

ITEM NUMBER 6309-0115
26 pages

(T. I. E.)

DATE July 26, 1963

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TITLE SYSTEMS ENGINEER INSTALLATION MANUAL

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INTRODUCTION

With the announcement of the IBM 1440 Data Processing System the responsibility of selling and installing of our marketing force has increased appreciably. Now, more than ever, applications of a stored program system have become feasible to a broadening range of customers and prospects who, until this time, were unable to cross the threshold to stored program systems.

From an installation standpoint the System Engineer's burden has increased proportionally because the ratio of systems to be installed per System Engineer has also increased significantly. Therefore there is an everpresent challenge to devise more effective methods for better utilization of Systems Engineer time, whereby the best possible service to the customer can be maintained during installation, and allow the customer to become as self-sufficient as quickly as possible.

One method of alleviating this is the 1440 Workshop program in which a System Engineer can be made available to more customers on a regular basis to supplement formal education, to keep the customers up to date on system and package program announcements, etc. during the pre-installation period. The Systems Engineer conducting the workshop session, however, quite often is not assigned primary responsibility to all accounts represented at the workshop. As a result he may not have detailed knowledge of any one particular account.

In addition the System Engineer may find it difficult to keep track of the progress of all the account to which he has been assigned primary responsibility unless some method of account status documentation is maintained. More likely than not his 1440 accounts involve customers who will have had no experience in stored program systems and will, therefore, require closer supervision than would a customer with systems experience.

A means must also be provided for backup systems assistance with little or no break in service or inconvenience to the customer in the event the primary Systems Engineer is away due to illness, vacation, school, or reassignment.

One approach to the problem is a Systems Installation Manual for each Systems account and maintained by the primary Systems Engineer, or in his absence the backup Systems Engineer. The objectives of the manual are twofold:

- (1) It should provide a record of customer progress during the preinstallation period in conjunction with the 11-Point Program.
- (2) It should serve as a rapid means of orientation for the backup Systems Engineer in the event the primary Systems Engineer must be absent from the account and should eliminate the expense of time involved by both the customer and Systems Engineers that would otherwise be needed for the transition.

It is not intended that the Systems Installation Manual be a substitute for the documentation that is normally the responsibility of the customer. Nor is it intended that the manual be so detailed that it is too time consuming to keep updated. Systems Installation Manuals of the type shown in the sample in the Appendix of this paper have been used successfully on a local basis and found very easy to maintain once the manual was setup. The following pages will include an explanation of the sample manual.

EXPLANATION OF THE SYSTEMS INSTALLATION MANUAL

Section I

Customer Organization
Customer Education
System Configuration

- Exhibit 1 - The Customer organization chart is primarily for the use of the backup Systems Engineer who may not know all of the key personnel in the account.
- Exhibit 2 - The personnel education chart provides a record of modular training. It may be desirable to include dates of the planned schools.
- Exhibit 3 - A schedule of the 1440 Workshop program is included showing subjects to be taught in the current series.
- Exhibit 4 - The 1440 configuration of the account is included showing all model numbers and special features. The System number is also included for reference when requesting test times, submitting cable orders, etc.

Section II

Installation Schedule
Program Schedule

- Exhibit 5 - A copy of the 11 Point Program System preinstallation schedule is included. This can be a copy of the original.
- Exhibit 6 - The Program progress chart is setup for each application area to show at a glance the status of all programs planned and completed by program number and programmer. It may also be desirable to show test date information, and per cent completed for each program.

Section III

Application Areas

- Exhibit 7 - A listing in order of conversion of the application areas to be run or the System. This includes current as well as planned applications.

Exhibit 8 - A general flow chart is made showing all major runs for each application. Source of Input and Output disposition is shown along with estimated volume and run time. The Program number is indicated and the disk pack number is shown on file runs.

Exhibit 9 - Layouts of disk records are kept on standard IBM forms. These could very easily be a copy of the customer's file layouts. A card layout may also be desirable in this section.

Section IV

Disk File Organization

Exhibit 10 - The disk file organization charts are kept for each disk pack and show each individual file kept on the pack. It is extremely useful when making the detailed system design. It also gives at a glance the amount of storage available for expansion.

Section V

Physical Planning

Exhibit 11 - A copy of the layout of the system room is helpful in working out physical planning with the customer and Customer Engineers to determine cable requirements, air conditioning, electrical requirements, etc. A physical planning check list could also be useful in this section.

Section VI

Miscellaneous Information

Exhibit 12 - This exhibit shows a list of IBM Applied Programs to be used with the system. It may also be desirable to include a list of Macros with formats and subroutines developed by the customer. Also any pertinent information such as testing schedules or general information not included in any other section is included here.

SUMMARY

The exhibits shown in the sample manual are for a 1440 Disk System but the principles apply to any IBM System Installation. Exhibits shown are merely a guide and each System Engineer will have to determine for himself what type documentation should be kept for each customer in terms of how he can best utilize his time and service during the preinstallation period. Thus, by setting up manuals of the type shown, the objectives set forth earlier can be easily met. Customer progress is outlined and a general outline of the system design is recorded for the backup Systems Engineer or for reference in the future for similar customers and prospects.

Again, how detailed should the manual be is up to the individual. A guide, however,

would be for the Systems Engineer to ask himself this question: "What type of documentation would I like to be turned over to me if I were the Backup Systems Engineer taking over the XYZ account?"

APPENDIX

SAMPLE SYSTEMS INSTALLATION MANUAL

SECTION 1

Customer Organization

Customer Education

System Configuration

XYZ COMPANY ORGANIZATION

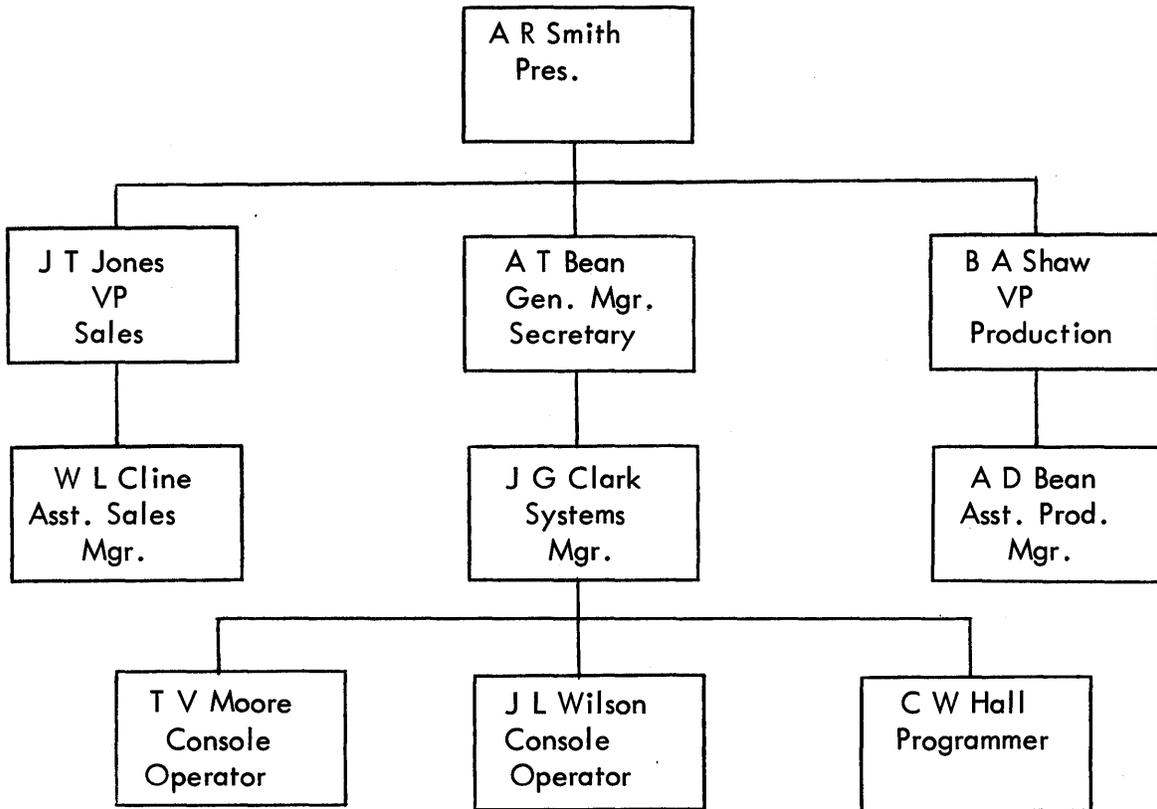


Exhibit 1

PERSONNEL EDUCATION CHART

NAME	EXEC.	BASIC PROGR.	SYSTEM PLAN.	RANDOM FILE CONCEPT	MGT. SCIENCE	RPG	1440 WORKSH.		
A R SMITH	X								
J T JONES	X								
A T BEAN	X								
B A SHAW	X								
J G CLARK		X	X	X	X		X		
T V MOORE		X	X						
J V WILSON		X	X				X		
C W HALL		X	X	X		X	X		

Exhibit 2

1440 WORKSHOP SCHEDULE

May 15	Orientation and Preinstallation Planning
May 22	Card and Form Design Considerations System Timings
May 29	File Organization Techniques Sort 5
June 5	Autocoder Macro System - IOCS
June 12	Disk Utility Programs File Organization Routines
June 19	RPG
June 26	Conversion Routines Documentation and Audit Controls
July 10	Physical Planning Preparation for Testing

Exhibit 3

SYSTEM CONFIGURATION

SYSTEM NO. 1-8504

MOD/SF NO.	DESCRIPTION
A4	1441 CPU 8K
2660	1447 MODEL 2 ATTACHMENT
3321	DISK STORAGE CONTROL
4631	INDEXING AND STORE ADDRESS REGISTERS
5275	MULTIPLY - DIVIDE
2	1442 READER - PUNCH
2	1443 PRINTER
5585	PRINT STORAGE
5567	PRINTER CONTROL
2	1447 CONSOLE WITH I/O PRINTER
7600	SENSE SWITCHES
1	1311 DISK DRIVE
2	1311 DISK DRIVE
5561	PRINTER ATTACHMENT

Exhibit 4

SECTION II

Installation Schedule

Program Schedule

CUSTOMER NAME XYZ Company		CUSTOMER NUMBER 66666-00	BRANCH OFFICE NAME Anywhere	DIST. OFF. NO. 76
BRANCH MANAGER'S EXECUTIVE CALL Jan. 15, 1963	DELIVERY DATE June 15, 1964	DATE PRE-INSTALLATION SCHEDULE ESTABLISHED Jan. 15, 1963		SYSTEM NO. 1-8504

STATUS: (X) FIRM ORDER () FIRM ORDER ON RESERVE	EST. LEAD TIME FOR COMPLETION PRIOR TO DELIVERY (NO. of MO.)	STARTING DATES		COMPLETION DATES	
		ESTIMATED	ACTUAL	TARGET	ACTUAL
1. ESTABLISHMENT OF CUSTOMER ORGANIZATION					
INCLUDES:					
A. ESTABLISHMENT OF EXECUTIVE COMMITTEE.					
B. APPOINTMENT OF PROJECT DIRECTOR.					
C. SELECTION OF PLANNING AND PROGRAMMING STAFF.					
	17	Jan. 15 63	Same	Jan. 20 63	Same
2. INITIAL EDUCATIONAL PROGRAM					
INCLUDING:					
A. EXECUTIVE SEMINAR.					
B. PROGRAMMING CLASS FOR PROJECT DIRECTOR AND PROGRAMMING STAFF.					
		Feb. 15 63	Same	April 30 63	Same
		Feb. 2 63	Same	June 2 63	Same
3. GENERAL SYSTEMS DESIGN					
IN PLANNING FOR THIS PHASE, CONSIDERATION MUST BE GIVEN TO MANY REQUIREMENTS INCLUDING THE PERTINENT ITEMS INDICATED BELOW (A, B, C, D).					
A. ESTABLISHMENT OF PRE-INSTALLATION SCHEDULE OF EVENTS. (BAR CHARTS)					
B. APPLICATION DEFINITION BASED PRINCIPALLY ON THE FOLLOWING ITEMS:					
1. REVIEW OF SOURCE DOCUMENTS.					
2. ANALYSIS OF FILE REQUIREMENTS.					
3. DETERMINATION OF REPORT REQUIREMENTS.					
4. ESTABLISHMENT OF DUE-IN AND DUE-OUT SCHEDULES.					
5. DEFINITION OF PROCEDURES WITH REGARD TO WORK FLOW.					
6. DEFINITION OF ORGANIZATIONAL CHANGES REQUIRED.					
7. DETERMINATION OF REQUIREMENTS FOR OPERATING SYSTEMS PERSONNEL.					
C. GENERAL FLOW-CHARTS. BLOCK DIAGRAMS.					
D. ALL BASIC CHANGES TO EXISTING SYSTEM DETERMINED AND AGREED TO AND A PLAN IN OPERATION TO AFFECT THEM.					
		Jan. 20 63	Same	Feb. 1 63	Same
		Feb. 15 63	Same	March 15 63	Same
		March 15 63	Same	May 15 63	May 7 63
		June 1 63	Same	June 4 63	Sma
4. REVIEW OF PHYSICAL INSTALLATION PLANS					
THIS MUST BE ACCOMPLISHED IN A MEETING WITH THE CUSTOMER AND IBM SALES ENGINEERING REPRESENTATIVE, AND MUST CONSIDER THE FOLLOWING MAJOR ITEMS:					
A. SPACE.					
B. POWER.					
C. AIR CONDITIONING.					
D. ROOM CONSTRUCTION.					
E. CABLE REQUIREMENTS.					
		July 15 63		Aug. 1 63	

	EST. LEAD TIME FOR COMPLETION PRIOR TO DELIVERY (NO. of MO.)	STARTING DATES		COMPLETION DATES	
		ESTIMATED	ACTUAL	TARGET	ACTUAL
*5. DETAILED SYSTEM DESIGN (COMMITTEE MEETING)					
<p>IN ESTABLISHING THE SCHEDULE FOR THIS ITEM CONSIDERATION SHOULD BE GIVEN TO THE FOLLOWING PERTINENT SUBJECTS:</p> <p>A. DETAILED FLOW CHARTS.</p> <p>B. DETAILED BLOCK DIAGRAM OF MAJOR APPLICATION.</p> <p>C. CODING BEGUN.</p> <p>D. DETERMINATION OF DETAILED EQUIPMENT SPECIFICATIONS.</p> <p>E. REVIEW OF SAVINGS AND COST ANALYSIS.</p> <p>F. REVIEW OF DETAILED PRE-INSTALLATION SCHEDULE OF EVENTS (CODING, TESTING, ROOM CONSTRUCTION, ETC.)</p>		July 1 63		Dec. 15 63	
6. FIRST TEST SESSION COMPLETED		Oct. 1 63		Feb. 1 64	
7. ESTABLISHMENT OF CONVERSION PROCEDURES					
<p>CONSIDERATION TO BE GIVEN TO:</p> <p>A. TIME SCHEDULE.</p> <p>B. EQUIPMENT REQUIREMENTS</p> <p>C. PERSONNEL REQUIREMENTS.</p> <p>D. PROCEDURES AND CONTROLS.</p>		Feb. 1 64		May 1 64	
*8. SECUREMENT OF FIRM COMMITMENT IN WRITING FROM CUSTOMER ON SYSTEM DELIVERY DATE.		March 15 64		March 15 64	
9. MACHINE ROOM LAYOUT & CABLE ORDER APPROVED.		Feb. 15 64		March 1 64	
10. SELECTION & TRAINING OF OPERATING PERSONNEL					
<p>A. CONSOLE OPERATORS.</p> <p>B. TAPE HANDLERS AND EQUIPMENT OPERATORS.</p> <p>C. LIBRARIAN.</p> <p>D. OTHERS.</p>		Oct. 1 63		Feb. 1 64	
*11. CONVERSION & MAJOR APPLICATION PROGRAMS TESTED & READY FOR VOLUME OR PARALLEL PILOT RUNS		May 1 64		June 1 64	

*A COPY OF THE UP DATED SCHEDULE IS TO BE MAILED TO THE REGIONAL SALES OFFICE ON THE TARGET DATES FOR STEPS 5, 8, AND 11.

____ ORIGINAL - BRANCH MANAGER
 ____ DUPLICATE - SALESMAN
 ____ TRIPLICATE - REGIONAL SALES OFFICE

L. B. Emmer
 BRANCH MANAGER SIGNATURE

Jan. 15, 1963
 DATE



INSTALLATION AND SCHEDULING CONTROL FORM -- PROGRAM COMPLETION DATE SCHEDULE

Payroll

PROGRAM		PROGRAMMER	SCHEDULED COMPLETE	JOB DEFINITION	GENERAL ENTRY PROGRAM	DETAIL ENTRY PROGRAM	COMPLETE PROGRAM MONEY	JOB COSTING PROGRAM	SCHEDULED TESTING PERIODS				FINAL INSTALLATION PREPARATION	OPERATION START DATE	REMARKS	TESTING SCHEDULE				
DESCRIPTION	No.								1	2	3	4				FIRST DAY	SECOND DAY	THIRD DAY	FOURTH DAY	FIFTH DAY
Clock Cards	01	Clark	SCHEDULED COMPLETE	2/15 X	X	X	X	X												
Job Sheets	02	Clark	SCHEDULED COMPLETE	2/15 X	X	X	X	X												
Payroll Edit	03	Clark	SCHEDULED COMPLETE	2/15 X	X	X	X	X												
Daily Earnings	04	Hall	SCHEDULED COMPLETE	2/20 X	X	X	X	X												
Clock CD Edit	05	Clark	SCHEDULED COMPLETE	2/20 X	X	X	X	X												
Payroll Register	06	Hall	SCHEDULED COMPLETE	2/20 X	X	X	X													
YTD Summary	07	Hall	SCHEDULED COMPLETE	2/25 X	X	X														
Payroll Checks	08	Hall	SCHEDULED COMPLETE	2/25 X	X															
941 A	09	Moore	SCHEDULED COMPLETE	2/30 X											RPG					
W-2	10	Wilson	SCHEDULED COMPLETE	2/30 X	X	X									RPG					
Labor Report	11	Clark	SCHEDULED COMPLETE	2/30 X	X															
File Maint.	12	Hall	SCHEDULED COMPLETE	2/30 X	X															
			SCHEDULED COMPLETE																	
			SCHEDULED COMPLETE																	
			SCHEDULED COMPLETE																	
			SCHEDULED COMPLETE																	
			SCHEDULED COMPLETE																	
			SCHEDULED COMPLETE																	
			SCHEDULED COMPLETE																	

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SECTION III

Application Areas

PLANNED APPLICATIONS

Payroll

Order Billing

Finished Goods Inventory

Raw Materials Inventory

Accounts Receivable

Accounts Payable

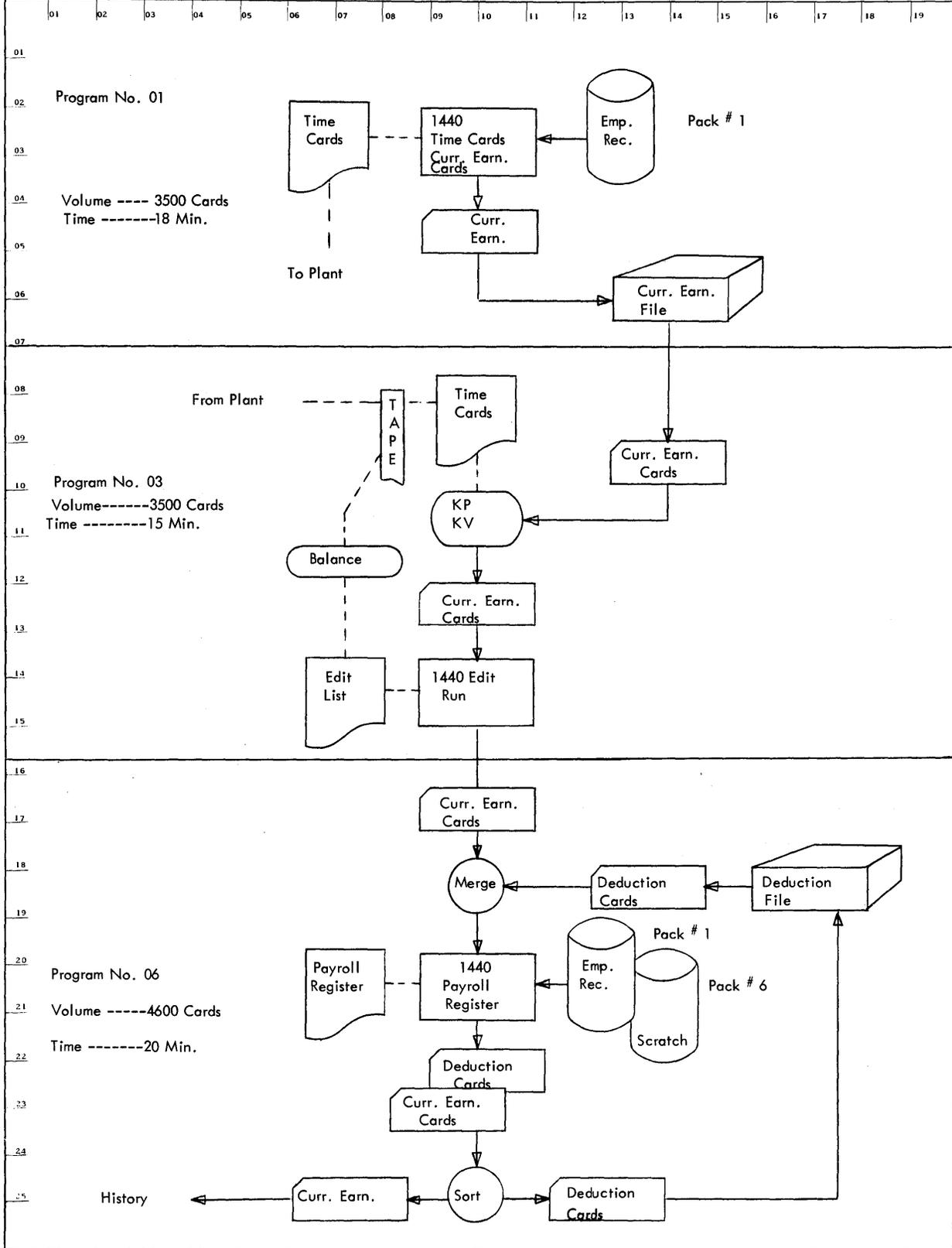
Sales Analysis

Plant Scheduling

Plant and Equipment Maintenance

Exhibit 7

Application Payroll Date Jan. 30, 1963 Page 1 of 3
 Procedure Time Cards and Payroll Register Drawn By I. B. Emmer



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Exhibit 8

SECTION IV

File Organization



INTERNATIONAL BUSINESSMACHINES CORPORATION

Form X24-1711-0
Printed in U.S.A.

IBM 1311 DISK STORAGE LAYOUT

Application Payroll Records

Date Jan. 20, 1963

Remarks	Sector Address	1 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100																		
		DPT	Clock	Job Code	Seq. No.	Name	F I S	Date	M S S	S. S. No.	Birth Date	Last Rate	Reg. Rate	O. T. Reg. Pay	O. T. Pay	Gross Pay	Fed. Tax	St. Tax	FICA	
		INS	Bond	Bond Bal	Hosp.	Adv.	Furn.	Misc.	Tot. Ded.	Net Pay	Gross	State	Fed.	FICA	Gross	State	Fed.	FICA	O/Flo	
Payroll Master Records - Pack # 1	000140																			
	007700																			

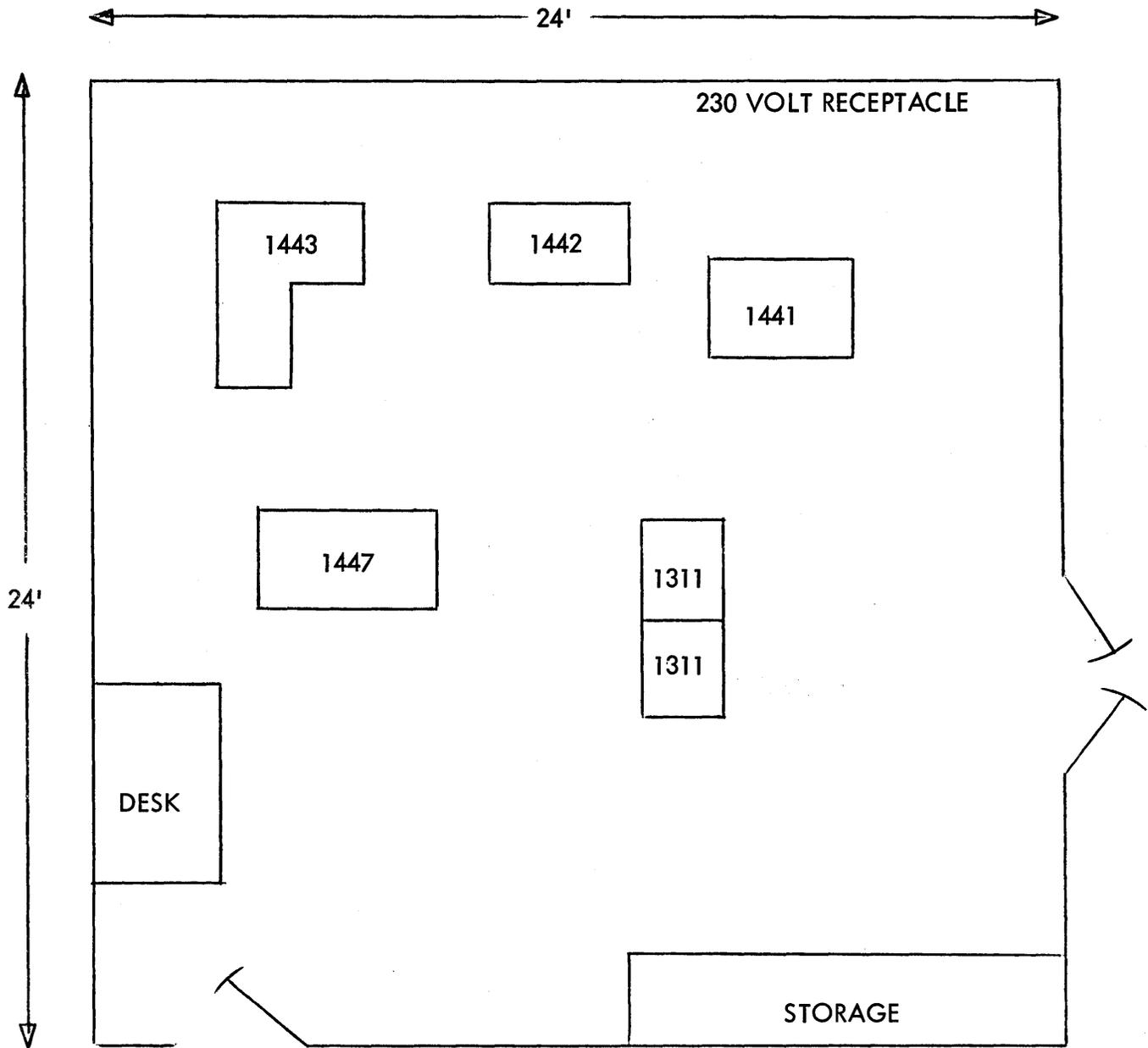
Exhibit 9

620935CSP

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SECTION V

Physical Planning



SCALE 1" = 4'

Exhibit 11

SECTION VI

Miscellaneous Information

IBM APPLIED PROGRAMS USED

Autocoder

IOCS

Disk Utility Programs

Disk File Organization Routines

Sort 5

Report Program Generator