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ABSTRACT

During the 1971-72 pilot test of the Southwest Regional Laboratory's (SWRL) Instructional Management System (IMS), three alternative procedures were used to gather data within the classroom, transmit those data to SWRL for processing, and send IMS output to the appropriate recipients in the schools. ComSys 3--one of the three configurations--provided for the use of in-the-school optical scanners and line printers with direct connections to the main computing facility for IMS. Procedures for using the ComSys 3 configuration, together with evaluation criteria, are presented. (DGC)

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NO: TN 5-72-22

TITLE: PROCEDURES FOR COMSYS 3 FOR THE 1971-72 IMS TRYOUT

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ABSTRACT

Operating procedures for IMS ComSys 3 input and output are listed. Included is a flowchart indicating channels of communication and decision points. TN 5-72-03 should be read to place this document in perspective.

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PROCEDURES FOR COMSYS 3 FOR THE 1971-72 IMS TRYOUT

INTRODUCTION

During the 1971-72 tryout of the Instructional Management System (IMS), selected combinations of four input and three output modes are being used to gather data within the classroom, transmit those data to SWRL for processing, and send IMS output to the appropriate recipients. The four input modes are: (1) U.S. mail, (2) school mail, (3) on-site scanner, and (4) on-site keyboard. The three output modes are: (1) U.S. mail, (2) school mail, and (3) on-site printer.

The mechanisms, procedures, and evaluative techniques used for gathering data and returning relevant information to the appropriate personnel constitute an IMS communication system (ComSys). Five such systems, designated as ComSys 1 through 5 in Figure 1, have been proposed; three of these - ComSys 1, ComSys 2, and ComSys 3 - are being used in the 1971-72 tryout.

Figure 1

OUTPUT MODES \ INPUT MODES	U.S. MAIL	SCHOOL MAIL	ON-SITE SCANNER	ON-SITE KEYBOARD
U.S. MAIL	ComSys 1		ComSys 4	
SCHOOL MAIL		ComSys 2		
ON-SITE PRINTER			ComSys 3	ComSys 5

This document describes the input and output devices, procedures, and evaluative criteria for ComSys 3. The procedures for ComSys 1 and 2 are presented in TN 5-72-03. All materials referred to are on file in Activity 508 archives.

DEFINITIONS

Input/Output Mode

As shown in Figure 1, the input mode for ComSys 3 is an on-site scanner while the output mode is an on-site character printer. Both devices are located in a school, and only teachers in that school submit data via the scanner and receive reports from the printer.

On-Site Scanner

The on-site scanner is the 660 Scanner/Copier developed by Electro Optical Systems (EOS), a subsidiary of Xerox Corporation.

On-Site Printer

The on-site printer is a DCT - 500 remote terminal, manufactured by UNIVAC.

Data Modem

The telephone link between both the scanner and printer and the SWRL 690/21 data concentrator unit (DCU) is accomplished by a 103A2 data set installed and maintained in the school at SWRL's expense.

PROCEDURES

Creating the Data Base

The procedures and materials used to create the data base in ComSys 3 are identical to those used in ComSys 1 and 2 (see TN 5-72-03, p. 2).

Input

Upon completing a unit, the teacher uses pre-encoded, scannable response sheets to administer criterion exercises. Teachers using FYCSP materials fill in the pupil code on both sides of each response sheet. These sheets are also used to delete pupils from the data base.

Before sending the response sheets to the scanner operator, the teacher completes two additional forms. The first is the IMS Class Identification Sheet. One Class ID Sheet is included with each set of materials as an identifier for the Criterion Exercise Response Sheets. The second form, the Scanning Request Form, provides necessary information to the scanner operator and is also used as a special scan form.

If new pupils are to be added to the class, the teacher records their names on an IMS Update Form before sending the materials to the scanner operator. All materials are then put in the proper sequence and sent to the scanner operator with the teacher's name.

Upon receipt of a set of materials, the scanner operator institutes the procedures described in "Scanner Operator Procedures for IMS" (TN, in draft). When the scanning has been concluded, the scanner operator returns all materials to the teacher.

Processing

Processing from the time of input until reports are output in ComSys 3 is the same as in ComSys 1 and 2.

Output

To transmit a set of reports, the DCU operator first contacts the scanner operator and informs her that SWRL is ready to send. The DCU operator then calls the data set at the school to establish the telephone link between the 690/21 DCU and the DCT-500 remote terminal. The reports are then transmitted to the on-site printer and a duplicate set is printed on SWRL's line printer. Upon completion, the scanner operator distributes the reports to the appropriate recipients. This concludes the output sequence.

EVALUATIVE DATA

The data required to evaluate the operation of ComSys 3 can be classified under the following descriptors: (I) time and cost, (II) hardware failure, (III) software errors, and (IV) affective data. Evaluative data items within each category for ComSys 3 are listed below:

I. Time and Cost Data

1. The time and cost estimate incurred in:

   . Preparing materials for scanning

   . Scanning the response sheets

   . Preliminary processing by the 690/21 DCU*

   . Transmitting data from the 690/21 DCU to the main CPU*

* To be estimated by Computer Center

. Processing by the main CPU*

. Storing data at the main CPU site*

. Transmitting data from the main CPU to the 690/21 DCU*

. Transmitting reports to the on-site printer*

2. SWRL's total cost and turnaround time.

3. The system's total cost and turnaround time.

II. Hardware Failure

1. The ratio of equipment failure to number of runs:*

. at SWRL

. at the school site

. at the main CPU site

2. The total time delay resulting from equipment failure:

. at SWRL

. at the school site

. at the main CPU site

III. Software Errors*

1. The number of errors resulting from:

. the scanning process

. resident 690/21 software

. resident main CPU software

. the report generation process

IV. Affective Data

1. Teachers' reactions to IMS-specific materials and procedures.
2. Scanner operator's reactions to:
   - . scanner operation
   - . input/output procedures
3. Teachers' reactions to the format and content of the reports.
4. Teachers' reactions to the total system.

SUMMARY

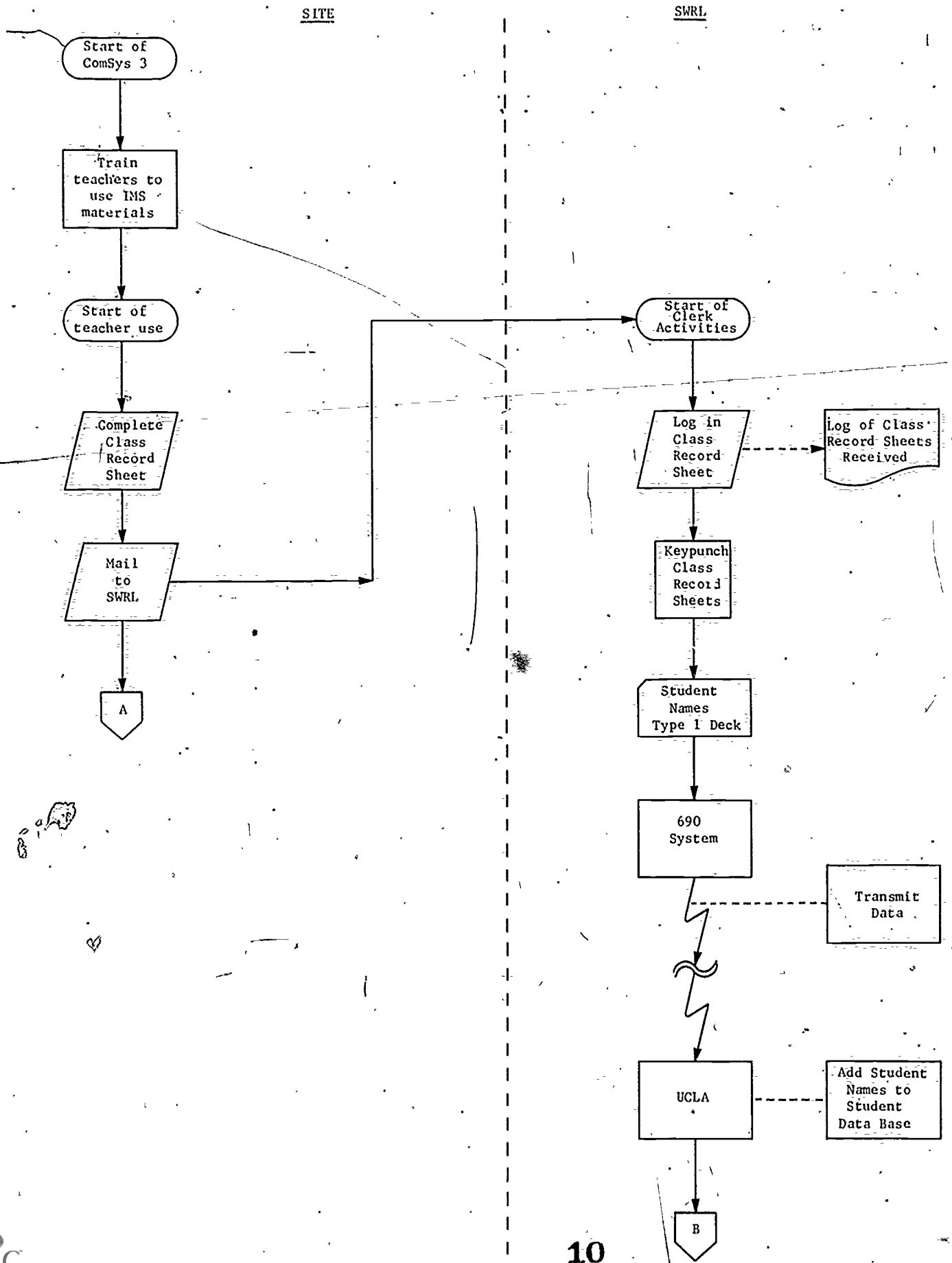
Table 1 and Appendix A summarize the information relating to the procedures used in ComSys 3. Table 1 presents a complete list of the forms, and delineates role responsibilities for completion of individual items on the forms. Appendix A is a flowchart of ComSys 3 illustrating concurrent role responsibilities, parallel processes, channels of communication and decision points.

Table 1

List of forms, their content, and the responsibility for ComSys 3

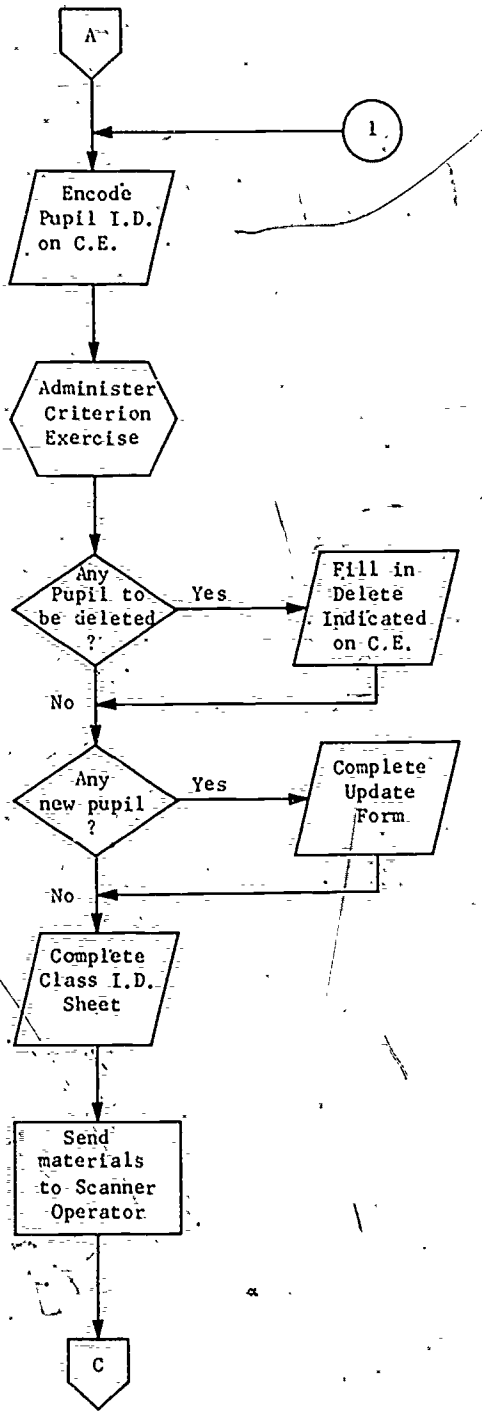
FORM	CONTENT	RESPONSIBILITY
Class Record Sheet	1. District Name	1. SWRL
	2. School	2. SWRL
	3. Teacher Name	3. SWRL
	4. Grade Level	4. SWRL
	5. Class Time (AM or PM)	5. SWRL
	6. Pupil Names	6. Teacher
	7. Group Designator	7. Teacher
Criterion Exercise Response Sheets for FYCSP	1. Pupil	1. Teacher
	2. Program Code	2. SWRL
	3. Unit Code	3. SWRL
	4. Page Code	4. SWRL
	5. Delete Indicator	5. Teacher
	6. Item Responses	6. Pupil
Criterion Exercise Response Sheets for LMS Programs	1. Program Code	1. SWRL
	2. Pupil List Code	2. Teacher
	3. Unit Code	3. SWRL
	4. Page Code	4. SWRL
	5. Item Responses	5. Teacher
	6. Tested Indicator	6. Teacher
	7. Delete Indicator	7. Teacher
Pupil List for LMS Programs	1. Pupil List Number	1. SWRL
	2. Pupil Names	2. Teacher
Class Identification Sheet	1. Teacher Name	1. SWRL
	2. Grade Level Code	2. SWRL
	3. Class Time (AM or PM) Code	3. SWRL
	4. District Code	4. SWRL
	5. School Code	5. SWRL
	6. Teacher Code	6. SWRL
	7. Date	7. Teacher
Update Form	1. Teacher Name	1. SWRL
	2. Teacher Code	2. SWRL
	3. Grade Level Code	3. SWRL
	4. Class Time (AM or PM) Code	4. SWRL
	5. Pupil Names	5. Teacher
	6. Group Designator	6. Teacher
Scanning Request Form	1. Teacher Name	1. Teacher
	2. Number of Sheets	2. Teacher
	3. Program	3. Teacher

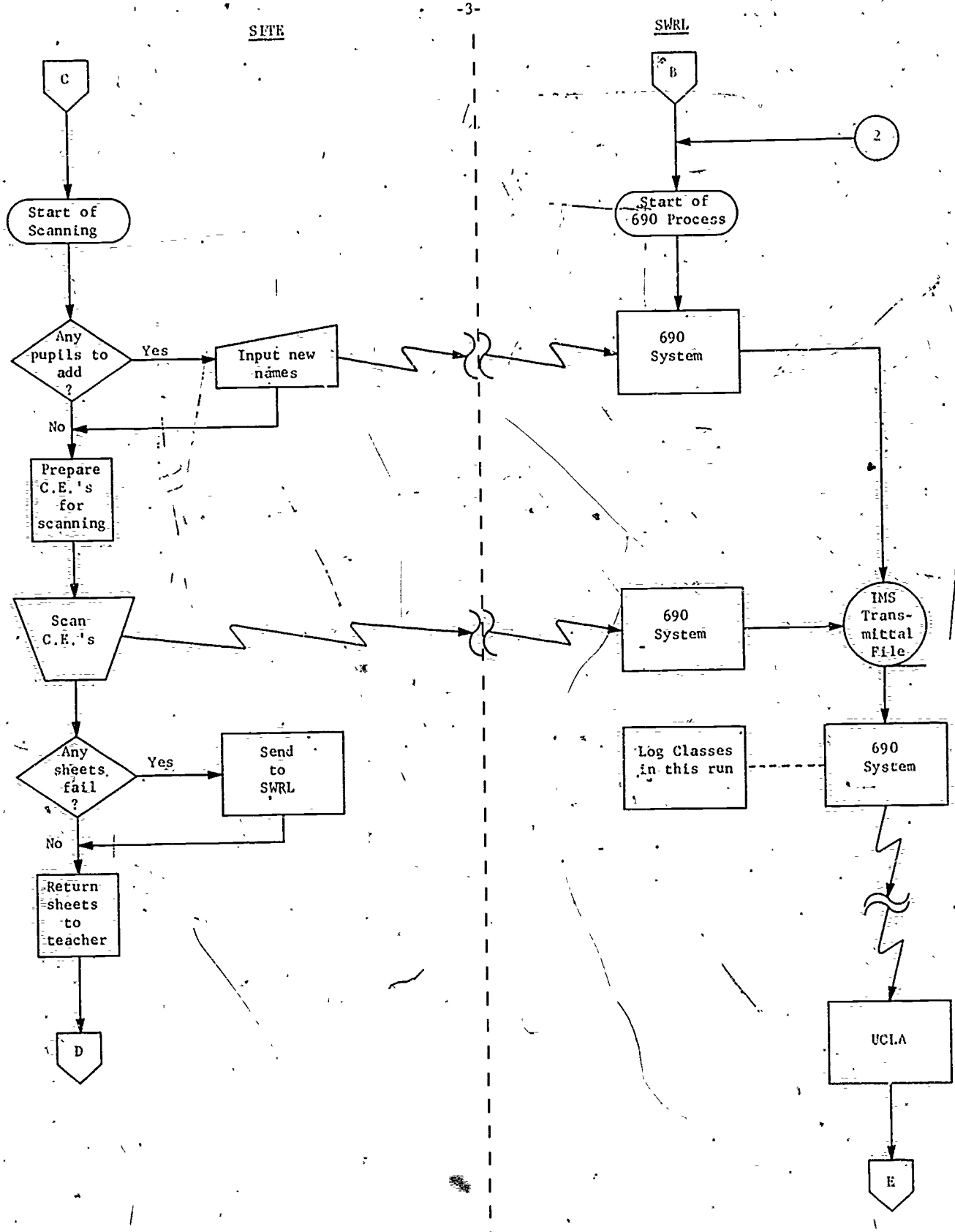
APPENDIX A

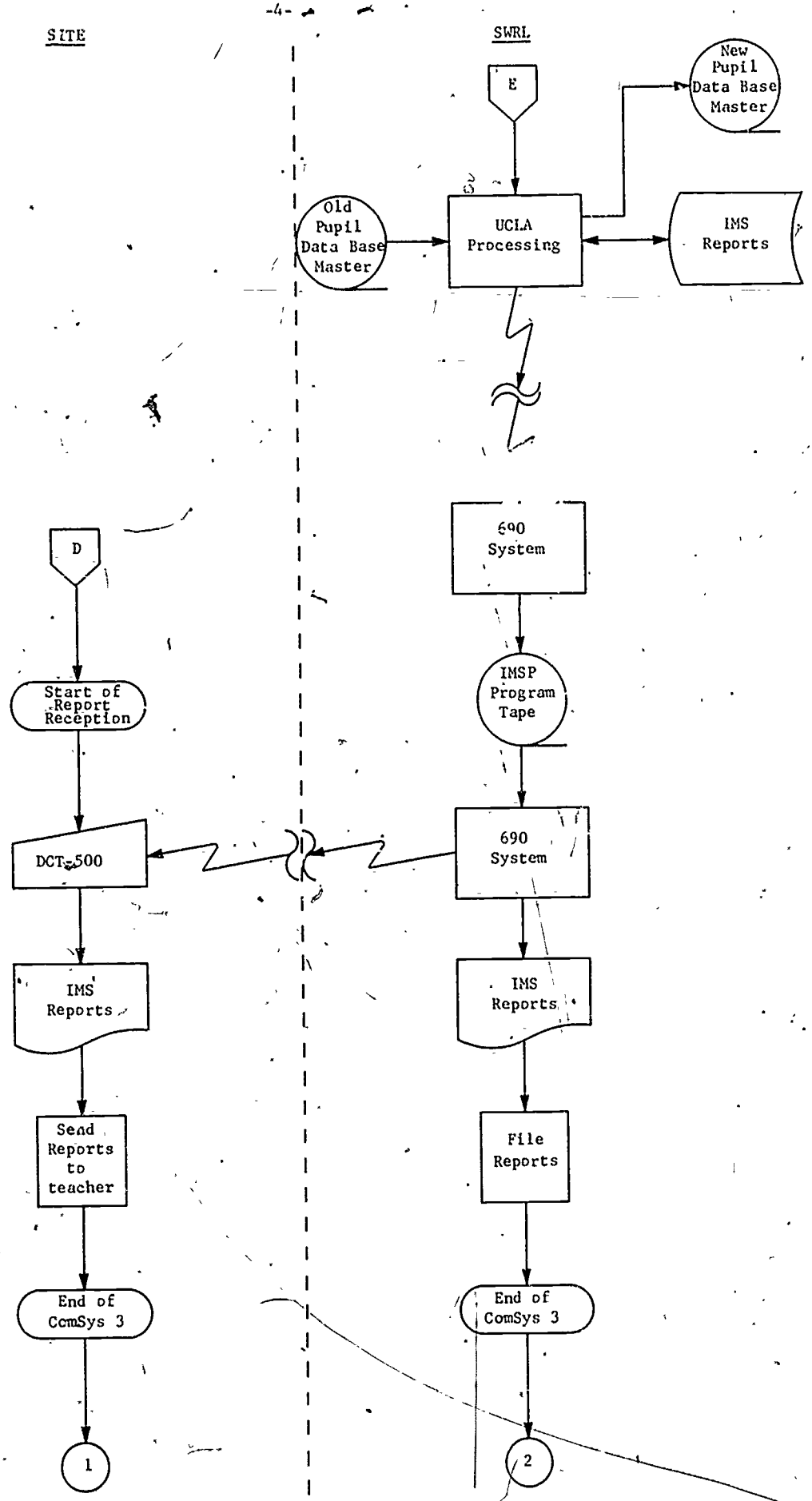

SITE
SWRL
Start of ComSys 3
Train teachers to use IMS materials
Start of teacher use
Complete Class Record Sheet
Mail to SWRL
A
Start of Clerk Activities
Log in Class Record Sheet
Log of Class Record Sheets Received
Keypunch Class Record Sheets
Student Names Type 1 Deck
690 System
Transmit Data
UCLA
Add Student Names to Student Data Base
B

SITE

SWRL


A
1
Encode Pupil I.D. on C.E.
Administer Criterion Exercise
Any Pupil to be deleted ?
Yes
Fill in Delete Indicated on C.E.
No
Any new pupil ?
Yes
Complete Update Form
No
Complete Class I.D. Sheet
Send materials to Scanner Operator
C


SITE
SWRL
C
B
2
Start of Scanning
Start of 690 Process
Any pupils to add ?
Yes
Input new names
690 System
No
Prepare C.E.'s for scanning
Scan C.E.'s
690 System
IMS Trans-mittal File
Any sheets fail ?
Yes
Send to SWRL
Log Classes in this run
690 System
No
Return sheets to teacher
UCLA
D
E


SITE
SWRL
E
New Pupil Data Base Master
Old Pupil Data Base Master
UCLA Processing
IMS Reports
D
690 System
Start of Report Reception
IMSP Program Tape
DCT-500
690 System
IMS Reports
IMS Reports
Send Reports to teacher
File Reports
End of ComSys 3
End of ComSys 3
1
2