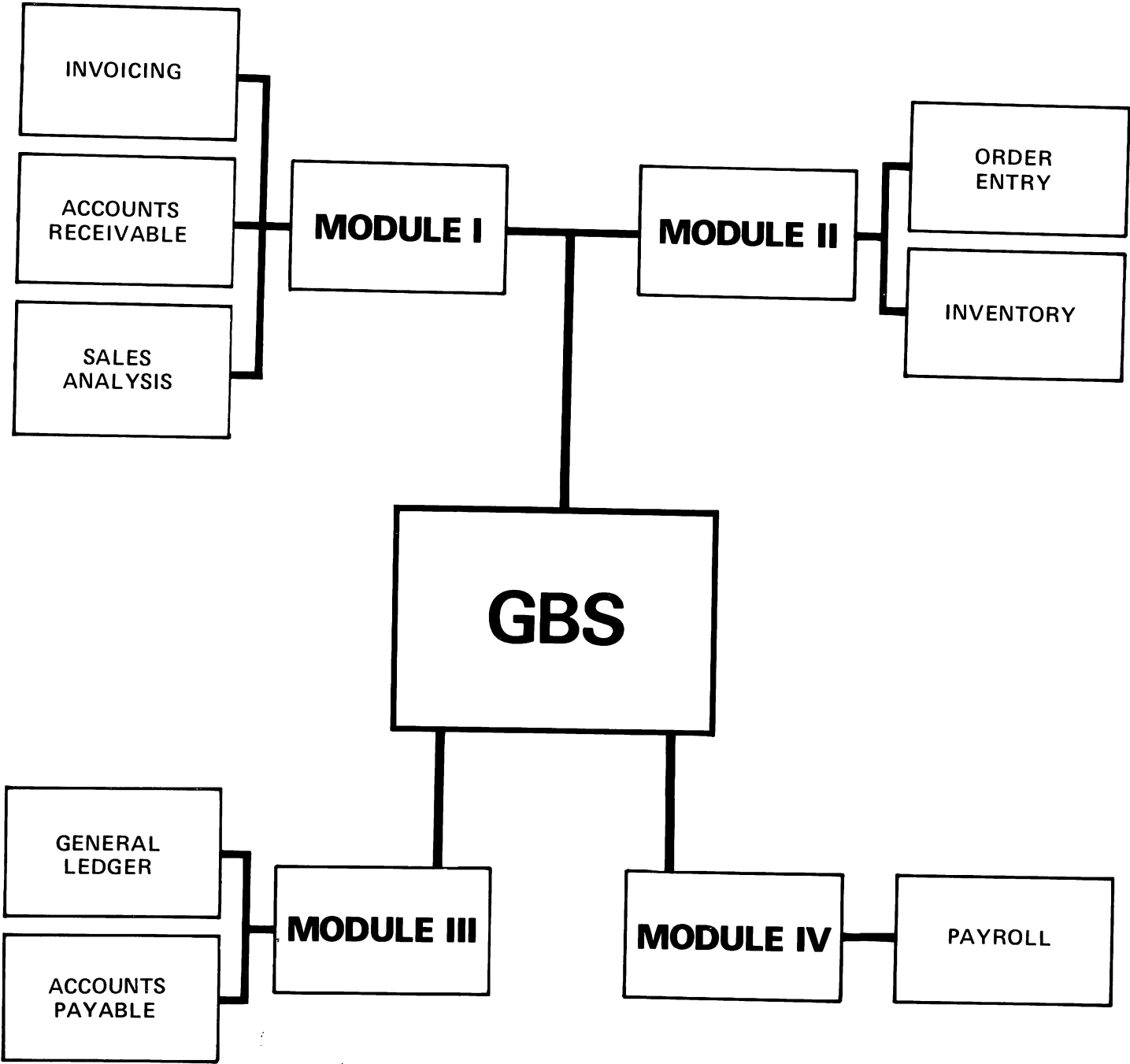
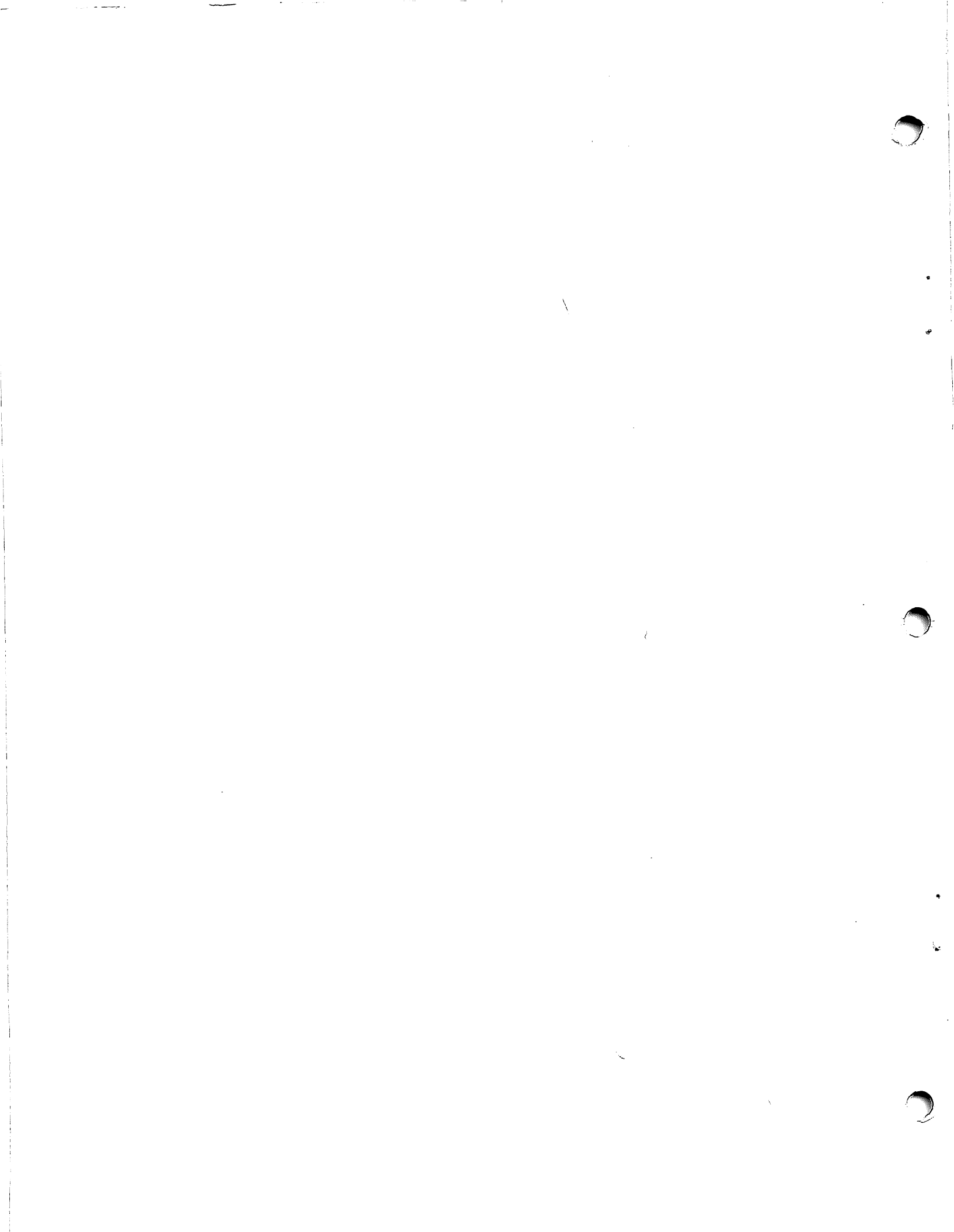


**WANG**

# GBS—MODS I-IV (DISK) TECHNICAL GUIDE





# **GBS—MODS I-IV (DISK) TECHNICAL GUIDE**

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Release 1



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## HOW TO USE THIS GUIDE

The GBS (Disk) Technical Guide is designed to serve as a vendor's introduction to the General Business System (Disk) package.

Information concerning the programs, files, subroutines, and operational functions of all modules of the GBS package are presented. Details of these topics appear in the GBS Disk System Manuals for each module.

Exclusive to the Technical Guide are the procedures for system setup. These procedures include file initialization, file build, establishing certain starting numbers for MOD I and for the open order file in MOD II, and KFAM initializations for all modules. Instructions for accessing the sample data files provided for your convenience are also included.

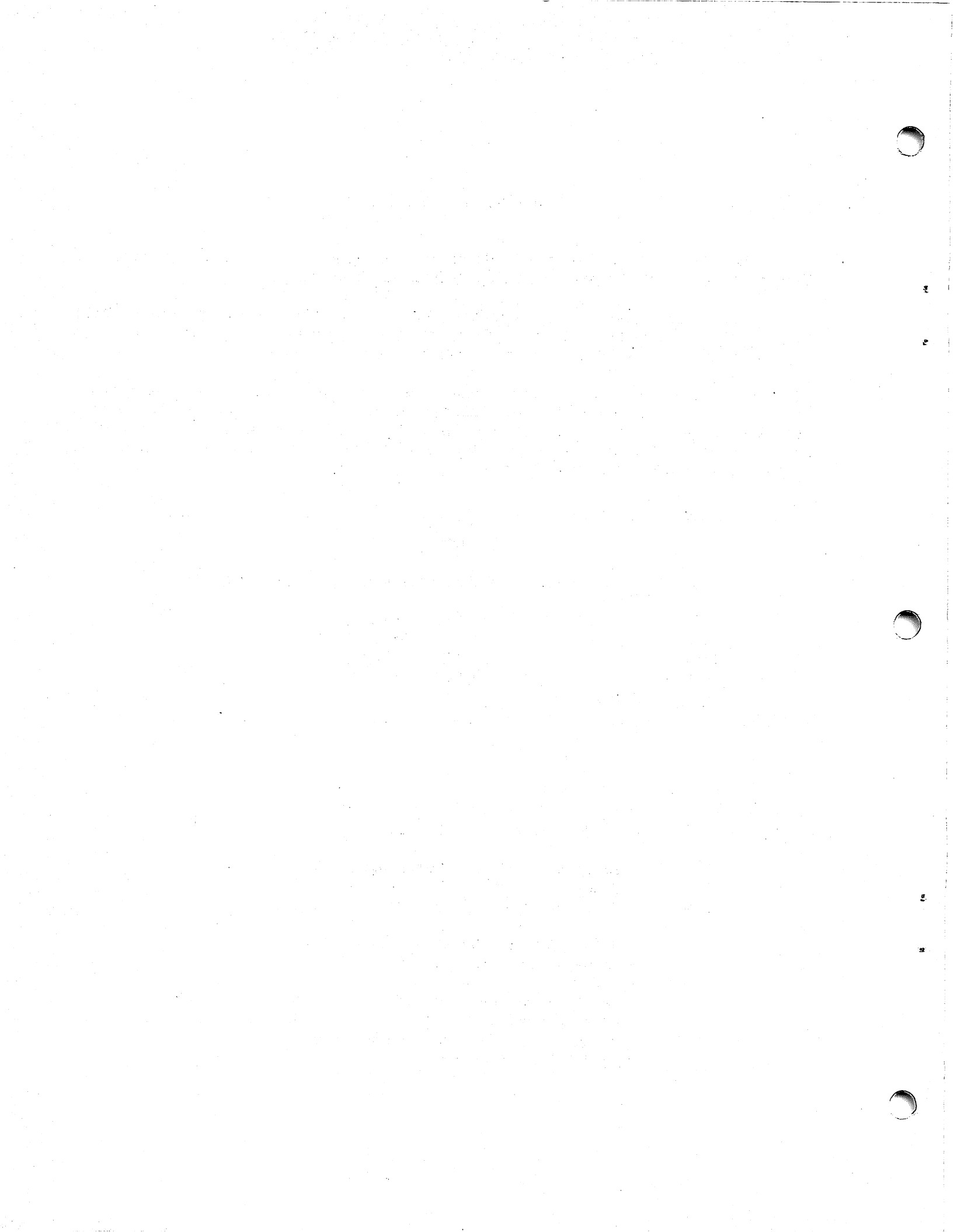
### NOTE:

This document pertains to the following software packages:

MOD I	195-2028-2/-3
MOD II	195-2030-2/-3
MOD III	195-2032-2/-3
MOD IV	195-3038-2/-3
2231W Printer	195-2033-2/-3

### HARDWARE CONFIGURATION

CPU	- 2200T with 24K or 2200VP with 32K
Console	- 2226
Storage	- 2260B 1/2 5.0 Megabyte F/R Disk Drive or 2260B 10.0 Megabyte F/R Disk Drive
	- 2270-1 Single Diskette Drive
Printer	- 2221W (2231W-2 may be used with available program modifications)
Op-31	- Audio Signal (Recommended Option)



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## CHAPTER 1: DESIGN PHILOSOPHY

The General Business System (GBS) is a tool to assist software vendors in the development of business application software for end users of the WCS/30 and WCS/20.

A major concern in the development of GBS was to design the application programs to include functions judged most common to the greatest number of users. The intention was to provide an easily modifiable package as well as a package which did not lock out any industry or business application.

Techniques used in the design of GBS to meet the above mentioned criteria include:

- straightforward overall design.
- extensive use of standard utilities and subroutines for repetitive tasks.
- use of Wang's version of Keyed File Access Method (KFAM) and SORT utilities.
- modularizing file I/O routines to minimize changes to read and write statements and to affected programs when a file or data accessing statement must be altered.
- inclusion of a Report Generator utility (RPL) to simplify the customized programming of reports.
- conformance to a set of standards regarding program line numbers, variable usage, programming techniques, and common subroutines.

With its random access capabilities, GBS is a truly disk-oriented system. As such, the need for pre-sequencing or sorting of input data is eliminated. Also, since most of the files in GBS are KFAM files, updating is performed "on line". Therefore, it is not necessary to keep track of a large number of storage media.

To simplify vendor modification, GBS records have been laid out so that, insofar as possible, only essential fields are used in each 256-byte record. Used fields are placed at the beginning of each record; thus room is provided in the record for vendors to add fields necessary to satisfy customer specifications. The determination of file size and the allocation of files on disks has been left up to the vendor, since the vendor is in the best position to do this.

File backup programs are included; they are an integral part of the system and should be run at appropriate times.

## 1.1 THE MODULES OF GBS

GBS contains four modules as follows:

- . Invoicing, Accounts Receivable and Sales Analysis (MOD I)
- . Order Entry, Inventory Control (MOD II)
- . Accounts Payable and General Ledger (MOD III)
- . Payroll (MOD IV)

MOD I is a prerequisite for MOD II since both rely heavily on the same important data files. MODs III and IV are essentially stand-alone modules.

Each installed version of GBS (Disk) is comprised of two disk platters and one diskette. These are designated as follows:

- . System Disk
- . Master Data Disk
- . Controller Diskette

If disk space permits, MODS can be combined on the same disk.

In MODS I-III there are several other diskette transaction files.

Data for the Inventory, Customer, Control, Salesman, and Open Item files reside on the Master Data Disk in MODS I and II. Additionally, the Open Order file is also contained in MOD II. Data for the Vendor, Chart of Accounts, Control, Open Item, Journal Entry, Check and Distribution files reside on the Master Data Disk for MOD III. Data for the Master, Daily Cash, Control and Bank Address files reside on the Master Data Disk for Mod IV. These files are copied to the fixed disk during system startup. The programs, assorted work files and key files are stored on the system disk which is mounted at device address B20 during system operation.

## 1.2 FORM CHANGES FOR MODEL 2231W-2 PRINTER

Initially, the standard hardware configuration required to run GBS modules included a Model 2221W printer; the current configuration contains a Model 2231W-2 printer. This hardware change has necessitated software changes to those programs which use pre-printed forms. Those program modules which are affected by this change have been appropriately altered and are collected together on a separate diskette for GBS disk systems - package number 195-2033 -2/-3. The diskette is called GBS 2231W-2 FORM CHANGES and contains the following modules which should be used to replace the existing 2221W modules:

<u>GBS MODULE</u>	<u>PROGRAM MODULE</u>	
	<u>Source</u>	<u>System</u>
I	ACCT050A INVC050A PROG-A PROG-C PROG-D PROG-F	ACCT050A INVC050A INVC030A INVC030C INVC030D INVC030F
II	OREN070B PROG-3A PROG-3C PROG-3F	OREN070B OREN030A OREN030C OREN030F
III	ACPA040A	ACPA040A
IV	PYRL170A PYRL190A PYRL340A PYRL350A	PYRL170A PYRL190A PYRL340A PYRL350A

## CHAPTER 2: BACKUP

Because of the dynamic nature of the data files, they reside on a disk of their own, and are copied to the fixed disk (320) for processing. This preserves data integrity in two ways. First, a copy exists of the latest data files in the event that the currently mounted files are destroyed; second, the key files reside on the System Disk and, if necessary, can be reconstructed from the master or backup data files.

The backup procedure is accessed through the System Menu by pressing Special Function Key 14 (End of Application). All data files, key files and programs can be backed up. Since the data files and the key file reside on separate platters, a two step operation must be performed to backup these files.

When SFK 14 listed in the GBS System Menu is depressed, a prompt appears requesting that the System disk be removed and replaced by a scratched disk. After mounting the scratched disk, touching RETURN(EXEC) initiates data transfer from the fixed to removable disk. In this way the scratched platter becomes the new master data disk, and the previous master data disk becomes the backup. Thus, files are always archived with the previous day's transactions.

Next, the System Disk may optionally be backed up. The same operation is followed here as with the data disk. A prompt is displayed requesting that the system disk be mounted at B20. Its contents are then copied to the fixed disk. Then, a scratch disk is mounted to receive the application programs and key files from the fixed platter. In this way, a copy of the application programs and the key files of the previous day's transaction is made.

Additional information on GBS parameters, subroutines and overview flow diagrams appear on the following pages. For a detailed discussion of individual programs of any GBS (Disk) module, refer to the GBS (Disk) System Manual for the appropriate module.

## CHAPTER 3: GBS MODULE CAPABILITIES

### 3.1 CAPABILITIES OF EACH MODULE

The General Business system is comprised of four modules featuring a variety of accounting applications useful to small and medium sized businesses. The following describes the capabilities of each module.

MOD I Invoicing creates post-billing invoices containing ship-to, billing and relevant product information through interaction with the Customer, Salesman and Inventory files.

Accounts Receivable automatically interfaces with the invoicing system through the invoice transaction file and updates the open item and control files as needed. This enables the open item file to keep track of accounts and generate appropriate statements.

Sales Analysis produces sales reports depicting the sales and cost extension figures along with margins for current month- and year-to-date figures. These single line reports are printed by each inquiry list program for the Customer, Inventory and Salesman files.

MOD II Order Entry processes customer orders, updates the Open Order and appropriate Master files, permits adjustment and confirmation of orders, and subsequently prints shipping papers and invoices.

Inventory Control permits updating of the Inventory Master File with receipts or withdrawals not connected with invoicing. It also produces stock status, low stock and inactive items information. Inventory sheets for the taking of physical inventory are also produced.

MOD III Accounts Payable supports accounts payable posting, check writing and automatic general ledger updating.

General Ledger supports further ledger posting and produces a company's financial reports.

MOD IV Payroll calculates many types of earnings and deductions, based upon entered and/or stored information, for hourly, hourly-exempt and salaried employees. Payment by check, cash, or direct deposit is also supported.

### 3.2 CAPABILITIES COMMON TO ALL MODULES

The following describes features provided by all the GBS Modules.

Maintenance and Inquiry programs - Used to access data files to alter and view information.

Audit Reports - May be produced for actions performed upon all files including Maintenance, Data Entry, and Transaction Posting.

Control file (MODS I-III)/Daily Cash (MOD IV) - Perform the single function of accumulating daily totals of all transactions which are subsequently printed through the Inquiry List program. Each control file consists of 366 records, one for each day of the year. A vendor may write programs to produce specialized reports from these files should a customer require them.

File cleanups - A group of programs with different names in each module perform the following functions:

Clear all totals from the Control/Daily Cash files and

Clear Month-to-date, Quarter-to-date and Year-to-date totals from various Master Files.

Specific details pertaining to the file cleanups in each module are given below.

	<u>Cleanup Name</u>	<u>Filed Acted Upon</u>	<u>Information Cleared</u>
<u>MODS I-II</u>	Clear File	Customer	M-T-D, Y-T-D
		Inventory	M-T-D, Y-T-D
		Salesman	M-T-D, Y-T-D
		Control File	Yearly totals
<u>MOD III</u>	Clear File (A/P Menu)	Control	Yearly totals
	Clear File (G/L Menu)	Control	Yearly totals
	Acct. Period Initializer	General Ledger	M-T-D, Y-T-D
<u>MOD IV</u>	Daily File Cleanup	Daily	Yearly totals
	M/F Cleanup	Master	Current Q-T-D Y-T-D totals

Dump programs, for vendor use in debugging operations, are provided for the files below. These programs are available through the System Menu (START), but do not appear on the menu. Special Function Keys 16 through 25 access these dump programs.

MODS I AND II FILE DUMPS

<u>Function Key</u>	<u>File</u>
16	Customer (CUSTDUMP)
17	Salesman (SDMP)
18	Inventory (IDMP)
19	A/R Open Item KFAM (ADMP)
20	A/R Open Item Sequential (ODMP)
21	Invoice Transaction (TRANDUMP)
22	Open Order (ORENDUMP)
23	Order Transaction (ORDTDUMP)
24	Lost Sales/Estimated Shortage (ORLSDUMP)
25	Shipping Shortage (ORSSDUMP)

MOD III FILE DUMPS (via A/P Menu #1)

<u>Function Key</u>	<u>File</u>
16	Vendor (VEND)
17	Open Item (OPEN)
18	Payment (PYMT)
19	Distribution (DISTDUMP)
20	Check (CHEK)
21	*Chart of Accounts (GENLDUMP)

MOD III FILE DUMPS (via G/L Menu #1)

<u>Function Key</u>	<u>File</u>
16	Journal Entry (JRNL DUMP)
17	*Chart of Accounts (GENLDUMP)

\*Same dump program.

### 3.3 GBS SYSTEM AND PROGRAM MENUS

GBS processing is initiated through the Controller Diskette which contains the date routine stored under the name of GBS and the System Menu, stored under the name of Start.

Processing is initiated as follows:

Insert the controller diskette into the fixed diskette drive.  
Enter LOAD DCF"GBS" RETURN(EXEC)  
The date is requested and verified and the System Menu is displayed.

#### 3.3.1 MOD I Menus

The MOD I System Menu provides selections for system start-up, program menu selection and backup procedures.

#### GBS SYSTEM MENU

FN KEY	PROGRAM NAME
(01)	BEGINNING OF APPLICATION
(02)	INVOICING MENU
(03)	A/R MENU
(14)	END OF APPLICATION
(15)	END OF RUN

The Invoicing System Menu in MOD I provides the following selections:

#### GBS INVOICING SYSTEM

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	CUSTOMER FILE MAINT.	(09)	CLEAR FILE
(02)	INVOICE CREATION	(10)	INVENTORY TRANS ENTRY
(03)	INVOICE PRINT	(11)	CUSTOMER MAINT. REPORT
(04)	INVOICE REGISTER	(12)	INVENTORY MAINT. REPORT
(05)	CUSTOMER INQUIRY/LIST	(13)	INVENTORY TRANS REPORT
(06)	INVENTORY FILE MAINT.	(14)	A/R MENU
(07)	INVENTORY INQUIRY/LIST	(15)	GBS SYSTEM MENU
(08)	CONTROL FILE INQUIRY/LIST		



The Accounts Receivable System Menu in MOD I offers the following selections:

GBS ACCOUNTS RECEIVABLE SYSTEM

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	TRANS ENTRY	(09)	SALESMAN INQUIRY/LIST
(02)	AGING & SVC CHG CALC	(10)	PURGE REPORT
(03)	STATEMENTS PRINT	(11)	TRANS REPORT
(04)	AGED TRIAL BALANCE	(12)	SALESMAN MAINT. REPORT
(05)	PURGE	(13)	SERVICE CHARGE REPORT
(06)	CREDIT REPORT	(14)	INVOICE MENU
(07)	OPEN ITEM INQUIRY/LIST	(15)	GBS SYSTEM MENU
(08)	SALESMAN FILE MAINT.		

3.3.2 MOD II Menus

GBS MOD II contains all the required programs from GBS MOD I with the addition of a number of programs to perform Order Entry and Inventory Control operations. MOD I is therefore a pre-requisite for the GBS MOD II.

The MOD II System Menu contains the following selections:

GBS SYSTEM MENU

FN KEY	PROGRAM NAME
(01)	BEGINNING OF APPLICATION
(02)	INVOICING MENU
(03)	INVENTORY MENU
(04)	A/R MENU
(05)	ORDER ENTRY MENU
(14)	END OF APPLICATION
(15)	END OF RUN

The MOD II Order Entry System Menu contains the following selections:

GBS ORDER ENTRY SYSTEM

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	ORDER ENTRY	(09)	OPEN ORDER INQUIRY/LIST
(02)	ORDER REGISTER	(10)	OPEN ORDER FILE REORG
(03)	LOST SLS/EST SHORT PRINT		
(04)	OPEN ORDER ADJUSTMENT		
(05)	SHIPPING CONFIRMATION		
(06)	SHIPPING REGISTER	(14)	APPLICATION MENU
(07)	SHIPPING SHORTAGE PRINT	(15)	GBS SYSTEM MENU
(08)	SHIPPING PAPERS PRINT		

The MOD II Inventory System Menu contains the following selections:

GBS INVENTORY SYSTEM

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	INVENTORY FILE MAINT.	(09)	PHYSICAL INVENTORY VAR RPT
(02)	INVENTORY TRANS ENTRY	(10)	INVENTORY MAINT. REPORT
(03)	STOCK STATUS REPORT	(11)	INVENTORY TRANS REPORT
(04)	LOW STK/INACTIVE ITEMS RPT		
(05)	INVENTORY INQUIRY/LIST		
(06)	PHYSICAL INVENTORY SHEETS	(14)	APPLICATION MENU
(07)	PHYSICAL INVENTORY ENTRY	(15)	GBS SYSTEM MENU
(08)	SORT PHYSICAL TRANS FILE		

The Invoicing System in MOD II contains the following selections:

GBS INVOICING SYSTEM

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	CUSTOMER FILE MAINT.	(09)	CUSTOMER MAINT. REPORT
(02)	INVOICE CREATION		
(03)	INVOICE PRINT		
(04)	INVOICE REGISTER		
(05)	CUSTOMER INQUIRY/LIST		
(06)	CONTROL FILE INQUIRY/LIST	(14)	APPLICATION MENU
(07)	CLEAR FILE	(15)	GBS SYSTEM MENU

The Accounts Receivable System in MOD II contains the following selections:

GBS ACCOUNTS RECEIVABLE SYSTEM

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	TRANS ENTRY	(09)	SALESMAN INQUIRY/LIST
(02)	AGING & SVC CHG CALC	(10)	PURGE REPORT
(03)	STATEMENTS PRINT	(11)	TRANS REPORT
(04)	AGED TRIAL BALANCE	(12)	SALESMAN MAINT. REPORT
(05)	PURGE	(13)	AGING & SVC CHG REPORT
(06)	CREDIT REPORT	(14)	APPLICATION MENU
(07)	OPEN ITEM INQUIRY/LIST	(15)	GBS SYSTEM MENU
(08)	SALESMAN FILE MAINT.		

The MOD II Application Menu provides access to any of the main MOD II menus:

GBS (APPLICATION) MENU

FN KEY	PROGRAM NAME
(01)	INVOICING MENU
(02)	INVENTORY MENU
(03)	A/R MENU
(04)	ORDER ENTRY MENU
(15)	GBS SYSTEM MENU

3.3.3 MOD III Menus

The main MOD III System Menu contains the following selections:

GBS SYSTEM MENU

FN KEY	PROGRAM NAME
(01)	BEGINNING OF APPLICATION
(02)	ACCOUNTS PAYABLE MENU
(03)	GENERAL LEDGER MENU
(04)	END OF APPLICATION
(05)	END OF RUN

The Accounts Payable System has three separate menus as follows:

Menu 1:

-----  
GBS ACCOUNTS PAYABLE SYSTEM  
-----

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	TRANS ENTRY	(08)	CHECK REGISTER
(02)	TRANS ENTRY REPORT	(09)	O/I & VENDOR UPDATE
(03)	OPEN ITEM PRINT	(10)	O/I & VENDOR UPDATE REPORT
(04)	PAYMENT SELECTION	(12)	A/P MENU 2
(05)	CHECK PRINT	(13)	A/P MENU 3
(06)	CHECK PRINT REPORT	(14)	G/L MENU 1
(07)	SORT FOR CHECK REGISTER	(15)	GBS SYSTEM MENU

Menu 2:

-----  
GBS ACCOUNTS PAYABLE SYSTEM  
-----

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	VENDOR MAINTENANCE	(08)	RE-ORG OPEN ITEM FILE
(02)	VEND MAINT REPORT	(09)	CLEAR FILE
(03)	OPEN ITEM MAINTENANCE	(12)	A/P MENU 1
(04)	OPEN ITEM MAINT REPORT	(13)	A/P MENU 3
(05)	VENDOR INQUIRY/LIST	(14)	G/L MENU 1
(06)	OPEN ITEM INQUIRY/LIST	(15)	GBS SYSTEM MENU
(07)	CONTROL FILE INQUIRY		

Menu 3:

-----  
GBS ACCOUNTS PAYABLE SYSTEM  
-----

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	DIST FILE SORT	(12)	A/P MENU 1
(02)	DISTRIBUTION REPORT	(13)	A/P MENU 2
(03)	CORRECT JOURNAL ENTRIES	(14)	G/L MENU 1
(04)	CORRECT J/E REPORT	(15)	GBS SYSTEM MENU
(05)	RESET J/E FILES		

The General Ledger System has two menus as follows:

Menu 1:

GBS GENERAL LEDGER SYSTEM

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	JOURNAL ENTRY	(08)	BALANCE SHEET PRINT
(02)	JOURNAL ENTRY REPORT	(09)	BUDGET REPORT
(03)	SORT JOURNAL ENTRY FILE	(10)	SCHEDULE REPORT
(04)	MERGE JOURNAL ENTRY FILE		
(05)	TRIAL BALANCE REPORT	(13)	G/L MENU 2
(06)	CHART OF ACCTS UPDATE	(14)	A/P MENU 1
(07)	INCOME STATEMENT PRINT	(15)	GBS SYSTEM MENU

Menu 2:

GBS GENERAL LEDGER SYSTEM

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	CHART OF ACCTS MAINT	(07)	RESET JOURNAL ENTRY FILE
(02)	CHART OF ACCTS MAINT RPT	(08)	ACCT PERIOD INIT
(03)	CHART OF ACCTS INQ/LIST	(09)	CLEAR FILE
(04)	CONTROL FILE INQ/LIST	(13)	G/L MENU 1
(05)	CORRECT JOURNAL ENTRIES	(14)	A/P MENU 1
(06)	CORRECT J/E REPORT	(15)	GBS SYSTEM MENU

3.3.4 MOD IV Menus

The MOD IV System Menu contains the following programs:

GBS PAYROLL SYSTEM MENU

FN KEY	PROGRAM NAME
(01)	BEGINNING OF APPLICATION
(02)	STANDARD PROCESSING MENU
(03)	SPECIAL PROCESSING MENU
(04)	END OF APPLICATION
(05)	END OF RUN

The MOD IV Standard Processing Menu contains the following programs:

GBS STANDARD PAYROLL PROCESSING

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	DATA ENTRY	(09)	PRINT CHECKS
(02)	TRANSACTION LIST	(10)	CHECK RECONCILIATION
(03)	CALCULATE EARNINGS	(11)	PRINT MEMOS
(04)	CALC TAXES & DEDUCTIONS	(12)	PRINT BANK DEPOSITS
(05)	EARNINGS REGISTER	(13)	CASH BREAKDOWN
(06)	TAX & DEDUCTION REGISTER	(14)	SPECIAL PAYROLL MENU
(07)	EMPLOYEE REGISTER	(15)	GBS SYSTEM MENU
(08)	PAY FILE EXTRACTS		

The MOD IV Special Processing Menu contains the following programs:

GBS SPECIAL PAYROLL PROCESSING

FN KEY	PROGRAM NAME	FN KEY	PROGRAM NAME
(01)	CONTROL FILE MAINTENANCE	(09)	PRINT W-2's
(02)	CONTROL FILE INQUIRY	(10)	DAILY FILE INQUIRY
(03)	MASTER FILE MAINTENANCE	(11)	DAILY FILE CLEAN-UP
(04)	MASTER FILE INQUIRY	(12)	ADJUSTMENT ENTRY
(05)	BANK FILE MAINTENANCE	(14)	STANDARD PAYROLL MENU
(06)	BANK FILE INQUIRY	(15)	GBS SYSTEM MENU
(07)	MASTER FILE CLEAN-UP		
(08)	PRINT 941A'S		

## CHAPTER 4: COMMON GBS PRACTICES AND ROUTINES

An important GBS design feature is the use of common methods and routines. This minimizes the total programming effort and provides consistency of output to the user. This scheme is maintained throughout GBS by employing important subroutines in many programs and several modules, by using a standard system of naming and calling variables and by retaining a unique system of program line numbers that are used in common by many routines.

### 4.1 STANDARDIZED VARIABLES

Throughout GBS a standard system of assigning variable names has been maintained. Each variable receives a name based upon whether it is used in:

- . a master file or transaction file
- . a generalized subroutine, or
- . a program subroutine local to one program.

File variables have permanent variable names assigned to each field. This enables a programmer to recognize a file variable immediately. Whenever such a field is referred to in any routine, it is therefore distinctive. File variables can be named with the letters A through P (except K) and the numbers "▲", 0, 1-5.

Generalized subroutine variables use variable names starting with Q through W unless they deal with the PUT/GET routines, handling fields from the Master Files. The page-eject routine uses variables A0\$ and IO\$, the page number variable is P1 and the line number variable is L. Program subroutines use variable names with the letters A through P and the numbers "▲", 0, 1-5.

Therefore, variable names indicate the following:

1. Any variables with names starting with the letters A through P, except K, and ending with the numbers "▲", 0, 1-5, are variables referencing a file or a program subroutine. Such variable names are constant throughout GBS programs; all are defined in the file layouts for each module (see the appropriate system manuals).
2. Any variable names starting with the letters Q through W refer to variables in a GBS generalized subroutine.
3. Any variable names starting with the letters A through P and ending with the numbers 6 through 9 and all of K, are assigned by a programmer and can change from program to program. Any variables in this category are defined at the end of the source program text.
4. Any variable names beginning with the letters X through Z are not used by the standard GBS programs and can be used as needed when making program modifications.

#### 4.2 COMMON PACKING/UNPACKING OF VARIABLES

In all major data files of the GBS modules, a common use has been made of the \$PACK and \$UNPACK statements to minimize storage space. In general, the same directives which pack variables, as defined by the \$PACK coding, are used to unpack these variables when it comes time to use them or manipulate them. Certain numeric fields are PACKED prior to \$PACKING due to the usage of RPL to generate certain reports. For more information on \$PACK and \$UNPACK, see the \$GIO Manual.

\$PACK and \$UNPACK are available in the System 2200 in two forms: the delimiter form (D) and the field form (F). GBS programs use only the Field form. Two field types in the field form are used: one for manipulation of alphanumeric fields, the other for manipulation of numeric fields.

For \$PACKING and \$UNPACKING of alphanumeric fields, the field specification is A0hh where hh is a two-digit hexcode defining the field width. For numeric fields, the field specification is 5p hh where p is a one-digit hexcode specifying the number of decimal positions and hh is a two-digit hexcode defining the field width.

For example:

```
10 DIMA$5, B$10, C, D, Z$(2)15, F$8
20 F$ = HEX (A005 A00A 5006 5208)
30 $PACK (F=F$) Z$() FROM A$,B$,C,D
```

In this example A\$ and B\$ are defined in the format specification F\$ as (A005) and (A00A), respectively. This specifies that A\$ is stored in an alphanumeric field five characters long and B\$ is stored in an alphanumeric field ten characters long. The numeric scalar variables C and D are packed in IBM packed decimal format specified as (5006) and (5208), respectively. This specifies that C is stored in a numeric field six digits long with zero digits



after the decimal point (e.g., 100107) and that D is stored in a numeric field eight digits long with two digits after the decimal point (e.g., 702463.72). The following statements \$UNPACK the record \$PACKED by the above routine:

```

10 DIM A$5,B$10,C,D,Z$(2)15,F$8
30 F$ = HEX (A005 A00A 5006 5208)
40 $UNPACK (F=F$) Z$() TO A$,B$,C,D

```

#### 4.3 COMMON MODULES AND SUBROUTINES

A number of modules and subroutines are used repeatedly throughout GBS. These are the standard or common modules and subroutines. These routines perform a number of operations as defined below. Many are KFAM routines; they are also further explained in the KFAM documentation.

##### 4.3.1 Specialized GBS Modules

<u>MODULE</u>	<u>DEFN'</u> <u>USED</u>	<u>DESCRIPTION</u>
DENTRY	100	This routine is a specialized version of the ISS Utilities Data Entry ('200) Routine and has been modified to allow use of S.F.(00).
SUBUTIL	242 248 254	This routine consists of three ISS Utilities Routines: Operator Wait ('254), Position Cursor ('248), and Print Q6\$ ('242).
SUBDATE	121/123	This routine is a modified version of the ISS Utilities date routine.
SUBFILE	140/141/247/150 151/129	This routine is a major modification of the ISS Utilities Routines. Therefore the ISS version cannot directly replace the one used in GBS. The following are the results of the modification. A scratch routine has been automatically built into the routine. A flexible diskette must be formatted. If a particular flexible disk has information on it, an error message will be returned to indicate "INCORRECT VOL". The operator can override this condition by entering an "X" and RETURN(EXEC). The flexible disk can then be reused.

This routine has been written to standardize the page handling of all programs. It is built into each program and not overlaid and must be customized for each application (top of page headings and number of lines to count prior to page eject). Where this routine occurs in a GBS module, it normally allows a form feed before and after each report. This may be eliminated to minimize paper waste as follows: after the page count P1 has been updated, put in a test such that if P1=1, bypass the PRINT HEX(0C) (page eject) statement.

#### 4.3.2 Specialized GBS Subroutines

The following subroutines are common to all GBS modules.

GOSUB '100 ( Q\$(1), Q\$(2), Q3, Q4, Q5\$, Q5 )..... Accept Data

- Q\$(1) = Minimum Value
- Q\$(2) = Maximum Value
- Q3 = Integers Left of Decimal
- Q4 = Integers Right of Decimal
- Q5\$ = Prompt
- Q5 = Input type ( 1 = numeric, 2 = alpha )

GOSUB '129 ( R9, R9\$ ) ..... Search Catalog Index

- R9 = Device number
- R9\$ = File Name

GOSUB '140 ( W, W\$(W), Q4(W), Q5(W) ) ..... Open Output File

- W = File Number
- W\$(W) = File Name
- Q4(W) = Retention Cycle
- Q5(W) = Volume Number

GOSUB '141 ( W, W3\$ ) ..... End of Volume/File Output

- W = File Number
- W3\$ = EOF/EOV

GOSUB '150 ( W, W\$(W), Q5(W) )..... Open Input File

W = File Number  
W\$(W) = File Name  
Q5(W) = Volume Number

GOSUB '151 (W)..... Close Input File

W = File Number

GOSUB '242 ( W0, Q6\$ )..... Print Q6\$

W0 = Work  
Q6\$ = Prompt

GOSUB '247 (Q6\$)..... Mount/Dismount Prompt

Q6\$ = Prompt

GOSUB '248 ( Q6, Q7, Q8 )..... Position Cursor

Q6 = Line #  
Q7 = Column #  
Q8 = # of lines to erase (starting with Q6)

GOSUB'254..... Operator Wait

#### 4.3.3 KFAM Modules

The following modified and remodified KFAM routines have been used throughout GBS.

<u>MODULE</u>	<u>DEFFN' USED</u>	<u>DESCRIPTION</u>
KFAM0003	230-237/239	This is the present KFAM-3 version on ISS Diskette #2 (Release 2). No changes have been made to it. It contains the following subroutines:  230 - OPEN 231 - DELETE 232 - FINDOLD 233 - FINDNEW 234 - FINDNEW(HERE) 235 - FINDFIRST 236 - FINDLAST 237 - FINDNEXT 239 - CLOSE

KFAM0103 230/232/235/236  
237/239

This is an Inquiry/Only version of KFAM taken from KFAM-3 (Release 1). The OPEN/CLOSE subroutines contained here are not compatible with the KFAM-3 (Release 2) OPEN/CLOSE subroutines and should not be mixed. It contains the following subroutines:

- 230 - OPEN
- 232 - FINDOLD
- 235 - FINDFIRST
- 236 - FINDLAST
- 237 - FINDNEXT
- 239 - CLOSE
  - Multiple File Capabilities

KFAM II 230-233/239  
(Not used in MOD III)

The following subroutines are contained in this specialized KFAM version:

- 230 - OPEN
- 231 - DELETE
- 232 - FINDOLD
- 233 - FINDNEW
- 239 - CLOSE
  - Multiple File Capabilities/Recovery Capabilities

KFAMCODE 91

This routine converts the KFAM return codes to numeric values (JO) and prints a screen error message on line 3. The messages are stored in an array (J\$( )) and can be suppressed by setting the appropriate element to blank. The errors are as follows:

- JO = 0 - No Error
- = 1 - End of File
- = 2 - Improper Call
- = 3 - Record Not Found
- = 4 - Duplicate Key
- = 5 - No More Space

KFAM8888  
(Not used in MOD III & IV)

This is a specialized KFAM version which is either built into the program or called from the program to overlay. It contains the following subroutine:

- 232 - FINDOLD

KFAM9999  
(Not used in MOD III & IV)

This is a specialized KFAM version which is either built into the program or called from the programs to overlay. It contains the following subroutines:

232 - FINDOLD  
233 - FINDNEW  
237 - FINDNEXT  
- Multiple File Capabilities/Recovery Capabilities

#### 4.3.4 KFAM Subroutines

The following standard KFAM subroutines have been used throughout GBS.

SELECT #JYYY, #KXXX

#J = The file number associated with the key file (0 to 6)  
#K = The file number associated with the data file (0 to 6)  
(K used in all subsequent DATALOAD and DATASAVE statements;  
K and J must be unique)  
YYY = Device address of key file  
XXX = Device address of data file

Return for all KFAM subroutines in Q\$

Q\$ = Blank = OK  
J\$(1) = E = End of file (FINDNEXT only)  
J\$(2) = X = Improper KFAM call  
J\$(3) = N = Null File or key not found  
J\$(4) = D = Duplicate key  
J\$(5) = S = No more space

GOSUB '230 (I, J, K, L, N\$)..... OPEN

I = The key file I.D. number used in KFAM subroutines (1 to 3)  
J = Same as J in select statement  
K = Same as K in select statement  
L = Key file number (multiple key files) (1 to 9)  
N\$ = Name of data file

GOSUB '231 (I, O, A\$)..... DELETE

I = Same as I in OPEN statement (GOSUB '230)  
O = Not used  
A\$ = Record Key

GOSUB '232 (I, O, A\$)..... FINDOLD

I = Same as I in OPEN statement (GOSUB '230)  
O = Not used  
A\$ = Record Key

GOSUB '233 (I, O, A\$, O)..... FINDNEW

I = Same as I in OPEN statement (GOSUB '230)  
O = Not used  
A\$ = Record key  
O = Not used

GOSUB '234 (I, O, A\$, O)..... FINDNEW (HERE)

I = Same as I in OPEN statement (GOSUB '230)  
O = Not used  
A\$ = Record Key  
O = Not used

GOSUB '235 (I)..... FINDFIRST

I = Same as I in OPEN statement (GOSUB '230)

GOSUB '236 (I)..... FINDLAST

I = Same as I in OPEN statement (GOSUB '230)

GOSUB '237 (I)..... FINDNEXT

I = Same as I in OPEN statement (GOSUB '230)

GOSUB '239 (I)..... CLOSE

I = Same as I in OPEN statement (GOSUB '230)

#### 4.3.5 MOD I - PUT/GET Subroutines

GOSUB'40 (N, A\$).....Customer Master Put

GOSUB'50 (N, A\$).....Customer Master Get

N = Disk Device Select #  
A\$ = Record Type ("▲" = Master, "1" = Ship to)

GOSUB'41 (N, Q).....A/R Open Item Put (KFAM)

GOSUB'51 (N, Q).....A/R Open Item Get (KFAM)

N = Disk Device Select #  
Q = Record # within data record

GOSUB'42 (N).....Inventory Master Put

OSUB'52 (N).....Inventory Master Get

N = Disk Device Select #

GOSUB'43 (N).....Salesman Master Put  
GOSUB'53 (N).....Salesman Master Get  
N = Disk Device Select #

GOSUB'44 (N, Q9).....Invoice Transaction Put  
GOSUB'54 (N, Q9).....Invoice Transaction Get  
N = Disk Device Select #  
Q9 = Record Type (1= A1, 2= B1, 3= C1)

GOSUB'45 (N).....A/R Open Item Put  
(Sequential)  
GOSUB'55 (N).....A/R Open Item Get  
(Sequential)  
N = Disk Device Select #

GOSUB'46 (N, Q9, F5).....Control File Put/Get  
N = Disk Device Select #  
Q9 = Julian Date  
F5 = Operation Type (1= Read, 0= Write)

#### 4.3.6 MOD II - PUT/GET Subroutines

The following subroutines are used in MOD II in addition to all the above MOD I subroutines.

GOSUB'47 (N, Q9).....Open Order Put  
GOSUB'57 (N, Q9).....Open Order Get  
N = Disk Device Select #  
Q9 = Record Type (1=A1, 2=B1)

GOSUB'48 (N, Q9).....Order Transaction Put  
GOSUB'58 (N, Q9).....Order Transaction Get  
N = Disk Device Select #  
Q9 = Record Type (1=A1, 2=B1)

GOSUB'49 (N).....Physical Inventory  
Trans. Put  
GOSUB'59 (N).....Physical Inventory  
Trans. Get  
N = Disk Device Select #

4.3.7 MOD III - PUT/GET Subroutines

GOSUB '60(N). . . . . Vendor File Put  
GOSUB '70(N). . . . . Vendor File Get  
  
GOSUB '61(N,Q). . . . . Open Item File Put  
GOSUB '71(N,Q). . . . . Open Item File Get  
  
GOSUB '63(N). . . . . Distribution File Put  
GOSUB '73(N). . . . . Distribution File Get  
  
GOSUB '62(N). . . . . Payment File Put  
GOSUB '72(N). . . . . Payment File Get  
  
GOSUB '64(N). . . . . Check File Put  
GOSUB '74(N). . . . . Check File Get  
  
GOSUB '67(N). . . . . Journal Entry File Put  
GOSUB '77(N). . . . . Journal Entry File Get  
  
GOSUB '65(N). . . . . Chart of Accounts File Put  
GOSUB '75(N). . . . . Chart of Accounts File Get

N = disk device address select #

Q = record # within data record

GOSUB '66(N, Q9, F5) . . . . . Control File PUT/GET

N = Device #  
Q9 = Julian Day  
F5 = 0 - Write out Control File  
      1 - Read in Control File



#### 4.3.8 GBS MOD IV - PUT/GET SUBROUTINES:

GOSUB '40 (N, Q)	. . . . .	Master File Put
GOSUB '50 (N, Q)	. . . . .	Master File Get
GOSUB '41 (N, Q)	. . . . .	Check File Put
GOSUB '51 (N, Q)	. . . . .	Check File Get
GOSUB '42 (N)	. . . . .	Reconciliation File Put
GOSUB '52 (N)	. . . . .	Reconciliation File Get
GOSUB '43 (N, Q)	. . . . .	Memo File Put
GOSUB '53 (N, Q)	. . . . .	Memo File Get
GOSUB '44 (N)	. . . . .	Deposit File Put
GOSUB '54 (N)	. . . . .	Deposit File Get
GOSUB '45 (N)	. . . . .	Cash File Put
GOSUB '55 (N)	. . . . .	Cash File Get
GOSUB '46 (N, Q)	. . . . .	Control File Put
GOSUB '56 (N, Q)	. . . . .	Control File Get
GOSUB '47 (N)	. . . . .	Bank Address File Put
GOSUB '57 (N)	. . . . .	Bank Address File Get
GOSUB '48 (N)	. . . . .	Daily Cash File Put
GOSUB '58 (N)	. . . . .	Daily Cash File Get

N = Disk Device Select #

Q = Record # in Block

#### 4.3.9 The Program Line Numbering of GBS

In the standard procedures developed for GBS, line numbers within GBS routines are assigned according to the operations which the lines perform. Since subroutine and module calls often refer to specific program lines, it is essential that, whenever any program modifications are made, the line numbering scheme is retained. When a program modification is made that affects the assigned line numbers, the following method should be used:

1. Make program modifications in the source program text.
2. Compress the modification with the usual compression routine.
3. Assign the standard line numbers to the modified and compressed routine.

The following lists define the line numbers assigned to the GBS modules.

Program	Source Lines	System Lines (compressed)	System Lines for COM Statements
KFAM0003		199 - 3072	170 - 176
KFAM0103		199 - 3072	170 - 176
KFAM11		199 - 3072	170 - 176
KFAM8888		199 - 3072	
KFAM9999		199 - 3072	
CUSFILE	3100 - 3164	3106 - 3116	170 - 174
OPNFILE	3170 - 3226	3176 - 3184	170
INFILE	3210 - 3250	3216 - 3220	170 - 174
SLSFILE	3250 - 3286	3256 - 3260	170
TRNFILE	3290 - 3360	3296 - 3312	170 - 174
SOPNFILE	3460 - 3542	3466 - 3482	170, 174
MOD1CONT	3540 - 3584	3550 - 3558	170
ORENFILE	3590 - 3660	3596 - 3608	170 - 174
ORDFILE	3660 - 3718	3666 - 3680	170 - 174
PTRNFILE	3680 - 3706	3686 - 3690	170
KFAMCODE	3400 - 3742	3700 - 3704	170
DENTRY	3400 - 3840	3710 - 3738	170
SUBUTIL		3740 - 3756	170
SUBDATE	3400 - 3878	3760 - 3774	170
SUBFILE	3400 - 4038	3780 - 3820	170
PG-EJECT	8000 - 8420	8040 - 8420	170
VENDFILE	3120 - 3154	3120 - 3124	170
DISTFILE	3100 - 3390	3100 - 3116	170
PYMTFILE	3150 - 3216	3150 - 3166	170, 172

Program	Source Lines	System Lines (compressed)	System Lines for COM Statements
CHEKFILE	3180 - 3240	3180 - 3192	170
JENTFILE	3120 - 3410	3120 - 3136	170, 174
GENLFILE	3170 - 3208	3170 - 3176	170
OPENFILE	3130 - 3370	3130 - 3140	170
PYRLMSTR	4000 - 480	3830 - 3868	170-182
PYRLRCON	4000 - 4130	3870 - 3878	170-174
PYRLCHK	4000 - 4320	3880 - 3898	170
PYRLMEMO	4000 - 4270	3900 - 3912	170-172
PYRLDEP	4000 - 4130	3920 - 3928	170
PYRLCASH	4000 - 4130	3930 - 3938	170
PYRLCTL	4000 - 4470	3940 - 3964	170
PYRLBANK	4000 - 4130	3970 - 3978	170
PYRLDALY	4000 - 4230	3980 - 3990	170

<u>SYSTEM LINE #</u>	<u>MODULE</u>	<u>DEFFN' USED</u>	<u>DESCRIPTION</u>
170,172,174,176	----	----	COM Statements for all Subroutines
170,172,174-189	----	----	COM/DIM Statements for all Subroutines
0199-3072	KFAM0003 KFAM0103	230-237/239 230/232/235/236 237/239	KFAM0003 Routines KFAM Inquiry
	KFAM II KFAM 8888	230-233/239 232	KFAM (Special) KFAM (Special) used in Invoice Create Program
	KFAM 9999	232/233/237	KFAM (Special) used in A/R Trans Entry Program
3106-3116	CUSFILE	40/50	PUT/GET - Customer Master File
3176-3184	OPNFILE	41/51	PUT/GET - A/R Open Item File (KFAM)
3216-3220	INVFILE	42/52	PUT/GET - Inventory File
3256-3260	SLSFILE	43/53	PUT/GET - Salesman File
3296-3312	TRNFILE	44/54	PUT/GET - Invoice Transaction File
3466-3482	SOPNFILE	45/55	PUT/GET - A/R Open Item File (sequential)
3550-3558	MOD1CONT	46	PUT/GET - Control File (MODS I and II)
3596-3608	ORENFILE	47/57	PUT/GET - Open Order File
3666-3680	ORDFILE	48/58	PUT/GET - Order Transaction File

<u>SYSTEM LINE #</u>	<u>MODULE</u>	<u>DEFFN' USED</u>	<u>DESCRIPTION</u>
3686-3690	PTRNFILE	49/59	PUT/GET - Physical Inventory Transaction File
3700-3704	KFAMCODE	91	KFAM Return Code Check
3710-3738	DENTRY	100	Accept Data
3740-3756	SUBUTIL	242 248 254	Print Q6\$ Position Cursor Operator Wait
3760-3774	SUBDATE	121/123	Date Conversion Routines
3780-3820	SUBFILE	140/141/247/150 151/129	Modified ISS Utilities
4000-8999	-----	-----	Main Line Program
	PG EJECT	90	Page Eject Routine
9000-9999	-----	-----	Variable Description List
3100 - 3116	DISTFILE	63/73	PUT/GET - Distribution File
3120 - 3124	VENDFILE	60/70	PUT/GET - Vendor File
3120 - 3136	JENTFILE	67/77	PUT/GET - Journal Entry File
3130 - 3140	OPENFILE	61/71	PUT/GET - Open Item File
3150 - 3166	PYMTFILE	62/72	PUT/GET - Payment File
3170 - 3176	GENLFILE	65/75	PUT/GET - Chart of Accounts File
3180 - 3192	CHEKFILE	64/74	PUT/GET - Check File
3200 - 3212	MOD3CONT	66	PUT/GET - Control File (MOD III)

<u>SYSTEM LINE #</u>	<u>MODULE</u>	<u>DEFFN' USED</u>	<u>DESCRIPTION</u>
3830 - 3868	PYRLMSTR	40/50	PUT/GET - Master File
3870 - 3878	PYRLRCON	42/52	PUT/GET - Reconcil- iation File
3880 - 3898	PYRLCHK	41/51	PUT/GET - Check File
3900 - 3912	PYRLMEMO	43/53	PUT/GET - Memo File
3920 - 3928	PYRLDEP	44/54	PUT/GET - Deposit File
3930 -3938	PYRLCASH	44/55	PUT/GET - Cash File
3940 - 3964	PYRLCTL	46/56	PUT/GET - Control File (MOD IV)
3970 - 3978	PYRLBANK	47/57	PUT/GET - Bank File
3980 - 3990	PYRLDALY	48/58	PUT/GET - Daily Cash File

## CHAPTER 5: DATA FILES

This chapter lists the data files of each module.

### 5.1 MOD I DATA FILES

Customer File (KFAM)  
Inventory File (KFAM)  
Salesman File (KFAM)  
A/R Open File (KFAM)  
A/R Sequential Open File  
Control File  
Invoice Transaction File

### 5.2 MOD II DATA FILES

Sortwork Data File  
Order Entry Transaction File  
Open Order File (KFAM)

### 5.3 MOD III DATA FILES

Journal Entries File  
A/P Distribution File  
A/P Check File  
A/P Payment File  
Chart of Accounts File (KFAM)  
Vendor File (KFAM)  
A/P Open Item File (KFAM)  
Sortwork Data File

### 5.4 MOD IV DATA FILES

Master File (KFAM)  
Check File  
Reconciliation File  
Memo File  
Deposit File  
Daily Cash File  
Cash File  
Control File  
Bank Address File (KFAM)

## CHAPTER 6: GBS SETUP

This chapter describes the setup procedure of all GBS Modules and is organized as follows: the first section describes preliminary procedures pertaining to all modules, subsequent sections list instructions relating specifically to each module.

### 6.1 GENERAL PROCEDURES ALL MODS

Each GBS Module is delivered on a set of diskettes; the programs must be copied to the appropriate disk as described below.

1. a. Format and scratch (SCRATCH DISK F/R LS=24, END=1023) a diskette. For MODS I through III additional scratched diskettes are needed for report and Invoice transactions files.
- b. Format and scratch (SCRATCH DISK F/R LS=24, END=9791) the fixed (320) and removable (B20) disks (5 megabyte unit).
- c. Format and scratch (SCRATCH DISK F/R LS=24, END=19582) the fixed (320) and removable (B20) disks (10-megabyte unit).
2. Copy all compressed programs and subroutines from the system diskettes to the hard disk (B20) using the ISS Copy/Verify utility.
3. Copy "GBS" and "START" menus from B20 to a scratched and formatted work diskette (310).

### 6.2 MODS I AND II

GBS MOD I is delivered on the following six diskettes:

- . three source program diskettes
- . two system program diskettes
- . one sample data file diskette



GBS MOD II is delivered on the following five diskettes:

- . three source program diskettes
- . two system program diskettes

If MODS I and II are installed simultaneously, copy programs from the MOD I diskette using the ALL/ADD mode with extra sectors unchanged. Follow the procedures described in 6.2.1

#### 6.2.1 MOD II Installation in an Existing MOD I Site

1. Copy MOD II diskettes to B20 using the ALL/ADD mode with "extra sectors" unchanged. Certain programs in both MODs I and II have identical names, and are not copied. Error messages are generated instead. They must be copied in a second pass using the REPLACE mode, entering the individual program names with "extra sectors" equal to zero (0). The program names are:

ITRN  
ITRNR  
START  
IPRT  
IPRTR  
INVT010A  
INVT020A  
INVT030A  
INVMENU  
INIT2 replaces INIT

2. Additionally, the program ACCTMENU (the MOD II version is larger than MOD I) must be copied with the following procedures:

<u>Enter</u>	<u>To</u>
1. CLEAR EXEC	Clear memory.
2. LOAD DCF "ACCTMENU" EXEC	Load program into memory from diskette.
3. SCRATCH R/B20, "ACCTMENU" EXEC	Scratch name from catalog on removable disk.
4. SAVE DCR/B20, "DUMMY" EXEC	Assign dummy name to A/R Menu module and save it on the removable disk.
5. SCRATCH R/B20, "DUMMY" EXEC	Set module with dummy name to scratch condition so it can be renamed.
6. SAVE DCR ("DUMMY")/B20, "ACCTMENU" EXEC	Rename the A/R menu module.

## 6.2.2 MODS I and II Setup

- Using the ISS Initialize KFAM Files program, initialize the data files to 320 and the key files to B20. These files include the Customer, Inventory, Salesman, A/R Open Item and Open Order files. Use the following chart to answer the KFAM prompts:

<u>Parameter</u>	<u>Set for:</u>				
	<u>Customer</u>	<u>Salesman</u>	<u>Inventory</u>	<u>A/R Open</u>	<u>Open Order (MOD II only)</u>
user file name	INVCFO10	SALEFO10	INVTFO10	ACCTFO10	ORENFO10
data file device	320	320	320	320	320
data catalogued	NO	NO	NO	NO	NO
key file number	1	1	1	1	1
key file device	B20	B20	B20	B20	B20
key catalogued	NO	NO	NO	NO	NO
record type	A	A	A	A	A
record length	252	252	252	50	252
blocking factor	1	1	1	5	1
key length	6	3	12	17	7
starting position of key	3	3	3	3	3
number of records	user specified				

- When installing MOD I only, use the INIT program to initialize the following files.

<u>FILE</u>	<u>FILE NAME</u>	<u>DEVICE ADDRESS</u>	<u>NUMBER OF RECORDS TO ALLOCATE</u>
Control File	GBS1FO10	320	System allocates 367
A/R Sequential File	ACCTFO20	B20	Should equal records specified for ACCTFO10.

- When installing MOD II use INIT 2 to initialize the following files:

<u>FILE</u>	<u>FILE NAME</u>	<u>DEVICE ADDRESS</u>	<u>NUMBER OF RECORDS TO ALLOCATE</u>
Control File	GBS1FO10	320	System allocates 367
A/R Sequential File	ACCTFO20	B20	Should equal records specified for ACCTFO10

Lost Sale/Est. Shortage File	ORENF030	320	3 records/sector, should accommodate all line items that produce lost sales or estimated shortages per order entry run
Shipping Shortage File	ORENF040	320	3 records/sector, should accommodate all line items short shipped per shipping confirmation run
Sortwork File	SORTWORK	B20	Number of records in the largest file to be sorted *
Sorted Physical Transaction File	INVTFO21	320	11 records/sector should equal records in INVTFO10

Wash accounts should be established in the Inventory and Salesman Master files. Wash accounts receive information entered against Salesman or Product numbers not currently on file. To create wash accounts for the Inventory and Salesman files, execute their respective file maintenance routines. A wash account is identified by twelve Z's for the product number and three Z's for the salesman number.

### 6.2.3 A/R File Build (INITA/R)

This program allows the user to build a starting Accounts Receivable Open Items file with his vendor. The program resides on B20.

All necessary subroutines are contained in this program. These subroutines include SUBUTIL, SUBDATE, DENTRY, CUSFILE, and KFAM0003. To access the program, enter LOAD DCR/B20 "INITA/R", touch RETURN(EXEC), RUN, and touch RETURN(EXEC).

There are two prerequisites for running INITA/R: (1) the entire initialization procedure must be completed, and (2) all customers must be entered through Customer File Maintenance.

The A/R File Build program adds records only to the file ACCTF010 (A/R Open Items - KFAM). It does not update the customer A/R balance in the Customer file. It is assumed that these fields are still zero since no processing has taken place after file initialization.

---

\* This file is used by the Inventory Open Order Reorganization, Physical Inventory Transactions, Lost Sales estimated shortage and the Shipping Shortage files.

INITA/R may be executed as many times as required to load all the open items. At any time an A/R Inquiry/List may be run using the "All" option. This provides a balance for each customer and a total A/R balance as well as all the supporting details. At this time, any adjustments can be made through the A/R File Build program's add, change, and delete functions.

When all the open items have been entered and validated, the A/R balance in the Customer File can be automatically set by running an End-of-Month A/R Aging program followed by the Purge program.

**NOTE:**

The first time the Purge Program is run, all customers are listed on the Purge Report as out of balance because all customer balances are zero. Purge inserts the proper balances into each customer record from the Open Item File; once Purge has been run, all files are in balance.

End-of-Month procedures are discussed in the GBS-MOD I (Disk) Operator's Manual. The package is now ready for formal operation.

Since it affects only the A/R Open files and none of the associated files, the INITA/R program should now be removed from the disk to prevent its inadvertent use.

**CAUTION:**

Balance Forward customers must be initialized by entering Balance Forward records; Open Item customers must be initialized by entering Open Item records. If summary Balance Forward records are entered for an Open Item customer, unpredictable results may occur at month-end-cycle time.

#### 6.2.4 A/R File Build Operating Instructions

1. To load the A/R Build program, enter LOAD DCR/B20 "INITA/R", RETURN(EXEC), RUN, RETURN(EXEC).

2. Enter the default date in the specified form, RETURN(EXEC). This date is automatically applied as the transaction date for balance forward and service charge records. It also may be used in other transaction type records by touching RETURN(EXEC) when prompted for a transaction date.
3. Enter maintenance type:
  - A = Add
  - C = Change
  - D = Delete
4. Enter a customer number or END, RETURN(EXEC). If END, RETURN(EXEC), is entered, go to step 18. Otherwise, the program verifies that the customer exists, and the name is displayed.
5. Enter an invoice number or END, RETURN(EXEC). For an addition, enter a unique invoice number. For a change or deletion, enter an existing invoice number. The invoice number must be numeric. Balance forward and service charge transactions must be applied to an invoice number of zero (0). If END, RETURN(EXEC), is entered, return to step 4.
6. Enter a transaction type, RETURN(EXEC).

RETURN(EXEC) = Invoice  
P = Payment  
CI = Credit Invoice  
DM = Debit Memo  
CM = Credit Memo  
BF = Balance Forward  
SC = Service Charge

The A/R file is checked for the existence of the invoice number record after the transaction type is entered. Only one balance forward and service charge transaction type may be applied per customer.

7.
  - a. If a record is being added, go to step 8.
  - b. If a record is to be changed or deleted, the selected record is displayed.
  - c. To change a record, go to step 8.
  - d. If delete is selected, the prompt OK TO DELETE is displayed. Enter Y or N. Go to step 5.
8. If the transaction type is BF or SC, go to step 13. If not, go to step 9.
9. Enter the original transaction date in the specified form, or key RETURN(EXEC) for the default date.
10. Enter the amount, RETURN(EXEC). It is not necessary to enter minus signs since the transaction type determines the sign of the entry.

11. If a payment is being entered, a check number prompt appears.
12. Go to step 17.
13. Enter the current amount.
14. Enter the 31 to 60 day-old amount.
15. Enter the 61 to 90 day-old amount.
16. Enter the over 90 day-old amount.
17. If the input data is acceptable, enter RETURN(EXEC). The new or updated record is written to the file; go to step 5. If the data is unacceptable, enter N, RETURN(EXEC) and go to step 5.
18. Key R to restart and go to step 3, or key E to end.

#### 6.2.5 Establishing The Starting Invoice Number - (MODS I and II)

After the Customer, Inventory, Salesman, A/R Open Items, and A/R Sequential files have been initialized, and the A/R File Build program has been executed, the starting invoice number should be established. This is done with the Clear File program. (For operating instructions, refer to the GBS MOD I (Disk) Operator's Manual.)

When establishing the starting invoice number, be sure that it is greater than the user's highest invoice number. This insures that the A/R Open Item File is in correct sequence for applying general payments, with the oldest invoices coming first. Additionally, starting invoice number, starting non-regular invoice number and starting order number must not be longer than five digits.

If the starting invoice number for GBS-MOD I (Disk) operation is less than the highest pre-GBS invoice number, issuing a general payment to a customer with pre-GBS invoices on the A/R open file wipes out later invoices instead of the oldest invoices.

#### 6.3 GBS MODS I AND II RECOVERY PROCEDURES

In GBS, the Order Entry Program, Shipping Confirmation and Invoice Create programs are all 'batch' entry type programs. In each, records are written to a sequential transaction file to provide greater efficiency in the entry phase. After all entries are made, the transaction file is closed and further processing, such as printing and file updating, takes place. In this mode, the machine may go unattended and the operator is free to perform other duties. This design appears to indicate that large batches of entry are the most efficient. However, this further indicates that any problems at this time (such as diskette errors or power failures, etc.) causes the user the greatest time loss. If an operator has been making entries for two hours and a

system failure occurs, lost data must be reentered. In the Order Entry Program, further complications occur. In this program, the quantity-allocated field on the Inventory File is adjusted as each entry is made. Therefore, if an operator simply reenters a batch of orders, all affected products would erroneously be updated twice.

To assist in the elimination of such problems, two recovery programs have been provided. The first (RECOVER1) allows adjustments to be made to the quantity-allocated field on the inventory file. The second, (RECOVER2) writes HEX (FF) records to and properly closes the transaction file that was being written when the problem occurred.

The procedure for recovery from errors occurring during the entry phase of Order Entry Shipping confirmation and Invoice Create is as follows:

1. Note the last completed order/invoice #
  - a. In Order Entry this should be the last complete order, as the current order could be in the middle of a block.
  - b. In Invoice Create and Confirmation this must be the last completed invoice, including the totals record.

If there is any uncertainty about the last number, run an order transaction (ORDTDUMP) or invoice transaction dump (TRANDUMP).

2. Run recovery program (RECOVER2) to close the transaction file.
3. Begin the appropriate entry program again, mounting an outdated transaction diskette when the transaction file is first requested. Enter END as the first customer or order number, closing out the entry portion of the program. When 'update' or 'print' is ready to begin, mount the original transaction file that has been fixed through recovery and all updating will then proceed properly.
4. Run CLEAR FILE program and reset order # or invoice # to the same number entered in RECOVER2.

**CAUTION:**

Resetting the order and invoice numbers is critical when it comes time to run CONFIRMATION. Due to file limitations, the invoice number is not updated until the end of a batch. If any errors occur during data entry, an old invoice number is left on file; reentry of the same number without adjustment causes duplicate invoice numbers and consequent difficulties.

5. With Order Entry, the quantity-allocated field must be readjusted (using RECOVER1) for any orders not completed.

If there are errors in the update portion of these programs, there is no single approach to recovery since the variables involved are extremely complex. Invoices could be in a partially updated condition and the user would have no way of knowing how far the update had progressed. In the case of a power failure, there is no way to determine what the last invoice number was without dumping the entire accounts receivable file and searching through it or using the invoices to check on receivable records written. Furthermore, an item could have had its key file record written and not its user file record, etc. The only reasonable source of recovery is backup and some amount of reentry. Any errors at this point require individual analysis. Having sufficient backups, therefore, cannot be too strongly recommended.

In Order Entry and Confirmation, it is important to note on which file an error occurs. If a disk error occurs on any file other than the transaction file (i.e., on the inventory file or the open order file), recovery may warrant more complicated and specialized correction procedures. If a disk error ERR67 or ERR72 occurs, the RECOVER2 program cannot guarantee success.

#### 6.4 MOD III

GBS MOD III is delivered on the following six diskettes:

- . three source program diskettes
- . two system program diskettes
- . a sample data file diskette

On receipt of MOD III, the vendor may combine the MOD III System with MODS I and II, or maintain a standalone MOD III System. If the vendor decides to join the three GBS Modules, the necessary routines must be created by the vendor.

##### 6.4.1 MOD III Setup

1. Using ISS Initialize KFAM Files program, initialize the data files to 320 and the key files to B20. These files include Chart of Accounts file, Vendor file and A/P Open Item file. Use the following chart to answer the KFAM prompts.

<u>Parameter</u>	<u>Set for:</u>		
	<u>Chart of Accounts</u>	<u>Vendor</u>	<u>A/P Open Item</u>
user file name	GENLF010	ACPAF010	ACPAF020
device addresses	320	320	320
record type	A	A	A
blocking factor	1	1	4
record length	252	252	63
key file name	GENLK110	ACPAK110	ACPAK120
device address	B20	B20	B20
key file number	1	1	1
key position	3	3	3
key length	8	5	15



2. Use the MOD III initialization routine, MOD3INIT, (on the system diskette) to establish the following files: (For every file except the Control file, the user may select the number of records.)

<u>FILE</u>	<u>FILE NAME</u>	<u>DEVICE ADDRESS</u>	<u>NUMBER OF RECORDS TO ALLOCATE</u>
Control File	GBS1F030	320	System allocates 367 records/sector. An A/P trade account # must be entered after allocating this file
Old Journal Entry File	GENLF020	320	4 records/sector, should accommodate all journal entries for a processing period
New Journal Entry File	GENLF030	320	4 records/sector, should accommodate all temporary next period journal entries posted prior to the closing of the current period
Sorted Journal Entry File	GENLF040	320	4 records/sector, should equal the size of GENLF020
Merged Journal Entry File	GENLF050	320	4 records/sector, should equal size of GENLF020 plus ACPAF060
SORTWORK File	SORTWORK	B20	Must be as large as the largest file to use it *
Payment File	ACPAF030	320	4 records/sector, should accommodate all invoices paid per payment cycle
Check File	ACPAF040	320	4 records/sector, should accommodate all checks produced per payment cycle

\* The SORTWORK File is used by the Journal Entry, Distribution and Check File and Open Item Reorganization.

<u>FILE</u>	<u>FILE NAME</u>	<u>DEVICE ADDRESS</u>	<u>NUMBER OF RECORDS TO ALLOCATE</u>
Sorted Check File	ACPAF050	320	4 records/sector, should equal ACPAF040
Old Distribution File	ACPAF060	320	4 records/sector, should accommodate all accounts payable distribution entries for a processing period
New Distribution File	ACPAF065	320	4 records/sector, should accommodate all accounts payable distribution entries posted prior to the closing of the current period

#### 6.5 MOD IV

The MOD IV programs are delivered on the following four diskettes:

- . two source diskettes
- . one system diskette
- . one sample data file diskette

On receipt of MOD IV, the vendor may combine the MOD IV system with MODS I, II and III. If the vendor decides to join the four GBS Modules, the necessary routines must be created by the vendor.

##### 6.5.1 MOD IV Setup

1. Using the ISS Initialize KFAM Files program, initialize the following data files to 320 and the key files to B20. The files include the Master File and the Bank Address file.

Use the following table to answer the KFAM prompts.

Set for:

<u>Parameter</u>	<u>Master File</u>	<u>Bank Address File</u>
user file name	PYRLF010	PYRLF120
data file device	320	320
data file catalogued	No	No
key file number	1	1
key file device	B20	B20
key file catalogued	No	No
record type	A	A
record length	252	252
blocking factor	1	1
key length	10	3
starting key position	3	3
number of records	*	**

\* The number of records in the Master File are user defined. Number of records = number of employees (including all terminated and inactive and active employees for a year's cycle) times 6. Each employee requires six records.

\*\* The Bank Address file has an upper limit of 100. If more than 100 banks are needed, the Bank Deposit List program must be modified. Allow one record per bank.

2. Use MOD IV initialization program ( PYRL250A on the system disk) to establish the following files on the indicated disks.

<u>FILE</u>	<u>FILE NAME</u>	<u>DEVICE ADDRESS</u>	<u>NUMBER OF RECORDS TO ALLOCATE</u>
Control File	PYRLF100	320	System allocates 4 records
Check File	PYRLF020	B20	Number of employees paid by check in one pay period times 2, 2 sectors/record
Reconciliation File	PYRLF030	B20	Number of employees paid by check in one pay period 1 record/sector

<u>FILE</u>	<u>FILE NAME</u>	<u>DEVICE ADDRESS</u>	<u>NUMBER OF RECORDS TO ALLOCATE</u>
Memo File	PYRLF040	B20	Number of employees paid by cash or direct deposit times 2, 2 sectors/record
Deposit File	PYRLF050	B20	Number of employees paid by direct deposit, 1 record/sector
Daily Cash File	PYRLF060	320	System allocates 367 records, 2 sectors/record
Cash File	PYRLF070	B20	Number of employees paid by cash, 1 record/sector

When setup is complete, run the maintenance programs in the following order.

1. Bank File maintenance
2. Control File Maintenance - to establish earnings tax and deduction descriptors.
3. Master File Maintenance - to enter employees

## CHAPTER 7: SETUP OF SAMPLE DATA FILES

To enable the vendor to become better acquainted with GBS, sample data files are provided with the modules.

This chapter describes the setup procedure for the data files, and is organized as follows: the first section describes general procedures pertaining to all modules, subsequent sections describe instructions pertaining specifically to each module

### 7.1 GENERAL INSTRUCTIONS

Use ISS (Release 2) copy/verify with the following parameters to copy KFAM files from the sample data diskette to the fixed 320 disk.

1. FUNCTION - COPY/VERIFY
2. EXTRA SECTORS - UNCHANGED
3. MODE - PART
4. INPUT ADDRESS - 310
5. OUTPUT ADDRESS - 320

Use ISS COPY/VERIFY with the following parameters to copy key files from the sample data diskette to the B20 removable disk.

1. FUNCTION - COPY/VERIFY
2. EXTRA SECTORS - UNCHANGED
3. MODE - PART
4. INPUT ADDRESS - 310
5. OUTPUT ADDRESS - B20

When all data files have been copied, run inquiry/list programs for each one and carefully review the output.

## 7.2 MOD I SAMPLE DATA FILES

The following KFAM sample data files are copied from the sample data file diskette to the fixed (320) disk.

### KFAM FILES

INVCF010 - Customer Master File  
GBS1F010 - Control File  
SALEF010 - Salesman Master File  
INVTF010 - Inventory Master File  
ACCTF010 - A/R Open Item File

The following key files and one sequential file are copied to the removable (B20) Disk.

### KEY FILES

INVCK110 - Customer Master File Key  
SALEK110 - Salesman Master File Key  
INVTK110 - Inventory master File Key  
ACCTK110 - A/R Open Item File Key  
ACCTF020 - A/R Open Item File (Sequential)

### 7.2.1 Sample Data File Structure

The following notes are provided to assist the vendor in becoming acquainted with the sample data files.

#### Customer Master File (INVCF010)

1. Customer numbers run Z0010 through Z0300, in increments of 10.
2. An A/R code of zero (0), indicating an open item customer, is assigned to each odd-numbered customer.
3. An A/R code of one (1), indicating a balance forward customer, is assigned to each even-numbered customer.

#### Salesman Master File (SALEF010)

1. Salesman numbers run 812 through 896, in increments of 12.

#### Inventory Master File (INVTF010)

1. Product numbers run from PR195010 through PR195200, in increments of 10.
2. The on-hand quantity for each product is 1000.

### 7.3 MOD II SAMPLE DATA FILES

The Sample data files described above may also be used in MOD II. In addition, the Open Order File must be initialized according to the instructions in Section 6.2.2.

### 7.4 MOD III SAMPLE DATA FILES

The following KFAM sample data files are copied from the sample data diskette to the fixed 320 disk.

#### KFAM FILES

GENLF010 - Chart of Account File  
ACPAF010 - Vendor Master File  
ACPAF020 - Open Item File

The following Key files are copied to the removable B20 disk.

#### KEY FILES

GENLK110 - Chart of Accounts File Key  
ACPAK110 - Vendor Master File Key  
ACPAK120 - Open Item File Key

#### 7.4.1 Sample Data File Structure

MOD III sample vendor numbers go from 00001 to 00025. There are 106 accounts in the Chart of Accounts. To obtain the account numbers, since they do not run in sequence, run an Inquiry/List with the ALL option. The first account number is 10000100; the last, 99999999.

### 7.5 MOD IV SAMPLE DATA FILES

The following KFAM sample data files are copied from the sample data diskette to the fixed 320 disk.

#### KFAM FILES

\*PYRLF010 - Master File  
\*PYRLF120 - Bank Address File  
PYRLF100 - Control File

The following key files are copied to the removable B20 disk.

#### KEY FILES

\*PYRLK110 - Master File Key  
\*PYRLK120 - Bank Address File Key

---

\* If these files have been previously initialized specify Replace rather than Part for the mode parameter.

### 7.5.1 Sample Data File Structure

The Mod IV sample data files have been structured as follows:

#### Employee numbers

a	b		
02-35			
digit a	Roll	digit b	Pay Type
0	= hourly exempt	0,1,2,3	= check
1	= salary	4,5,6,	= deposit
2,3	= hourly	7,8,9,	= cash

#### Frequency

All hourly employees are weekly.

hourly-exempt digit b

0-5 = Biweekly  
6-9 = 10th 20th of the month

Salary digit b

0-5 = 15th of the month  
6-4 = E.O.M.

Earnings 11	Vacation - Special frequency, hourly -exempt employee
Earnings 06	XMAS Bonus, yearly frequency, all employees
Earnings 08	Qtr. Bonus, Quarterly frequency, hourly and hourly-exempt employee



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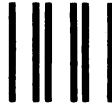
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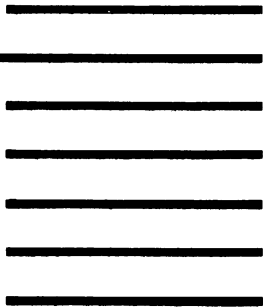


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