

WANG

Introducing
GBS/MBS
Release 1



Introducing GBS/MBS Release 1

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PREFACE

This document introduces the Wang General Business System (GBS)/Manufacturing Business System (MBS) Release 1 system. It provides basic descriptions of the system hardware and software components, the concepts upon which the system is based, and the features and benefits available with GBS/MBS Release 1.

This document is comprised of four chapters, organized as follows.

- Chapter 1 serves as an introduction to GBS/MBS Release 1.
- Chapter 2 presents an overview of the system features including flexibility, accuracy, ease of use, and security features.
- Chapter 3 contains an overview of the hardware components available with the system.
- Chapter 4 describes the basic concepts and capabilities of the GBS/MBS Release 1 software applications. Throughout Chapter 4, descriptions and references are made to the various reports and lists available within the individual software application programs. For further details and samples of these lists and reports, refer to the *GBS Core Sample Reports Manual* and the *MBS Core Sample Reports Manual*.



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CHAPTER 1

SYSTEM INTRODUCTION

1.1 OVERVIEW

GBS/MBS Release 1 is a combined general business and manufacturing software package designed as a powerful solution for the general business problems of the small- to medium-sized company, and the material control requirements of the small- to medium-sized manufacturing organization. GBS/MBS Release 1, designed and developed by Wang personnel, and distributed by Wang-approved software consultants, consists of the following modules.

- **GBS Core Modules**
 - Order Entry/Processing
 - Invoicing and Receivables
 - Purchase Order
 - Material Control
 - Sales History/Forecast

- **GBS Optional Modules**
 - Accounts Payable/General Ledger
 - Payroll

- **MBS Core Modules**
 - Bill of Material
 - Production Scheduling
 - Production Control
 - Production Forecast

The GBS core modules are integrated applications and must be purchased as a whole, the GBS optional modules can be purchased as additions to the GBS core, and the MBS core modules must be purchased as a group and used in conjunction with the GBS core.

GBS/MBS Release 1 allows considerable flexibility during installation; each application may be easily modified, and extensive system documentation is provided to assist consultants in tailoring GBS/MBS Release 1 to individual requirements.

GBS/MBS Release 1 is a versatile disk-based system designed to run on Wang's 2200 series multi-processing product line. Disks containing data and programs are easy to unload and store, and all information is readily available during each processing stage. In addition, GBS/MBS Release 1 meets the most demanding security requirements through detailed audit records, a unique password facility, and fast, easy backup procedures.

Several operators can simultaneously utilize a single Central Processing Unit (CPU). Since each operator has constant access to all files and records except those protected by passwords, an unlimited number and variety of jobs can be processed at any time.

Each terminal is interactive. Understandable instructions and logically formatted data appear on the Cathode Ray Tube (CRT) screen, enabling direct communication with the operator. Thus, the need for off-site user training is eliminated. Instruction materials are designed for quick reference rather than step-by-step instruction.

1.2 SYSTEM SETUP

Data Files

Each application in the GBS/MBS Release 1 system consists of several programs and data files to calculate totals, update inventory, view all supply/demand, produce pick slips, formulate financial reports, develop forecasts based on sales and/or production plans, and print checks and invoices.

GBS/MBS Release 1 is a menu-driven, user-oriented system. Data files can be selected at random from clear, organized application menus. When the user gains access to a data file, the system requests entry of key information associated with records in the files. Upon entry of this information, processing is transparent to the user.

The user is responsible for the accuracy of the information in the data files. However, the system supplies extensive verification prompts before accepting information. Inaccurately entered data or outdated information can be changed or voided using maintenance programs.

File Initialization

GBS/MBS Release 1 provides a file initialization program (INIT) to initialize the system files. Because INIT sets up file size parameters, the customer must complete a *GBS/MBS Customer Survey and Configurator* to enable the consultant to accurately determine file specifications. The answers to the survey questions should be based on peak usage estimates, so that the consultant can build a growth factor into each file.

Actual file initialization is handled by the consultant; however, all data entered during the INIT program is based on the customer's responses to the survey/configurator. (For more details on the file initialization program, see the *GBS/MBS General Accounting Core Technical Guide* or the *GBS/MBS Manufacturing Core Technical Guide*.)

Data Base Maintenance

GBS/MBS Release 1 provides standard programs for maintaining the data files in each application. Maintenance is basically the same for all the files. A series of prompts and instructions is provided to assist in creating and maintaining uniform records and files.

Initial creation and continued updating of data files is performed by maintenance programs that allow additions, changes, and deletions of records. All maintenance activity is reflected in audit reports.

During record creation, the operator enters an ID to permanently identify the record. The system immediately allocates space in the file and requests information for each field in the record. Upon completion of data entry, the operator may correct erroneous entries for specific fields, write the record to the file, or void the entry and begin again with the entry of another record ID.

When the operator wants to change a record, a system prompt asks for the record ID. The appropriate record is displayed, and the operator may change fields at random by entering the line numbers assigned to the desired fields. Changes are accepted or voided by the operator, and the revised record is written to the file.

Record deletion begins with entry of the appropriate ID. The system requests verification of whether or not the record is to be deleted and, depending on the operator's response (Y or N), records are either deleted or rewritten to the file.

NOTE

The system displays a message requesting operator validation before allowing deletion of information. In some cases, a lockout feature prevents record deletion (i.e., deletion of an inventory item used in an assembly product structure).

Data Base Inquiry

GBS/MBS Release 1 contains display/print programs for inspecting information in the data files via screen displays and/or hard-copy printouts. At any stage of processing, the operator can investigate an entire file, a range of records in a file, or individual records selected at random.

As an extra security measure, it is suggested that the operator print a report of all the records in a file before performing any maintenance activity. This report can be compared with the audit report produced after maintenance has been performed to ensure the validity of the file contents.

Maintenance Audit Records

Comprehensive audit reporting is one of the outstanding security features of GBS/MBS Release 1. Audit trails of all maintenance activity are stored in a maintenance audit file. Each time the contents of a data file are modified by the operator, a record of the change is stored in the audit file.

GBS/MBS Release 1 provides utility programs to print reports reflecting record changes. Reports show the "before" (old) and "after" (new) condition of each field modified during maintenance. The operator should print reports and clear the file after extensive maintenance activity; however, if maintenance is minimal, this procedure can be designated as an end-of-day task.

When the Maintenance audit file becomes approximately 80% full, the system notifies the operator that the file is nearly full. If, at any time, the operator allows the file to become 95% full, the system instructs the operator to print reports and clear the file. Until this is done, the system will not allow processing to continue.

Inventory Transaction Audit Records

The GBS/MBS Release 1 Inventory Transaction audit file collects records of inventory transactions. Each time a transaction affects the Inventory file balances, a record is written to the Inventory Transaction audit file. The following types of transactions are recorded.

- Purchase Receipts
- Work-Order Receipts
- Unplanned Issues to Work Orders
- On-Hold Transfers
- In-Process Transfers
- Balance-On-Hand Adjustments

File Reorganization

Reorganization programs are provided for all Key File Access Method (KFAM) files in the GBS/MBS Release 1 system.

Records deleted during file maintenance become flagged and cannot be accessed by the operator, but the system does not actually erase records and compress files during maintenance. GBS/MBS Release 1 reorganization programs purge the files of deleted records, compress the files to make room for addition of new records, and inform the operator how much file space is available after the reorganization is complete.

1.3 SYSTEM MENUS

During the start-up procedures, the System menu is displayed. From this menu, the operator can access all GBS/MBS Release 1 application menus, the Utilities menu, and the Reorganization menu.

The application menus list programs in the recommended sequence of operation. The programs are numbered; to select a program, the operator presses the Special Function Key (SFK) corresponding to the desired program (refer to Section 3.2).

In the event a program is selected at an unusual stage of processing, such as posting invoices prior to printing the Invoice Register, the system reacts in one of the following ways.

1. A warning/explanation is displayed to notify the operator of the consequences of running the program.
2. The system prohibits the running of the program, outlines the prerequisites, and instructs the operator to return to the menu.

At any stage of processing, the operator can instruct the system to return to the GBS/MBS Release 1 System menu by pressing SFK 31.

**GBS/MBS SYSTEM MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	ORDER ENTRY/PROCESSING MENU	(08)	BILL OF MATERIALS MENU
(01)	INVOICING & RECEIVABLES MENU	(09)	PRODUCTION SCHEDULING MENU
(02)	PURCHASE ORDER MENU	(10)	PRODUCTION CONTROL MENU
(03)	MATERIAL CONTROL MENU	(11)	PRODUCTION FORECAST MENU
(04)	SALES HISTORY/FORECAST MENU	(12)	UTILITIES MENU
(05)	ACCOUNTS PAYABLE MENU	(13)	FILE REORGANIZATION MENU
(06)	GENERAL LEDGER MENU		
(07)	PAYROLL MENU	(31)	END OF PROCESSING

**GBS/MBS ORDER ENTRY/PROCESSING MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	ENTER ORDERS	(07)	PRINT LOST SALES REPORT
(01)	PRINT ORDER REGISTER	(08)	ADJUST OPEN ORDERS
(02)	PRINT SHIPPING PAPERS	(09)	D/P OPEN ORDERS
(03)	CONFIRM SHIPMENTS	(10)	ANALYZE OPEN ORDERS
(04)	PRINT SHIPPING REGISTER	(11)	PURGE CLOSED ORDERS
(05)	AUTOMATIC BACKORDER FILLING		
(06)	PRINT ORD. ENTRY/EST. SHORTAGE REPT.	(31)	SYSTEM MENU

**GBS/MBS INVOICING & ACCOUNTS RECEIVABLE MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	ENTER INVOICES	(09)	MAINTAIN CUSTOMER FILE
(01)	PRINT INVOICE REGISTER	(10)	MAINTAIN SALESMAN FILE
(02)	PRINT INVOICES	(11)	ENTER CASH RECEIPTS
(03)	POST INVOICES	(12)	D/P CUSTOMERS
(04)	AGE A/R & CALCULATE SERVICE CHARGES	(13)	D/P SALESMEN
(05)	PRINT A/R STATEMENTS	(14)	D/P A/R OPEN ITEMS
(06)	PRINT AGED TRIAL BALANCE	(15)	PRINT CREDIT REPORT
(07)	PURGE OPEN ITEM FILE		
(08)	CLEAR FILES	(31)	SYSTEM MENU

**GBS/MBS PURCHASE ORDER MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	ENTER PURCHASE ORDERS	(08)	DISPLAY INSPECTION BY PRODUCT
(01)	MAINTAIN P.O. FILE	(09)	PRINT ANALYSIS BY P.O. #
(02)	DISPLAY P.O. BY PRODUCT	(10)	PRINT ANALYSIS BY VENDOR #
(03)	PRINT P.O. BY PRODUCT	(11)	DELETE PURCHASE ORDERS
(04)	ENTER RECEIPTS TO P.O.	(12)	D/P OPEN COMMITMENT
(05)	PRINT RECEIVING LOG	(13)	MAINTAIN VENDOR FILE
(06)	ENTER INSPECTION TRANSACTIONS	(14)	D/P VENDOR FILE
(07)	PRINT INSPECTION STATUS REPORT	(31)	SYSTEM MENU

**GBS/MBS MATERIAL CONTROL MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	MAINTAIN INVENTORY FILE	(09)	D/P SUPPLY/DEMAND
(01)	ENTER INVENTORY TRANSACTIONS	(10)	D/P MATERIAL REQUIREMENTS
(02)	D/P SUMMARY STOCK STATUS	(11)	D/P MAT. RQMTS. SUMMARY REPORT
(03)	PRINT INVENTORY EXCEPTION REPORT	(12)	PRINT REORDER ADVICE
(04)	D/P INVENTORY	(13)	ABC ANALYSIS
(05)	PRINT PHYSICAL INVENTORY SHEETS	(14)	ADJUST ABC CLASSES
(06)	ENTER PHYSICAL COUNT	(15)	PRINT EXCESS INVENTORY REPORT
(07)	PRINT PHYSICAL INVENTORY REPORT	(16)	PRINT COMPARATIVE COST ANALYSIS
(08)	BUILD SUPPLY/DEMAND	(31)	SYSTEM MENU

**GBS/MBS SALES HISTORY/FORECAST MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	MAINTAIN SALES HISTORY	(05)	MATHEMATICAL FORECAST
(01)	MAINTAIN SALES FORECAST	(06)	MAINTAIN CONTROL FILE
(02)	HISTORY/FORECAST REPORT	(07)	SALES HISTORY BY PRODUCT GROUP
(03)	VARIANCE REPORT		
(04)	MANIPULATE SALES HISTORY	(31)	SYSTEM MENU

**GBS/MBS ACCOUNTS PAYABLE MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	ENTER TRANSACTIONS	(06)	MAINTAIN VENDOR FILE
(01)	PRINT CASH REQUIREMENTS	(07)	MAINTAIN OPEN ITEM FILE
(02)	SELECT ITEMS FOR PAYMENT	(08)	DISPLAY/PRINT VENDOR FILE
(03)	PRINT CHECKS	(09)	DISPLAY/PRINT OPEN ITEM FILE
(04)	PRINT CHECK REGISTER	(10)	REPORT ON DISTRIBUTION
(05)	PURGE PAID ITEMS	(31)	SYSTEM MENU

**GBS/MBS GENERAL LEDGER MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	JOURNAL ENTRY	(07)	CLEAR FILES (End of Month)
(01)	TRIAL BALANCE REPORT	(08)	MAINTAIN CHART OF ACCOUNTS
(02)	POST J/E TO CHART OF ACCOUNTS	(09)	MAINTAIN CONTROL FILE
(03)	PRINT INCOME STATEMENT	(10)	DISPLAY/PRINT CHART OF ACCOUNTS
(04)	PRINT BALANCE SHEET	(11)	DISPLAY/PRINT CONTROL FILE
(05)	PRINT BUDGET REPORT	(12)	DISPLAY/PRINT JOURNAL ENTRY
(06)	PRINT SCHEDULE REPORT	(31)	SYSTEM MENU

**GBS/MBS PAYROLL MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	START PAY CYCLE	(08)	EMPLOYEE MASTER FILE MAINTENANCE
(01)	ENTER HOURS & DEDUCTIONS	(09)	BANK ADDRESS FILE MAINTENANCE
(02)	CALCULATE GROSS & NET PAY	(10)	CONTROL FILE MAINTENANCE
(03)	ENTER ADJUSTMENTS	(11)	EMPLOYEE MASTER FILE INQUIRY LIST
(04)	PRINT EMPLOYEE REGISTERS	(12)	BANK ADDRESS FILE INQUIRY LIST
(05)	PRINT CHECKS, MEMOS, W-2s	(13)	CONTROL FILE INQUIRY/LIST
(06)	PRINT RECONCILIATION LISTS	(31)	SYSTEM MENU
(07)	END OF PAY CYCLE/PERIOD		

**GBS/MBS BILL OF MATERIALS MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	MAINTAIN BILL OF MATERIALS FILES	(05)	GROSS REQUIREMENTS EXPLOSION
(01)	D/P MULTI-LEVEL COSTED BOM	(06)	ASSIGN LOW LEVEL CODES
(02)	D/P SINGLE LEVEL BOM	(07)	SET LONGEST LEAD TIME
(03)	D/P MULTI-LEVEL WHERE USED	(08)	MASS DELETE/CHANGE
(04)	D/P SINGLE LEVEL WHERE USED	(31)	SYSTEM MENU

**GBS/MBS PRODUCTION SCHEDULING MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	MAINTAIN PRODUCTION PLAN FILE	(05)	D/P PRODUCTION PLAN BY PLANNER
(01)	D/P PRODUCTION PLAN	(06)	D/P PLAN SUMMARY BY PLANNER
(02)	D/P PRODUCTION PLAN ANALYSIS	(07)	PRINT LABOR, MACHINE ANALYSIS
(03)	D/P PRODUCTION PLAN BY DATE	(31)	SYSTEM MENU
(04)	D/P PRODUCTION PLAN ANALYSIS SUMM		

**GBS/MBS PRODUCTION CONTROL MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	ENTER WORK ORDERS	(11)	DELETE WORK ORDERS
(01)	MAINTAIN WORK ORDERS	(12)	MAINTAIN LABOR CLASSES
(02)	PRINT PICK SLIPS	(13)	D/P LABOR CLASSES
(03)	VERIFY PICK SLIPS	(14)	ENTER SHOP CALENDAR
(04)	SHORTAGE REPLENISHMENT	(15)	PRINT SHOP CALENDAR
(05)	TRIAL ALLOCATIONS	(16)	MAINTAIN SHOP CALENDAR
(06)	ADD CHARGES TO W.O.	(17)	CREATE WORK ORDERS FROM PLAN
(07)	CLOSE WORK ORDERS	(18)	D/P W.I.P. STATUS REPORT
(08)	D/P WORK ORDERS	(19)	PRINT JOB COST LEDGER
(09)	PRINT WORK ORDERS BY PROD/DUE DATE		
(10)	CLEAR PTD CHARGES FROM W.O.	(31)	SYSTEM MENU

**GBS/MBS PRODUCTION FORECAST MENU
RELEASE 1**

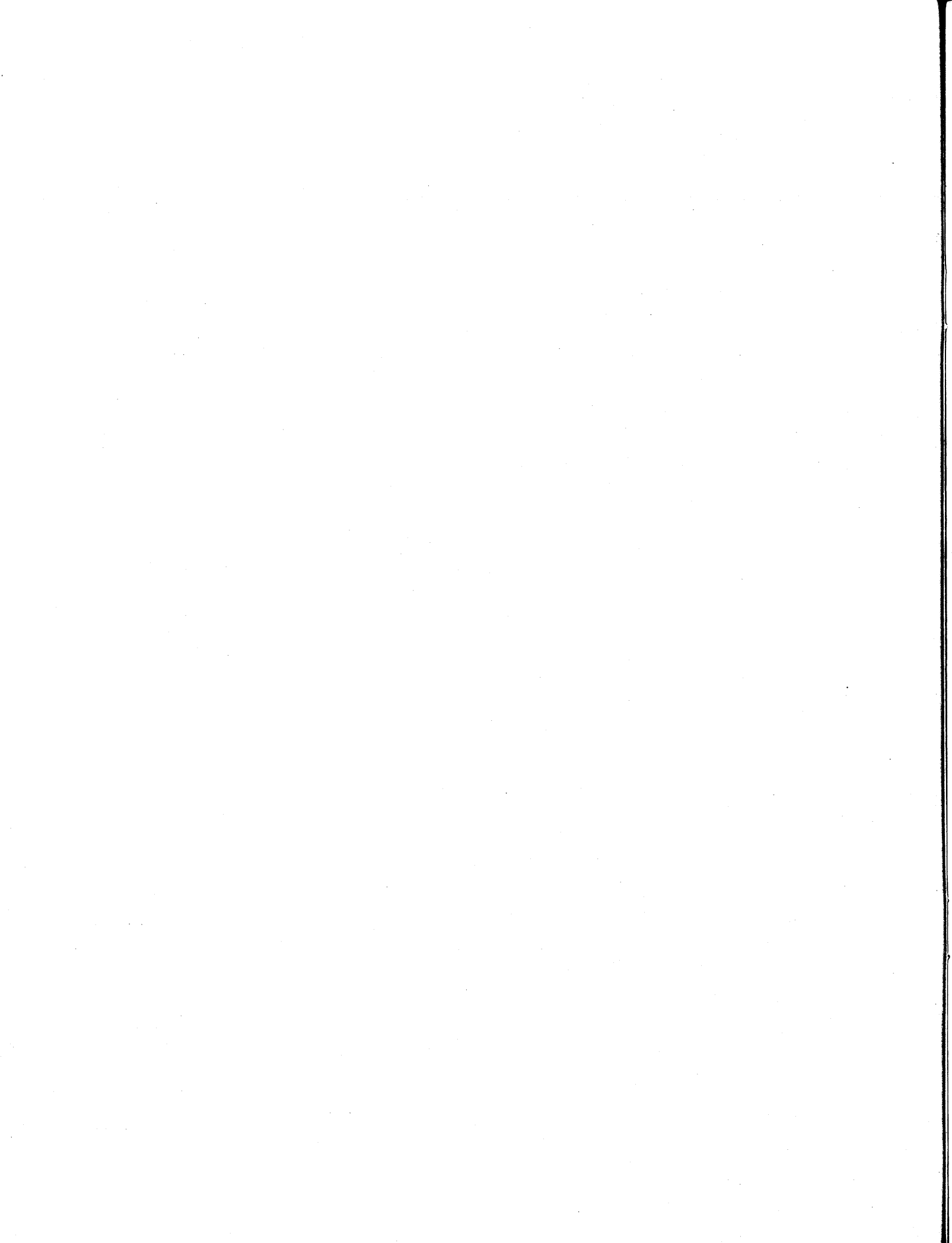
SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	CREATE NEW REQUIREMENTS FILE	(03)	NET/EXPLODE REQUIREMENTS FILE
(01)	MAINTAIN REQUIREMENTS	(04)	PRINT FINAL REQUIREMENTS
(02)	PRINT PRELIMINARY REQUIRE. FILE	(31)	SYSTEM MENU

**GBS/MBS UTILITIES MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	PRINT MAINTENANCE AUDIT REPORT	(06)	DELETE INCOMPLETE INVOICES/ ORDERS
(01)	D/P TRANSACTIONS	(07)	D/P CONTROL FILE
(02)	BUILD ACCOUNTS RECEIVABLE FILE	(08)	DISPLAY KFAM QUEUE
(03)	RESET ACCESS TABLES	(09)	CHANGE SYSTEM DATE
(04)	RESTORE DATA FROM BACKUP DISK	(10)	INVENTORY TRANSACTION AUDIT
(05)	COPY DATA TO BACKUP DISK	(31)	SYSTEM MENU

**GBS/MBS FILE REORGANIZATION MENU
RELEASE 1**

SFK	PROGRAM NAME	SFK	PROGRAM NAME
(00)	REORGANIZE CUSTOMER MASTER FILE	(09)	REORGANIZE BANK ADDRESS FILE
(01)	REORGANIZE INVENTORY MASTER FILES	(10)	REORGANIZE PRODUCTION PLAN FILE
(02)	REORGANIZE SALESMAN MASTER FILE	(11)	REORGANIZE LABOR CLASS FILE
(03)	REORGANIZE OPEN ORDER FILE	(12)	REORGANIZE PURCHASE ORDER FILE
(04)	REORGANIZE BILL OF MATERIALS FILES	(13)	REORGANIZE WORK ORDER FILE
(05)	REORGANIZE A/P OPEN ITEM FILE	(14)	REORGANIZE PICK SLIP FILE
(06)	REORGANIZE CHART OF ACCOUNTS FILE	(15)	REORGANIZE SALES HISTORY FILE
(07)	REORGANIZE VENDOR MASTER FILE		
(08)	REORGANIZE EMPLOYEE MASTER FILE	(31)	SYSTEM MENU



CHAPTER 2 SYSTEM FEATURES

2.1 OVERVIEW

GBS/MBS Release 1 is a fully integrated system combining several features to ensure easy and precise operator control. This combination of manpower and automation guarantees flexibility and ensures organized and accurate results.

2.2 FLEXIBILITY

Integrated Applications

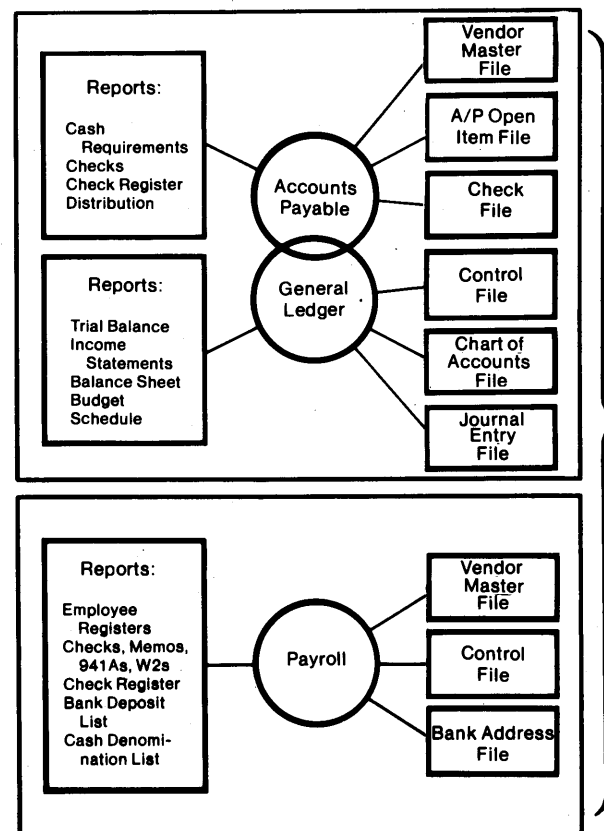
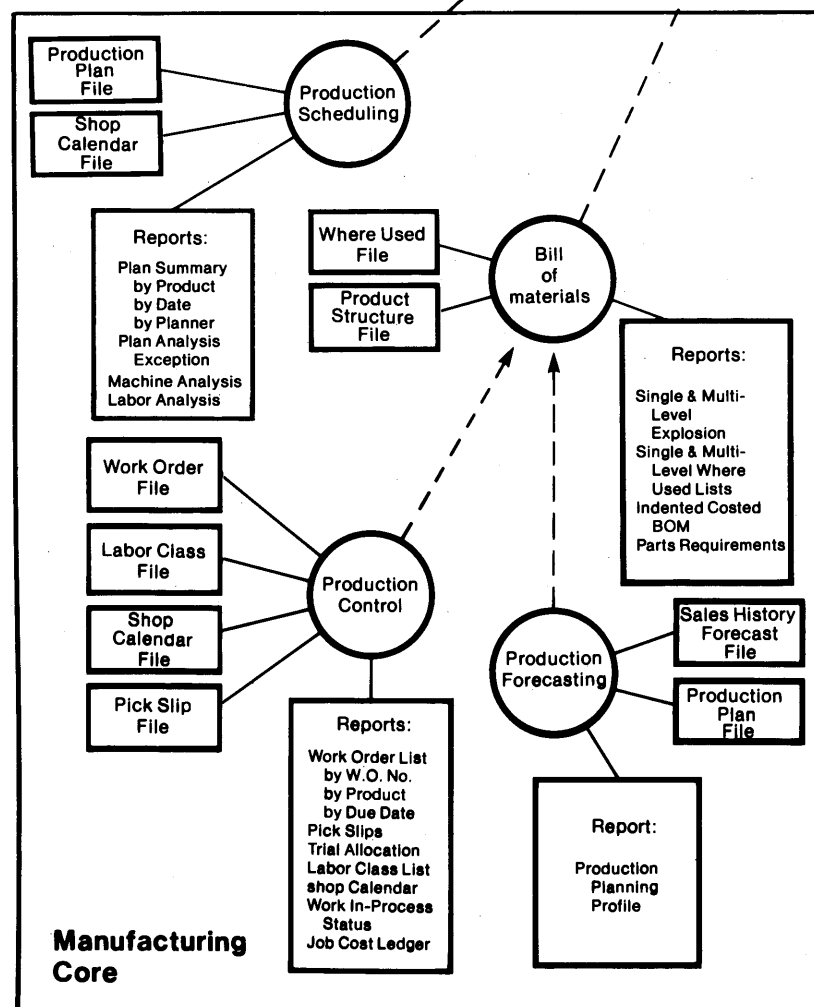
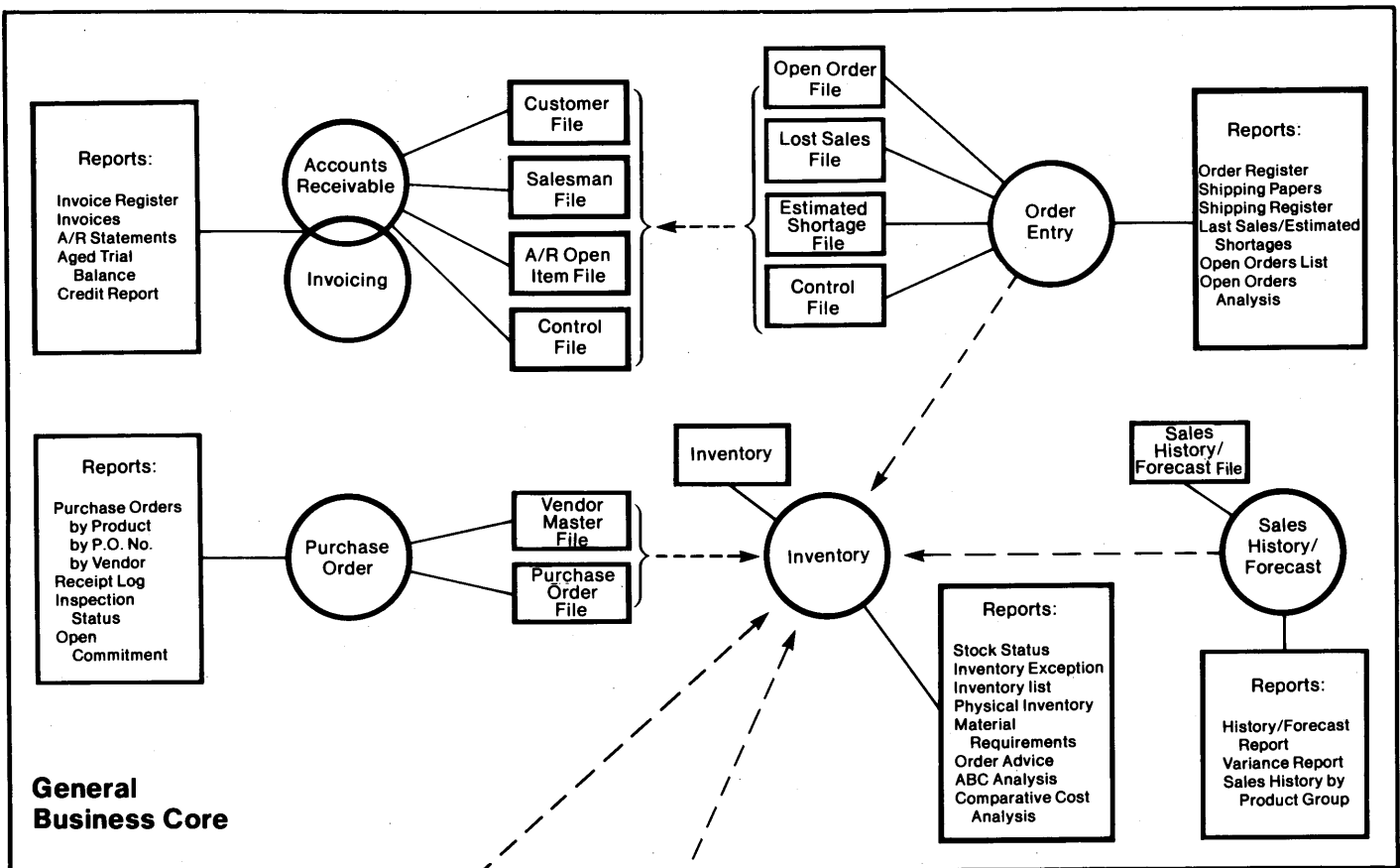
The complete GBS/MBS Release 1 system consists of general business modules, manufacturing modules, utilities to perform backup procedures and system maintenance functions, and file reorganization programs.

The General Business core modules (Order Entry/Processing, Invoicing and Receivables, Purchase Order, Material Control, and Sales History/Forecast) provide basic accounting and inventory requirements. These modules are integrated applications and must be purchased as a whole. The optional General Business modules (Accounts Payable/General Ledger, and Payroll) are accounting applications that can be purchased in addition to the general business core. Together, these general business modules serve as a complete and efficient accounting control system for the small- to medium-sized company.

The Manufacturing core group (Bill of Materials, Production Scheduling, Production Control, and Production Forecast) can be added to, and must be used in conjunction with, the General Business core modules. The Manufacturing core modules are also integrated applications that cannot be purchased separately. These modules give manufacturers a comprehensive and efficient material control system and precise, up-to-date management information concerning each phase of the manufacturing process. The Manufacturing core modules are flexible enough to adapt to the needs of both make-to-stock and make-to-order manufacturers.

The optional General Business modules (Accounts Payable/General Ledger, and Payroll) may be purchased in addition to the General Business and Manufacturing core modules to satisfy the full spectrum of accounting and material control requirements.

Figure 2-1 illustrates the relationship between the stand-alone and dependent applications.



Optional Modules

← = Dependent Application

Figure 2-1. Integrated Applications

Multi-Company Capabilities

Over 200 companies can be individually processed on one system. Companies are added through the INIT program (using unique file name conventions), which allows the consultant to either set up separate files for each company, or specifies that certain files be shared between companies while other files remain separate (refer to Section 1.2).

System Modification

Apart from the standard specifications determined during initialization, several sections of GBS/MBS Release 1 can be modified during installation to satisfy individual user needs. Some examples follow.

- New fields can be added to records.
- Reports can be reformatted, and additional lines and columns can be created.
- A history file can be built into the control file.
- Field lengths (i.e., name and address lines) can be expanded or decreased.

2.3 ACCURACY

Extensive verification prompts accompany all data entry programs. This feature, combined with the Change and Delete options in the maintenance programs, assures accurate results.

During maintenance, the program name and the appropriate record ID are displayed at the top of the CRT screen. All fields are also displayed, and each entry appears in its proper position (field) as it is entered. All entries/fields are identified by line numbers, and entries can be changed or voided during initial record creation by entering the assigned line number. The options to change or void entries are automatically offered before records are written to the files.

Some GBS/MBS Release 1 programs notify the operator of potential error conditions before writing records to files (i.e., unbalanced debits and credits during journal entry). When entries exceed the system-specified field length or dollar amount, the system displays the correct entry range and instructs the operator to enter the corrected data.

2.4 EASE OF USE

From an operator's point of view, the most outstanding feature of the GBS/MBS Release 1 software is simplicity. Processing begins with organized menus. Programs are listed in the recommended sequence of operation. Clear prompts and audio signals help to guide operator processing. Reports and screen displays are available on request at all times, and two logical program exits allow the operator to stop processing without damaging data or interrupting the processing flow.

2.5 SECURITY

GBS/MBS Release 1 has several data security features. The audit reports keep the operator up to date on all changes, additions, and deletions of data. Since these reports show the condition of the files before and after maintenance and transaction processing, any erroneous activity can be easily detected and corrected as necessary.

During initialization, the consultant can specify that certain programs and files be protected by passwords. This feature is especially useful in both the Sales History/Forecasting module to ensure integrity of accumulated information, and the Accounts Payable/General Ledger system for the protection of such financial reports as income statements, budget reports, and balance sheets.

Disk backup is a fast, easy procedure to ensure data integrity. All data should be copied at regular intervals to removable media. Data can be stored indefinitely on the system, but security is guaranteed when the user adheres to a regular disk backup schedule. Precise backup procedures vary, depending on the available hardware. Refer to the appropriate hardware manual for further information on backup procedures.

CHAPTER 3 HARDWARE

3.1 OVERVIEW

This chapter provides general information on the hardware used with GBS/MBS Release 1. For further details regarding the equipment described in this chapter, the following manuals should be referenced.

- 2200LVP Introductory Manual
- 2200MVP Introductory Manual
- Wang BASIC-2 Language Reference Manual
- Wang BASIC-2 Disk Reference Manual
- Model 2236DE Interactive Terminal User Manual

A separate user manual is also available for each 2200-compatible printer, containing instructions for mounting paper, forms, and tapes (refer to Section 3.3).

GBS/MBS Release 1 is written in the BASIC-2 programming language to run on Wang's 2200 series multiprocessing hardware. BASIC-2, a version of standard BASIC, has been enhanced to be more suitable for commercial data processing. The advantages of Wang's interpretive BASIC-2 language include the following.

- Large memory requirements are eliminated. Interpretive programs are two to three times smaller than source programs.
- No time-consuming compilations. Syntax checking occurs as programs are entered into the system.
- Low system overhead. Execution is permitted without overlaying programs and data.

As the user's demands increase, 2200 series computers can be upgraded to facilitate the use of more terminals, printers, and/or disk storage without major revisions to the GBS/MBS Release 1 software. (Refer to either the *GBS/MBS Accounting Core Technical Guide* or the *GBS/MBS Manufacturing Core Technical Guide* for information on hard disk and floppy diskette conversions, and hardware upgrading procedures.)

3.2 THE INTERACTIVE TERMINAL

Figure 3-1 illustrates the standard terminal used with the 2200 Series product line. The terminal consists of an easy-to-read 24-line x 80-character CRT screen, a typewriter-style keyboard, and a 10-key numeric pad. Frequent and easily understood prompts help the operator enter data; the familiar keyboard helps to make input fast and easy.



Figure 3-1. The Interactive Terminal

Additionally, the terminal is equipped with 16 white Special Function Keys (SFKs) at the top of the keyboard, used by GBS to access and exit programs and menus. Since each of these keys may be pressed in conjunction with the SHIFT key, a total of 32 SFKs is available, numbered 0-15 and 16-31. Simultaneously pressing a key numbered 0-15 and the SHIFT key accesses keys 16-31.

Several special terminal features greatly enhance the GBS/MBS Release 1 software. Character attributes such as bright intensity, reverse video, blinking, and underscoring are used to attract the operator's attention to specific details on the CRT. Box graphics are used to highlight menu titles. The keyboard is equipped with repeating keys to speed up editing during maintenance, and to assist during entry of IDs with duplicates of the same character (i.e., Product ID 10000000).

One of the most significant features of the terminal is the ability to produce screen dumps. When a printer is attached to a local terminal, any screen display can be printed exactly as it appears on the CRT.

3.3 PRINTERS, SPECIAL FORMS, AND VERTICAL FORMAT TAPES

Printers

Any 2200-compatible printer with a 132-character line length can be used with GBS/MBS Release 1 software. The 2200 Series product line hardware is designed to support one system printer, accessible by all operators. In addition, each terminal is capable of supporting one terminal printer for exclusive use. A separate user manual is available for each 2200-compatible printer.

Special Forms

The following types of continuous-feed forms are available to GBS/MBS Release 1 users (as models).

- Invoices
- Accounts Receivable Shipping Papers
- Accounts Receivable Statements
- Accounts Payable Checks
- Payroll Checks

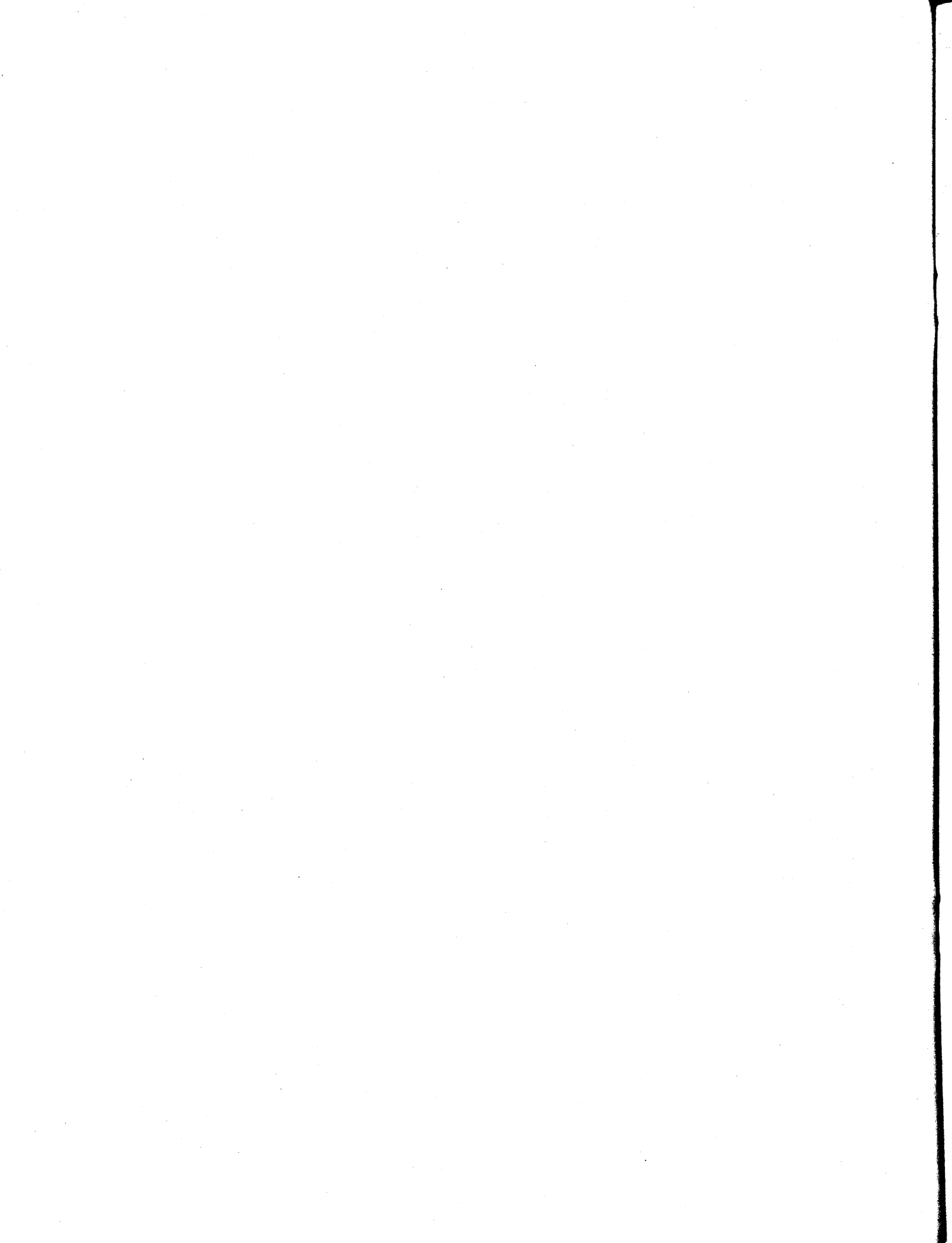
GBS/MBS Release 1 forms present a neat, professional appearance and are designed for convenient filing and mailing.

Vertical Format Tapes

Vertical format tapes are used to dictate logical page breaks and to assure proper alignment of paper and special forms. GBS/MBS Release 1 requires the following vertical format tapes.

- A tape used by the Invoicing, Accounts Receivable (A/R) system for formatting invoices and A/R shipping papers
- A vertical format tape used by the Invoicing, A/R system for printing A/R statements
- A tape used by the Accounts Payable, General Ledger, and Payroll systems for printing checks
- A standard vertical format tape used for all other printouts and reports

GBS/MBS Release 1 instructs the operator to change the vertical format tape and/or mount the proper forms when special tapes/forms are required. The vertical format tapes listed are distributed with the GBS/MBS Release 1 software.



CHAPTER 4 APPLICATIONS

4.1 ORDER ENTRY/PROCESSING

The Order Entry/Processing application processes customer orders and generates the necessary paperwork (order and shipping registers, shipping papers) for subsequent shipping and invoicing activity. The application updates the inventory status of items involved in order processing as the orders are created; completed and verified orders update the Accounts Receivable Open Item file.

Features of the Order Entry/Processing application include the following.

- Complete control over introducing customer orders into the system — The operator specifies all data that is to appear on the order.
- Override of standard terms and tax tables — The operator can use the standard rates, or temporarily modify these rates for individual orders.
- Control over order printing — Orders can be printed individually or in a batch mode using the Print Shipping Papers program.
- Changes to orders after input — Incorrect data can be immediately changed by the operator.
- Multiple inquiry of outstanding orders — The operator can print and/or display individual orders, a range of orders, or all orders.
- Control over shipping confirmation — The operator can ship partial orders.
- Control over daily report printing — Managerial reports, order register, shipping papers, and shipping registers can be printed at any specified time.
- Entry of dropped shipped orders — The customer can be billed at one address and have products shipped to up to 380 different Ship-To addresses.
- Automatic backorder filling — Backorders or future orders can be automatically released based on available inventory.

The Order Entry/Processing application also includes the following reports.

- **Estimated Shortages Report** — Prints, in product number sequence (in detail or summary form), items for which shortages occurred as a result of order entry.
- **Lost Sales Report** — Indicates, in summary or detail form, products cancelled or not backordered.
- **Analyze Open Orders Report** — Breaks down the current status of the Open Order file for all dates or a specified range of dates, and can be used when determining if modifications should be made to purchasing or manufacturing schedules.

4.2 INVOICING AND ACCOUNTS RECEIVABLE

The Invoicing and Accounts Receivable application processes and posts invoices and accepts cash receipts; ages the A/R Open Item file and calculates service charges; prints Aged Trial Balances, A/R statements, and credit reports; and purges the A/R Open Item file of deleted items. This application also provides maintenance programs for the customer and salesmen files; and inquiry/list programs for the customer, salesmen, and the A/R Open Item files.

Features inherent in the Invoicing and Accounts Receivable application include the following.

- Effectively utilized in conjunction with the Order Entry/Processing application — Debit and credit memos and over-the-counter cash sales can be entered effectively.
- Used for data entry in both a post-billing and pre-billing environment — All invoices, as well as debit and credit memos, can be entered.
- Control over invoice printing — Invoices can be printed from the Current or Old Invoice Transaction file for either individual invoices, a range of invoices, or all invoices.
- Both open item and balance forward processing is available — A special code in the Customer master record determines the customer type.
- Automated distribution of payments — Payments are operator applied, thus easing postings.
- Credit reports and calculation of service charges — Provides management with the information necessary to control open receivables and customer accounts.
- Selective printing of statements and aged accounts receivable reports — The operator specifies when reports are to be printed.

The Enter Invoices program allows the user to override the standard terms of 2%/15, net 30 by entering alternate terms for individual items; the default terms can be modified by the installing software vendor. Product information for an invoice line item is automatically obtained from the Inventory file. Maintenance to both the Customer file and Salesmen file takes immediate effect. Customer and salesmen master information is readily available in both hard copy and/or screen display.

Cash receipts posted to the A/R Open Item file may be distributed to one or more invoices. The A/R Statement and Aged Trial Balance are list programs using the sequential Aged Open Item file and the Customer master file. Month-end procedures delete fully paid invoices from the A/R Open Item file and generate various Invoicing and A/R reports.

4.3 PURCHASE ORDER

The Purchase Order application facilitates order tracking and expediting for critical materials by reflecting estimated delivery times which, in turn, provide a means of generating time-phased availability information. Operators can enter, modify, delete, and inquire about purchase orders; monitor the receipt of goods through quality control; generate open commitment reports on scheduled deliveries; determine from where orders originated; and estimate material costs based upon prior orders.

Additional features of the Purchase Order application include:

- Serving as a central source for tracking purchasing and receiving activity
- Providing management with timely information on all phases of the purchasing cycle
- Allowing individual purchase orders to be easily maintained
- Allowing new vendors to be easily added and modifications to existing vendor records through vendor maintenance.

The following four types of reports are provided with the Purchase Order application.

- Purchase Order Report — Provides a view of the status of purchase orders, including partial receipt data, an estimation of incurred expenses based on last order activity, and an expected due date. This report can be printed by product, by purchase order number, or by vendor.
- Purchase Order Receiving Log — Lists all items received within a specified time period.
- Inspection Status Report — Provides a list of orders on file for a specified product ID, and the quantity received, inspected, accepted, and rejected.
- Purchase Order Commitment Report — Reflects outstanding cash outflow for procured materials.

4.4 MATERIAL CONTROL

The Material Control application performs standard inventory functions such as transaction entry, stock status, and ABC analysis (classification of inventory items in decreasing order of annual dollar volume). The application also prints physical inventory sheets; maintains, controls, and reports upon the current status of balances in the Inventory master file; and automatically analyzes inventory items in order to make recommendations concerning inventory control and reorder strategies based on order points, lead times, and projected availability.

Additional features of the Material Control application include:

- Inventory file maintenance, which allows additions, changes, and deletions to the inventory
- Regeneration of material requirements based on operator-specified dates for either individual products, a range of products, or all products
- Projected availability status for either individual products, a range of products, or all products
- Movement control, which alerts management to inactive or low stock items
- Complete physical inventory recording scheme
- Re-order advice, which provides management with a method to recommend procurement of items with production demands
- Shrinkage factors to be accessed during manufacturing applications
- Excess inventory reporting
- Comparative cost analysis.

At operator-specified intervals, the application uses the Production Plan, Work Order, Customer Order, and Purchase Order files to create the Supply/Demand file. The Supply/Demand file serves as a chronological ordering of supply and demand relationships, and is the basis for a series of reports that analyze the material requirements of each inventory item. The available reports include the following.

- Summary Stock Status
- Inventory Exception Report
- Physical Inventory Sheets
- Physical Inventory Report
- Material Requirements Summary Report
- Reorder Advice
- ABC Analysis
- Excess Inventory Report
- Comparative Cost Analysis

These reports contain reorder advice that is particularly important to the manufacturing planning department and the purchasing group. Anyone, however, can receive the actual reports. GBS/MBS Release 1 uses an average cost system that maintains standard and last costs. The comparison cost report provides a variance analysis of last, average, and standard costs.

4.5 SALES HISTORY/FORECAST

The Sales History/Forecast application captures sales history data from the Inventory master file for a specified period of time. The information is then used to forecast anticipated product demand for future time periods.

Additional features of the Sales History/Forecast application include the following.

- Three Year Sales History Retention
- Original/Revised/Future Forecasts
- Two Mathematical Derivatives for Forecasting
- Flexible Variance Analysis
- Sales Analysis by Product Group

The Sales History/Forecast file holds the actual sales history for three years in monthly buckets. The file also holds original, previous, and revised forecast figures in monthly buckets. Also available is a Sales History/Forecast Report to list the figures contained in the file. The variance reports will reflect the variances between two years of selected history or forecasting information and calculate the percentage difference of each months figures. The Sales History by Product Group Report is a sales history listing for either all indicated product groups or an operator- selected product group.

4.6 ACCOUNTS PAYABLE, GENERAL LEDGER

Accounts Payable and General Ledger are stand-alone applications containing the following features.

- Cash Requirements Analysis
- Multiple Check Selection Criteria
- Budget Analysis
- Balance Sheets
- Income Statements
- Schedule Report Generator
- Accounts Payable Distribution to Ledger

The A/P system enables the company to pay bills and to post invoices, credit memos, debit memos, and external payments to the G/L Chart of Accounts. A/P transactions (journal entries) can be batched for the old or new fiscal period, and can be distributed over a maximum of ten accounts. After each transaction, the A/P Open Item file is updated, and a system-generated credit is posted to the A/P Trade Account. The operator-specified Trade Account number is stored in the G/L Control file. Items can be selected for payment by due date, by vendor due date, or by vendor invoice number.

An option of the Open Item Display/Print program provides a list of items selected for payment. This report can be printed prior to check printing, and check registers provide totals paid after checks have been printed; paid invoices are purged from the files.

Journal entries, such as payroll and A/R transactions, can be made directly through the G/L system. Entries can be batched for the old or new fiscal period; standard journal entries that are usually identical from one month to the next can be created or changed. When adjusting a journal entry, the correct entry is accessed by the system-assigned transaction number. The operator is notified if journal entries are out of balance. Amounts cannot be changed in existing entries, but adjusting entries can be created through the G/L system. When entries are posted to the G/L Chart of Accounts, current and year-to-date totals are updated, and financial reports are printed.

Reports tailored to company needs can be produced. These Schedule Reports provide a means of tracking trends not readily apparent through conventional reporting. For example, overhead costs can be listed by assigning identical schedule codes to each relevant account in the Chart of Accounts. A maximum of five schedule reports can be supported by each account.

Files are cleared at month- or year-end. The system assigns an asterisk to the files that should be cleared, or to the accounts that should be closed, at the end of a period. A lockout feature prevents clearing before the appropriate date stored in the control file. Date specifications for yearly and monthly accounting periods can be adjusted through the Control File Maintenance program.

The following reports are provided by the A/P, G/L application.

- Cash Requirements
- Checks
- Check Registers
- Distribution Reports
- Trial Balances
- Income Statements
- Balance Sheets
- Budget Reports
- Schedule Reports

4.7 PAYROLL

Payroll is a stand-alone application containing the following features.

- Multi-State Payroll
- Government Reporting
- Check Reconciliation
- Personnel Reporting

The Payroll application provides three payment methods (cash, check, and direct bank deposit) for hourly, hourly-exempt, and salaried employees. Memos to accompany payment are produced for distribution to employees and/or their banks; check registers, bank deposit lists, and cash denomination lists supply the employer with hard-copy reference to totals paid in each category.

Each employee record in the Employee master file has capacity for 15 earning and deduction types and 10 tax types. The Payroll control file contains 30 description fields for each type of earning, tax, and deduction.

Each description field in the control file is assigned a consultant-modifiable calculation algorithm. For example, if the earning calculation for Line 2 in the control file is "earning units times 1.5," the logical field description would be "Overtime." The Tax Switches section of the control file allows the operator to specify for each earning unit whether or not it is taxable.

Eight standard pay cycles are set up in the control file as follows.

1. Weekly
2. Bi-weekly
3. Bi-monthly (10th and 20th)
4. Mid-month (15th)
5. End-of-month
6. Quarterly
7. Yearly
8. Vacation

The operator can turn these indicators on or off, depending on the pay cycle, by entering Y or N in the appropriate fields.

The line numbers assigned to description fields in the control file are entered into employee records as codes to identify earning, tax, and deduction units unique to each employee. The line numbers assigned to pay period indicators in the control file are entered into employee records as frequency codes for each earning, tax, and deduction type. Taxes are deducted automatically according to the tax switches, FICA percentage, and wage limit set up in the Payroll control file, and are based on the employee's marital status, number of dependents, and salary/rate.

In operator-specified situations, transactions can be processed between cycles; a program is provided to manually adjust totals when handwritten transactions have occurred and not been recorded during a standard pay period. Vacation pay is handled by a special feature that combines vacation and regular pay without distorting tax amounts.

At the end of a quarter and/or year, a separate cycle must be executed to process government forms (W-2s and 941As) and to clear year-to-date and quarter-to-date fields. This cycle is run after the last completed pay cycle of the period.

GBS/MBS Release 1 Payroll provides the following reports.

- Employee Registers
- Checks, Memos, W-2s
- Check Registers
- Bank Deposit Lists
- Cash Denomination Lists

4.8 BILL OF MATERIAL

The Bill of Material (BOM) application is utilized in conjunction with the remaining MBS core applications (Production Scheduling, Production Control, Production Forecast) and must be integrated with the GBS core.

Some of the features of the BOM application include the following.

- Explosion (up to 31 levels)
- Implosion
- Low-Level Coding
- Effectivity Dates
- Scrap Factors
- Mass Change and Delete Capabilities
- Set Longest Lead Times
- Gross Requirements Analysis

The main function of BOM is to break assembly products down into component lists and to produce reports. GBS/MBS Release 1 produces a costed assembly explosion that is especially useful in product design and feasibility studies.

In addition, BOM reports provide gross requirements lists. These lists allow the operator to determine gross material requirements, and to compare the required amounts with the amounts in stock. BOM also provides a means of updating effectivity information in the BOM file as engineering and design changes are implemented.

The system assigns Level codes (0-31) to assembly products and components within assemblies. Level 0 products are end items not used in any other assembly. A bicycle is an example of a Level 0 end item; wheels are components. Wheels, in turn, could be broken down into components such as rims, spokes, and ball bearings. Any product with more than one part can be designated as an assembly to be broken down into components by the BOM.

Every manufactured product can benefit from the BOM application. Component costs can include raw materials, finished goods, overhead, and advertising.

The BOM application provides the following reports.

- BOM Parts Explosions
- Indented Costed BOM
- Single- and Multi-Level Explosions
- Parts Requirements
- Single- and Multi-Level Where Used Lists

4.9 PRODUCTION SCHEDULING

The Production Scheduling application is utilized in conjunction with the remaining MBS core applications (Bill of Material, Production Control, Production Forecast) and must be integrated with the GBS core.

Some of the inherent features of the Production Scheduling application include the following.

- Master Production Scheduling
- Planned Orders (Component Simulated Reservations)
- Firm Orders (Component Allocation)
- Calculation of Start/Firm Dates
- Schedules by Planner
- Labor Capacity Analysis
- Machine Capacity Analysis

The Production Scheduling application controls the operation of the Production Schedule, a collection of proposed manufacturing work orders. These orders are identified by date and quantity, and are maintained by user-generated transactions establishing quantities and completion dates. The orders may be specified as either planned or firm. The transactions are treated as additions, changes, or deletions in quantity for a specified date.

The Production Scheduling application provides the following reports.

- Production Plan Analysis
- Production Plan by Date
- Production Plan by Planner
- Production Plan by Product
- Labor, Machine Analysis

4.10 PRODUCTION CONTROL

The Production Control application is utilized in conjunction with the remaining MBS core applications (Bill of Material, Production Scheduling, Production Forecast) and must be integrated with the GBS core.

Some of the features of the Production Control application include the following.

- Job Costing (with Ledgers)
- Trial Allocations
- Work Order Entry (from Production Schedule)
- Average Costing
- Work In Process (W.I.P.) Status Control
- Automated Shortage Replenishment with Pick Slip Generation
- Shop Calendar (3 years)

The Production Control application supplies a means of creating and maintaining released work orders. The application also helps monitor the ongoing status of those work orders. Operators can create work orders by releasing orders from the Production Plan file (orders proposed by production scheduling), or can create orders on demand. Both procedures explode the assembly bill of material to determine component and quantity requirements, and calculate scrap factors and total assembly shrinkage. The system then allocates the available components, creates a work order, and generates a pick slip. The application presents a production control capability based on chronological sequence by due date of all orders currently on the floor, as well as anticipated orders based on start date.

The Production Control application provides the following reports.

- Work Order List by Work Order Number
- Work Order List by Product ID
- Work Order List by Due Date
- Pick Slips
- Trial Allocations
- Labor Class List
- Shop Calendar
- Work in Process Status Report
- Job Cost Ledger

The first three reports are sequenced by work order number, product ID, and/or due date. Each report reflects the current status of the work order, the status of the pick slip, an update of the quantity built, and the charges generated against the work order for current and year-to-date periods. Each report has a report summary of period and year-to-date totals. The Trial Allocations report is a simulation report that estimates component availability on proposed work orders.

The Job Cost Ledger allows manufacturers to track the cost of jobs by showing prior work-in-process amounts; and current open, current closed, and total work-in-process.

4.11 PRODUCTION FORECAST

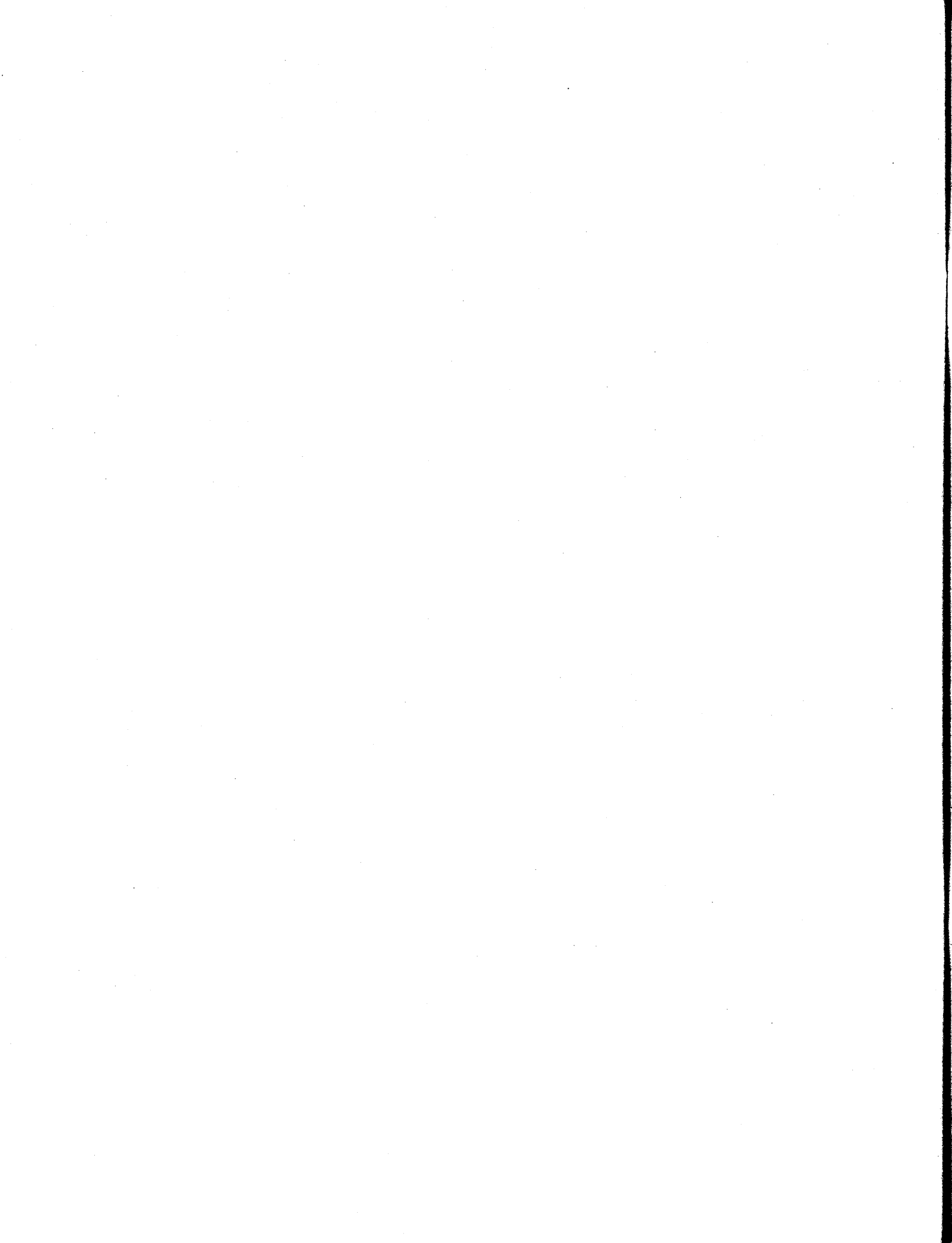
The Production Forecast application is utilized in conjunction with the remaining MBS core applications (Bill of Material, Production Scheduling, Production Control) and must be integrated with the GBS core.

Features of the Production Forecast application include the following.

- Automatic Generation of Time Planned Forecasted Production Orders
- Variance Analysis to Master Production Schedule

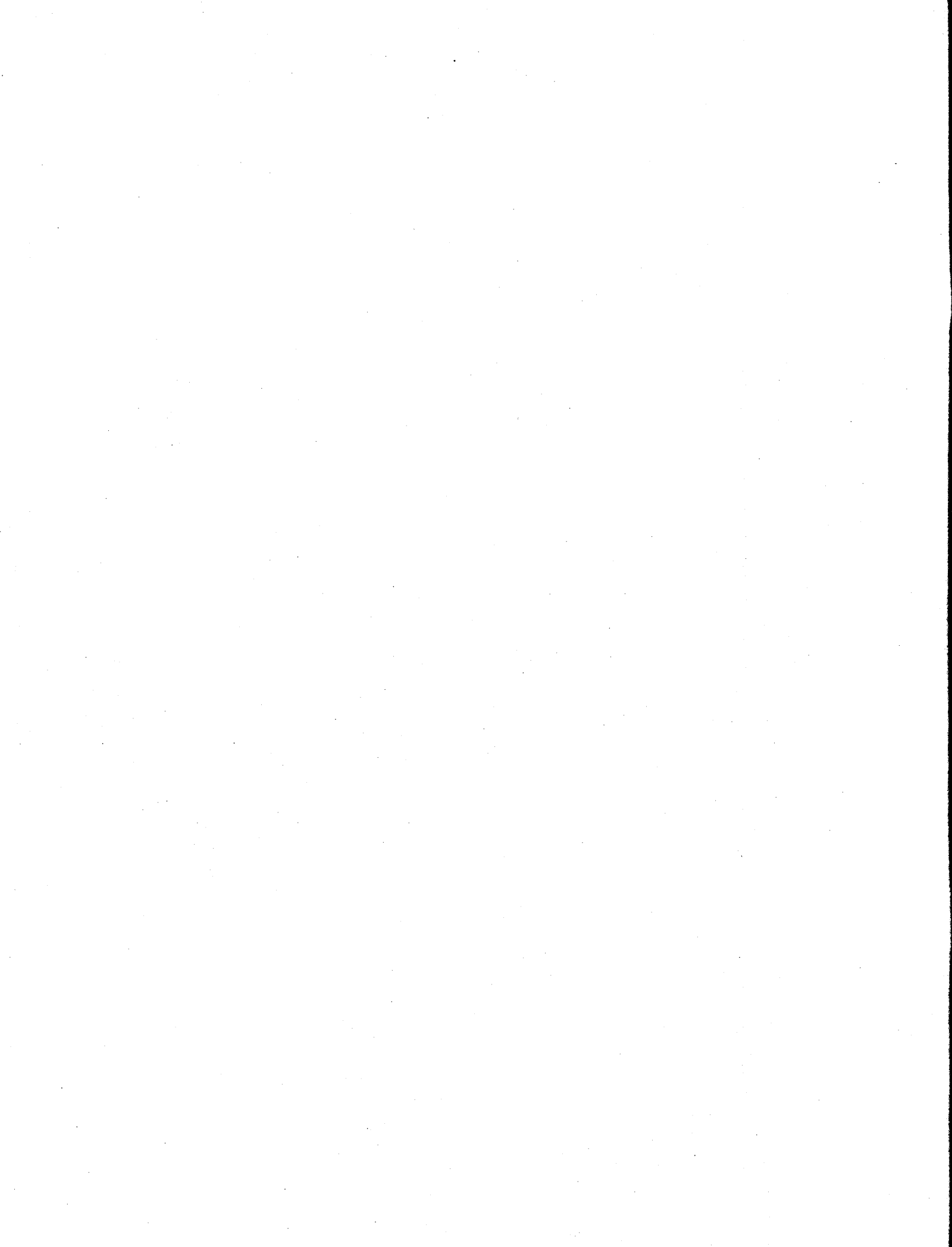
The Production Forecast application provides a means of calculating time-phased net requirements by exploding demand through a bill of materials and netting each assembly and subassembly against the available inventory. The application can also simulate the effect of a new demand profile, developed from actual sales and forecast figures, against an existing production plan.

The Production Forecast application generates a Production Planning Profile report, which gives a comparison of new demand against scheduled material receipts on a time-phased, subassembly basis.



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