN = The number of batches to be created (precede with zeros)

Other symbols = same as above

Example: To write eight batches of Payroll on disc from tape with the first batch beginning at 16. Each batch contains 200 records, 120 columns long with the tape blocked at 5.

START TD, PAYROLL(16), 0200*120/05@08 ENTER

V. INTERVAL TIMER

INTERVAL TIMER

1. The Interval Time Feature automatically accumulates and records the total elapsed time for a job in the jobfile record. The elapsed time for data entry is stored in positions 57 to 59 following the letter "D". The elapsed time for verify is recorded in positions 62 to 64 following the letter "V". Both times are given in minutes.
2. The total elapsed time for data entry (D) and continue data entry (CD) jobs are recorded in the "data entry time" portion. The total elapsed time for verify (V), continue verify (CV), re-verify (RV), balance verify (B), continue balance verify (CB), and re-balance verify (RB) are recorded in the "verify time" portion of the jobfile record.
3. The depression of the Control Unit RESET or START button will I-END all jobs and record the total elapsed time in the jobfile records.

APPENDIX A

GLOSSARY OF COMPUTER-RELATED TERMS

GLOSSARY OF COMPUTER-RELATED TERMS

- Argument - Specific information within a record which uniquely identifies that record from another. Used when searching a file.
- Batch - A group of records (which receive a jobname and batch number).
- Batch Number - A two position field, either alpha, numeric, or alpha-numeric, enclosed in parentheses, immediately following the PROGNAME, which allows separate files to be keyed within the same program.
- Bit - Abbreviation for Binary DigiT. A bit in computers is represented by change in magnetic polarity or by a circuit being switched ON or OFF.
- Block - To group two or more records together, without gaps, up to a maximum of 800 characters (perhaps ten 80 character records).
- Buffer - An interim memory. A buffer is used to hold data between the time it is keyed and the time it is recorded on the disc.
- Byte - A group of eight bits. A byte usually represents one character (for example : a, m, l, +).
- Check Digit - A numeric character which is used as an accuracy check. For instance, in an account number, the last digit may be used to mathematically check the validity of the other digits.
- Column - One alpha-numeric character, a blank, or one punctuation character (called special characters).
- Cursor - White underline on the screen which indicates where the next character will be entered.
- Cylinder - A pair of tracks on disc allocated for storage. The system has 200 cylinders - 31 are used by the system and the remaining 169 are for data.

- Disc - A storage device, consisting of a thin, circular plate covered with an iron oxide coating capable of being magnetized. Information is recorded by creating, at a specific spot on the disc surface, a magnetized area by means of a recording head in a manner similar to tape recorders. Reading is performed by the recording heads sensing the magnetized areas.
- Field - Any number of columns.
- Interrecord Gap (IRG) - An area on tape with no information between the end of one record and the beginning of a new one.
- Job Control Statement (JCS) - Any of the statements used to direct the system to perform certain functions, i.e. data entry or data verification.
- Jobfile - Contains a status record for every job in the system. Each Jobfile record indicates the name of the job, entry operator, verify operator, status of data entry, verification, and tape, the number of data records, verify records, and error records, and any balance totals within that job.
- Jobname - The name used by the operator to identify jobs within the system. It usually consists of the PROGRAM and the Batch Number.
- Label - A data item or record which is used to identify a file. On a tape, the standard IBM label is 80 characters long.
- Operator ID (OPR) - Up to three characters which identify the entry operator and verify operator for a job.
- Pack - Reduce the amount of storage required to hold information by changing the method of coding the data.
- Parity Check - A check that is performed on data bits to detect an error.
- Program Library (PROGLIB) - A listing of the name of every program stored in the system.

- Program Name (PROGNAME) - The name of the program control format used for a specific job. It can be up to eight positions in length but with no blanks, spaces, or special characters.
- Record - 16 - 125 columns, which can be divided into any number of fields.
- Reflective Marks - Silver marks on tape which indicate the beginning of tape (BOT) and end of tape (EOT). Data should not be written before BOT or after EOT; this is system controlled.
- Search - Seek a desired record within a file either on disc or tape.
- Tape - A tape made of plastic with a magnetic surface on which data is recorded by magnetizing narrow stripes (called tracks). Data is read by sensing these magnetized areas.
- Tape Interrupt - A special record on a tape which indicates the temporary end of data. It is used to locate the place to begin, when more data is later added to the tape.
- Tape Mark - A 3-1/2" space and a special character on tape which indicates the end of a file or separates labels from files or files from files.
- Track - The portion of the tape or disc which contains data bits which pass under the read/write head.

APPENDIX B
SYSTEM COMPONENTS

KEYSTATION

The eight keystations are identical and functionally independent of each other. There is a keyboard and a visual display mounted on a desk that contains a personal effects cabinet. One cable, that runs from keystation to keystation, connects all of them to the Control Unit. Each keystation has its own power cord.

DISPLAY

The display permits the operator to see each character of the record as it is keyed. An entire 125-character record can be displayed for viewing in the form of four rows of 32 characters each. The last three positions of the fourth row are used as a character counter. This character counter, in conjunction with a moving indicator called the cursor, indicates the next position to be keyed. At the end of any record the character counter returns to 001, and the cursor returns to the first character position of the first row.

The controls for the display are located under the screen of the display unit. The power ON/OFF knob is located on the left. This knob also controls the brightness of the display. The knob on the right controls the contrast.

KEYBOARD

The keyboard has five control switches, 35 character keys, three shift keys, and 15 function keys as shown in Figure 1. The five switches are capitalized (e.g. AUTO SKIP-DUP) and the 15 function keys are capitalized and underlined (e.g. START, ENTER) throughout the manual. The keyboard also houses the red (attention) light.

Switches

There are five functional switches on the upper righthand side of the keyboard. These switches are shown in Figure 1.

KEYBOARD

Switches

AUTO SKIP-DUP	If on, under program control, designated fields will automatically be skipped and duplicated.
PROGRAM SELECT	Returns to program level selected (P1 or P2) at beginning of each new record.
PROGRAM CONTROL	When on, station is under program control. When off, station is in "free form," which is alpha and 125 character length records.
GEN/CHECK	When in GEN, system will generate correct check digit for field. When in CHECK, system will indicate, by an error message, when an incorrect check digit is keyed.
64/48	When in 64, entire keyboard is enabled. When in 48, all special characters (upper portion of alpha keys) are disabled. An "INVALID KEY" message is displayed if one of these is keyed.

Function Keys

<u>DBL END</u>	End a jobtype or function.
<u>START</u>	Start a jobtype or function
<u>DBL SEARCH</u>	Search a file to retrieve a record with a specific argument.
<u>DISP</u>	Display special information on the screen.
<u>DBL VER COR</u>	Used in verification to correct errors field by field. Also used to correct balance fields in entry or in verification. In a balance field, the <u>VER COR</u> key deducts the incorrect balance from the accumulator before adding the new balance into the accumulator.
<u>RESET</u>	Clears all messages from screen. When a message is on the screen, the red light flashes. <u>RESET</u> is the only key enabled when the red light is on.

<u>NUMERIC</u>	Key numeric in an alpha field.
<u>DBL BW REC</u>	Cursor must be at the beginning of a field. Moves backward one record at a time.
<u>FW REC</u>	Cursor must be at the beginning of a field. Moves forward one record at a time. Disabled unless in a <u>BW REC</u> or File mode.
<u>DUP</u>	Manual dup key. Duplicates one field at a time from the previous record. Disabled when in a <u>BW REC</u> mode.
<u>DBL P3</u>	Puts system into Program Control Level 3 for one record.
<u>P1</u>	Puts system into Program Control Level 1 for one record.
<u>DBL P4</u>	Puts system into Program Control Level 4 for one record.
<u>P2</u>	Puts system into Program Control Level 2 for one record.
<u>BWD FIELD</u>	Moves cursor backward, one field at a time.
<u>FWD FIELD</u>	Moves cursor forward, one field at a time.
<u>ENTER</u>	Used with job control statements. Also used as release key in certain jobtypes.
<u>BWD CHAR</u>	Moves cursor backward, one character at a time.
<u>FWD CHAR</u>	Moves cursor forward, one character at a time. Disabled during verification.
<u>DBL DEL</u>	Delete a record on disc.
<u>SKIP</u>	Skip from one field to the next.
<u>DBL ZERO BAL</u>	Used for subtotaling line items in jobs with balance fields.
<u>LEFT ZERO</u>	Add leading zeros to a numeric field. Also used to enter balance fields into accumulator.

AUX

Call out auxiliary or stored information within a job.

ALPHA

Key alpha in a numeric field.

DBL INSERT

Insert a record on disc.

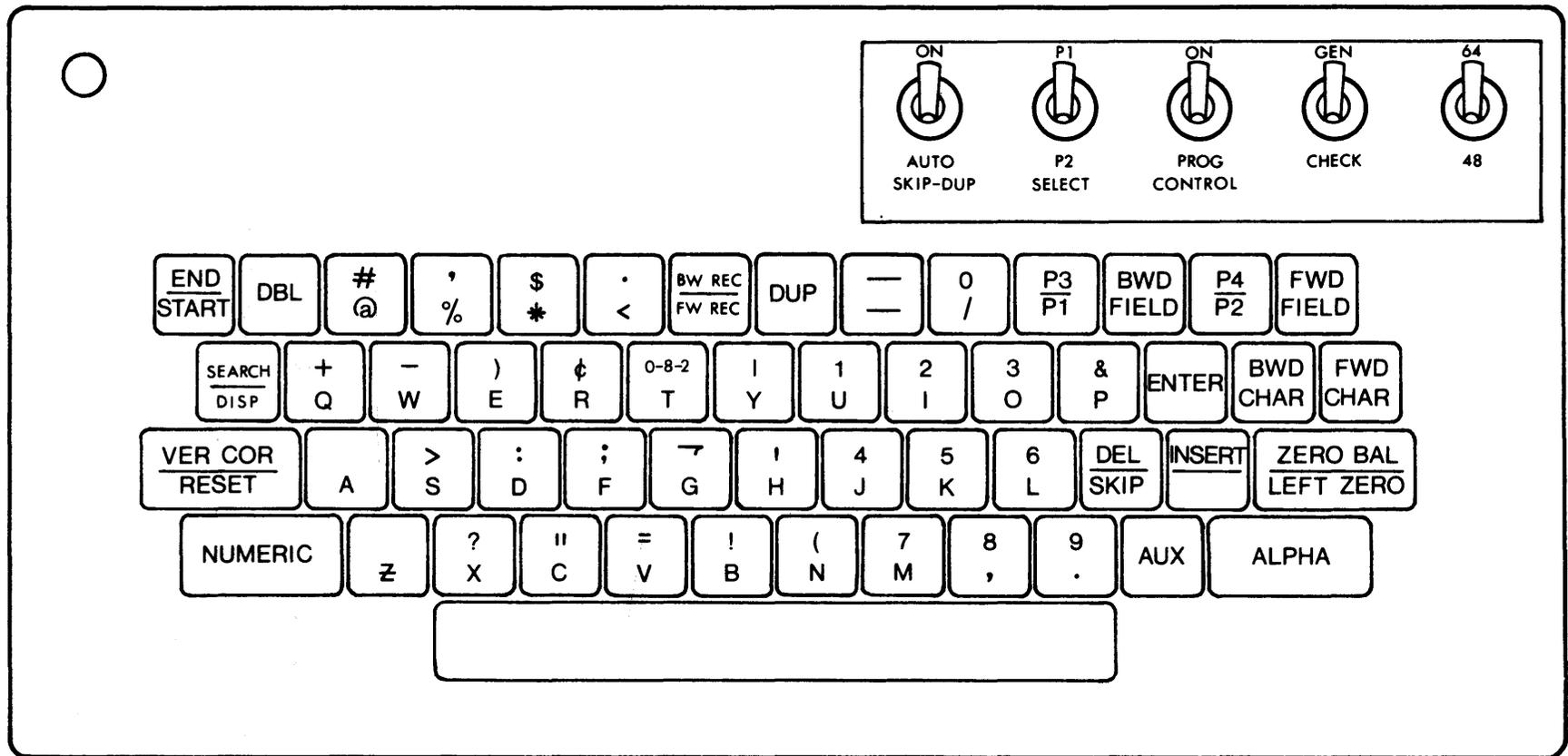
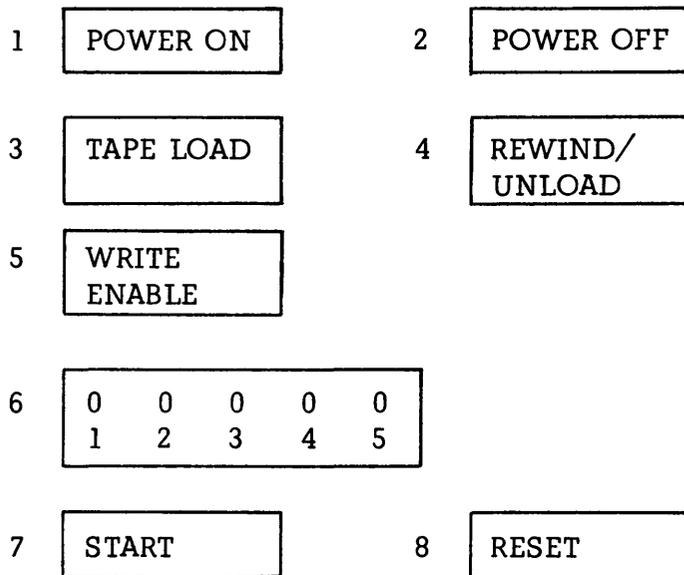


FIGURE 1

SUPERVISOR'S PANEL ON CONTROL UNIT

The illustration below shows the arrangement of Control Buttons on the Control Unit. They are numbered and a description of each is listed beneath the illustration.



- | | |
|-----------------------------|---|
| 1. POWER ON (Green) | When depressed, applies necessary AC and DC power to the system. |
| 2. POWER OFF (Red) | When depressed, removes all AC and DC power from the system. |
| 3. TAPE LOAD (White) | Used to load tape on to tape unit. It moves the tape to the silver beginning of tape (BOT) marker. |
| 4. REWIND/UNLOAD
(White) | After the tape has been run, this button must be depressed twice to remove the tape. The first time, it will rewind the tape back to the beginning of tape (BOT) marker, and the second time, it will unload the tape from the takeup reel. |
| 5. WRITE ENABLE | This light, when lit, indicates that the tape Write-Ring is in place and data can be written on the tape. This light must be on for all DT Jobtypes or the message "NOT READY" will be displayed. |

SUPERVISOR'S PANEL ON CONTROL UNIT (Continued)

6. Fault Indicators When running Operational Diagnostics, the fault indicators will flash on and off. The lights should all be OFF after completion of the Diagnostics. They are numbered 1 thru 5 so that if any should remain ON (indicating a system problem), you can give the numbers to the INFOREX office.

7. START (Yellow) The START button is depressed after powering up the system, and will load the disc heads and run the Operational Diagnostics. This button should be depressed only after powering up the system and just prior to powering down the system. Do not depress this button at any other time without instructions from an INFOREX Field Engineer.

8. RESET (Blue) The RESET button is depressed only if the system hangs up (one or more keystations will not accept keystrokes). Any time this is required, please notify the INFOREX Field Engineering office.

APPENDIX C

QUIZZES

OPERATOR QUIZ

1. What is a "JCS"? Give an example.
2. What is the "JCS" to start a data entry job, using a stored program?
3. What is the "JCS" to start a data entry job, if the program is not stored in the library?
4.
 - a. How many programs can be stored in the program library? _____
 - b. How many levels can each program have? _____
5. More than one operator can use the same program control.
True _____ False _____
6. What are the job types for data verification? _____

7. More than one operator can enter data using the same program name and batch number.
True _____ False _____
8. How do you interrupt a data entry job? Give an example.

9. Explain how a record can be deleted from a data set when doing a data entry job.
10. Explain how a record can be deleted from a data set when doing a verify job.
11. The first record of a data set cannot be deleted.
True _____ False _____
12. What is the "JCS" to continue data entry? Give an example.
13. What is the "JCS" for balance verification?
14. What function keys are required when entering data in a balance field?
15. How do you correct a balance field after it has been entered?
16. What does the DBL key accomplish?

17. When doing verification all forward function keys are inhibited.

True _____

False _____

LEAD OPERATOR QUIZ

1. List the steps to enter and store a program.

2. What is the "JCS" to cancel a program from the library?

3. List the steps to change any level of the program once it has been stored in the library?

4. Write the appropriate "JCS" to cancel each of the data sets from Disc if the Jobfile status of each are as indicated below:

DI	V	T
DC	VI	T
DC	VC	TC
DC	V	TC

5. Explain how to correct an AUTO DUP field through an entire data set (file).

6. How can the operator use a program that is stored in the library with a different job name?

7. What are the three necessary items needed in order to search a data set (file)?
- a.
 - b.
 - c.
8. What is meant by a search argument?
9. List the steps to search a data set?
10. A Jobfile record cannot be updated by an operator.
- True _____ False _____
11. How many active jobs can the Jobfile contain? _____
12. What is the maximum length of a Prognome (program name)?
13. What does a recompute (K Jobtype) accomplish?
14. What is the "JCS" to search the Jobfile for all of the batches that have been transferred to tape?
15. The RESET button on the control unit will put a DI or VI status in the Jobfile if data is being entered or verified.
- True _____ False _____

TAPE QUIZ

1. A data set (file) can be transferred to tape if it has a "DS" status in the jobfile.

True_____

False_____

2. Give an example of a "JCS" to transfer three non-sequential batches of Payroll to tape.

3. How can you insure a job has been completely verified before transferring it to tape?

4. A job can be transferred to tape if it has a "DC" and a "VI" status in the jobfile.

True_____

False_____

5. How do you cancel an unwanted transfer after the "JCS" has been given?

6. What is meant by a Tape Interrupt?

7. What is the "JCS" for a Tape Continue?

8. What is the "JCS" to cancel a tape transfer? (Stop Tape)

9. What is meant by blocking and unblocking?

10. What is the maximum character length of a blocked record?
 - a. Without the Packed Records Feature _____
 - b. With the Packed Records Feature _____

11. What level of program control determines the length of the records to be blocked if no record length is specified in the Disc to Tape "JCS"?

12. What is the "JCS" to transfer from tape to disc?

13. How many tape labels can be stored? _____

14. What is the "JCS" to store tape labels?

15. What does a tape proofing (tape validation) function accomplish?

16. Give an example of how you can specify record length when transferring from disc to tape?

17. List the steps to transfer the program library to tape for the first time.
18. List the steps to transfer the programs from tape to the program library.
19. Transferring the programs for the library to tape and tape to the library is a stand-alone job.
True _____ False _____
20. A record can be changed on tape up to three times.
True _____ False _____
21. List the steps to search tape; by file and by record.
22. You may search for a record on tape within a block.
True _____ False _____
23. List the steps to correct a specific record on tape.



Program Library Form

PROGRAM CONTROL CODES			PROGNAME
TYPE OF FIELD	VERIFY	NON-VERIFY	
Alpha	1CCCC	1AAAA	
Alpha Right Boundary	2CCCC	2AAAA	
Auto Aux	4CCCC		
Auto Dup Alpha	∕CCCC		
Auto Dup Numeric	∕VVVV		
Auto Forward Field		3PPPP	
Auto Increment		∕PPPP	
Auto Skip	- VVVV		
Balance 1	2PPPP	2PPPP	
Balance 2 (Feature)	2QQQQ	2QQQQ	
Check Digit 10 or 7	3VVVV	3&&&&	
Check Digit 11 or 7	4VVVV	4&&&&	
Left Zero	2VVVV	2&&&&	
Numeric	∕VVVV	∕&&&&	
			Job _____
			Frequency _____
			Date _____
			Estimated Total Volume _____
			SINGLE CHARACTER FIELD
	VERIFY	NON-VERIFY	
Alpha	1		
Auto Aux	4		
Auto Dup Numeric	∕		
Auto Forward Field		3	
Auto Skip	-		
Numeric	∕		
			END RECORD CODE
			Single Level E
			Cascading Level L

P1	FIELD																																																												
	CODES																																																												
	POSITION	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60																																																											
P2	FIELD																																																												
	CODES																																																												
	POSITION	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60																																																											
P3	FIELD																																																												
	CODES																																																												
	POSITION	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60																																																											
P4	FIELD																																																												
	CODES																																																												
	POSITION	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60																																																											

P1	FIELD																																																																																																																								
	CODES																																																																																																																								
	POSITION	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125																																																																																																																							
P2	FIELD																																																																																																																								
	CODES																																																																																																																								
	POSITION	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125																																																																																																																							
P3	FIELD																																																																																																																								
	CODES																																																																																																																								
	POSITION	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125																																																																																																																							
P4	FIELD																																																																																																																								
	CODES																																																																																																																								
	POSITION	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125																																																																																																																							

