GENERAL LEDGER

By   LON POOLE · MARY BORCHERS

GENERAL LEDGER
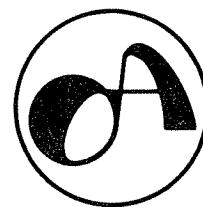
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INTRODUCTION

You can now buy a computer for a few thousand dollars that is just as powerful as one that cost ten or twenty times as much just a few years ago. Today's inexpensive computers can certainly handle most of the accounting chores of any small business. But the computer itself is only part of a total automated accounting system. The other part is a set of programs that tell the computer what to do. In the days when computers themselves were very expensive, programs that were fairly expensive still constituted only a small part of the price tag for a complete automated accounting system. Today, the programs can easily cost a small business as much as the computer itself. Until recently, this has been a problem with no solution. This book is part of the solution.

This is one in a series of books published by Osborne & Associates that provides complete source listings and documentation for business data processing programs. This is not another book on how to write computer programs; the programs are already written. The book includes source listings for ten programs written in the widely used computer programming language BASIC.

These General Ledger programs are a direct result of Osborne & Associates' five years of experience serving as software consultants to small and medium-sized businesses. We developed these programs on a Wang Laboratories 2200 minicomputer, so the listings in the book are in Wang Laboratories extended BASIC. The programs have been installed, user-tested, and updated over the years so that they are now basically error-free.

CONTENTS

Most of this book is devoted to extensive system and program documentation. The first chapter provides an overview of the General Ledger system structure and philosophy. It analyzes program capabilities, limitations, and flexibilities. Chapter 2 describes data file structure, including file content, uses, and accessing methods. Chapter 3 is a guide to managing your General Ledger using the programs in this book. It discusses what the programs do, how they interrelate, and when to run each one. Chapter 3 also correlates this General Ledger system with the Accounts Payable/Receivable systems presented in the Osborne & Associates publication *Accounts Payable and Accounts Receivable.* Chapter 4 is a complete user's guide with step-by-step instructions for operating each program, sample CRT screens, sample printouts, and a description of how each program works.

Chapter 5 describes some special features of Wang Laboratories extended BASIC. **Unless your BASIC is compatible with Wang extended BASIC, you will have to convert the programs to your BASIC.**

While you are changing the programs to be compatible with your BASIC, you will probably want to customize them so they match your accounting procedures more exactly. Chapter 6 discusses some of the ways you can do this.

Chapter 7 contains the specific information you will need to install the General Ledger programs. It provides details on file initialization and CRT display layouts. It also includes step-by-step operating instructions for a utility program to set up CRT masks.

The source listings occupy the last third of this book. Comments (REMARKs) on specific program lines appear in the margin next to the listings. Also, you will find computer-generated cross-references showing where the line numbers, variables, and subroutines are used in each program.

A programmer installing the General Ledger system should read the entire book. Non-programmers who need to know how the programs interrelate and how to operate each program can read just Chapters 1, 3, and 4. Those who only need to know how to operate the programs can read just Chapter 4.

OTHER BOOKS IN THIS SERIES

This book refers to two of the other books in the BASIC program series published by Osborne & Associates. *Payroll With Cost Accounting* contains complete source listings and documentation for a Payroll system with labor distribution cost accounting. *Accounts Payable and Accounts Receivable* contains complete source listings and documentation for Accounts Payable/Receivable reports and account maintenance.

PUBLICATION ERRORS

The programs in this book have been in daily operation for several years. Additionally, they were thoroughly tested prior to publication, so they should be error-free. Still, there is no way to prove any computer program has no errors. **If you find any errors in the program source listings or any other part of this book, please send a written description to the authors, in care of Osborne & Associates, at the address printed on the back cover of this book. Please include a description of your correction, if you have one.**

HOW THIS BOOK HAS BEEN PRINTED

Notice that text in this book has been printed in both boldface type and lightface type. This has been done to help you skip those parts of the book that cover subject matter with which you are familiar. You can be sure that lightface type only expands on information presented in the previous boldface type. Therefore, read only boldface type until you reach a subject about which you want to know more, at which point start reading the lightface type.

Chapter One
SYSTEM CAPABILITIES

Put all of the programs listed in this book together and you will have a complete computerized General Ledger system. It performs most of the tasks normally associated with computerized versions of General Ledger. You will notice that there is not just one program to perform these tasks. That is because we split up the tasks so that each program performs only part of the overall processing. You can still think of these programs collectively as one large, multi-faceted General Ledger program. In fact, you could even implement them as one program if you had enough computer memory. However, most small computers do not have enough memory. That is why we have divided the tasks among different programs. **Figure 1-A gives an overview of General Ledger. Table 1-B lists the individual programs.**

There is one program, Menu, that just controls which of the tasks will be performed. You select the task you want from a numbered list displayed by the Menu program, and it loads and executes programs to perform the task you selected. When the selected program finishes its processing, it reloads the Menu so you can choose another task. This technique of using a controller program makes General Ledger look very much like one large program — at least to the person operating it.

Whenever you start up the General Ledger system, you will have to correctly enter a password before you can proceed with task selection. This protects the General Ledger from accidental or malicious tampering.

The General Ledger accepts postings to the various accounts from three external sources: Payroll, Accounts Payable, and Accounts Receivable. You can also enter postings directly. This allows you to adjust erroneous postings from external sources, and to make postings to accounts normally unaffected by Payroll, Accounts Payable, or Accounts Receivable. Please note that the Accounts Payable/Receivable programs described in the Osborne & Associates publication *Accounts Payable and Accounts Receivable* generate postings to the General Ledger described in this book, but the Payroll programs described in the Osborne & Associates publication *Payroll With Cost Accounting* do not.

In the final analysis, the financial statements are what a General Ledger is all about. **With the programs in this book, you can format your own balance sheet and income statement.** You have complete freedom to place titles and headings where you want them, skip lines or pages between accounts, and generate subtotals and totals throughout the reports — up to ten levels if you need them. You can print the balance sheet and income statement for the current month, current quarter, or any of the previous three quarters. This year's or last year's totals are also included on the income statement. They do not appear on the balance sheet, since balance sheet account totals are by nature running totals, hence yearly totals.

In addition to the balance sheet and income statement, you can print a trial income statement and trial balance. There is also a special report that lists the current account balance for selected accounts.

Table 1-B. General Ledger Programs

Number	Name
0	**Menu** -- Choose which of the General Ledger programs you wish to run.
1	**General Information File Maintenance** -- Change today's date, the company name, company address, or fiscal year.
2	**Direct Posting** -- Enter postings to any account. Optionally print direct postings.
3	**Posting Update** -- Update General Ledger accounts with external postings and direct postings.
4	**Reports** -- Print the trial income statement, trial balance, income statement, balance sheet, or special report. Also move totals at end of month, quarter, or year.
5	**Account File Maintenance** -- Add new accounts. Change account name, report parameters, totals, etc.
6	**Account File Reorganize** -- Recover wasted space caused by record deletion in the Account file.

(Not shown: General Information File (company name, date))
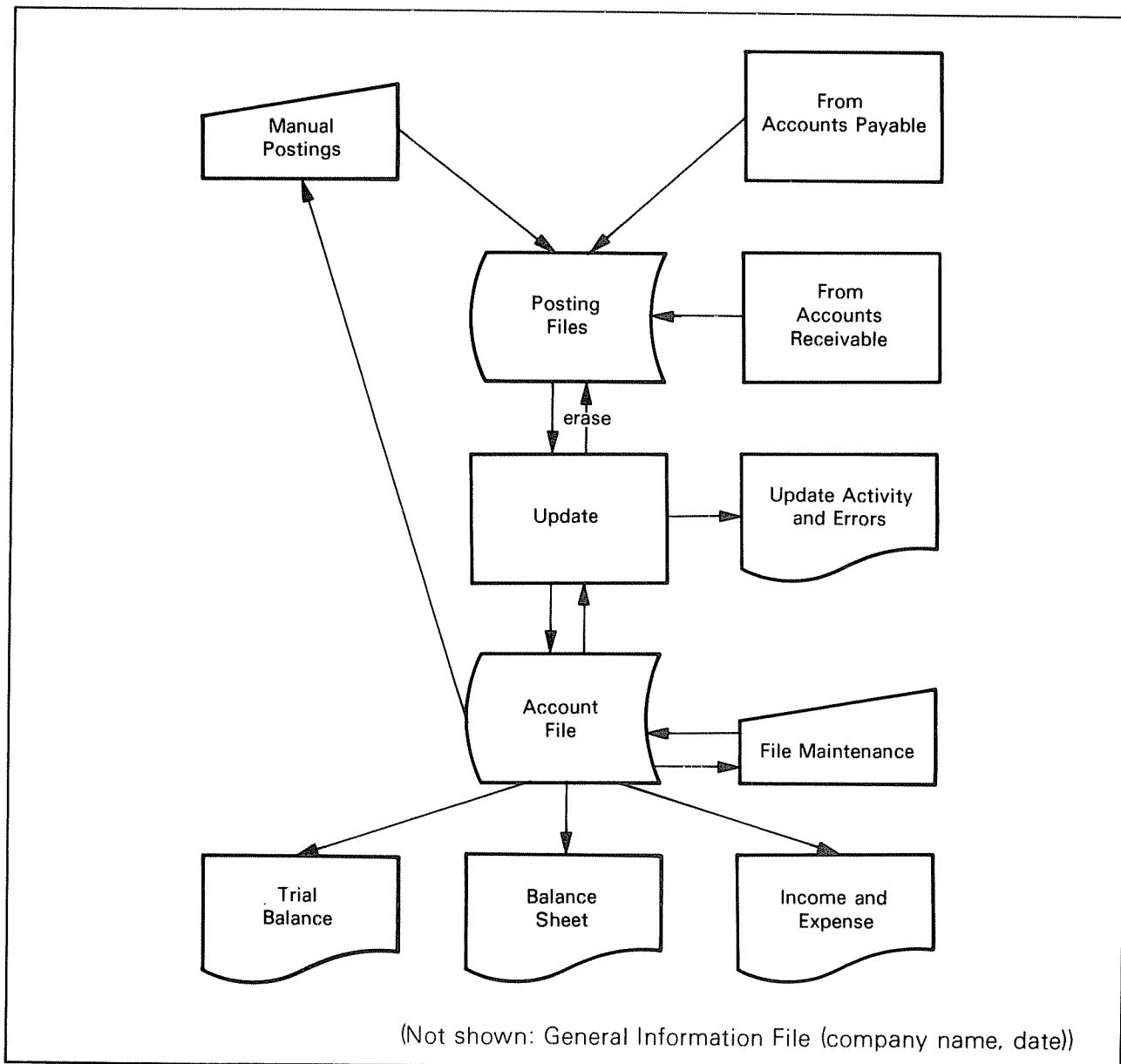
Figure 1-A. General Ledger System

Chapter Two
DATA FILES

All General Ledger data is organized into a hierarchical structure composed of fields, records, and files. A field is any single data item, a record is a group of fields that are related to one subject, and a file is a collection of like records. For example, individual data items such as Account Number, Account Name, and Monthly Total are some of the fields in an Account record, and all the Account records taken together comprise the Account file.

General Ledger expects its data files to be stored on some kind of random access storage device, such as a disk drive. Tape cassettes and other sequential storage media will not work.

Data is transferred to and from the disk in complete records, one record at a time. To use a particular field, you must load the entire record that contains it. For example, to obtain an account's Monthly Total field you must load the entire Account record from the Account file into the computer's memory. You can then extract the monthly balance from the Account record to display it, print it, etc.

FILE ACCESSING METHODS

There are several ways to locate a specific record within a file. The General Ledger programs use sequential, random, and keyed (indexed sequential) file accessing methods. In many cases, file accessing begins with the first record on the file, proceeds to the second record, then to the third, and so on to the end of the file. This is called sequential file accessing.

Sequential accessing is inadequate for many files. You may need records in a random order; perhaps you will access record 1, then record 25, record 23, and finally record 26. Since a disk can jump around, locating records randomly, limiting the disk to strict sequential accessing makes no sense. Given a record's relative position within a file, the disk can compute the location of the record from the beginning of the file, position itself to that location, and load the desired record into the computer memory. This is called random accessing. When using random accessing, you must either know or be able to arithmetically compute a record's location. Unfortunately, this is not always possible.

There are several ways you can find a record if you do not know its position within a file. Every one of these methods requires each record to be identifiable by a unique code or key. Usually, you will decide that some field or group of fields in the record will form the key. For example, the Account Number field could be the key for the Account file. You can access records by their keys even if the records are completely unordered within the file. One way of doing this is by keeping a separate table of keys to use as a file index. Each entry in the index contains a key, along with the position of that key's record within the file. To access a record, find its key in the index. The accompanying record position points to the actual location of the data record on the disk. We call files that are accessed this way keyed files, and the procedure for accessing them is called keyed file accessing. This type of accessing is sometimes called Indexed Sequential Accessing Method (ISAM).

FILE DESCRIPTIONS

Table 2-A lists the data files used by General Ledger. The description given for each file includes a summary of the file's contents and uses and any special notes that are pertinent.

Table 2-A. General Ledger Data Files

Number	Name	Description	Accessing Methods
1	G/LOF110	**Account** — This file contains the account name, various account type parameters, and account balances	keyed
2	G/LOF020	**External Posting** — This holds postings to the General Ledger from Accounts Payable, Accounts Receivable. etc	sequential
3	G/LOF030	**Direct Posting** — This holds postings entered from General Ledger to adjust errors in external postings, etc	sequential
4	G/IOF010	**General Information** — The first record in this file contains today's date and some data used by the Payroll programs described in the Osborne & Associates publication *Payroll With Cost Accounting*. The second record on this file contains the company name. address, etc	sequential, random
5	CRT3	**CRT Mask** — Each record on this file contains the field labels, descriptions. and explanations that are displayed on the CRT screen and are used as a template for guiding data entry in some programs	random

FILE LAYOUTS

File layouts describing the exact record format for each file used in General Ledger are presented on the following pages. Each layout contains the following items:

DESCRIPTION — The name used to identify the file in this book.

FILE NAME — The name the programs use to identify the file.

UNIT — The address or name of the disk on which the file resides.

NO. OF RECORDS — The number of records in the file.

RECORD SIZE — The number of bytes or characters each record occupies, excluding control bytes added by the computer.

BLOCKING — The number of records in one sector or the number of sectors each record takes, whichever applies.

KEY SIZE/POSITION — The number of bytes the key occupies in the record and its relative position from the start of the record, including Wang format control bytes.

All data is loaded and saved via alphanumeric variables (often arrays). Numeric values are packed into the alphanumeric variables in binary coded decimal (BCD) format. Thus numeric values are stored without spaces, excess trailing or leading zeros, or other cosmetic parts that do not affect the value of the number.

Each field in a record is listed on a separate line of the file layout. The variable name that the programs use to refer to it, its description, and its size are shown. If the field size is prefixed with an A, the field is alphanumeric, with the maximum length specified by the integer suffix. If the field size is prefixed with an N, the field is numeric and the number suffix gives the PACK/UNPACK image. For example, -N9.2 means nine pre-decimal digits and two post-decimal digits. The minus sign means a positive or negative number can be packed. Any number between -999,999,999.99 and 999,999,999.99 can be packed in a -N9.2 image. A -N9.2 field requires six bytes of disk space (each digit takes one-half byte, with one-half for the sign).

With few exceptions, we have left the number of records in a file up to you. There are several things to consider when you are establishing the file sizes. The storage capacity of your disks will impose a practical limit on file sizes. In addition, your computer will only be fast enough to handle a limited number of disks. There is a more detailed discussion of file size factors in Chapter 7.

A program and data file cross-reference table (Table 2-B) shows which data files are accessed by each program, and how the data files are used.

Table 2-B. Program/Data File Cross Reference

DATA FILE

1. ACCOUNT
2. EXTERNAL POSTING
3. DIRECT POSTING
4. GENERAL INFORMATION
5. CRT MASK

PROGRAM

		5	4	3	2	1
0.	MENU	R				
1.	GENERAL INFORMATION FILE MAINTENANCE	R	U			
2.	DIRECT POSTING	R	R	U	R	R
3.	UPDATE		R	U/E	U/E	U
4.	REPORTS	R	R	R	R	U
5.	ACCOUNT FILE MAINTENANCE	R	R			U
6.	ACCOUNT FILE REORGANIZE					U

R – READ   E – ERASE   U – UPDATE

5

FILE LAYOUT

FILE NO.	DESCRIPTION				PAGE
1	ACCOUNT				1 of 1

FILE NAME	UNIT	NO. OF RECORDS	RECORD SIZE	BLOCKING	KEY SIZE/POSITION
G/LOF110	B10	You decide	103	1/sector	4/3

MISCELLANEOUS COMMENTS

Key is Account Number field (packed).

VARIABLE	FIELD DESCRIPTION	SIZE	COMMENTS
L$	Misc., packed as follows:	A42	
L1	Account Number	N5.1	
L2	Sub-account Number	N2	0 = Regular
L3	Account Type	N1 ◄	1 = Title
			2 = Total
L1$	Account Name	A31	3 = Heading
L4	Report Type	N1 ◄	1 = Income Stmt
			2 = Balance Sheet
L5	Normal Balance	N1	1 = Debit; 2 = Credit
L6	Total Level	N1	0 - 9
L7	Extra Line Advance	N1	0 - 8 Lines; 9 = New Page
L8	Sales Account	N1	0 = No; 1 = Yes
L9	Include on Special Report	N1	0 = No; 1 = Yes
D$	Misc., packed as follows:	A60	
D(1)	This Month Total	-N9.2	
D(2)	This Year Total	-N9.2	
D(3)	This Quarter Total	-N9.2	
D(4)	First Previous Quarter Total	-N9.2	
D(5)	Second Previous Quarter Total	-N9.2	
D(6)	Third Previous Quarter Total	-N9.2	
D(7)	Previous Year Total	-N9.2	
D(8)	Unused	-N9.2	
D(9)	Unused	-N9.2	
D(10)	Unused	-N9.2	

FILE LAYOUT

FILE NO.	DESCRIPTION					PAGE
2	EXTERNAL POSTING					1 of 1

FILE NAME	UNIT	NO. OF RECORDS	RECORD SIZE	BLOCKING	KEY SIZE/POSITION
G/LOF020	B10	3600 Max.	14	16/sector	N/A

MISCELLANEOUS COMMENTS

The size of this file plus the size of G/LOF030 must be less than 3600 records.

VARIABLE	FIELD DESCRIPTION	SIZE	COMMENTS
G$(1-16)	Misc., packed as follows:	A14	
P1	General Ledger Account Number	N5.1	0 = Payroll
P2	Source Code	N2 ◄───	1 = Accounts Payable
P3	Date (Month and Day)	N2.2	2 = Accounts Receivable
P4	Reference	N6	3 = General Ledger
P5	Amount	-N7.2	

7

FILE NO.	DESCRIPTION					PAGE
3	DIRECT POSTING					1 of 1

FILE NAME	UNIT	NO. OF RECORDS	RECORD SIZE	BLOCKING	KEY SIZE/POSITION
G/LOF030	B10	You decide	14	16/sector	N/A

MISCELLANEOUS COMMENTS

The size of this file plus the size of G/LOF020 must be less than 3600 records.

VARIABLE	FIELD DESCRIPTION	SIZE	COMMENTS
G$(1-16)	Misc., packed as follows:	A14	
P1	General Ledger Account Number	N5.1	0 = Payroll
P2	Source Code	N2 ◄	1 = Accounts Payable
P3	Date (Month and Day)	N2.2	2 = Accounts Receivable
P4	Reference	N6	3 = General Ledger
P5	Amount	-N7.2	
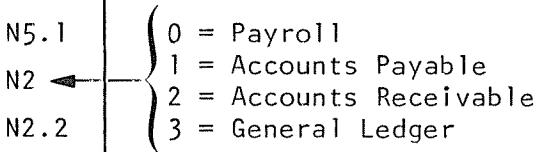
FILE LAYOUT

FILE NO.	DESCRIPTION					PAGE
4	GENERAL INFORMATION					1 of 1

FILE NAME	UNIT	NO. OF RECORDS	RECORD SIZE	BLOCKING	KEY SIZE/POSITION	
G/IOF010	B10	2	129	1/sector	N/A	

MISCELLANEOUS COMMENTS

One company record and one general system record are stored. (This is compatible with file G/IOF010 in *Payroll With Cost Accounting* and *Accounts Payable and Accounts Receivable.*)

VARIABLE	FIELD DESCRIPTION	SIZE	COMMENTS
G1$	Unused	A9	Record 1
G3$	Misc., packed as follows for system information, record 1 only:	A24	Record 1
	Today's Date	N6	Record 1
	Period Start Date	N6	Record 1
	Period End Date	N6	Record 1
	Payroll Number in Month	N6	Record 1
	Day Number in Payroll Period	N6	Record 1
	Unused	A9	Record 1
G1$	Misc., packed as follows for company 1:	A9	Record 2
G1	Company Number	N2	Record 2
G2	Next Check Number	N6	Record 2
G3	Overtime Rate Multiplier	N2.2	Record 2
G4	Hourly Rate	N2.2	Record 2
G5	Fiscal Year Ends	N2	Record 2
G2$(1)	Company Name	A24	Record 2
G2$(2)	Company Address - Line 1	A24	Record 2
G2$(3)	Company Address - Line 2	A24	Record 2
G2$(4)	Company Address - Line 3	A24	Record 2
G2$(5)	Federal/State Tax Numbers	A24	Record 2

FILE LAYOUT

FILE NO.	DESCRIPTION		PAGE
5	CRT MASK		1 of 1

FILE NAME	UNIT	NO. OF RECORDS	RECORD SIZE	BLOCKING	KEY SIZE/POSITION
CRT3	B10	5	1024	4 sectors	N/A

MISCELLANEOUS COMMENTS

    Masks are loaded and displayed four lines (i.e., one sector) at a time.

VARIABLE	FIELD DESCRIPTION	SIZE	COMMENTS
X3$(1)	Mask, Line 1	A64	First Sector
X3$(2)	Mask, Line 2	A64	
X3$(3)	Mask, Line 3	A64	
X3$(4)	Mask, Line 4	A64	
X3$(1)	Mask, Line 5	A64	Second Sector
X3$(2)	Mask, Line 6	A64	
X3$(3)	Mask, Line 7	A64	
X3$(4)	Mask, Line 8	A64	
X3$(1)	Mask, Line 9	A64	Third Sector
X3$(2)	Mask, Line 10	A64	
X3$(3)	Mask, Line 11	A64	
X3$(4)	Mask, Line 12	A64	
X3$(1)	Mask, Line 13	A64	Fourth Sector
X3$(2)	Mask, Line 14	A64	
X3$(3)	Mask, Line 15	A64	
X3$(4)	Mask, Line 16	A64	

Chapter Three
MANAGEMENT GUIDE

Before you can run the programs in this book, you must understand what they can do for you and what information they need from you in order to perform their function. Some programs gather information from you and store it in data files. Other programs interpret, combine, and transfer data between files. Finally, there are programs to extract the processed data from the files and report it back to you.

This chapter provides a general overview of General Ledger processing. It describes how the General Ledger programs work, including when and why you should run each program. It discusses some common errors and what to do about them. You should become familiar with the information in this chapter before attempting to run any programs using the detailed instructions in Chapter 4.

MENU

A special program, called the Menu, controls the loading and execution of all General Ledger programs. You choose which program to run by specifying its identifying number in the Menu. Table 3-A shows the Menu's list of programs.

Table 3-A. Menu Program List

1) General Information File Maintenance
2) Direct Posting
3) Posting Update
4) Reports
5) Account File Maintenance
6) Account File Reorganize

SYSTEM DATE

As your first processing step every day, be sure to set the correct date using 1) General Information File Maintenance. Usually, you will set the date to today's date. You can use other dates for special effects like predating or postdating reports. For example, if today is January 2, you can still set the date to December 31 and run year-end reports (assuming the file still contains year-end figures).

SETTING UP THE CHART OF ACCOUNTS

The single most important aspect of automated General Ledger processing is setting up the chart of accounts. This is because the chart of accounts, contained in the Account file, determines what your financial reports will look like. Each account has a record in the Account file. The order of the Account records in the Account file establishes the order of account printing on the financial reports. There are special records in the Account file for report titles and headings. Account records determine where and when subtotals and totals will appear. Report spacing, extra blank lines, and skipping to the top of a new page are all controlled by information which you supply on each Account record. Thus you must consider the overall picture of your General Ledger reports when designing your chart of accounts and entering it into the Account file.

Let's take a step-by-step look at how you can carefully design a chart of accounts and implement it in your Account file. To start with, you or your accountant must draw up a chart of accounts suitable for your company. Table 3-B shows a sample chart of accounts. Notice that there are four categories of accounts: Assets, Liabilities, Income (or Revenue), and Expenses. Each of these categories contains a multitude of regular General Ledger accounts. The regular accounts are grouped together at different levels of detail. Table 3-B depicts this grouping by indenting account names at different levels.

Table 3-B. Sample Chart of Accounts

ASSETS

Current Assets

Cash
  Revenue Bank
  Petty Cash
Total

Accounts Receivable
  Trade Accounts Receivable
    Finished Goods Sales Receivable
    Consulting Fees Receivable
    Allow for Doubtful Accounts
    Total
  Employee Receivables
  Other Accounts Receivable
Total

Inventory - Finished Goods
  Finished Goods (at Mfg. Cost)
  Raw Materials
  Other Inventory
Total

Prepaid Expense
  Prepaid Insurance
  Prepaid Taxes
  Other Prepaid Expenses
Total

Consulting
Contracts-in-Process
  Direct Labor
  Overhead
  Other Direct Charges
    Direct Materials
    Outside Service
    Freight - In
    Travel
  Total
  Credits
Total

Total Current Assets

Deferred Production Costs
  Direct Labor
  Overhead
  Other Direct Charges
    Direct Materials
    Outside Services
    Freight - In
  Total
  Credits
Total

Property & Equipment

Cost
  Machinery & Equipment
  Furniture & Fixtures
  Leasehold Improvements
Total

Construction-in-Process

Accumulated Depreciation
  Machinery & Equipment
  Furniture and Fixtures
  Leasehold Improvements
Total

Total Property & Equipment

Total Assets

LIABILITIES & STOCKHOLDERS' EQUITY

Current Liabilities

Notes Payable
Current Matur. on L-T Debt
Vouchers Payable
Sales Tax Payable

Income Tax Payable
  Federal
  State
Total

Payroll Taxes Payable
  Federal Income Tax Withholding
  FICA
  Federal Unemployment Tax
  State Income Tax Withholding
  SDI
  State Unemployment Tax
Total

Accrued Liabilities
  Payroll
  Vacation
  Property Taxes
  Other Accrued Liabilities
Total

Unearned Income
Customer Overpayments
Unidentified Customer Receipts

Total Current Liabilities

Long Term Liabilities
  Notes Payable
  Deferred Income Taxes Payable
  Total

Stockholders' Equity
  Capital Stock
  Additional Paid-In Capital
  Retained Earnings
  Total

Total Liab. & Stockholders' Eq

INCOME

Sale of Goods
  Finished Goods
  Sales Returns & Allowances
Total

Consulting Fees

Royalties Income
  Patent Royalties
  Consulting Royalties
Total

Other Income
  Collection of Bad Debts
  Miscellaneous Income
Total

Total Income

Table 3-B. Sample Chart of Accounts (Continued)

EXPENSES

Cost of Income
  Cost of Sale of Goods
  Cost of Consulting Fees
  Royalty Payments
  Variance Expense
Total

Development Project Expenses
  Direct Labor
  Overhead
  Other Direct Charges
    Direct Materials
    Outside Services
    Freight - In
    Travel
  Total
Total Development Proj. Expense

Department Expenses

Salaries, Wages, & Benefits
  Direct Labor
  Indirect Labor
  Overtime Premium
  Holiday-Vacation-Sick Leave
  Jury Duty & Other Leave
  Payroll Taxes
  Bonus
  Other Fringe Benefits
Total

Materials & Supplies
  Computer Materials and Supplies
  Raw Materials & Supplies
  Stationery-Matr'ls and Supplies
  Other Materials and Supplies
Total

Facilities & Equipment
  Rent - Office Space
  Equipment Leases
  Depreciation
  Equipment Maintenance
  Janitorial Service
  Utilities
  Auto Expense
  Equipment Rental
Total

Outside Services
  Professional Services - Legal
  Prof. Services - Consulting
  Employment Service
  Credit & Collection Service
  Other Outside Services
Total

Advertising
  Periodicals
  Trade Shows
    Shows - Travel
    Shows - Other
  Total

  Direct Mailings - Samples
  Brochure Printing and Mailing
  Outside Prep. Work on Ads
  Other Advertising
Total Advertising

Order & Shipping Expenses
  Shipping Expense - Outgoing
  Order/Shipping Forms Printing
  Postage
Total

Other Expenses
  Taxes-Licenses-Fees
  Insurance
  Travel & Employee Business Exp.
  Communications
  Doubtful Accounts
  Dues and Subscriptions
  Other Freight - In
  Allow'l Customer Underpayment
  Miscellaneous
Total

Transfer in from Other Depts.

Credits
  Direct Labor Transferred Out
  Overhead Applied
  Est. O'head (Over) Under Absorbed
Total

Total Department Expenses

Non-Operating (Income) Expense
(Gain) Loss on Prop./Equip. Sale
Interest (Income) Expense
Total

Estimated Income Taxes
  Federal
  State
Total

Total Expense

In addition, there is a descriptive heading that precedes the first regular account in each group. Also, a group sub-total follows the last account in each group. For an example of this in Table 3-B, look in the Assets category under the Accounts Receivable heading. In this chart of accounts, Accounts Receivable is a "heading" account, not a "regular" account. It is broken down into three categories:

Trade Accounts Receivable
Employee Receivables
Other Accounts Receivable

The last two accounts are themselves regular accounts, but Trade Accounts Receivable is another heading account consisting of three regular accounts:

Finished Goods Sales Receivable
Consulting Fees Receivable
Allowance for Doubtful Accounts

There is a total of these three accounts following the last account, Allowance for Doubtful Accounts. There is also a total of the various Accounts Receivable accounts, which is the sum of the Trade Accounts Receivable total, the Employee Receivables account, and the Other Accounts Receivable account.

When you draw up your chart of accounts, be sure you specifically write down the various headings and totals that you want to appear on your financial reports, just as we have done in Table 3-B. Every printed line on the financial reports must have a corresponding Account record. You probably will not forget to create Account records for headings and totals if you include them in your handwritten chart of accounts.

The next step in preparing the Account file involves assigning an account number to each non-blank line on your chart of accounts. Account numbers are six-digit numbers. They consist of five pre-decimal digits and one post-decimal digit. Thus, account numbers can range from 10000.0 to 99999.9. You must assign account numbers in four basic categories, according to the following scheme:

Assets	10000.0 - 19999.9
Liabilities	20000.0 - 29999.9
Income	30000.0 - 39999.9
Expenses	40000.0 - 49999.9

Notice the first digit of the account number identifies the category of the account. You can assign account numbers within the four categories any way you like. Just remember that the headings, regular accounts, and totals will appear on the financial reports in numeric sequence, according to their account numbers.

There is a systematic way to assign account numbers within the general categories. What you do is use the second digit of the account number to differentiate between groups of accounts on the highest level within each category, the third digit to differentiate between groups of accounts on the next level, the fourth digit for the next level, and so on. Table 3-C illustrates this scheme applied to our sample chart of accounts from Table 3-B. Here we see, for example, that all expense account numbers begin with the digit 4 and are in strict numeric sequence, as they should be. The second digit of the expense account number tells which of the five major groups of expenses any particular account belongs to. For example, account numbers beginning 41 are in the Cost of Income group, while account numbers beginning 43 are in the Department Expenses group. The third, fourth, and fifth digits provide successively more detail within each of the major expense groups. Notice that some expenses require more detailing than others. Very little detail is provided in the Cost of Income expenses, since only the first three digits of the account number are used (the unused digits are zero). Contrast that with the Department Expenses accounts; they need five digits to provide sufficient detail. Figure 3-D shows the breakdown of two expenses category account numbers that use different levels of detail.

Table 3-C. Sample Chart of Accounts Encoded for Account File

ACCOUNT NUMBER	SUB-ACCOUNT	ACCOUNT NAME	ACCOUNT TYPE	REPORT TYPE	NORMAL BALANCE	TOTAL LEVEL	EXTRA LINES	SALES ACCOUNT	SPECIAL REPORT	THIS MONTH
10000.0	50	**ASSETS**	1	2	1	8	2			
11000.0	50	Current Assets	3	2	1	6	1			
11100.0	50	Cash	3	2	1	5	0			
11110.0	0	Revenue Bank	0	2	1	2	0		x	2023.25
11150.0	0	Petty Cash	0	2	1	2	0		x	40.00
11199.0	50	Total CASH	2	2	1	5	1			
11400.0	50	Accounts Receivable	3	2	1	5	0			
11410.0	50	Trade Accounts Receivable	3	2	1	2	0			
11412.0	0	Finished Goods Sales Receivable	0	2	1	0	0		x	100941.03
11414.0	0	Consulting Fees Receivable	0	2	1	0	0		x	1500.00
11419.0	0	Allow for Doubtful Accounts	0	2	2	0	0		x	-3028.23
11419.0	50	Total	2	2	1	2	0			
11420.0	0	Employee Receivables	0	2	1	2	0		x	1030.00
11490.0	0	Other Accounts Receivable	0	2	1	2	0		x	0.00
11499.0	50	Total	2	2	1	5	1			
11600.0	50	Inventory - Finished Goods	3	2	1	5	0			
11610.0	0	Finished Goods (at Mfg. Cost)	0	2	1	2	0		x	266195.00
11620.0	0	Raw Materials	0	2	1	2	0		x	929.13
11630.0	0	Other Inventory	0	2	1	2	0		x	0.00
11699.0	50	Total	2	2	1	5	1			
11800.0	50	Prepaid Expense	3	2	1	5	0			
11810.0	0	Prepaid Insurance	0	2	1	2	0		x	877.24
11820.0	0	Prepaid Taxes	0	2	1	2	0		x	0.00
11890.0	0	Other Prepaid Expenses	0	2	1	2	0		x	63.50
11899.0	50	Total	2	2	1	5	1			
11900.0	50	Consulting	3	2	1	5	0			
11900.0	51	Contracts-in-Process	3	2	1	5	0			
11910.0	0	Direct Labor	0	2	1	2	0		x	5400.00
11920.0	0	Overhead	0	2	1	2	0		x	2700.00
11940.0	50	Other Direct Charges	3	2	1	2	0			
11942.0	0	Direct Materials	0	2	1	0	0		x	513.75
11944.0	0	Outside Service	0	2	1	0	0		x	86.19
11946.0	0	Freight - In	0	2	1	0	0		x	22.07
11948.0	0	Travel	0	2	1	0	0		x	143.33
11949.0	50	Total	2	2	1	2	0			
11990.0	0	Credits	0	2	2	2	0		x	-1000.00
11999.0	40	Total	2	2	1	5	0			
11999.0	50	Total Current Assets	2	2	1	6	9			
13000.0	50	Deferred Production Costs	3	2	1	6	0			
13010.0	0	Direct Labor	0	2	1	2	0		x	XX.XX
13020.0	0	Overhead	0	2	1	2	0		x	XX.XX
13040.0	50	Other Direct Charges	3	2	1	2	0			
13042.0	0	Direct Materials	0	2	1	0	0		x	XX.XX
13044.0	0	Outside Services	0	2	1	0	0		x	XX.XX
13046.0	0	Freight - In	0	2	1	0	0		x	XX.XX
13049.0	50	Total	2	2	1	2	0			
13990.0	0	Credits	0	2	2	2	0		x	XX.XX
13999.0	50	Total	2	2	1	6	2			
15000.0	50	Property & Equipment	0	2	1	6	1		x	XX.XX
15100.0	50	Cost	3	2	1	5	0			
15110.0	0	Machinery & Equipment	0	2	1	2	0		x	XX.XX
15120.0	0	Furniture & Fixtures	0	2	1	2	0		x	XX.XX
15130.0	0	Leasehold Improvements	0	2	1	2	0		x	XX.XX
15199.0	50	Total	2	2	1	5	1			
15800.0	0	Construction-in-Process	0	2	1	5	1		x	XX.XX
15900.0	50	Accumulated Depreciation	3	2	2	5	0			
15910.0	0	Machinery & Equipment	0	2	2	2	0		x	XX.XX
15920.0	0	Furniture and Fixtures	0	2	2	2	0		x	XX.XX
15930.0	0	Leasehold Improvements	0	2	2	2	0		x	XX.XX
15999.0	40	Total	2	2	2	5	1			
15999.0	50	Total Property & Equipment	2	2	1	6	2			
19999.0	50	Total Assets	2	2	1	8	9			
			0-Regular 1-Title 2-Total 3-Heading	1-Inc. Stmt. 2-Bal. Sht.	1-DB 2-CR					

ACCOUNT NUMBER	SUB-ACCOUNT	ACCOUNT NAME	ACCOUNT TYPE	REPORT TYPE	NORMAL BALANCE	TOTAL LEVEL	EXTRA LINES	SALES ACCOUNT	SPECIAL REPORT	THIS MONTH
20000.0	50	**LIABILITIES &**	1	2	2	8	0			
20000.0	51	**STOCKHOLDERS' EQUITY**	1	2	2	8	1			
21000.0	50	Current Liabilities	3	2	2	6	1			
21100.0	0	Notes Payable	0	2	2	5	0		x	xx.xx
21200.0	0	Current Matur. on L-T Debt	0	2	2	5	0		x	xx.xx
21300.0	0	Vouchers Payable	0	2	2	5	0		x	xx.xx
21400.0	0	Sales Tax Payable	0	2	2	5	1		x	xx.xx
21500.0	50	Income Tax Payable	3	2	2	5	0			
21510.0	0	Federal	0	2	2	2	0		x	xx.xx
21520.0	0	State	0	2	2	2	0		x	xx.xx
21599.0	50	Total	2	2	2	5	1			
21600.0	50	Payroll Taxes Payable	3	2	2	5	0			
21610.0	0	Federal Income Tax Withholding	0	2	2	2	0		x	xx.xx
21620.0	0	FICA	0	2	2	2	0		x	xx.xx
21630.0	0	Federal Unemployment Tax	0	2	2	2	0		x	xx.xx
21640.0	0	State Income Tax Withholding	0	2	2	2	0		x	xx.xx
21650.0	0	SDI	0	2	2	2	0		x	xx.xx
21660.0	0	State Unemployment Tax	0	2	2	2	0		x	xx.xx
21699.0	50	Total	2	2	2	5	1			
21700.C	50	Accrued Liabilities	3	2	2	5	0			
21710.0	0	Payroll	0	2	2	2	0		x	xx.xx
21720.0	0	Vacation	0	2	2	2	0		x	xx.xx
21730.0	0	Property Taxes	0	2	2	2	0		x	xx.xx
21790.0	0	Other Accrued Liabilities	0	2	2	2	0		x	xx.xx
21799.0	50	Total	2	2	2	5	1		x	xx.xx
21810.0	0	Unearned Income	0	2	2	5	0		x	xx.xx
21820.0	0	Customer Overpayments	0	2	2	5	0		x	xx.xx
21830.0	0	Unidentified Customer Receipts	0	2	2	5	1		x	xx.xx
21999.0	50	Total Current Liabilities	2	2	2	6	1			
22000.0	50	Long Term Liabilities	3	2	2	6	0			
22100.0	0	Notes Payable	0	2	2	5	0		x	xx.xx
22200.0	0	Deferred Income Taxes Payable	0	2	2	5	0		x	xx.xx
22999.0	50	Total	2	2	2	6	9			
23000.0	50	Stockholders' Equity	3	2	2	6	0			
23100.0	0	Capital Stock	0	2	2	5	0		x	xx.xx
23200.0	0	Additional Paid-In Capital	0	2	2	5	0		x	xx.xx
23900.0	0	Retained Earnings	0	2	2	5	0		x	xx.xx
23999.0	50	Total	2	2	2	6	2			
29999.0	50	Total Liab & Stockholders' Eq.	2	2	2	8	9			
30000.0	50	**INCOME**	1	1	2	8	2			
31000.0	50	Sale of Goods	3	1	2	5	0			
31110.0	0	Finished Goods	0	1	2	2	0	x	x	xx.xx
31190.0	0	Sales Returns & Allowances	0	1	1	2	0	x	x	xx.xx
31199.0	50	Total	2	1	2	5	1			
31210.0	0	Consulting Fees	0	1	2	5	1		x	xx.xx
31300.0	50	Royalties Income	3	1	2	5	0			
31310.0	0	Patent Royalties	0	1	2	2	0		x	xx.xx
31320.0	0	Consulting Royalties	0	1	2	2	0		x	xx.xx
31399.0	50	Total	2	1	2	5	1			
31500.0	50	Other Income	3	1	2	5	0			
31510.0	0	Collection of Bad Debts	0	1	2	2	0		x	xx.xx
31590.0	0	Miscellaneous Income	0	1	2	2	0		x	xx.xx
31599.0	50	Total	2	1	2	5	1			
31999.0	50	Total Income	2	1	2	8	3			
			0-Regular 1-Title 2-Total 3-Heading	1-Inc. Stmt. 2-Bal. Sht.	1-DB 2-CR					

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Table 3-C. Sample Chart of Accounts Encoded for Account File (Continued)

ACCOUNT NUMBER	SUB-ACCOUNT		ACCOUNT TYPE	REPORT TYPE	NORMAL BALANCE	TOTAL LEVEL	EXTRA LINES	SALES ACCOUNT	SPECIAL REPORT	THIS MONTH
40000.0	50	**EXPENSES**	1	1	1	8	2			
41000.0	50	Cost of Income	3	1	1	6	0			
41100.0	0	Cost of Sale of Goods	0	1	1	5	0		x	xx.xx
41200.0	0	Cost of Consulting Fees	0	1	1	5	0		x	xx.xx
41300.0	0	Royalty Payments	0	1	1	5	0		x	xx.xx
41900.0	0	Variance Expense	0	1	1	5	0		x	xx.xx
41999.0	50	Total	2	1	1	6	2			
42000.0	50	Development Project Expenses	3	1	1	6	0			
42010.0	0	Direct Labor	0	1	1	2	0		x	xx.xx
42020.0	0	Overhead	0	1	1	2	0		x	xx.xx
42040.0	50	Other Direct Charges	3	1	1	2	0			
42042.0	0	Direct Materials	0	1	1	0	0		x	xx.xx
42044.0	0	Outside Services	0	1	1	0	0		x	xx.xx
42046.0	0	Freight - In	0	1	1	0	0		x	xx.xx
42048.0	0	Travel	0	1	1	0	0		x	xx.xx
42049.0	50	Total	2	1	1	2	0			
42999.0	50	Total Development Proj. Expense	2	1	1	6	9			
43000.0	50	Department Expenses	3	1	1	6	1			
43100.0	50	Salaries, Wages, & Benefits	3	1	1	5	0			
43110.0	0	Direct Labor	0	1	1	2	0			xx.xx
43120.0	0	Indirect Labor	0	1	1	2	0			xx.xx
43130.0	0	Overtime Premium	0	1	1	2	0			xx.xx
43140.0	0	Holiday-Vacation-Sick Leave	0	1	1	2	0			xx.xx
43150.0	0	Jury Duty & Other Leave	0	1	1	2	0			xx.xx
43160.0	0	Payroll Taxes	0	1	1	2	0			xx.xx
43170.0	0	Bonus	0	1	1	2	0			xx.xx
43190.0	0	Other Fringe Benefits	0	1	1	2	0			xx.xx
43199.0	50	Total	2	1	1	5	1			
43200.0	50	Materials & Supplies	3	1	1	5	0			
43210.0	0	Computer Materials and Supplies	0	1	1	2	0			xx.xx
43220.0	0	Raw Materials & Supplies	0	1	1	2	0			xx.xx
43230.0	0	Stationery-Matr'ls and Supplies	0	1	1	2	0			xx.xx
43290.0	0	Other Materials and Supplies	0	1	1	2	0			xx.xx
43299.0	50	Total	2	1	1	5	1			
43300.0	50	Facilities & Equipment	3	1	1	5	0			
43310.0	0	Rent - Office Space	0	1	1	2	0			xx.xx
43320.0	0	Equipment Leases	0	1	1	2	0			xx.xx
43330.0	0	Depreciation	0	1	1	2	0			xx.xx
43340.0	0	Equipment Maintenance	0	1	1	2	0			xx.xx
43350.0	0	Janitorial Service	0	1	1	2	0			xx.xx
43360.0	0	Utilities	0	1	1	2	0			xx.xx
43370.0	0	Auto Expense	0	1	1	2	0			xx.xx
43390.0	0	Equipment Rental	0	1	1	2	0			xx.xx
43399.0	50	Total	2	'	1	5	1			
43400.0	50	Outside Services	3	1	1	5	0			
43410.0	0	Professional Services - Legal	0	1	1	2	0			xx.xx
43420.0	0	Prof. Services - Consulting	0	1	1	2	0			xx.xx
43430.0	0	Employment Service	0	1	1	2	0			xx.xx
43440.0	0	Credit & Collection Service	0	1	1	2	0			xx.xx
43490.0	0	Other Outside Services	0	1	1	2	0			xx.xx
43499.0	50	Total	2	1	1	5	1			
43500.0	50	Advertising	3	1	1	5	0			
43510.0	0	Periodicals	0	1	1	2	0			xx.xx
43520.0	50	Trade Shows	0	1	1	2	0			xx.xx
43521.0	0	Shows - Travel	0	1	1	0	0			xx.xx
43529.0	0	Shows - Other	0	1	1	0	0			xx.xx
43529.0	50	Total	2	1	1	2	9			
43530.0	0	Direct Mailings - Samples	0	1	1	2	0			xx.xx
43540.0	0	Brochure Printing and Mailing	0	'	1	2	0			xx.xx
43560.0	0	Outside Prep. Work on Ads	0	1	1	2	0			xx.xx
43590.0	0	Other Advertising	0	1	1	2	0			xx.xx
43599.0	50	Total Advertising	2	1	1	5	1			
			0-Regular 1-Title 2-Total 3-Heading	1-Inc. Stmt. 2-Bal. Sht.	1-DB 2-CR					

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Table 3-C. Sample Chart of Accounts Encoded for Account File
(Continued)

ACCOUNT NUMBER	SUB-ACCOUNT		ACCOUNT TYPE	REPORT TYPE	NORMAL BALANCE	TOTAL LEVEL	EXTRA LINES	SALES ACCOUNT	SPECIAL REPORT	THIS MONTH
43600.0	50	Order & Shipping Expenses	3	1	1	5	0			
43610.0	0	Shipping Expense - Outgoing	0	1	1	2	0			xx.xx
43620.0	0	Order/Shipping Forms Printing	0	1	1	2	0			xx.xx
43630.0	0	Postage	0	1	1	2	0			xx.xx
43699.0	50	Total	2	1	1	5	1			
43700.0	50	Other Expenses	3	1	1	5	0			
43710.0	0	Taxes-Licenses-Fees	0	1	1	2	0			xx.xx
43720.0	0	Insurance	0	1	1	2	0			xx.xx
43730.0	0	Travel & Employee Business Exp.	0	1	1	2	0			xx.xx
43740.0	0	Communications	0	1	1	2	0			xx.xx
43750.0	0	Doubtful Accounts	0	1	1	2	0			xx.xx
43760.0	0	Dues and Subscriptions	0	1	1	2	0			xx.xx
43770.0	0	Other Freight - In	0	1	1	2	0			xx.xx
43780.0	0	Allow'l Customer Underpayment	0	1	1	2	0			xx.xx
43790.0	0	Miscellaneous	0	1	1	2	0			xx.xx
43799.0	50	Total	2	1	1	5	1			
43810.0	0	Transfer in from Other Depts.	0	1	2	5	1			xx.xx
43900.0	50	Credits	3	1	2	5	0			
43910.0	0	Direct Labor Transferred Out	0	1	2	2	0			xx.xx
43920.0	0	Overhead Applied	0	1	2	2	0			xx.xx
43990.0	0	Est. O'head (Over) Under Absorbed	0	1	2	2	0			xx.xx
43999.0	40	Total	2	1	2	5	1			
43999.0	50	Total Department Expenses	0	1	1	6	1			xx.xx
44000.0	50	Non-Operating (Income) Expense	3	1	1	6	0			
44100.0	0	(Gain) Loss on Prop./Equip. Sale	0	1	2	5	0			xx.xx
44200.0	0	Interest (Income) Expense	0	1	1	5	0			xx.xx
44999.0	50	Total	2	1	1	6	1			
45000.0	50	Estimated Income Taxes	3	1	1	6	0			
45100.0	0	Federal	0	1	1	5	0			xx.xx
45200.0	0	State	0	1	1	5	0			xx.xx
45999.0	50	Total	2	1	1	6	2			
49999.0	50	Total Expense	2	1	1	8	9			
			0-Regular 1-Title 2-Total 3-Heading	1-Inc. Stmt. 2-Bal. Sht.	1-DB 2-CR					

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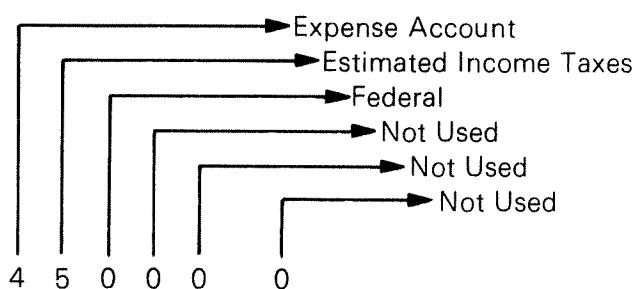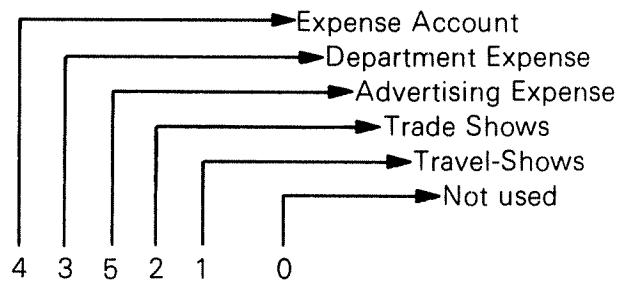
Figure 3-D. Breakdown of Sample Account Numbers

There is a field in each Account record that allows some additional flexibility in assigning account numbers. The Sub-account Number field enables you to put a heading (or other descriptive text) between two accounts with consecutive account numbers. In effect, the Sub-account Number field is a two-digit extension of the Account Number field. There is a restriction on the use of sub-account numbers: only title, heading, and total account records can use sub-account numbers. Regular accounts may not use sub-account numbers. This restriction maintains compatibility with the Accounts Payable and Accounts Receivable programs described in the Osborne and Associates publication *Accounts Payable and Accounts Receivable.* Table 3-C shows sub-account numbers assigned to our sample chart of accounts. Notice that account number 11419.0, sub-account number 0 (11419.0/0) is a regular account, the Allowance for Doubtful Accounts account. There is also an account number 11419.0/50 which is a total record for Trade Accounts Receivable.

So far we have discussed designing a chart of accounts and assigning account numbers and sub-account numbers as the first step in setting up a chart of accounts in the Account file. Looking now at the right hand side of Table 3-C, you will see that there is still more information required on each of the Account records. Let's discuss the rest of the items on Table 3-C from left to right, starting with the Account Type field.

We have already described the four types of account records you need in order to set up a chart of accounts in the Account file. The Account Type field is merely an encoding of this information. Table 3-E provides the details.

Table 3-E. Account Types

ACCOUNT TYPE	DESCRIPTION
0	**Regular** -- Actual accounts with monthly, quarterly, etc balances Can receive postings
1	**Title** -- Account Name field prints on financial reports (in expanded type, if available) Its Normal Balance field sets the standard balance to prevail until the next title account No dollar balances maintained Cannot receive postings
2	**Total** -- Account Name field prints on financial reports Causes printing of the total for the level in its Total Level field (totals at this level and all lower levels are then reset) No dollar balances maintained Cannot receive postings
3	**Heading** -- Account Name field prints on financial reports No dollar balances maintained Cannot receive postings

The Report Type field determines whether the Account record is part of the income statement report or balance sheet report. The balance sheet report always includes accounts from the Assets and Liabilities categories while the Income and Expense categories appear on the income and expense report. If the Report Type field is '1', the account appears on the income statement; if it is '2', the account is a balance sheet account.

The Normal Balance field designates whether the account usually has a debit or credit balance. Here, a '1' means a debit balance and a '2' means a credit balance. Most Asset accounts have a normal debit balance, Liability accounts have a normal credit balance, Income accounts have a normal credit balance, and Expense accounts have a normal debit balance. Table 3-C shows that there can be exceptions to this rule, however. Ultimately, an account's Normal Balance field, together with the Normal Balance field of the title account that most closely precedes it, determines the sign of the amount printed on the financial report. If the two Normal Balance fields are different (one is a credit and the other is a debit) the account amount is multiplied by -1 prior to printing. For example, in Table 3-C title account 10000.0/50 Assets has a normal balance '1' (debit). Account 11419.0/0 Allow for Doubtful Accounts has a normal balance '2', so its balance is multiplied by -1 before printing.

The Total Level field has two uses. For balance sheet accounts, it determines which of three columns the account amount or total amount will print in. If the Total Level field is '0', '1', or '2', the amount prints in the left-most column. '3', '4', or '5' cause the amount to print in the middle column. The amounts print in the right-most column with total levels '6', '7', '8', or '9'. Income and Expense accounts all print in the same column, regardless of total level.

The Total Level field also determines how often totals will print and how many levels of detail they will include. Thus, it plays a vital part in implementing the account hierarchy shown in Table 3-C by using different levels of indentation. The Total Level field ranges from 0 to 9, with '9' being most general and '0' most specific. This means that level 9 includes the account amounts and subtotals from levels 8, 7, 6, 5, 4, 3, 2, 1, and 0. Similarly, level 5 includes subtotals and account amounts from levels 4, 3, 2, 1, and 0. Level 0 can only be the amount from a single account.

To better understand how the total level works, let's imitate the way the computer accumulates totals during one of the financial reports. For example, we can simulate part of a balance sheet report with data from the first part of Table 3-C. To start with, we need ten accumulators numbered 0 through 9, corresponding to total levels 0 through 9. Initially, these accumulators have a value of 0.

Now we are ready to proceed down the chart of accounts (Table 3-C). The first three accounts are title and heading accounts. We can skip them, since they have no balances and hence no bearing on totals. The next account, 11110.0 Revenue Bank, is a level 2 account with a balance of $2023.25. Add this amount to accumulators 2, 3, 4, 5, 6, 7, 8, and 9:

Accumulator 0:	0.00	Accumulator 5:	2023.25
Accumulator 1:	0.00	Accumulator 6:	2023.25
Accumulator 2:	2023.25	Accumulator 7:	2023.25
Accumulator 3:	2023.25	Accumulator 8:	2023.25
Accumulator 4:	2023.25	Accumulator 9:	2023.25

This is a level 2 account, so we now print the amount in accumulator 2 (along with the data for account 11110.0). After printing, zero accumulators 2, 1, and 0. Then proceed to the next account, 11150.0 Petty Cash. This is a level 2 account with a balance of $40. It affects the accumulators as follows:

Accumulator 0:	0.00	Accumulator 5:	2063.25
Accumulator 1:	0.00	Accumulator 6:	2063.25
Accumulator 2:	40.00	Accumulator 7:	2063.25
Accumulator 3:	2063.25	Accumulator 8:	2063.25
Accumulator 4:	2063.25	Accumulator 9:	2063.25

Again, we print the amount in accumulator 2 (along with data from account 11150.0). Zero accumulators 2, 1, and 0. The next account, 11199.0 Total, is a level 5 total account. Total accounts, like title and heading accounts, have no balance to add to the accumulators. Therefore, we just print the amount in accumulator 5, then zero accumulators 5, 4, 3, 2, 1, and 0. Note that the amount in accumulator 5 was the sum of the balances from accounts 11110.0 and 11150.0.

The algorithm should be evident by now. For a regular account at level X, add the account balance to accumulators X through 9. Print the amount in accumulator X, then zero accumulators X through 0. For a total account at level X, there is no account balance to add to the accumulators. Just print the amount in accumulator X, then zero accumulators X through 0. The changes that other of the Asset accounts cause in the accumulators further illustrates the algorithm:

Account 11400.0, level 5, heading:
　No change
Account 11410.0, level 2, heading:
　No change
Account 11412.0, level 0, $100941.03:

Accumulator 0:	100941.03	Accumulator 5:	100941.03
Accumulator 1:	100941.03	Accumulator 6:	103004.28
Accumulator 2:	100941.03	Accumulator 7:	103004.28
Accumulator 3:	100941.03	Accumulator 8:	103004.28
Accumulator 4:	100941.03	Accumulator 9:	103004.28

Account 11414.0, level 0, $1500.00:

Accumulator 0:	1500.00	Accumulator 5:	102441.03
Accumulator 1:	102441.03	Accumulator 6:	104504.28
Accumulator 2:	102441.03	Accumulator 7:	104504.28
Accumulator 3:	102441.03	Accumulator 8:	104504.28
Accumulator 4:	102441.03	Accumulator 9:	104504.28

```
      Account 11419.0, level 0, $-3028.23:
Accumulator 0:  - 3028.23       Accumulator 5:    99412.80
Accumulator 1:   99412.80       Accumulator 6:   101476.05
Accumulator 2:   99412.80       Accumulator 7:   101476.05
Accumulator 3:   99412.80       Accumulator 8:   101476.05
Accumulator 4:   99412.80       Accumulator 9:   101476.05
      Account 11419.0, level 2, total:
Accumulator 0:       0.00       Accumulator 5:    99412.80
Accumulator 1:   99412.80       Accumulator 6:   101476.05
Accumulator 2:   99412.80       Accumulator 7:   101476.05
Accumulator 3:   99412.80       Accumulator 8:   101476.05
Accumulator 4:   99412.80       Accumulator 9:   101476.05
```

The Extra Lines field follows the Total Level field on Table 3-C. It simply specifies the number of blank lines to skip on the financial reports after printing the account data. If the Extra Lines field is 9, the report skips to a new page. In Table 3-C, there are two extra blank lines following account 10000.0, one extra blank line following account 11000.0, and the report goes to a new page following account 11999.0/50.

The Sales Account field identifies the major income accounts. The total of these accounts is the divisor for calculating the "percent of sales" on the financial reports. The sample chart of accounts in Table 3-C has two sales accounts: 31110.0 Finished Goods, and 31190.0 Sales Returns and Allowances.

The Special Report field designates which accounts will appear on the "special" financial report. Use this field to specify the accounts that will be on the special report. In Table 3-C we have chosen to include all regular accounts on the special report.

The last field on Table 3-C, the This Month field, represents the seven Amount fields that are present on every regular account record. The Amount fields contain balances for this month, this quarter, this year, last year, and the three quarters prior to this quarter. When you first add an account to the Account file, you should put its up-to-date balances in the Amount fields. You may opt to systematically omit certain balances when you set up the account initially. For example, you might not enter the balances for previous quarters.

POSTINGS FROM ACCOUNTS PAYABLE AND ACCOUNTS RECEIVABLE

This General Ledger accepts postings from outside programs via the External Posting file. The Accounts Payable and Accounts Receivable programs described in the Osborne & Associates publication *Accounts Payable and Accounts Receivable* will write records on that file. Entering a new invoice in Accounts Payable generates postings to the Vouchers Payable account and operator-designated Expense accounts. Paying an invoice creates postings to decrease the Vouchers Payable and Cash accounts. In Accounts Receivable, entering a new invoice generates a posting to increase the Accounts Receivable account. Entering payment on an invoice creates postings to decrease the Accounts Receivable account and increase the Cash account.

Modifying payables or receivables invoices produces postings to adjust the General Ledger accounts affected by the changes. See *Accounts Payable and Accounts Receivable* for a more complete discussion.

Let's look at the postings to the sample chart of accounts in Table 3-C that would result from an Accounts Payable invoice with the following particulars:

Vendor: Breadboard Magazine
Invoice Number: 31761
Item: January Ad
Amount: $890.00

When you enter this invoice, account 21300.00 Vouchers Payable automatically receives a posting to increase by $890.00. If you elect to expense this invoice to normal magazine advertising, account 43510.0 Periodicals also receives a posting to increase by $890.00. Subsequently paying this invoice results in postings to decrease accounts 21300.00 Vouchers Payable and 11110.0 Revenue Bank by $890.00.

ENTERING DIRECT POSTINGS

The Accounts Payable and Accounts Receivable programs will take care of most of the postings to Expense accounts and a few others as well. You will have to directly enter postings to the rest of the accounts. Using 2) Direct Posting Entry, you can create postings to any account on the Account file. These direct postings are appended to the Direct Posting file. 3) Update clears the file. This gives you the flexibility to enter postings in small batches throughout the month (running 3) Update signals the end of a batch), or of holding onto them and entering them all just before running 3) Update. 2) Direct Posting Entry will list the current contents of the Direct Posting File at any time.

END-OF-MONTH PROCEDURES

At the end of each month, just before you are ready to print the financial reports, you must run 3) Update. This program takes the postings from the External Posting file and the Direct Posting file and adds them to the appropriate accounts in the Account file. While doing this, it prints an account-by-account listing of the activity. This listing is your audit trail of account balance changes.

You may run 3) Update more often than once a month if you wish. You may have to if there is not enough room on either your Direct Posting file or External Posting file for one full month's worth of direct postings or external postings. The program detects these file full conditions. This is discussed further in the Error Recovery section of this chapter.

Be sure to look over the update activity listing for errors. At the end of the listing there is a separate section of program-detected errors such as postings to nonexistent accounts. You must rectify these errors before running the financial reports. To make corrections, you can enter and update additional direct postings.

The next step in the end-of-month processing is to print the trial income statement. This accomplishes three things. First, you can use it to check account balances before running the final income and expense statement, adjusting incorrect account balances by creating and updating additional direct postings. Second, the trial balance statement adds up the balances of those accounts that are marked sales accounts by the Sales Account field, then it saves these totals on a special Account record. Later, they are used as divisors in computing the percent column on the final income and expense statement. Third, the trial income and expense statement provides a gross profit figure you can directly post to the Retained Earnings account (23900.0 in Table 3-C). Now print a trial balance report. Check the account balances. Adjust them as needed with direct postings.

After you have run the trial income statement and trial balance sheet and corrected any incorrect account balances, you can print as many copies of the income statement and balance sheet as you need. Then use the monthly "move totals" operation in 4) Reports to clear the monthly balances on the Income and Expense accounts. This will not clear the Asset and Liability account balances, since they are running totals.

END-OF-QUARTER PROCEDURE

After printing the monthly reports at the end of the last month in a quarter, print the quarterly income statement and balance sheet. Then do a quarterly "move totals" operation in 4) Reports instead of a monthly "move totals" operation. The quarterly "move totals" automatically includes a monthly "move totals". In addition, it shifts the four quarterly balance fields in each Account record down one field. What was this quarter's balance becomes the first previous quarter's balance, which in turn becomes the second previous quarter's balance, and so on. The third previous quarter's balance is lost, since there is no fourth previous quarter's balance.

END-OF-YEAR PROCEDURE

After printing the final monthly and quarterly income statements and balance sheets for the year, print the yearly income statement and balance sheet. Then do a yearly "move totals" operation in 4) Reports instead of a quarterly or monthly "move totals" operation. The yearly "move totals" includes a quarterly and monthly "move totals". It also shifts what was this year's balance to last year's balance (last year's balance is lost) and clears this year's balance.

ELECTIVE PROCEDURES

There are several features of General Ledger that you may use at your discretion. You can actually run any of the reports in 4) Reports any time you wish. In fact, there is no prescribed time to print the special report or the income statement or balance sheet for any of the previous quarter account balances. The account balances will be up-to-date as of the last time that you updated the Account file using 3) Update.

You may need to use 5) Account File Maintenance from time to time. With it, you can add new accounts, delete old accounts, and modify existing accounts. Do be careful about directly modifying account balances using 5) Account File Maintenance; there is no audit trail. It is a much better practice to enter and update additional direct postings to adjust account balances.

5) Account File Maintenance will also provide you with a plain listing of the account records, should you ever need one.

Occasionally, you may need to reorganize the Account file. Use 6) Account File Reorganize to do this. This program recovers otherwise unusable space in the Account file that results from deleting Account records. You can run 6) Account File Reorganize whenever you want.

ERRORS AND ERROR RECOVERY

Errors will occur in any accounting system, whether computerized or manual. When you first start using your programs, you will probably encounter occasional errors caused by problems in the computer programs themselves. These errors are inevitable even with standardized programs like the ones in this book. For one thing, transcription errors will almost certainly occur when the programs are transferred from the book to the computer. But even after you correct these errors, other program errors can still arise. There is no way to test every possible combination of data that you can enter, no matter how extensively the programs are tested before you actually use them.

In practice, though, programming errors usually subside rather quickly, leaving you with operator errors to take care of. The General Ledger programs have a number of features built in that will allow you to easily correct operator mistakes if you notice them in time. These features include use of the backspace and line erase keys to correct any data item that you have not finished entering. Also, you can usually review each screenful of data and change specific items on it before they become permanent. These features are common to all of the General Ledger programs. The following paragraphs describe some of these specific errors that can occur in each of the General Ledger programs, and what to do about them.

MENU

Now and then you will probably choose the wrong program in the Menu. This is no problem, since every program allows you to exit immediately back to the Menu. See Chapter 4 for more explicit instructions for each program.

POSTING ENTRY

After you enter a posting in 2) Direct Posting Entry, the program checks to make sure there is still enough room on the Direct Posting file for another posting. If not, it displays this message:

    FILE FULL - RUN G/L UPDATE
    KEY <CONTINUE> <RETURN> TO EXIT

At this point, you must run 3) Update. It clears both the Direct Posting file and the External Posting file after updating the Account file.

2) Direct Posting Entry can halt with this same file full message even when the Direct Posting file is not completely full. This is because there must be room on the External Posting file for all the postings on the Direct Posting file. Thus, if the External Posting file is completely full with postings from Accounts Payable and Accounts Receivable, you will not be able to enter any direct postings without first running 3) Update.

The External Posting file can also become full during Accounts Payable or Accounts Receivable. Refer to *Accounts Payable and Accounts Receivable* for a more complete description of this problem and what to do about it.

UPDATE ERRORS

Basically, there are three kinds of errors that can occur during 3) Update. The program will detect the error if there is a posting to an account that does not exist. It prints a list of these errors at the end of the update report. The recovery procedure for this error depends on whether you entered the correct account number or not. If not, re-enter the posting using 2) Direct Posting Entry, this time with the correct account number. If the account number is correct, you must use 5) Account File Maintenance to create a record for the account on the Account file. Then you can re-enter the posting using 2) Direct Posting Entry. In either case, re-run 3) Update after you re-enter the posting.

The program will not detect the other two kinds of update errors. You must check the update report to make sure you have not entered postings to the wrong account, or for the wrong amount. The recovery procedure is the same for either of these problems. First, you must enter a direct posting to cancel the erroneous posting. Do this by making the new posting the same as the old posting, but reverse the sign of the posting amount. Now enter another new direct posting to the correct account for the correct amount. Again, when you are finished entering new direct postings to correct update errors, re-run 3) Update to effect the changes in the Account file. For example, suppose you found a posting to account 42046.0 Freight-In for $137.26 which should have been to account 43770.0 Other Freight-In for $173.26. Fix this by entering two postings using 2) Direct Posting Entry. The first posting is to account 42046.0 for $-137.26 to back out the error. The second posting is to account 43770.0 for $173.26 to put in the proper posting. Run 3) Update to effect these postings.

ACCOUNT FILE FULL

The flashing bulletin FILE FULL - RUN REORGANIZE in 5) Account File Maintenance means there is no room on the Account file for any new records. Run 6) Account File Reorganize to recover any wasted space caused by deleted records. If this does not help, you must somehow increase the size of the Account file (your programmer should be able to help with this).

POWER FAILURE

If a power failure occurs during most programs you can recover by restarting the program as soon as the computer is running normally again. If a power failure occurs during 3) Update, make an especially careful check of the update report to make sure all postings are updated correctly. You may have to enter direct postings to adjust a partially updated account. If a power failure occurs during the "move totals" operation in 4) Reports, you must revert to your disk backups, repeating all operations you have performed since the backups were made.

Chapter Four
USER'S MANUAL

The user's manual contains step-by-step instructions for use of all programs included in this General Ledger system. Explanations of program processes, error recovery, and exceptional procedures are also given. User flowcharts are provided so that, once you are familiar with General Ledger processing, you can refer to them for a quick reference of program flow.

There are several items worthy of mention which are characteristic of all programs throughout this accounting system. This first section describes those characteristics. Read it carefully before going on to the step-by-step instructions for each program.

DATA ENTRY

It is important that you be familiar with the different ways data is entered into the system. All data is entered by means of the keyboard, using the CRT screen to display messages that describe the entry. There are two modes in which data can be entered: input and keyin.

Entry in input mode is always prompted by a question, with a question mark and cursor waiting on the next line. You will sometimes see, for example, the following displayed on your screen:

KEY RETURN TO BEGIN; 'END' TO EXIT
?__

The program will now await your entry. What you enter will show up here.

KEY RETURN TO BEGIN; 'END' TO EXIT
?__

At this time you should either press the RETURN key, or type in END and then press the RETURN key.

The second mode of keyboard entry, keyin, is used more often. **Keyin entry is prompted by a series of asterisks appearing on the screen, and the CRT cursor waiting at the first asterisk.** These asterisks always follow a question or field description which identifies what you should enter.

A typical keyin will appear as follows:

ACCOUNT NUMBER _*******

Now when you key a character, it will replace an asterisk.

The length of your entry is limited by the number of asterisks displayed. You do not have to enter as many characters as there are asterisks — the asterisks represent only a length limit on entry. The **BACKSPACE** key backs out the last character and lets you re-enter it, except when the cursor is at the position of the first asterisk; then [BACKSPACE] has no effect. The **LINE ERASE** key is also effective during the keyin in clearing out all characters entered in the course of the keyin; the cursor returns to the position of the first asterisk and awaits entry. Keyin entry is always terminated by pressing the **RETURN** key.

Each data entry falls in one of two categories: alphanumeric or numeric. A Name field, Address field and Description field are three examples of an alphanumeric field. **Any key or combination of keys on the keyboard that produces a valid printing character can be used for alphanumeric entries.** You are most likely to use letters, numbers and punctuation symbols for alphanumeric entries.

Only digits, [+], [-], and [SPACE] are allowed when entering numeric values, however. Blank or unfilled spaces (indicated by a "Ø" symbol) have no effect on the value of a numeric entry. For example, if you have a numeric field as follows:

AMOUNT ********

you could enter the value 123.45 as

AMOUNT 123.45**

or

AMOUNT ØØ123.45

Either way the value is still 123.45.

Sometimes the program further restricts numeric entry by limiting the range of values you can enter. Maybe only whole numbers between 0 and 14 will be allowed, for example. Throughout this chapter, numeric ranges are described by the numbers in parentheses following each field description or entry instruction.

GENERAL LEDGER ACCOUNT NUMBERS

General Ledger account numbers are made up of six digits. There are five pre-decimal digits and one post-decimal digit, comprising an *xxxxx.x* format. General Ledger numbers may range from 00000.1 to 99999.9. In addition, you may append a sub-account number between 0 and 99 to the General Ledger number (indicated by an *xxxxx.x/xx* format). This sub-account number is used for title, heading and total Account records. Methods for designing your chart of accounts and assigning General Ledger account numbers are discussed in detail in Chapter 3.

ENTRY CODES

Much information is entered via alphanumeric or numeric codes, such as the General Ledger account numbers described above. But unlike General Ledger account numbers, many coded entries do not remain constant throughout the system. Rather, many coded entry options are peculiar to each program, and as such are defined by each program. Such coded entries are defined in a prompt message similar to the following, with options displayed in parentheses after the prompt message:

ENTER OPERATION CODE (0=EXIT, 1=ADD, 2=CHANGE)
*

Enter '1' if you wish to perform the ADD operation, or enter '2' if you wish to perform the CHANGE operation; then key [RETURN]. To exit the program you simply press the RETURN key; this blank (Ø) entry is equivalent to a '0' in most cases.

A field number usually identifies each individual data item displayed on the screen. During a CHANGE operation you can change the value of a data item by entering its field number at the appropriate time. The prompt message for such an entry usually appears as follows:

ENTER FIELD TO CHANGE (0 IF NONE)
**

At this time you may either enter a field number, as displayed on each individual display, or simply key [RETURN] if there are no changes or all changes have been made. Thus the field number is a kind of code, and its meaning is derived from looking at the entire CRT display. Note that if there is a data item displayed, but it has no identifying field number on this particular screen display, it cannot be changed during this program.

For any entry you can just key [RETURN] without entering any other character, unless a blank entry is not allowed by entry range restrictions. **During numeric entry a blank entry is the same as entering '0', then keying [RETURN]. During alphanumeric entry it is the same as entering a blank (Ø), then keying [RETURN].**

Dates are entered as six-digit numbers with no slashes or dashes separating month, day, or year. Any month or day whose number does not take two digits must be entered with a leading zero. For example, March 3, 1979 is entered as 030379. Dates are always redisplayed with punctuation after entry has been completed; 03/03/77 in the example.

Whenever a yes-or-no question is asked, such as ENTRY CORRECT?, a keyin of one character will be requested. The standard in this system is for a '1' to represent "yes", and a '0' or 'Ø' to represent "no".

The standard delete code is DEL. If anything other than DEL is entered when you are asked to enter a delete code, the deletion will not take place.

SFK

SFK refers to a Special Function Key, one of 16 numbered keys whose function is defined in a program. SFK15 is defined in almost every program. Its only purpose is as a program exit. Exit from every program is possible through use of SFK15; in case your system does not include programmable SFK's, other exit procedures are provided. Note that any SFK entry is not terminated by pressing the RETURN key; its function begins immediately after the key is pressed.

BULLETINS

The fourth line of the CRT is reserved for the display of a bulletin. A bulletin is a short message, flashed three times, describing what is going on in the program. Some bulletins are referred to as error messages because they describe an error on your part.

All keyin mode entries are tested for validity. This test includes a check for non-numeric characters in a numeric entry, as well as a number range check for numeric entries. When some sort of unacceptable entry is discovered by this test, the bulletin **OUT OF RANGE** will flash. In the case of numeric entry, this bulletin signals either a number which is too large or too small, or not all numeric characters. The CRT cursor will be repositioned to the first of the string of asterisks, which have replaced the unacceptable entry, and the program will await another keyin. The validity test is repeated for each keyin until you make an acceptable entry.

Although the most frequent bulletin which will be displayed is OUT OF RANGE, there are a number of other bulletins which may be flashed from time to time. Some of these are **INVALID DATE, NOT ON FILE, RECORDED** and **DELETED.** These bulletins serve as warnings or status messages during the course of the program. Whenever the bulletin identifies unacceptable entry, such as INVALID DATE, the cursor is repositioned to the same entry field and awaits another entry. If a bulletin serves as a status message, the program continues after the bulletin has been flashed.

There are two program status messages which deserve special mention but are not flashed as bulletins. One is:

PROCESSING. . . DO NOT INTERRUPT

This message signifies a process taking place in computer memory which involves no user action or CRT display.

The other message describes the process of one program loading another. This process occurs during the Menu program, and the program displays:

LOADING PROGRAM

A similar message is displayed at the end of each program when the Menu is being loaded. For example, when the Menu is being loaded from the General Ledger Direct Posting program, the following is displayed during this process:

G/L DIRECT POSTING LOADING MENU

Be patient. When these messages appear there is something going on even though you can't see it on the CRT. Pressing keys and flipping switches will do harm; the messages appear because the processes take time.

USING THE PRINTER

Another message which does not take the flashing form is:

PRINTER NOT READY

In all programs where the printer is used, there is a test to make sure the printer is turned on

and ready to print. If it is not, the program waits with the PRINTER NOT READY message displayed on the screen until the printer is turned on. When this message appears, there is no way to continue or even exit the program without turning the printer on. Once the printer is turned on, the message is cleared from the screen and the program continues. **Do not turn the printer off just because the message no longer appears on the screen; if you do, your program will undoubtedly hang at some point, waiting to be able to print on the printer.**

FLOWCHARTS

Flowcharts are provided with each program following the step-by-step user instructions. Flowcharts are a schematic guide to the action of a program. Once you are familiar with the operation of this General Ledger system, the flowcharts will serve as a quick reference to program use.

Each flowchart symbol describes a logical step in a program from the user's point of view. Different symbols represent different kinds of steps. Table 4-A explains the general meaning of each symbol. In the actual flowcharts, the text inside each symbol describes the step in more detail. The 'ɓ̸' symbol is used in the flowchart text and throughout the chapter to signify a blank.

Connectors are used to connect one point in a flowchart to another, thus avoiding the maze that can be created by too many crossing arrows. For the purposes of this book we have formulated three connectors: Intra-program, SFK and Inter-program connectors.

Intra-program connector, coded by letters of the alphabet. This connector connects points within a program.

SFK connector, coded by SFK numbers.

Inter-program connector, coded by program numbers. This connector connects a program to another program. It is applicable only if your computer system allows for loading of programs by another program.

Table 4-A. Flowchart Symbols Key
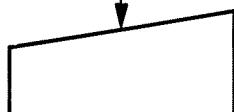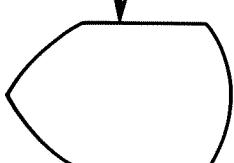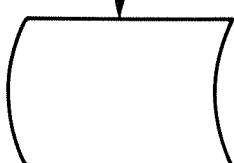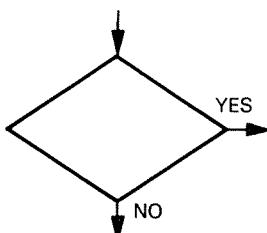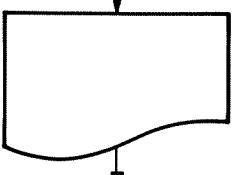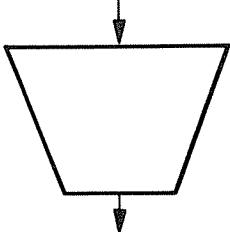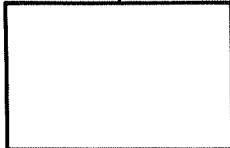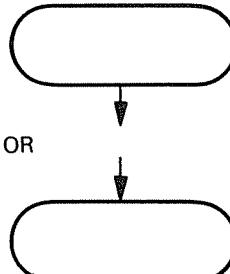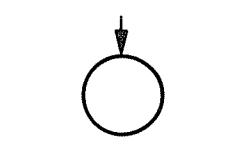
Symbol	Description
ARROW	Designates direction of program flow.
USER INPUT	Keyboard entry.
DISPLAY	Describes or quotes what is displayed on CRT screen. Quotes are shown in bold type, all capitals.
DISK ACTION	Describes an action taking place on disk drive; do not interrupt program during this process.
DECISION	Direction of program flow determined by a "yes" or "no" answer to the enclosed question.
PRINTOUT	Report printed by printer on standard paper.

Table 4-A. Flowchart Symbols Key (Continued)

Symbol	Description
USER INSTRUCTIONS	The operator must perform a duty outside of program.
PROCESS,NOTE	Describes a program action, or may contain a note to the user.
OR TERMINAL	Designates program start, program end, or return to main program.
OR CONNECTOR	Continue program at matching code (note direction of arrow). Connector circles in regular weight are incoming connectors (flow transfers TO the connector). Connector circles in bold weight are outgoing connectors (flow transfers FROM the connector).

START AND END

To start the system:

1. **Put your General Ledger disk in your disk drive.**
2. **Load the Menu program into your computer according to your system's instructions. The Menu's standard file name is G/L000.**
3. **Run the Menu program.**

Note: If your system cannot load and run one program from another program, you will have to load and run each General Ledger program manually. If such is the case, the Menu program cannot be used except as a printed guide to program selection. Remember to clear each program before you load another. Before you clear a program, make sure it has finished all processing.

To end processing:

1. **When the day's transactions are completed, make any backup disks you keep from your working disks.**
2. **Clear the last program on the screen from your computer's memory.** If you use the Menu program, you should always clear the entire system with that program in memory.
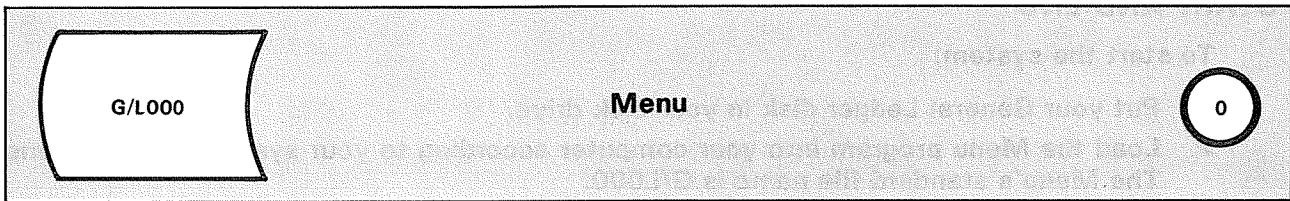
PURPOSE: Allow program selection, then automatically load and run selected program.

WHEN: To begin processing and automatically at the end of every program. All programs should be loaded by the Menu if possible.

TO EXIT: Menu must be cleared manually.

CRT 0-1

```
G/L PROGRAM SELECTION MENU
ENTER PASSWORD

XXXX
<bulletin>
1) GENERAL INFORMATION F/M

2) DIRECT POSTING

3) POSTING UPDATE

4) REPORTS

5) ACCOUNT FILE MAINTENANCE

6) ACCOUNT FILE REORGANIZE
```

d = display only,   x = enter only,   z = enter or display with option to change

LOAD MENU

1) Load the Menu program according to your system instructions.

When running the program manually, the initial Menu is displayed as CRT 0-1.

PASSWORD

2) Enter your password.

This system is password protected. If the characters you enter do not equal your password, the bulletin WRONG PASSWORD is flashed on the screen. You must re-enter the password until the correct password is entered; repeat this step.

Otherwise, proceed to step 3.

CRT 0-2

```
G/L PROGRAM SELECTION MENU
CHOOSE PROGRAM BY NUMBER
XX
<bulletin>
1) GENERAL INFORMATION F/M
2) DIRECT POSTING
3) POSTING UPDATE
4) REPORTS
5) ACCOUNT FILE MAINTENANCE
6) ACCOUNT FILE REORGANIZE
```

d = display only,   x = enter only,   z = enter or display with option to change

PROGRAM SELECTION

After successful entry of the password, or when the Menu is loaded automatically, the display appears as CRT 0-2.

3) Enter program number (1 - 6).

When an acceptable program number has been entered, the following message is displayed on the fourth line of the Menu display:

-- > LOADING PROGRAM #

The Menu is now loading the requested program. Be patient. Some programs are lengthy and take some time to load into the computer memory. The CRT display will not change until the next program is loaded and run.

Start

load Menu program G/L000, run

SFK 15

load Menu G/L000

0

PROGRAM SELECTION MENU mask 1

PROGRAM SELECTION MENU mask 1

has password been entered ?

NO

YES

CHOOSE PROGRAM BY NUMBER

ENTER PASSWORD

keyin program number

keyin password

LOADING PROGRAM #

password correct ?

YES

load requested program

NO

bulletin: WRONG PASSWORD

go to requested program number 1-6

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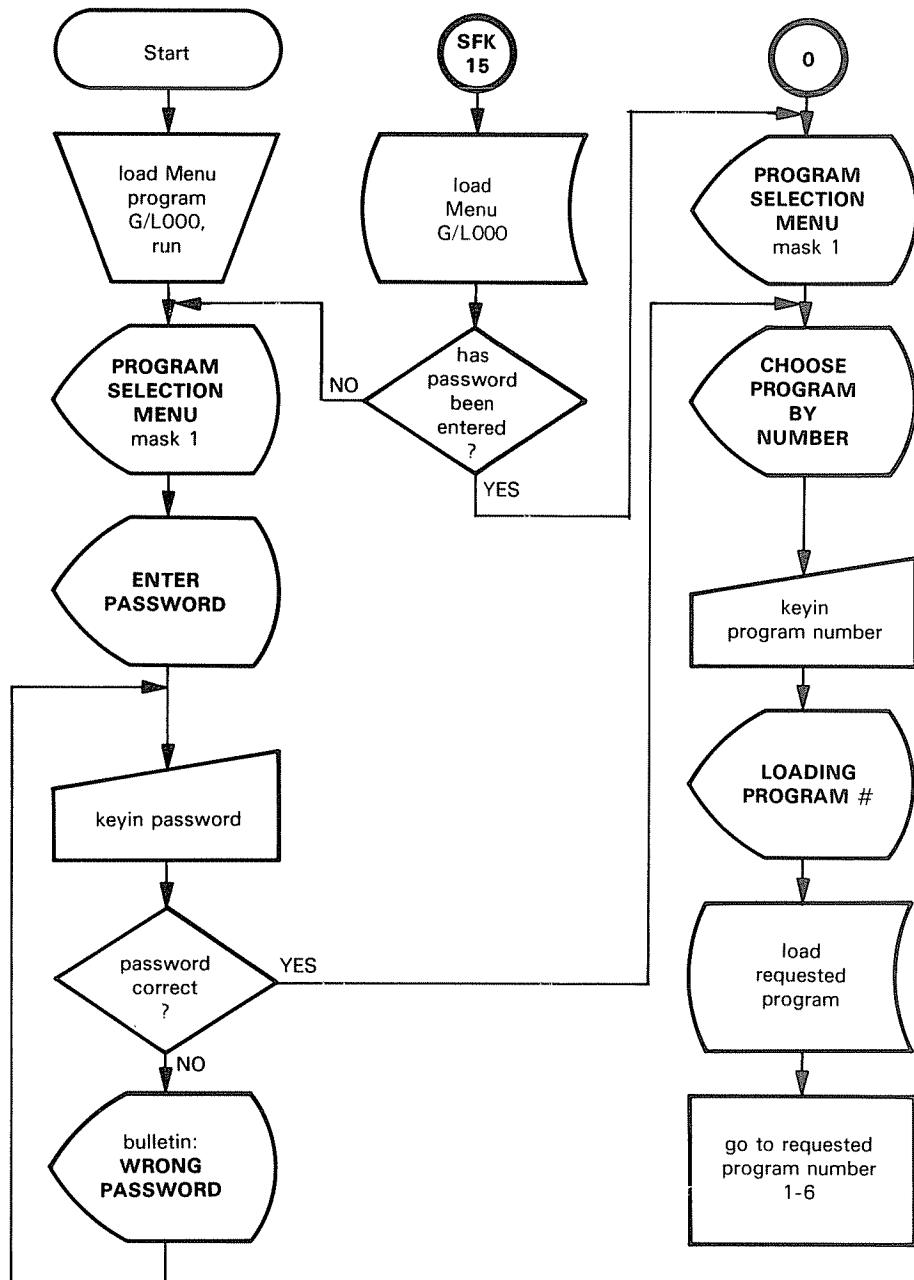
PURPOSE: **Enter or change today's date and company general information.**

WHEN: **Daily or as needed.**

TO EXIT: **Enter a field to change of '0', or SFK15 any time.**

This is basically the same General Information File Maintenance program as used in *Payroll With Cost Accounting* and *Accounts Payable and Accounts Receivable.* One new field has been added to this file record, the Fiscal Year Ends field, which has caused some field numbers to shift. Much of the information contained on this file pertains to Payroll processing. However, the company information, Today's Date field, and the Fiscal Year Ends field are relevant to General Ledger.

Enter your company name, address, federal and state numbers, and month your fiscal year ends when you initially set up your system. You may change this information at any time.

Every day you perform a General Ledger task, you should set Today's Date in this file to the correct date. This program should be the first program run each day.

The initial display appears as CRT 1-1. When entering information for the first time, it must be entered as a "change".

CRT 1-1

```
GENERAL INFORMATION FILE MAINTENANCE
ENTER FIELD TO CHANGE (16 TO PRINT; 0 TO EXIT)
XX
<bulletin>
1) COMPANY NUMBER  ZZ            11) TODAY'S DATE     ZZ/ZZ/ZZ
2) NEXT P/R CHECK  ZZZZZZ        12) PERIOD START     ZZ/ZZ/ZZ
3) O.T. RATE       ZZ.ZZ         13) PERIOD END       ZZ/ZZ/ZZ
4) HOURLY RATE     ZZ.ZZ         14) PAYROLL NUMBER   ZZ
5) FISCAL YR ENDS  ZZ            15) DAY NUMBER       ZZ
6) COMPANY NAME    ZZZZZZZZZZZZZZZZZZZZZZZZ
7)          ADDR   ZZZZZZZZZZZZZZZZZZZZZZZZ
8)                 ZZZZZZZZZZZZZZZZZZZZZZZZ
9)                 ZZZZZZZZZZZZZZZZZZZZZZZZ
10)FED/STATE NOS.  ZZZZZZZZZZZZZZZZZZZZZZZZ
```

d = display only,   x = enter only,   z = enter or display with option to change

Changes

1) Enter field number (0-16).

  0 - EXIT. Program ends The Menu is loaded.

  1-15 - Request to change the value at this field. Enter a new value when requested See Table 1-1 for field
    details When entry is complete. repeat this step

  16 - PRINT. Print the General Information data for the currently displayed company To prepare for this opera-
    tion. load standard paper into the printer. then make sure the printer is turned on and ready to print When
    the report is completed. you may make more changes. repeat this step

Table 1-1. General Information Fields

Field	Description
1	**COMPANY NUMBER** (1-10). Display General Information for this company. Accounts Payable, Accounts Receivable and General Ledger use only company number '1'.
2	**NEXT P/R CHECK** (1-999999). Used for Payroll.
3	**OVERTIME RATE** (0-99.99). Used for Payroll.
4	**HOURLY RATE** (0-99.99). Used for Payroll.
5	**FISCAL YEAR ENDS** (1-12). Month the fiscal year ends.
6	**COMPANY NAME** (24 characters).
7,8,9	**COMPANY ADDRESS** (three lines, 24 characters each).
10	**FEDERAL/STATE NUMBERS** (24 characters). Enter Federal and State tax identification numbers on this line. The first 12 characters are intended for the federal number, the latter 12 characters for the state number.
11	**TODAY'S DATE.** Change daily or as needed.
12	**PERIOD START DATE.** Used for Payroll.
13	**PERIOD END DATE.** Used for Payroll.
14	**PAYROLL NUMBER** (1-2). Used for Payroll.
15	**DAY NUMBER** (1-14). Used for Payroll.

A sample General Information report is shown in Report 1-1.

Report 1-1. General Information File Maintenance

```
                                IMPRESSIVE PRODUCTS                              DATE 05/31/78
                          GENERAL INFORMATION FILE MAINTENANCE                   PAGE 1


PERIOD START        05/16/78
PERIOD END          05/31/78
PAYROLL NUMBER      02
DAY NUMBER          10


COMPANY CODE  1      NEXT CHECK NO.  51247     O.T. RATE  1.50    HOURLY RATE  0.00    FISCAL YR ENDS 12
COMPANY NAME IMPRESSIVE PRODUCTS              FED/STATE TAX NUMBERS        91-1111111-A  137 456789
ADDRESS         356 BUSINESS STREET           PARODICE, CALIFORNIA                          94710
```

```
        ( 1 )                                ( SFK )
          │                                  ( 15  )
          ▼                                     │
    ┌───────────┐                               ▼
    │  GENERAL  │                         ╱─────────────╲
    │INFORMATION│                        │    G/I FM     │
    │   FILE    │                        │   LOADING     │
    │MAINTENANCE│                        │    MENU       │
    │  mask 5   │                         ╲─────────────╱
    └───────────┘                               │
          │                                     ▼
          │                               ╱───────────╲
          ▼                              │    load     │
   ┌────────────┐                        │    Menu     │
   │ keyin field │                       │   G/L000    │
   │number to change│                     ╲───────────╱
   └────────────┘                              │
          │                                    ▼
          ▼                                  ( 0 )
     ╱────────╲        YES
    ╱ entry = 0 ╲─────────►
    ╲    ?     ╱
     ╲────────╱
          │ NO
          ▼
     ╱──────────╲      NO
    ╱ entry = 16 ╲──────────────────►
    ╲  (PRINT)   ╱
     ╲    ?     ╱
          │ YES
          ▼
     ╱──────────╲     YES                ╱──────────╲     NO
    ╱  printer   ╲──────────►           ╱   field    ╲──────────►
    ╲  ready     ╱                      ╲ number = 1 ╱
     ╲    ?     ╱                        ╲    ?     ╱
          │ NO                                │ YES
          ▼                                   ▼                    ▼
    ╱───────────╲                      ┌────────────┐      ┌─────────────┐
   │  PRINTER   │                      │   keyin    │      │keyin requested│
   │    NOT     │                      │company number│    │ field value  │
   │   READY    │                      └────────────┘      └─────────────┘
    ╲───────────╱                            │                    │
          │                                  ▼                    ▼
          ▼                            ╱───────────╲        ╱──────────╲
    ┌──────────┐                      │    new      │      │   save    │
    │   turn   │                      │  company    │      │  record   │
    │ printer  │                      │  General    │       ╲──────────╱
    │   on     │                      │Information  │
    └──────────┘                       ╲───────────╱
          │                                  │
          ▼                                  │
   ┌────────────┐                            │
   │  current   │                            │
   │  company   │                            │
   │  General   │                            │
   │Information │                            │
   └────────────┘
```

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PURPOSE: Enter direct postings to General Ledger accounts, and optionally print these postings.

WHEN: Daily or as needed.

TO EXIT: Enter an operation code of '0', or SFK15 any time.

Any General Ledger postings which are not made through Payroll, Accounts Payable or Accounts Receivable (external postings) must be entered using this program. This program will also be used to adjust account totals when balance errors are being corrected.

Any Posting records created will remain on the Direct Posting file until General Ledger Update is run. You may print the contents of the Direct Posting file at any time by selecting the PRINT operation in this program.

Whenever you create a Posting record, the program checks the contents of the Direct Posting and External Posting files. If the Direct Posting file is filled to its limit, or if the External Posting file will be filled to its limit when the Direct Posting records are added to it during the General Ledger Update program, the program stops with this message displayed on the screen:

FILE FULL - RUN G/L UPDATE
KEY <CONTINUE> <RETURN> TO EXIT

Key [CONTINUE] and [RETURN]; the Menu will be loaded. Select and run the G/L Update program. When it is completed, re-select Direct Posting Entry/Print and continue entering your batch of postings.

The initial display for this program appears as CRT 2-1.

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```
G/L DIRECT POSTING ENTRY/PRINT
ENTER OPERATION (O=EXIT, 1=POST, 2=PRINT)
x
<bulletin>
ACCOUNT xxxxxx <account name>
1)DATE          zz/zz       <account type>
2)REFERENCE   zzzzzz        OPENING BALANCE    xxxxxx.xx
3)AMOUNT zzzzzzzzzz         CLOSING BALANCE    xxxxxx.xx
```

d = display only, x = enter only, z = enter or display with option to change

SELECT OPERATION

1) Enter operation code (0-2).

    0 - EXIT. Program ends The Menu is loaded

    1 - POST. Request to enter a direct posting to a General Ledger account; proceed to step 2

    2 - PRINT. Print current Direct Posting records; proceed to step 5

OPERATION IS POST

You may only post amounts to General Ledger accounts which are established on the Account file.

2) Enter account number (0-99999.9).

    0 - POST operation complete. A new operation is requested; return to step 1

    General Ledger number - Request to post an amount to this General Ledger account. A check is made to see if the requested General Ledger account is on the Account file:

        If yes, the account name, date, opening balance and account description are displayed on a screen similar to CRT 2-1 You may continue with the requested operation, proceed to step 3

        If no, the bulletin NOT ON FILE is flashed The account number must be on the Account file before a direct posting may be entered for that account A new account number is requested, repeat this step

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DIRECT POSTINGS DATA

If you discover at this point that you have entered the wrong account number, you must enter any ficticious postings data, and then select a final action (step 4) of 4 - CANCEL. Then re-enter the account number as needed.

3) **Enter field values as requested.** See Table 2-1 for field details. Initially, the posting Date field is set to today's date (from the General Information file) by the program. The Reference field and Amount field values are requested automatically.

When a value has been entered for each field, you may change any field values just entered and also the date at field 1; proceed to step 4.

Table 2-1. Direct Posting Fields

Field	Description
1	**DATE** (MMDD). The date of this posting entry. Note that you enter only the month and day (MMDD), and not the year. If you enter a '0' or ƀ at this field, today's date from the General Information file will be used automatically.
2	**REFERENCE** (0-999999). Invoice number or other reference code.
3	**AMOUNT** (-9999999.99 - +9999999.99). Amount of direct posting. The closing balance will be adjusted and displayed according to this posting amount.

CORRECTIONS

ENTER FIELD TO CHANGE (0=NONE; 4=CANCEL)

4) **Enter field number to change** (0-4).

0 - No changes, save this record. The bulletin RECORDED is flashed when this record is saved on the Direct Posting file. A new account number is requested; return to step 2.

1-3 - Change value of requested field. See Table 2-1 for field details. A new closing balance is calculated and displayed with any change to the amount at field 3. Repeat this step.

4 - CANCEL. This record is not saved on the Direct Posting file. A new account number is requested; return to step 2.

5) OPERATION IS PRINT

The print operation begins immediately once the operation is requested. To prepare for the print operation, load standard paper into the printer, then make sure the printer is turned on and ready to print. The entire Direct Posting file is printed. When the report is completed, another operation is requested; return to step 1.

A sample Direct General Ledger Postings report is shown in Report 2-1.

Report 2-1. Direct General Ledger Postings

```
                                    IMPRESSIVE PRODUCTS                                      DATE 05/31/78
                                DIRECT GENERAL LEDGER POSTINGS                               PAGE 1

ACCOUNT SOURCE DATE     REF     AMOUNT>-----<ACCOUNT SOURCE DATE     REF     AMOUNT>-----<ACCOUNT SOURCE DATE     REF     AMOUNT
43110.0    3   10/12     0        0.00>-----<43730.0    3   9/22     22       -3.00>-----<43740.0    3   9/22     23      -4.00
43750.0    3    9/22    24       -4.00>-----<31110.0    3   9/22    123   100000.00>-----<11110.0    3   9/22    456   50000.00
31110.0    3    5/31     0      903.77>-----<31320.0    3   5/31     0     7383.81>-----<31590.0    3   5/31     0    1002.00
41300.0    3    5/31     0      592.44>-----<43340.0    3   5/31     0     3320.00>-----<43410.0    3   5/31     0     926.00
43510.0    3    5/31     0     2026.00>-----<43530.0    3   5/31     0      264.89>-----<43730.0    3   5/31     0     498.34
43590.0    3    5/31     0      994.00>-----<31590.0    3   5/31     0     1002.00>-----<41300.0    3   5/31     0     592.44
43340.0    3    5/31     0      320.00>-----<43410.0    3   5/31     0      926.00>-----<43510.0    3   5/31     0    2026.00
43530.0    3    5/31     0      264.89>-----<

                        22 TOTAL DIRECT POSTINGS    $173031.58
```

(2)

(A)

(SFK 15)

G/L DIRECT POSTING ENTRY/PRINT mask 2

ENTER OPERATION (0 = EXIT; 1 = POST; 2 = PRINT)

have any postings been entered this run ?
— NO
— YES

keyin operation code

has a current report been printed ?
— YES
— NO

operation code = 0 (EXIT) ?
— YES
— NO

DO YOU WANT A DIRECT POSTING LISTING?

(B)

page 2

operation code = 2 (PRINT) ?
— NO
— YES

keyin response 1 = yes, 0 = no

printer ready ?
— YES
— NO

entry = 1 (YES) ?
— YES
— NO

PRINTER NOT READY

G/L DIRECT POSTING LOADING MENU

turn printer on

load Menu G/L000

Direct General Ledger Postings

(0)

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B

operation
code = 1
(POST)

keyin
account number

account
number = 0
?

YES → **A** page 1

NO

account
number on
Account file
?

YES

NO

bulletin:
**NOT ON
FILE**

account
description
and current
amounts,
today's date

keyin
reference number

keyin
posting amount

closing amount
adjusted
automatically

**ENTER
FIELD TO
CHANGE
(0 = NONE;
4 = CANCEL)**

keyin
field number

field
number = 4
(CANCEL)
?

NO

YES

record is
not saved;
cancelled

field
number = 0
(NONE)
?

NO

YES

save
record

bulletin:
RECORDED

keyin value at
requested field

closing amount
is adjusted if
Amount field
is changed

A
page 1

44

PURPOSE: Update direct postings and external postings to the General Ledger Account file.

WHEN: Daily or as needed, and always before printing reports at the end of the month.

TO EXIT: Enter initial response of 'END', or SFK15 any time.

This program sorts and then updates direct postings and external postings to the Account file. It also clears both the Direct Posting and External Posting files.

You will always run this program before printing reports, to ensure that your most recent postings are included in these reports.

You must also run Update when either the Direct Posting or External Posting file is full. This "file full" condition will be detected during the Direct Posting Entry program. To recover from this situation you must run Update in order to clear the files. Once the files are cleared you may return to Direct Posting Entry and resume entering postings. Similarly, if the External Posting file is found full during Accounts Payable or Accounts Receivable processing, run this G/L Update program to clear it. Then return to your Accounts Payable or Accounts Receivable program and resume processing.

G/L Posting Sort/Update involves two separate programs. The first program sorts the postings on the Direct Posting and External Posting files. The postings from both files are then merged together onto the External Posting file, and the Direct Posting file is cleared. When the sort is complete, the first program automatically loads the second program.

The second program updates all the postings to the appropriate Account records in the Account file. An account-by-account Update activity report is printed during the Update program. When the update is complete, the External Posting file is cleared, and the Menu is loaded.

Inspect the Update activity report for posting errors (see discussion in Chapter 3, Errors and Error Recovery). If you discover errors, correct them using Direct Posting Entry, or Account File Maintenance, if necessary. Then re-run Update before printing reports.

To prepare for this program load standard paper into the printer, then make sure the printer is turned on and ready to print.

START OR END

This program requires virtually no user action; you need only tell it when to begin.

    G/L POSTINGS SORT/UPDATE
    KEY RETURN TO BEGIN; ENTER 'END' TO EXIT.

1) Start or end program.

   RETURN - Continue Sort/Update programs When all posting records have been sorted and updated to the General Ledger Account File and the G/L Update activity report is printed, the program ends and the Menu is loaded

   END - EXIT Program ends The Menu is loaded

The Sort program involves no user action. There are, however, certain status messages displayed on the screen to let you know where the program is within the sort, and how the sort is progressing. Initially, the Sort program will display the following message:

    WORKING. . . DO NOT INTERRUPT

If there are no records located on the Direct Posting or the External Posting files, the message NO RECORDS is displayed. The Sort program then loads the Menu, since there is no reason to proceed with the update.

When posting records are located on either or both of the posting files, the program first sorts the Direct Posting file. The first sort status message reads:

MAX NUMBER OF RECORDS: ##

The number displayed here is the total number of records on both the Direct Posting and External Posting files. While the actual sort takes place the following message is displayed.

SORT DIRECT POSTINGS

When this Direct Posting sort is complete, the External Posting file is sorted. The sort message reads:

SORT EXTERNAL POSTINGS

During the sort, each of the two posting files is saved in blocks on the Work file. If more than one block of records is saved, these messages are displayed as each block of records is saved:

RECORD NUMBER: *m*
BLOCKS SORTED: *n*

m is the number of records saved on the Work file so far. *n* is the number of blocks sorted. After all blocks of records are sorted and saved they must be merged together onto the External Posting file in their final order. During this process, the following message is displayed.

MERGE SORTED BLOCKS

Records from each block on the Work file are merged and saved, sector by sector, onto the External Posting file. As each sector is saved, the activity is followed by the following message:

RECORD NUMBER: *n*

As each sector of records is saved, *n* is incremented by the number of records saved. When the sort is complete, the program displays this message:

SORT COMPLETE

At the completion of the Sort program, your screen display will appear similar to CRT 3-1.

```
G/L POSTING SORT/UPDATE
KEY RETURN TO BEGIN; ENTER 'END' TO EXIT
WORKING...DO NOT INTERRUPT
MAX NUMBER OF RECORDS:        dd
MERGE SORTED BLOCKS
RECORD NUMBER:        dd


BLOCKS SORTED:        dd


SORT COMPLETE
```

d = display only,   x = enter only,   z = enter or display with option to change

The Sort program then loads the Posting Update program. The screen display is cleared and the following title displayed:

GENERAL LEDGER UPDATE
PROCESSING. . .DO NOT INTERRUPT

The update process begins immediately. An Update activity report is printed during the update process, so make sure your printer is turned on and ready to print.

When all postings have been updated to the Account file and the G/L Update report has finished printing, the program ends and the Menu is loaded.

A sample G/L Update report is shown in Report 3-1. An error report, which prints at the end of the Update report, is shown in Report 3-2.

```
                          IMPRESSIVE PRODUCTS                                      DATE 05/31/78
                             G/L UPDATE                                            PAGE 1

   ACCT    SRCE  DATE   REF    AMOUNT:::SRCE  DATE   REF    AMOUNT:::SRCE  DATE   REF    AMOUNT:::SRCE  DATE   REF     AMOUNT

  11110.0    1   9/ 8    41    110.00:::  1   9/19  71151   120.00:::  1   9/20    42    120.00:::  1   9/28  71290    120.00
             1  10/18  71437   140.00:::  1  10/31  71449   175.00:::  1  10/31  71568   190.00:::  1  10/31  71713    200.00
             1  11/13  71671   100.00:::  1  11/29  71822    70.00:::  3   9/22   456  50000.00:::
  REVENUE BANK                     P/R   0       A/P  10     A/R   0       G/L   1          OPENING BAL     20235.25
      NET CHANGE    51345.00           0.00         1345.00        0.00      50000.00       CLOSING BAL     71580.25


  11420.0    1   9/19   532    150.00:::  1   9/20   7850   100.00:::  1   9/25   589    100.00:::  1   9/26   7844   -250.00
             1   9/26   7847  -250.00:::  1   9/28  71250   440.00:::  1   9/28  71251   100.00:::  1  10/13    49     40.00
             1  10/13   614   1000.00:::  1  10/13   621   1282.00:::  1  10/13   622    500.00:::  1  10/13   645   1000.00
             1  10/13  71319  -100.00:::  1  10/31   642     75.00:::  1  10/31   643    125.00:::  1  10/31   671    100.00
             1  10/31   672    150.00:::  1  10/31   673    150.00:::  1  10/31   674    150.00:::  1  10/31   675    150.00
             1  10/31   676    150.00:::  1  11/ 7   688    200.00:::  1  11/ 7   692     75.00:::  1  11/13   698    150.00
             1  11/13   699    150.00:::  1  11/13   700    100.00:::  1  11/13   701    100.00:::  1  11/15   7856  -150.00
             1  11/15  103078 -992.00:::  1  11/15 110778  -100.00:::  1  11/22   7860  -150.00:::  1  11/28  71747    500.00
             1  11/29   7864  -150.00:::  1  11/29   7867  -100.00:::  1  11/29   7870  -150.00:::
  EMPLOYEE RECEIVABLES             P/R   0       A/P  35     A/R   0       G/L   0          OPENING BAL      1030.00
      NET CHANGE     4645.00           0.00         4645.00        0.00         0.00         CLOSING BAL      5675.00


  11610.0    1   9/17  1548  14378.02:::  1  10/31  1548  14378.02:::  1  10/31  1548 -14378.02:::  1  10/31  8771   16865.05
             1  10/31  8772   8278.95:::  1  10/31 111778 50000.00:::  1  10/31 251574 14463.52:::
  FINISHED GOODS (AT MFG. COST)    P/R   0       A/P   7     A/R   0       G/L   0          OPENING BAL     266195.00
      NET CHANGE   103985.54           0.00       103985.54        0.00         0.00         CLOSING BAL     370180.54


  11630.0    1  10/31  22741   451.94:::  1  11/22 781287   111.83:::
  OTHER INVENTORY                  P/R   0       A/P   2     A/R   0       G/L   0          OPENING BAL         0.00
      NET CHANGE      563.77           0.00          563.77        0.00         0.00         CLOSING BAL       563.77


  11820.0    1   9/19  71224  1366.23:::  1   9/28   7107  1366.23:::  1   9/28  71306   775.40:::  1  10/31  71711   1300.00
             1  10/31  71712  1600.00:::  1  11/ 7 135772   536.23:::
  PREPAID TAXES                    P/R   0       A/P   6     A/R   0       G/L   0          OPENING BAL         0.00
      NET CHANGE     6944.09           0.00         6944.09        0.00         0.00         CLOSING BAL      6944.09


  11890.0    1  11/22  2111   1998.00:::  1  11/29   2111  1998.00:::
  OTHER PREPAID EXPENSES           P/R   0       A/P   2     A/R   0       G/L   0          OPENING BAL        63.50
      NET CHANGE     3996.00           0.00         3996.00        0.00         0.00         CLOSING BAL      4059.50


  15110.0    1   9/17  8241   1917.00:::  1   9/26   8375  1331.25:::  1   9/30  87326   428.68:::  1  10/31  51032    304.93
             1  10/31  64567   457.40:::  1  10/31  71534   233.88:::  1  11/28   7136   180.24:::  1  11/29  64567   -228.70
             1  11/29  645670  228.70:::
  MACHINERY & EQUIPMENT            P/R   0       A/P   9     A/R   0       G/L   0          OPENING BAL     350000.00
      NET CHANGE     4853.38           0.00         4853.38        0.00         0.00         CLOSING BAL
```

```
                          IMPRESSIVE PRODUCTS                                      DATE 05/31/78
                             G/L UPDATE                                            PAGE 2

   ACCT    SRCE  DATE   REF    AMOUNT:::SRCE  DATE   REF    AMOUNT:::SRCE  DATE   REF    AMOUNT:::SRCE  DATE   REF     AMOUNT

  15120.0    1   9/30  6066    127.53:::  1  10/13  71308   166.14:::  1  10/31   6964   500.55:::  1  11/13  33531    378.08
                                                                                         OPENING BAL      30000.00
```

```
                          IMPRESSIVE PRODUCTS                                      DATE 05/31/78
                             G/L UPDATE                                            PAGE 3

                          IMPRESSIVE PRODUCTS                                      DATE 05/31/78

                          IMPRESSIVE PRODUCTS                                      DATE 05/31/78

                          IMPRESSIVE PRODUCTS                                      DATE 05/31/78

                          IMPRESSIVE PRODUCTS                                      DATE 05/31/78
                                                                                  PAGE 9
```

```
                          IMPRESSIVE PRODUCTS                                      DATE 05/31/78
                             G/L UPDATE                                            PAGE 10

   ACCT    SRCE  DATE   REF    AMOUNT:::SRCE  DATE   REF    AMOUNT:::SRCE  DATE   REF    AMOUNT:::SRCE  DATE   REF     AMOUNT

  43790.0    1   9/19  71152    69.19:::  1   9/20  71228    31.00:::  1   9/20  71231    65.00:::  1   9/20  71232     65.00
             1   9/28  71255    28.30:::  1  10/31  71714    28.17:::  1  11/ 7  71572    20.00:::  1  11/13  71670     92.47
             1  11/15 111578    48.00:::  1  11/29  71823   105.35:::
  MISCELLANEOUS                    P/R   0       A/P  10     A/R   0       G/L   0          OPENING BAL        56.24
      NET CHANGE      552.48           0.00          552.48        0.00         0.00         CLOSING BAL       608.72


  44200.0    1   9/12  5707      1.21:::  1   9/19  71191  1786.49:::  1   9/28  71252    61.37:::  1   9/30   8660    489.46
             1   9/30 100178     3.67:::  1  10/31  71495  1750.31:::  1  10/31 102078     3.67:::  1  10/31 103178    138.95
             1  11/ 7  71571   306.25:::  1  11/ 7 103178  -138.95:::  1  11/15 110178     2.56:::  1  11/15 112678      9.40
             1  11/29  1078      5.00:::  1  11/29 357720     0.93:::
  INTEREST (INCOME)EXPENSE         P/R   0       A/P  14     A/R   0       G/L   0          OPENING BAL       945.25
      NET CHANGE     4420.32           0.00         4420.32        0.00         0.00         CLOSING BAL      5365.57


  45200.0    1   9/25  92178    136.27:::
  STATE                            P/R   0       A/P   1     A/R   0       G/L   0          OPENING BAL      3324.90
      NET CHANGE      136.27           0.00          136.27        0.00         0.00         CLOSING BAL      3461.17




  TOTAL NET CHANGE:

  DEBIT ACCOUNTS      373005.28
  CREDIT ACCOUNTS     269066.72

  PROOF               103938.56
```

Report 3-2. G/L Posting Errors

ACCT NO	SRCE	DATE	REF	AMOUNT	ACCT NO	SRCE	DATE	REF	AMOUNT	ACCT NO	SRCE	DATE	REF	AMOUNT
2.0	1	9/ 8	0	-17269.92	2.0	1	9/12	0	0.00	2.0	1	9/16	0	0.00
2.0	1	9/17	0	0.00	2.0	1	9/17	0	0.00	2.0	1	9/19	0	-83749.84
2.0	1	9/20	0	0.00	2.0	1	9/20	0	-65.00	2.0	1	9/20	0	-6848.54
2.0	1	9/25	0	-2042.04	2.0	1	9/26	0	0.00	2.0	1	9/26	0	0.00
2.0	1	9/28	0	-4557.79	2.0	1	9/30	0	0.00	2.0	1	9/30	0	0.00
2.0	1	9/30	0	-20.00	2.0	1	10/13	0	-22139.85	2.0	1	10/18	0	0.00
2.0	1	10/18	0	-8659.61	2.0	1	10/20	0	-12202.96	2.0	1	10/31	0	0.00
2.0	1	10/31	0	0.00	2.0	1	10/31	0	0.00	2.0	1	10/31	0	-19204.42
2.0	1	10/31	0	-55196.68	2.0	1	10/31	0	-59070.91	2.0	1	11/ 7	0	0.00
2.0	1	11/ 7	0	-38082.51	2.0	1	11/13	0	-1661.85	2.0	1	11/15	0	0.00
2.0	1	11/15	0	0.00	2.0	1	11/22	0	0.00	2.0	1	11/27	0	0.00
2.0	1	11/28	0	0.00	2.0	1	11/28	0	-9156.88	2.0	1	11/29	0	0.00
2.0	1	11/29	0	0.00	2.0	1	11/29	0	0.00	2.0	1	11/29	0	0.00
2.0	1	11/29	0	0.00	2.0	1	11/29	0	-2346.68	2.0	1	11/30	0	0.00
2020.0	1	9/ 8	0	-3199.05	2020.0	1	9/12	0	8045.02	2020.0	1	9/16	0	0.00
2020.0	1	9/17	0	40285.30	2020.0	1	9/17	0	-333.87	2020.0	1	9/19	0	-1107.66
2020.0	1	9/20	0	0.00	2020.0	1	9/20	0	112.57	2020.0	1	9/20	0	-15.63
2020.0	1	9/25	0	0.00	2020.0	1	9/26	0	12427.52	2020.0	1	9/26	0	18525.68
2020.0	1	9/28	0	0.00	2020.0	1	9/30	0	3536.41	2020.0	1	9/30	0	14749.97
2020.0	1	9/30	0	-20.00	2020.0	1	10/13	0	-1380.63	2020.0	1	10/18	0	32.00
2020.0	1	10/18	0	-719.52	2020.0	1	10/20	0	-12202.96	2020.0	1	10/31	0	0.00
2020.0	1	10/31	0	6614.17	2020.0	1	10/31	0	50939.94	2020.0	1	10/31	0	-4.00
2020.0	1	10/31	0	-1120.98	2020.0	1	10/31	0	-19204.42	2020.0	1	11/ 7	0	6586.79
2020.0	1	11/ 7	0	-28858.03	2020.0	1	11/13	0	0.00	2020.0	1	11/15	0	86.50
2020.0	1	11/15	0	12787.29	2020.0	1	11/22	0	7795.62	2020.0	1	11/27	0	491.92
2020.0	1	11/28	0	0.00	2020.0	1	11/28	0	431.38	2020.0	1	11/29	0	0.00
2020.0	1	11/29	0	1.00	2020.0	1	11/29	0	114.24	2020.0	1	11/29	0	1768.35
2020.0	1	11/29	0	3104.64	2020.0	1	11/29	0	4420.40	2020.0	1	11/30	0	4864.61
3037.0	1	9/19	52478	28.10	3073.0	1	9/16	8405	-5963.35	3073.0	1	9/16	84050	5963.35
4420.0	1	10/31	71455	61.37	4521.0	1	9/26	7847	443.89	4521.0	1	11/29	7864	264.24
29098.0	1	11/29	29098	17.65	29098.0	1	11/30	29098	-17.65	31640.0	1	10/31	71531	1982.03
43380.0	1	10/31	633	10.00										

94   ERROR POSTINGS = $ -209931.28

49

3

SFK 15

G/L POSTINGS SORT/UPDATE

G/L POSTINGS SORT LOADING MENU

MAX NUMBER OF RECORDS:#

GENERAL LEDGER UPDATE

KEY RETURN TO BEGIN; ENTER 'END' TO EXIT

load Menu G/L000

sort direct postings

PROCESSING... DO NOT INTERRUPT

keyin response

0

sort external postings

printer ready ? — YES

entry = END ? — YES

NO

merge sorted blocks

NO

PRINTER NOT READY

WORKING... DO NOT INTERRUPT

SORT COMPLETE

turn printer on

any records on Direct or External Posting files ? — YES

load Posting Update G/L030

G/L Update

NO

NO RECORDS

load Menu G/L000

0

PURPOSE: Print a variety of reports from the Account file, and update month-to-date, quarter-to-date, and year-to-date totals.

WHEN: As needed, and at the end of each month, quarter, and year.

TO EXIT: Enter report type of '0', or SFK15 any time.

G/L Reports prints your General Ledger financial reports. You should run a full set of reports once a month after running Posting Update. First, run a trial income statement and trial balance, and inspect each report for possible errors; any errors should be corrected immediately using the Account File Maintenance or Direct Posting/Update programs. If you make any changes, you should run another set of trial reports and check for errors once again. When the trial reports are correct, run the monthly, quarterly, etc. reports as necessary.

To prepare for this program, load standard paper into the printer, then turn the printer on and make sure it is ready to print.

The display for this program appears in CRT 4-1.

CRT 4-1

```
G/L REPORTS


<bulletin>

+ + + + + + + + + + + + + + + + + + + + + + + + + + + + + + +
+ TYPE z          + FORMAT z       + QUARTER z     + MOVE   z      +
+ 0:=EXIT         + 1=INCOME STMT + 0=CURRENT      + 1:=MONTHLY    +
+ 1=TRIAL         + 2:=BALANCE     + 1=1ST PREVIOUS+ 2=QUARTERLY +
+ 2=SPECIAL       +                + 2=2ND PREVIOUS+ 3=YEARLY    +
+ 3=MONTHLY       +                + 3=3RD PREVIOUS+            +
+ 4=QUARTERLY     +                +               +            +
+ 5=MOVE TOTALS +                  +               +            +
+ + + + + + + + + + + + + + + + + + + + + + + + + + + + + + +
<Posting file status>
```

d = display only,   x = enter only,   z = enter or display with option to change

SELECT REPORT PARAMETERS

1) Enter report type (0-5).

0 - EXIT. Program ends. The Menu is loaded.

1 - TRIAL. Print a trial income statement or trial balance report. You must select the report format; proceed to step 2.

2 - SPECIAL. Print a listing of all accounts which are indicated to be included at the Special field on the Account record; proceed to step 7.

3 - MONTHLY. Print a monthly income statement or balance report. You must specify the report format; proceed to step 2.

4 - QUARTERLY. Print a quarterly income statement or balance report. You must specify the report format; proceed to step 2.

5 - MOVE TOTALS. Request to perform monthly, quarterly, or yearly updates. This operation should be selected only at the end of a month, quarter, or year. At the end of each month, move monthly; at the end of each quarter, move quarterly; at the end of each year, move yearly (refer to Chapter 3 for more discussion). You must specify which move to make; proceed to step 4.

2) Enter report format (1-2).

1 - INCOME STATEMENT. Print an income statement in conjunction with the report type.

If trial or monthly type, proceed to step 7.

If quarterly type, you must specify which quarter; proceed to step 3.

2 - BALANCE. Print a balance sheet report in conjunction with report type:

If trial or monthly type, proceed to step 7.

If quarterly type, you must specify which quarter; proceed to step 3.

3) Enter quarter (0-3).

0 - CURRENT. Print quarterly report for the current quarter. Proceed to step 7.

1 - FIRST PREVIOUS QUARTER. Print quarterly report for one quarter prior to the current quarter. Proceed to step 7.

2 - SECOND PREVIOUS QUARTER. Print quarterly report for two quarters prior to the current quarter. Proceed to step 7.

3 - THIRD PREVIOUS QUARTER. Print quarterly report for three quarters prior to the current quarter. Proceed to step 7.

4) Enter move (1-3).

1 - MONTHLY. Clear the monthly figures on the Income and Expense accounts. Perform this operation only at the end of the month. Proceed to step 5.

2 - QUARTERLY. Move quarterly figures, and clear the monthly and current quarter figures on the Income and Expense accounts. Perform this operation only at the end of a quarter. Proceed to step 5.

3 - YEARLY. Move quarterly and yearly figures, and clear the monthly, current quarter, and current year figures on the Income and Expense accounts. Perform this operation only at the end of the year. Proceed to step 5.

Since it is very tedious to recover from an erroneous MOVE operation, you must verify any selected MOVE operation.

ENTRY CORRECT?

5) Verify move direction (0-1).

0 - No, do not move. New report parameters are requested; return to step 1.

1 - Yes, OK to move as indicated. You should have up-to-date reports for the end of the month/quarter/year before the move operation. A check is made on your report status; proceed to step 6.

HAVE YOU RUN ALL YOUR REPORTS?

6) Verify current reports (0-1).

0 - No, not all reports current, do not move. New report parameters are requested; return to step 1.

1 - Yes, current reports verified, move as indicated. WORKING...DO NOT INTERRUPT is displayed on the screen. Do not interrupt the program while a move operation is taking place. When the move operation is complete, new report parameters are requested; return to step 1.

7) Verify report parameters (0-1).

0 - No, do not print. New report parameters are requested; return to step 1.

1 - Yes, print. Make sure your printer is turned on and ready to print. When the report is finished printing, new report parameters are requested; return to step 1

A sample Trial Income Statement is shown in Report 4-1, a Trial Balance Sheet in Report 4-2. A Special Report is shown in Report 4-3. A Monthly Income Statement is shown in Report 4-4, a Monthly Balance Sheet in Report 4-5. A Quarterly Income Statement for the current quarter is shown in Report 4-6, and a Quarterly Balance Sheet is shown for the first previous quarter in Report 4-7; Income Statements and Balance reports for varying quarters all use the same format.

Report 4-1. Trial Income Statement (Page 1 of 4)

```
                          IMPRESSIVE PRODUCTS                                  DATE 05/31/78
                          TRIAL INCOME STATEMENT                               PAGE 1

  ACCOUNT      NAME                        THIS MONTH    PCT            QUARTER      PCT


               INCOME


               SALE OF GOODS
 31110.0          FINISHED GOODS         $  198265.48 107.95%     $   394350.04 107.69%
 31190.0          SALES RETURNS & ALLOWANCES -14603.45   7.95%         -28184.66   7.69%
               TOTAL                     $  183662.03 100.00%     $   366165.38 100.00%

 31210.0       CONSULTING FEES               4500.00   2.45%            8910.00   2.43%

               ROYALTIES INCOME
 31310.0          PATENT ROYALTIES              0.00   0.00%               0.00   0.00%
 31320.0          CONSULTING ROYALTIES        350.00   0.19%             700.00   0.19%
               TOTAL                     $      350.00   0.19%     $      700.00   0.19%

               OTHER INCOME
 31510.0          COLLECTION OF BAD DEBTS    2135.55   1.16%            4604.25   1.25%
 31590.0          MISCELLANEOUS INCOME          0.00   0.00%               0.00   0.00%
               TOTAL                     $     2135.55   1.16%     $     4604.25   1.25%

          TOTAL INCOME                   $  190647.58 103.80%     $   380379.63 103.88%


               EXPENSES


               COST OF INCOME
 41100.0       COST OF SALE OF GOODS        65000.00  35.39%          127400.00  34.79%
 41200.0       COST OF CONSULTING FEES          0.00   0.00%               0.00   0.00%
 41300.0       ROYALTY PAYMENTS             9180.00   4.99%           18360.00   5.01%
 41900.0       VARIANCE EXPENSE                 0.00   0.00%               0.00   0.00%
               TOTAL                     $    74180.00  40.38%     $   145760.00  39.80%


               DEVELOPMENT PROJECT EXPENSES
 42010.0          DIRECT LABOR            24137.00  13.14%           48201.59  13.16%
 42020.0          OVERHEAD                 6025.35   3.28%           12032.64   3.28%
                  OTHER DIRECT CHARGES
 42042.0             DIRECT MATERIALS         0.00   0.00%               0.00   0.00%
 42044.0             OUTSIDE SERVICES      1000.00   0.54%            2000.00   0.54%
 42046.0             FREIGHT - IN             0.00   0.00%              14.30   0.00%
 42048.0             TRAVEL                 120.34   0.06%             240.68   0.06%
                  TOTAL                   $    1120.34   0.61%     $     2254.98   0.61%
               TOTAL DEVELOPMENT PROJ. EXPENSE $ 31282.69  17.03%  $    62489.21  17.06%
```

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Report 4-1. Trial Income Statement (Page 2 of 4)

ACCOUNT	NAME		THIS MONTH	PCT		QUARTER	PCT
	DEPARTMENT EXPENSES						
	SALARIES, WAGES, & BENEFITS						
43110.0	DIRECT LABOR	$	65023.55	35.40%	$	129852.03	35.46%
43120.0	INDIRECT LABOR		0.00	0.00%		0.00	0.00%
43130.0	OVERTIME PREMIUM		346.89	0.18%		692.74	0.18%
43140.0	HOLIDAY-VACATION-SICK LEAVE		458.24	0.24%		925.64	0.25%
43150.0	JURY DUTY & OTHER LEAVE		0.00	0.00%		0.00	0.00%
43160.0	PAYROLL TAXES		4295.24	2.33%		8577.59	2.34%
43170.0	BONUS		0.00	0.00%		0.00	0.00%
43190.0	OTHER FRINGE BENEFITS		2594.74	1.41%		5137.59	1.40%
	TOTAL	$	72718.66	39.59%	$	145185.59	39.65%
	MATERIALS & SUPPLIES						
43210.0	COMPUTER MATERIALS AND SUPPLIES		620.87	0.33%		1216.91	0.33%
43220.0	RAW MATERIALS & SUPPLIES		1135.99	0.61%		2271.98	0.62%
43230.0	STATIONARY-MATR'LS AND SUPPLIES		689.45	0.37%		1365.11	0.37%
43290.0	OTHER MATERIALS AND SUPPLIES		570.97	0.31%		1113.39	0.30%
	TOTAL	$	3017.28	1.64%	$	5967.39	1.62%
	FACILITIES & EQUIPMENT						
43310.0	RENT - OFFICE SPACE		2300.00	1.25%		4600.00	1.25%
43320.0	EQUIPMENT LEASES		4365.79	2.37%		8731.58	2.38%
43330.0	DEPRECIATION		567.86	0.30%		1078.97	0.29%
43340.0	EQUIPMENT MAINTENANCE		57.99	0.03%		111.94	0.03%
43350.0	JANITORIAL SERVICE		500.00	0.27%		1000.00	0.27%
43360.0	UTILITIES		534.26	0.29%		1065.85	0.29%
43370.0	AUTO EXPENSE		478.18	0.26%		930.08	0.25%
43390.0	EQUIPMENT RENTAL		414.25	0.22%		787.08	0.21%
	TOTAL	$	9218.33	5.01%	$	18305.50	4.99%
	OUTSIDE SERVICES						
43410.0	PROFESSIONAL SERVICES - LEGAL		2151.95	1.17%		4088.71	1.11%
43420.0	PROF. SERVICES - CONSULTING		400.00	0.21%		820.00	0.22%
43430.0	EMPLOYMENT SERVICE		2440.22	1.32%		2440.22	0.66%
43440.0	CREDIT & COLLECTION SERVICE		31.80	0.01%		68.37	0.01%
43490.0	OTHER OUTSIDE SERVICES		97.48	0.05%		192.04	0.05%
	TOTAL	$	5121.45	2.78%	$	7609.34	2.07%
	ADVERTISING						
43510.0	PERIODICALS		4910.32	2.67%		9820.64	2.68%
	TRADE SHOWS						
43521.0	SHOWS - TRAVEL		445.09	0.24%		445.09	0.12%
43529.0	SHOWS - OTHER		758.71	0.41%		758.71	0.20%
	TOTAL	$	1203.80	0.65%	$	1203.80	0.32%

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                              IMPRESSIVE PRODUCTS                        DATE 05/31/78
                           TRIAL INCOME STATEMENT                          PAGE 3

    ACCOUNT        NAME                          THIS MONTH    PCT              QUARTER     PCT


    43530.0       DIRECT MAILINGS - SAMPLES    $    250.66    0.13%       $      516.36    0.14%
    43540.0       BROCHURE PRINTING AND MAILING     164.88    0.08%              331.41    0.09%
    43560.0       OUTSIDE PREP. WORK ON ADS          43.80    0.02%               86.72    0.02%
    43590.0       OTHER ADVERTISING                   0.00    0.00%                0.00    0.00%
                  TOTAL ADVERTISING            $   6573.46    3.57%       $    11958.93    3.26%

                  ORDER & SHIPPING EXPENSES
    43610.0       SHIPPING EXPENSE - OUTGOING       668.59    0.36%             1334.51    0.36%
    43620.0       ORDER/SHIPPING FORMS PRINTING      26.80    0.01%               53.60    0.01%
    43630.0       POSTAGE                           320.00    0.17%              639.36    0.17%
                  TOTAL                        $   1015.39    0.55%       $     2027.47    0.55%

                  OTHER EXPENSES
    43710.0       TAXES-LICENSES-FEES               258.47    0.14%              258.47    0.07%
    43720.0       INSURANCE                         573.52    0.31%             1118.36    0.30%
    43730.0       TRAVEL & EMPLOYEE BUSINESS EXP.    189.27    0.10%              374.75    0.10%
    43740.0       COMMUNICATIONS                   1633.53    0.88%             3260.53    0.89%
    43750.0       DOUBTFUL ACCOUNTS                 468.00    0.25%              982.80    0.26%
    43760.0       DUES AND SUBSCRIPTIONS             90.00    0.04%              180.00    0.04%
    43770.0       OTHER FREIGHT - IN                219.23    0.11%              434.08    0.11%
    43780.0       ALLOW'L CUSTOMER UNDERPAYMENT       0.00    0.00%                0.00    0.00%
    43790.0       MISCELLANEOUS                      56.24    0.03%              109.67    0.02%
                  TOTAL                        $   3488.26    1.89%       $     6718.66    1.83%

    43810.0   TRANSFER IN FROM OTHER DEPTS.          0.00    0.00%                0.00    0.00%

                  CREDITS
    43910.0       DIRECT LABOR TRANSFERRED OUT  -24137.00   13.14%           -48201.59   13.16%
    43920.0       OVERHEAD APPLIED              -6025.36    3.28%           -11628.94    3.17%
    43990.0       EST. O'HEAD (OVER)UNDER ABSORBD    0.00    0.00%                0.00    0.00%
                  TOTAL                        $ -30162.36   16.42%       $   -59830.53   16.33%

              TOTAL DEPARTMENT EXPENSES        $  70990.47   38.65%       $   137942.35   37.67%

                  NON-OPERATING (INCOME)EXPENSE
    44100.0   (GAIN)LOSS ON PROP./EQUIP. SALE        0.00    0.00%                0.00    0.00%
    44200.0   INTEREST (INCOME)EXPENSE             945.25    0.51%             1985.03    0.54%
                  TOTAL                        $    945.25    0.51%       $     1985.03    0.54%

                  ESTIMATED INCOME TAXES
    45100.0   FEDERAL                           16624.50    9.05%            33215.75    9.07%
    45200.0   STATE                              3324.90    1.81%             6643.15    1.81%
                  TOTAL                        $  19949.40   10.86%       $    39858.90   10.88%


          TOTAL EXPENSE                        $ 197347.81  107.45%       $   388035.49  105.97%
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                              IMPRESSIVE PRODUCTS                        DATE 05/31/78
                           TRIAL INCOME STATEMENT                          PAGE 4

    ACCOUNT        NAME                          THIS MONTH    PCT              QUARTER     PCT


            SALES ACCOUNTS TOTAL                367324.06                     732330.76

            DEBIT TOTAL                         242113.62                     480961.00
            CREDIT TOTAL                        235413.39                     468394.82

            RETAINED EARNINGS                    -6700.23                     -12566.18
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Report 4-2. Trial Balance Sheet (Page 1 of 4)

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                              IMPRESSIVE PRODUCTS                        DATE 05/31/78
                              TRIAL BALANCE SHEET                        PAGE  1


   ACCOUNT      NAME                          THIS MONTH



                ASSETS


                CURRENT ASSETS

                CASH
   11110.0         REVENUE BANK                   $        20235.25
   11150.0         PETTY CASH                                40.00
                REVENUE BANK                                       $        20275.25

                ACCOUNTS RECEIVABLE
                   TRADE ACCOUNTS RECEIVABLE
   11412.0          FINISHED GOODS SALES RECEIVABLE   100941.03
   11414.0          CONSULTING FEES RECEIVABLE          1500.00
   11419.0          ALLOW FOR DOUBTFUL ACCOUNTS        -3028.23
                    TOTAL                        $        99412.80
   11420.0       EMPLOYEE RECEIVABLES                     1030.00
   11490.0       OTHER ACCOUNTS RECEIVABLE                   0.00
                TOTAL                                             $       100442.80

                INVENTORY - FINISHED GOODS
   11610.0         FINISHED GOODS (AT MFG. COST)         266195.00
   11620.0         RAW MATERIALS                            929.13
   11630.0         OTHER INVENTORY                            0.00
                TOTAL                                             $       267124.13

                PREPAID EXPENSE
   11810.0         PREPAID INSURANCE                        877.24
   11820.0         PREPAID TAXES                              0.00
   11890.0         OTHER PREPAID EXPENSES                    63.50
                TOTAL                                             $          940.74

                CONSULTING
                CONTRACTS-IN-PROCESS
   11910.0         DIRECT LABOR                            5400.00
   11920.0         OVERHEAD                                2700.00
                   OTHER DIRECT CHARGES
   11942.0          DIRECT MATERIALS              513.75
   11944.0          OUTSIDE SERVICE                86.19
   11946.0          FREIGHT - IN                   22.07
   11948.0          TRAVEL                        143.33
                   TOTAL                        $          765.34
   11990.0         CREDITS                                -1000.00
                TOTAL                                             $         7865.34

                TOTAL CURRENT ASSETS                              $       396648.26
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Report 4-2. Trial Balance Sheet (Page 2 of 4)

ACCOUNT	NAME	THIS MONTH		
	DEFERRED PRODUCTION COSTS			
13010.0	DIRECT LABOR		$ 300000.00	
13020.0	OVERHEAD		36000.00	
	OTHER DIRECT CHARGES			
13042.0	DIRECT MATERIALS	6770.00		
13044.0	OUTSIDE SERVICES	25000.00		
13046.0	FREIGHT - IN	0.00		
	TOTAL		$ 31770.00	
13990.0	CREDITS		0.00	
	TOTAL			$ 367770.00
	PROPERTY & EQUIPMENT			
	COST			
15110.0	MACHINERY & EQUIPMENT		350000.00	
15120.0	FURNITURE & FIXTURES		30000.00	
15130.0	LEASEHOLD IMPROVEMENTS		2000.00	
	TOTAL			$ 382000.00
15800.0	CONSTRUCTION-IN-PROCESS			0.00
	ACCUMULATED DEPRECIATION			
15910.0	MACHINERY & EQUIPMENT		-100000.00	
15920.0	FURNITURE AND FIXTURES		-13333.00	
15930.0	LEASEHOLD IMPROVEMENTS		-571.00	
	TOTAL			$ -113904.00
	TOTAL PROPERTY & EQUIPMENT			$ 268096.00
	TOTAL ASSETS			$ 1032514.26

Report 4-2. Trial Balance Sheet (Page 3 of 4)

ACCOUNT	NAME	THIS MONTH		

LIABILITIES & STOCKHOLDERS' EQUITY

ACCOUNT	NAME	THIS MONTH		
	CURRENT LIABILITIES			
21100.0	NOTES PAYABLE		$ 180000.00	
21200.0	CURRENT MATUR. ON L-T DEBT		0.00	
21300.0	VOUCHERS PAYABLE		95467.85	
21400.0	SALES TAX PAYABLE		3221.00	
	INCOME TAX PAYABLE			
21510.0	FEDERAL	0.00		
21520.0	STATE	0.00		
	TOTAL		$ 0.00	
	PAYROLL TAXES PAYABLE			
21610.0	FEDERAL INCOME TAX WITHHOLDING	16250.00		
21620.0	FICA	3915.24		
21630.0	FEDERAL UNEMPLOYMENT TAX	783.13		
21640.0	STATE INCOME TAX WITHHOLDING	2659.94		
21650.0	SDI	652.35		
21660.0	STATE UNEMPLOYMENT TAX	1495.57		
	TOTAL		$ 25756.23	
	ACCRUED LIABILITIES			
21710.0	PAYROLL	0.00		
21720.0	VACATION	12480.00		
21730.0	PROPERTY TAXES	1400.00		
21790.0	OTHER ACCRUED LIABILITIES	0.00		
	TOTAL		$ 13880.00	
21810.0	UNEARNED INCOME		500.00	
21820.0	CUSTOMER OVERPAYMENTS		1500.00	
21830.0	UNIDENTIFIED CUSTOMER RECEIPTS		2300.00	
	TOTAL CURRENT LIABILITIES		$ 322625.08	
	LONG TERM LIABILITIES			
22100.0	NOTES PAYABLE		200000.00	
22200.0	DEFERRED INCOME TAXES PAYABLE		0.00	
	TOTAL		$ 200000.00	

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Report 4-2. Trial Balance Sheet (Page 4 of 4)

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                           IMPRESSIVE PRODUCTS                    DATE 05/31/78
                           TRIAL BALANCE SHEET                    PAGE 4


ACCOUNT        NAME                          THIS MONTH


          STOCKHOLDERS' EQUITY
23100.0   CAPITAL STOCK                                    $    300000.00
23200.0   ADDITIONAL PAID-IN CAPITAL                            0.00
23900.0   RETAINED EARNINGS                                  209889.18
          TOTAL                                          $    509889.18


     TOTAL LIAB. & STOCKHOLDERS' EQ.                      $   1032514.26

     DEBIT TOTAL                       1150446.49
     CREDIT TOTAL                      1150446.49

     PROOF                                   0.00
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Report 4-3. Special Report (Page 1 of 3)

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                           IMPRESSIVE PRODUCTS                    DATE 05/31/78
                           SPECIAL REPORT                         PAGE 1


ACCOUNT        NAME                          THIS MONTH


11110.0   REVENUE BANK                      20235.25
11150.0   PETTY CASH                           40.00
11412.0     FINISHED GOODS SALES RECEIVABLE 100941.03
11414.0     CONSULTING FEES RECEIVABLE        1500.00
11419.0     ALLOW FOR DOUBTFUL ACCOUNTS       3028.23
11420.0   EMPLOYEE RECEIVABLES               1030.00
11490.0   OTHER ACCOUNTS RECEIVABLE             0.00
11610.0   FINISHED GOODS (AT MFG. COST)    266195.00
11620.0   RAW MATERIALS                       929.13
11630.0   OTHER INVENTORY                       0.00
11810.0   PREPAID INSURANCE                   877.24
11820.0   PREPAID TAXES                         0.00
11890.0   OTHER PREPAID EXPENSES               63.50
11910.0   DIRECT LABOR                       5400.00
11920.0   OVERHEAD                           2700.00
11942.0     DIRECT MATERIALS                  513.75
11944.0     OUTSIDE SERVICE                    86.19
11946.0     FREIGHT - IN                       22.07
11948.0     TRAVEL                            143.33
11990.0   CREDITS                            1000.00
13010.0   DIRECT LABOR                     300000.00
13020.0   OVERHEAD                          36000.00
13042.0     DIRECT MATERIALS                 6770.00
13044.0     OUTSIDE SERVICES                25000.00
13046.0     FREIGHT - IN                        0.00
13990.0   CREDITS                               0.00
15110.0   MACHINERY & EQUIPMENT            350000.00
15120.0   FURNITURE & FIXTURES              30000.00
15130.0   LEASEHOLD IMPROVEMENTS             2000.00
15800.0 CONSTRUCTION-IN-PROCESS                 0.00

15910.0   MACHINERY & EQUIPMENT            100000.00
15920.0   FURNITURE AND FIXTURES            13333.00
15930.0   LEASEHOLD IMPROVEMENTS              571.00
21100.0   NOTES PAYABLE                    180000.00
21200.0   CURRENT MATUR. ON L-T DEBT            0.00
21300.0   VOUCHERS PAYABLE                  95467.85
21400.0   SALES TAX PAYABLE                  3221.00

21510.0   FEDERAL                              0.00
21520.0   STATE                                0.00
21610.0   FEDERAL INCOME TAX WITHHOLDING    16250.00
21620.0   FICA                              3915.24
21630.0   FEDERAL UNEMPLOYMENT TAX           783.13
21640.0   STATE INCOME TAX WITHHOLDING      2659.94
21650.0   SDI                                652.35
21660.0   STATE UNEMPLOYMENT TAX            1495.57
21710.0   PAYROLL                              0.00
21720.0   VACATION                         12480.00
```

ACCOUNT	NAME	THIS MONTH
21730.0	PROPERTY TAXES	1400.00
21790.0	OTHER ACCRUED LIABILITIES	0.00
21810.0	UNEARNED INCOME	500.00
21820.0	CUSTOMER OVERPAYMENTS	1500.00
21830.0	UNIDENTIFIED CUSTOMER RECEIPTS	2300.00
22100.0	NOTES PAYABLE	200000.00
22200.0	DEFERRED INCOME TAXES PAYABLE	0.00
23100.0	CAPITAL STOCK	300000.00
23200.0	ADDITIONAL PAID-IN CAPITAL	0.00
23900.0	RETAINED EARNINGS	209889.18
31110.0	FINISHED GOODS	198265.48
31190.0	SALES RETURNS & ALLOWANCES	14603.45
31210.0	CONSULTING FEES	4500.00
31310.0	PATENT ROYALTIES	0.00
31320.0	CONSULTING ROYALTIES	350.00
31510.0	COLLECTION OF BAD DEBTS	2135.55
31590.0	MISCELLANEOUS INCOME	0.00
41100.0	COST OF SALE OF GOODS	65000.00
41200.0	COST OF CONSULTING FEES	0.00
41300.0	ROYALTY PAYMENTS	9180.00
41900.0	VARIANCE EXPENSE	0.00
42010.0	DIRECT LABOR	24137.00
42020.0	OVERHEAD	6025.35
42042.0	DIRECT MATERIALS	0.00
42044.0	OUTSIDE SERVICES	1000.00
42046.0	FREIGHT - IN	0.00
42048.0	TRAVEL	120.34
43110.0	DIRECT LABOR	65023.55
43120.0	INDIRECT LABOR	0.00
43130.0	OVERTIME PREMIUM	346.89
43140.0	HOLIDAY-VACATION-SICK LEAVE	458.24
43150.0	JURY DUTY & OTHER LEAVE	0.00
43160.0	PAYROLL TAXES	4295.24
43170.0	BONUS	0.00
43190.0	OTHER FRINGE BENEFITS	2594.74
43210.0	COMPUTER MATERIALS AND SUPPLIES	620.87
43220.0	RAW MATERIALS & SUPPLIES	1135.99
43230.0	STATIONARY-MATR'LS AND SUPPLIES	689.45
43290.0	OTHER MATERIALS AND SUPPLIES	570.97
43310.0	RENT - OFFICE SPACE	2300.00
43320.0	EQUIPMENT LEASES	4365.79
43330.0	DEPRECIATION	567.86
43340.0	EQUIPMENT MAINTENANCE	57.99
43350.0	JANITORIAL SERVICE	500.00
43360.0	UTILITIES	534.26
43370.0	AUTO EXPENSE	478.18
43390.0	EQUIPMENT RENTAL	414.25

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                              IMPRESSIVE  PRODUCTS                              DATE 05/31/78
                              SPECIAL  REPORT                                   PAGE  3


      ACCOUNT         NAME                                  THIS MONTH


      43410.0         PROFESSIONAL SERVICES - LEGAL            2151.95
      43420.0         PROF. SERVICES - CONSULTING               400.00
      43430.0         EMPLOYMENT SERVICE                       2440.22
      43440.0         CREDIT & COLLECTION SERVICE                31.80
      43490.0         OTHER OUTSIDE SERVICES                     97.48
      43510.0         PERIODICALS                              4910.32
      43521.0            SHOWS - TRAVEL                          445.09
      43529.0            SHOWS - OTHER                           758.71
      43530.0         DIRECT MAILINGS - SAMPLES                 250.66
      43540.0         BROCHURE PRINTING AND MAILING             164.88
      43560.0         OUTSIDE PREP. WORK ON ADS                  43.80
      43590.0         OTHER ADVERTISING                           0.00
      43610.0         SHIPPING EXPENSE - OUTGOING               668.59
      43620.0         ORDER/SHIPPING FORMS PRINTING              26.80
      43630.0         POSTAGE                                   320.00
      43710.0         TAXES-LICENSES-FEES                       258.47
      43720.0         INSURANCE                                 573.52
      43730.0         TRAVEL & EMPLOYEE BUSINESS EXP.           189.27
      43740.0         COMMUNICATIONS                           1633.53
      43750.0         DOUBTFUL ACCOUNTS                         468.00
      43760.0         DUES AND SUBSCRIPTIONS                     90.00
      43770.0         OTHER FREIGHT - IN                        219.23
      43780.0         ALLOW'L CUSTOMER UNDERPAYMENT               0.00
      43790.0         MISCELLANEOUS                              56.24
      43810.0      TRANSFER IN FROM OTHER DEPTS.                  0.00

      43910.0         DIRECT LABOR TRANSFERRED OUT            24137.00
      43920.0         OVERHEAD APPLIED                         6025.36
      43990.0         EST. O'HEAD (OVER)UNDER ABSORBD             0.00
      44100.0      (GAIN)LOSS ON PROP./EQUIP. SALE               0.00
      44200.0      INTEREST (INCOME)EXPENSE                     945.25
      45100.0      FEDERAL                                    16624.50
      45200.0      STATE                                       3324.90
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Report 4-4. Monthly Income Statement (Page 1 of 4)

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                              IMPRESSIVE PRODUCTS                              DATE 05/31/78
                            MONTHLY INCOME STATEMENT                           PAGE 1


   ACCOUNT        NAME                           THIS MONTH    PCT             YTD BAL    PCT


                  INCOME


                  SALE OF GOODS
   31110.0          FINISHED GOODS          $   198265.48 107.95%        $   979368.32 107.40%
   31190.0          SALES RETURNS & ALLOWANCES  -14603.45   7.95%           -67502.26   7.40%
                    TOTAL                   $   183662.03 100.00%        $   911866.06 100.00%

   31210.0        CONSULTING FEES                4500.00   2.45%             22007.70   2.41%

                  ROYALTIES INCOME
   31310.0          PATENT ROYALTIES                0.00   0.00%                 0.00   0.00%
   31320.0          CONSULTING ROYALTIES          350.00   0.19%              1750.00   0.19%
                    TOTAL                   $      350.00   0.19%        $     1750.00   0.19%

                  OTHER INCOME
   31510.0          COLLECTION OF BAD DEBTS      2135.55   1.16%             12588.02   1.38%
   31590.0          MISCELLANEOUS INCOME            0.00   0.00%                 0.00   0.00%
                    TOTAL                   $     2135.55   1.16%        $    12588.02   1.38%

               TOTAL INCOME                 $   190647.58 103.80%        $   948211.78 103.98%



                  EXPENSES


                  COST OF INCOME
   41100.0        COST OF SALE OF GOODS         65000.00  35.39%            310856.00  34.09%
   41200.0        COST OF CONSULTING FEES           0.00   0.00%                 0.00   0.00%
   41300.0        ROYALTY PAYMENTS               9180.00   4.99%             45900.00   5.03%
   41900.0        VARIANCE EXPENSE                  0.00   0.00%                 0.00   0.00%
                  TOTAL                      $    74180.00  40.38%        $   356756.00  39.12%


                  DEVELOPMENT PROJECT EXPENSES
   42010.0          DIRECT LABOR               24137.00  13.14%            120287.07  13.19%
   42020.0          OVERHEAD                    6025.35   3.28%             30027.45   3.29%
                    OTHER DIRECT CHARGES
   42042.0            DIRECT MATERIALS             0.00   0.00%                 0.00   0.00%
   42044.0            OUTSIDE SERVICES          1000.00   0.54%              5000.00   0.54%
   42046.0            FREIGHT - IN                 0.00   0.00%                14.30   0.00%
   42048.0            TRAVEL                     120.34   0.06%               601.70   0.06%
                    TOTAL                   $     1120.34   0.61%        $     5616.00   0.61%
                  TOTAL DEVELOPMENT PROJ. EXPENSE $ 31282.69  17.03%     $   155930.52  17.10%
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                                 IMPRESSIVE PRODUCTS                           DATE 05/31/78
                                 MONTHLY INCOME STATEMENT                      PAGE 2


      ACCOUNT       NAME                              THIS MONTH    PCT                YTD BAL     PCT



                    DEPARTMENT EXPENSES

                      SALARIES, WAGES, & BENEFITS
      43110.0           DIRECT LABOR             $    65023.55   35.40%       $    324045.74   35.53%
      43120.0           INDIRECT LABOR                    0.00    0.00%                  0.00    0.00%
      43130.0           OVERTIME PREMIUM               346.89    0.18%               1728.73    0.18%
      43140.0           HOLIDAY-VACATION-SICK LEAVE    458.24    0.24%               2341.87    0.25%
      43150.0           JURY DUTY & OTHER LEAVE          0.00    0.00%                752.36    0.08%
      43160.0           PAYROLL TAXES                 4295.24    2.33%              21405.38    2.34%
      43170.0           BONUS                            0.00    0.00%                  0.00    0.00%
      43190.0           OTHER FRINGE BENEFITS         2594.74    1.41%              12689.85    1.39%
                       TOTAL                     $    72718.66   39.59%       $    362963.93   39.80%

                      MATERIALS & SUPPLIES
      43210.0           COMPUTER MATERIALS AND SUPPLIES 620.87   0.33%               2969.26    0.32%
      43220.0           RAW MATERIALS & SUPPLIES      1135.99    0.61%               5679.95    0.62%
      43230.0           STATIONARY-MATR'LS AND SUPPLIES 689.45   0.37%               3371.82    0.36%
      43290.0           OTHER MATERIALS AND SUPPLIES   570.97    0.31%               2699.97    0.29%
                       TOTAL                     $     3017.28    1.64%       $     14721.00    1.61%

                      FACILITIES & EQUIPMENT
      43310.0           RENT - OFFICE SPACE           2300.00    1.25%              11500.00    1.26%
      43320.0           EQUIPMENT LEASES              4365.79    2.37%              21828.95    2.39%
      43330.0           DEPRECIATION                   567.86    0.30%               2535.58    0.27%
      43340.0           EQUIPMENT MAINTENANCE           57.99    0.03%                268.10    0.02%
      43350.0           JANITORIAL SERVICE             500.00    0.27%               2500.00    0.27%
      43360.0           UTILITIES                      534.26    0.29%               2656.63    0.29%
      43370.0           AUTO EXPENSE                   478.18    0.26%               2248.47    0.24%
      43390.0           EQUIPMENT RENTAL               414.25    0.22%               1849.64    0.20%
                       TOTAL                     $     9218.33    5.01%       $     45387.37    4.97%

                      OUTSIDE SERVICES
      43410.0           PROFESSIONAL SERVICES - LEGAL 2151.95    1.17%               9608.47    1.05%
      43420.0           PROF. SERVICES - CONSULTING    400.00    0.21%               2111.50    0.23%
      43430.0           EMPLOYMENT SERVICE            2440.22    1.32%               2440.22    0.26%
      43440.0           CREDIT & COLLECTION SERVICE     31.80    0.01%                186.31    0.02%
      43490.0           OTHER OUTSIDE SERVICES          97.48    0.05%                471.46    0.05%
                       TOTAL                     $     5121.45    2.78%       $     14817.96    1.62%

                      ADVERTISING
      43510.0           PERIODICALS                   4910.32    2.67%              24551.60    2.69%
                        TRADE SHOWS
      43521.0            SHOWS - TRAVEL                445.09    0.24%                445.09    0.04%
      43529.0            SHOWS - OTHER                 758.71    0.41%                758.71    0.08%
                       TOTAL                     $     1203.80    0.65%       $      1203.80    0.13%
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Report 4-4. Monthly Income Statement (Page 3 of 4)

ACCOUNT	NAME		THIS MONTH	PCT		YTD BAL	PCT
43530.0	DIRECT MAILINGS - SAMPLES	$	250.66	0.13%	$	1337.37	0.14%
43540.0	BROCHURE PRINTING AND MAILING		164.88	0.08%		833.50	0.09%
43560.0	OUTSIDE PREP. WORK ON ADS		43.80	0.02%		214.20	0.02%
43590.0	OTHER ADVERTISING		0.00	0.00%		0.00	0.00%
	TOTAL ADVERTISING	$	6573.46	3.57%	$	28140.47	3.08%
	ORDER & SHIPPING EXPENSES						
43610.0	SHIPPING EXPENSE - OUTGOING		668.59	0.36%		3328.27	0.36%
43620.0	ORDER/SHIPPING FORMS PRINTING		26.80	0.01%		134.00	0.01%
43630.0	POSTAGE		320.00	0.17%		1596.48	0.17%
	TOTAL	$	1015.39	0.55%	$	5058.75	0.55%
	OTHER EXPENSES						
43710.0	TAXES-LICENSES-FEES		258.47	0.14%		258.47	0.02%
43720.0	INSURANCE		573.52	0.31%		2712.02	0.29%
43730.0	TRAVEL & EMPLOYEE BUSINESS EXP.		189.27	0.10%		925.63	0.10%
43740.0	COMMUNICATIONS		1633.53	0.88%		8131.76	0.89%
43750.0	DOUBTFUL ACCOUNTS		468.00	0.25%		2604.42	0.28%
43760.0	DUES AND SUBSCRIPTIONS		90.00	0.04%		450.00	0.04%
43770.0	OTHER FREIGHT - IN		219.23	0.11%		1072.18	0.11%
43780.0	ALLOW'L CUSTOMER UNDERPAYMENT		0.00	0.00%		0.00	0.00%
43790.0	MISCELLANEOUS		56.24	0.03%		265.95	0.02%
	TOTAL	$	3488.26	1.89%	$	16420.43	1.80%
43810.0	TRANSFER IN FROM OTHER DEPTS.		0.00	0.00%		0.00	0.00%
	CREDITS						
43910.0	DIRECT LABOR TRANSFERRED OUT		-24137.00	13.14%		-120287.07	13.19%
43920.0	OVERHEAD APPLIED		-6025.36	3.28%		-27851.31	3.05%
43990.0	EST. O'HEAD (OVER)UNDER ABSORBD		0.00	0.00%		0.00	0.00%
	TOTAL	$	-30162.36	16.42%	$	-148138.38	16.24%
	TOTAL DEPARTMENT EXPENSES	$	70990.47	38.65%	$	339371.53	37.21%
	NON-OPERATING (INCOME)EXPENSE						
44100.0	(GAIN)LOSS ON PROP./EQUIP. SALE		0.00	0.00%		0.00	0.00%
44200.0	INTEREST (INCOME)EXPENSE		945.25	0.51%		5260.33	0.57%
	TOTAL	$	945.25	0.51%	$	5260.33	0.57%
	ESTIMATED INCOME TAXES						
45100.0	FEDERAL		16624.50	9.05%		82939.73	9.09%
45200.0	STATE		3324.90	1.81%		16587.95	1.81%
	TOTAL	$	19949.40	10.86%	$	99527.68	10.91%
	TOTAL EXPENSE	$	197347.81	107.45%	$	956846.06	104.93%

Report 4-4. Monthly Income Statement (Page 4 of 4)

ACCOUNT	NAME	THIS MONTH	PCT	YTD BAL	PCT
	DEBIT TOTAL	242113.62		1177397.02	
	CREDIT TOTAL	235413.39		1163852.42	
	RETAINED EARNINGS	-6700.23		-13544.60	

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                              IMPRESSIVE PRODUCTS                          DATE 05/31/78
                              MONTHLY BALANCE SHEET                        PAGE 1


   ACCOUNT      NAME                               THIS MONTH


                 ASSETS


             CURRENT ASSETS

                CASH
   11110.0        REVENUE BANK                  $      20235.25
   11150.0        PETTY CASH                            40.00
                REVENUE BANK                                    $      20275.25

                ACCOUNTS RECEIVABLE
                  TRADE ACCOUNTS RECEIVABLE
   11412.0          FINISHED GOODS SALES RECEIVABLE   100941.03
   11414.0          CONSULTING FEES RECEIVABLE          1500.00
   11419.0          ALLOW FOR DOUBTFUL ACCOUNTS        -3028.23
                    TOTAL                       $      99412.80
   11420.0        EMPLOYEE RECEIVABLES                 1030.00
   11490.0        OTHER ACCOUNTS RECEIVABLE             0.00
                TOTAL                                          $     100442.80

                INVENTORY - FINISHED GOODS
   11610.0        FINISHED GOODS (AT MFG. COST)       266195.00
   11620.0        RAW MATERIALS                         929.13
   11630.0        OTHER INVENTORY                        0.00
                TOTAL                                          $     267124.13

                PREPAID EXPENSE
   11810.0        PREPAID INSURANCE                     877.24
   11820.0        PREPAID TAXES                          0.00
   11890.0        OTHER PREPAID EXPENSES                63.50
                TOTAL                                  $        940.74

                CONSULTING
                CONTRACTS-IN-PROCESS
   11910.0        DIRECT LABOR                         5400.00
   11920.0        OVERHEAD                             2700.00
                  OTHER DIRECT CHARGES
   11942.0          DIRECT MATERIALS               513.75
   11944.0          OUTSIDE SERVICE                 86.19
   11946.0          FREIGHT - IN                    22.07
   11948.0          TRAVEL                         143.33
                    TOTAL                          $     765.34
   11990.0        CREDITS                               -1000.00
                TOTAL                                          $       7865.34

             TOTAL CURRENT ASSETS                              $     396648.26
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                              IMPRESSIVE PRODUCTS                          DATE 05/31/78
                              MONTHLY BALANCE SHEET                        PAGE 2


   ACCOUNT      NAME                               THIS MONTH



                DEFERRED PRODUCTION COSTS
   13010.0        DIRECT LABOR                   $     300000.00
   13020.0        OVERHEAD                              36000.00
                  OTHER DIRECT CHARGES
   13042.0          DIRECT MATERIALS              6770.00
   13044.0          OUTSIDE SERVICES            25000.00
   13046.0          FREIGHT - IN                    0.00
                    TOTAL                         $   31770.00
   13990.0        CREDITS                                0.00
                TOTAL                                          $     367770.00


             PROPERTY & EQUIPMENT

                COST
   15110.0        MACHINERY & EQUIPMENT               350000.00
   15120.0        FURNITURE & FIXTURES                 30000.00
   15130.0        LEASEHOLD IMPROVEMENTS                2000.00
                TOTAL                                          $     382000.00

   15800.0     CONSTRUCTION-IN-PROCESS                              0.00

                ACCUMULATED DEPRECIATION
   15910.0        MACHINERY & EQUIPMENT              -100000.00
   15920.0        FURNITURE AND FIXTURES             -13333.00
   15930.0        LEASEHOLD IMPROVEMENTS               -571.00
                TOTAL                                          $    -113904.00

             TOTAL PROPERTY & EQUIPMENT                         $     268096.00


          TOTAL ASSETS                                          $    1032514.26
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                              IMPRESSIVE PRODUCTS                           DATE 05/31/78
                              MONTHLY BALANCE SHEET                         PAGE 3


    ACCOUNT       NAME                           THIS MONTH



                         LIABILITIES &
                     STOCKHOLDERS' EQUITY

                  CURRENT LIABILITIES

    21100.0      NOTES PAYABLE                               $    180000.00
    21200.0      CURRENT MATUR. ON L-T DEBT                            0.00
    21300.0      VOUCHERS PAYABLE                                  95467.85
    21400.0      SALES TAX PAYABLE                                  3221.00

                  INCOME TAX PAYABLE
    21510.0         FEDERAL                       0.00
    21520.0         STATE                         0.00
                  TOTAL                                      $         0.00

                  PAYROLL TAXES PAYABLE
    21610.0         FEDERAL INCOME TAX WITHHOLDING 16250.00
    21620.0         FICA                          3915.24
    21630.0         FEDERAL UNEMPLOYMENT TAX        783.13
    21640.0         STATE INCOME TAX WITHHOLDING   2659.94
    21650.0         SDI                            652.35
    21660.0         STATE UNEMPLOYMENT TAX         1495.57
                  TOTAL                                      $     25756.23

                  ACCRUED LIABILITIES
    21710.0         PAYROLL                          0.00
    21720.0         VACATION                     12480.00
    21730.0         PROPERTY TAXES                1400.00
    21790.0         OTHER ACCRUED LIABILITIES        0.00
                  TOTAL                                      $     13880.00

    21810.0      UNEARNED INCOME                                     500.00
    21820.0      CUSTOMER OVERPAYMENTS                              1500.00
    21830.0      UNIDENTIFIED CUSTOMER RECEIPTS                     2300.00

                  TOTAL CURRENT LIABILITIES                  $    322625.08


                  LONG TERM LIABILITIES
    22100.0      NOTES PAYABLE                                    200000.00
    22200.0      DEFERRED INCOME TAXES PAYABLE                         0.00
                  TOTAL                                      $    200000.00
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                              IMPRESSIVE PRODUCTS                           DATE 05/31/78
                              MONTHLY BALANCE SHEET                         PAGE 4


    ACCOUNT       NAME                           THIS MONTH



                  STOCKHOLDERS' EQUITY
    23100.0      CAPITAL STOCK                               $    300000.00
    23200.0      ADDITIONAL PAID-IN CAPITAL                            0.00
    23900.0      RETAINED EARNINGS                                209889.18
                  TOTAL                                      $    509889.18


                  TOTAL LIAB. & STOCKHOLDERS' EQ.            $   1032514.26

                  DEBIT TOTAL                   1150446.49
                  CREDIT TOTAL                  1150446.49

                  PROOF                               0.00
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                              IMPRESSIVE PRODUCTS                          DATE 05/31/78
                           QUARTERLY INCOME STATEMENT                      PAGE 1


   ACCOUNT      NAME                         QUARTER    PCT                YTD BAL    PCT


                INCOME


                SALE OF GOODS
   31110.0        FINISHED GOODS         $  394350.04 107.69%          $  979368.32 107.40%
   31190.0        SALES RETURNS & ALLOWANCES -28184.66   7.69%            -67502.26   7.40%
                  TOTAL                  $  366165.38 100.00%          $  911866.06 100.00%

   31210.0      CONSULTING FEES               8910.00   2.43%              22007.70   2.41%

                ROYALTIES INCOME
   31310.0        PATENT ROYALTIES               0.00   0.00%                  0.00   0.00%
   31320.0        CONSULTING ROYALTIES         700.00   0.19%               1750.00   0.19%
                  TOTAL                  $      700.00   0.19%          $    1750.00   0.19%

                OTHER INCOME
   31510.0        COLLECTION OF BAD DEBTS     4604.25   1.25%              12588.02   1.38%
   31590.0        MISCELLANEOUS INCOME           0.00   0.00%                  0.00   0.00%
                  TOTAL                  $     4604.25   1.25%          $   12588.02   1.38%

             TOTAL INCOME               $  380379.63 103.88%          $  948211.78 103.98%



                EXPENSES


                COST OF INCOME
   41100.0      COST OF SALE OF GOODS      127400.00  34.79%             310856.00  34.09%
   41200.0      COST OF CONSULTING FEES         0.00   0.00%                  0.00   0.00%
   41300.0      ROYALTY PAYMENTS           18360.00   5.01%              45900.00   5.03%
   41900.0      VARIANCE EXPENSE               0.00   0.00%                  0.00   0.00%
                TOTAL                   $  145760.00  39.80%          $  356756.00  39.12%


                DEVELOPMENT PROJECT EXPENSES
   42010.0        DIRECT LABOR             48201.59  13.16%             120287.07  13.19%
   42020.0        OVERHEAD                 12032.64   3.28%              30027.45   3.29%
                  OTHER DIRECT CHARGES
   42042.0          DIRECT MATERIALS           0.00   0.00%                  0.00   0.00%
   42044.0          OUTSIDE SERVICES        2000.00   0.54%               5000.00   0.54%
   42046.0          FREIGHT - IN              14.30   0.00%                 14.30   0.00%
   42048.0          TRAVEL                   240.68   0.06%                601.70   0.06%
                    TOTAL               $     2254.98   0.61%          $    5616.00   0.61%
                TOTAL DEVELOPMENT PROJ. EXPENSE $ 62489.21 17.06%      $  155930.52  17.10%
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Report 4-6. Quarterly Income Statement (Page 2 of 4)

ACCOUNT	NAME		QUARTER	PCT		YTD BAL	PCT
	DEPARTMENT EXPENSES						
	SALARIES, WAGES, & BENEFITS						
43110.0	DIRECT LABOR	$	129852.03	35.46%	$	324045.74	35.53%
43120.0	INDIRECT LABOR		0.00	0.00%		0.00	0.00%
43130.0	OVERTIME PREMIUM		692.74	0.18%		1728.73	0.18%
43140.0	HOLIDAY-VACATION-SICK LEAVE		925.64	0.25%		2341.87	0.25%
43150.0	JURY DUTY & OTHER LEAVE		0.00	0.00%		752.36	0.08%
43160.0	PAYROLL TAXES		8577.59	2.34%		21405.38	2.34%
43170.0	BONUS		0.00	0.00%		0.00	0.00%
43190.0	OTHER FRINGE BENEFITS		5137.59	1.40%		12689.85	1.39%
	TOTAL	$	145185.59	39.65%	$	362963.93	39.80%
	MATERIALS & SUPPLIES						
43210.0	COMPUTER MATERIALS AND SUPPLIES		1216.91	0.33%		2969.26	0.32%
43220.0	RAW MATERIALS & SUPPLIES		2271.98	0.62%		5679.95	0.62%
43230.0	STATIONARY-MATR'LS AND SUPPLIES		1365.11	0.37%		3371.82	0.36%
43290.0	OTHER MATERIALS AND SUPPLIES		1113.39	0.30%		2699.97	0.29%
	TOTAL	$	5967.39	1.62%	$	14721.00	1.61%
	FACILITIES & EQUIPMENT						
43310.0	RENT - OFFICE SPACE		4600.00	1.25%		11500.00	1.26%
43320.0	EQUIPMENT LEASES		8731.58	2.38%		21828.95	2.39%
43330.0	DEPRECIATION		1078.97	0.29%		2535.58	0.27%
43340.0	EQUIPMENT MAINTENANCE		111.94	0.03%		268.10	0.02%
43350.0	JANITORIAL SERVICE		1000.00	0.27%		2500.00	0.27%
43360.0	UTILITIES		1065.85	0.29%		2656.63	0.29%
43370.0	AUTO EXPENSE		930.08	0.25%		2248.47	0.24%
43390.0	EQUIPMENT RENTAL		787.08	0.21%		1849.64	0.20%
	TOTAL	$	18305.50	4.99%	$	45387.37	4.97%
	OUTSIDE SERVICES						
43410.0	PROFESSIONAL SERVICES - LEGAL		4088.71	1.11%		9608.47	1.05%
43420.0	PROF. SERVICES - CONSULTING		820.00	0.22%		2111.50	0.23%
43430.0	EMPLOYMENT SERVICE		2440.22	0.66%		2440.22	0.26%
43440.0	CREDIT & COLLECTION SERVICE		68.37	0.01%		186.31	0.02%
43490.0	OTHER OUTSIDE SERVICES		192.04	0.05%		471.46	0.05%
	TOTAL	$	7609.34	2.07%	$	14817.96	1.62%
	ADVERTISING						
43510.0	PERIODICALS		9820.64	2.68%		24551.60	2.69%
	TRADE SHOWS						
43521.0	SHOWS - TRAVEL		445.09	0.12%		445.09	0.04%
43529.0	SHOWS - OTHER		758.71	0.20%		758.71	0.08%
	TOTAL	$	1203.80	0.32%	$	1203.80	0.13%

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                          IMPRESSIVE PRODUCTS                         DATE 05/31/78
                       QUARTERLY INCOME STATEMENT                        PAGE 3


    ACCOUNT        NAME                           QUARTER    PCT              YTD BAL    PCT


  43530.0    DIRECT MAILINGS - SAMPLES      $      516.36   0.14%    $       1337.37    0.14%
  43540.0    BROCHURE PRINTING AND MAILING         331.41   0.09%            833.50    0.09%
  43560.0    OUTSIDE PREP. WORK ON ADS              86.72   0.02%            214.20    0.02%
  43590.0    OTHER ADVERTISING                       0.00   0.00%              0.00    0.00%
             TOTAL ADVERTISING             $     11958.93   3.26%    $      28140.47    3.08%

             ORDER & SHIPPING EXPENSES
  43610.0    SHIPPING EXPENSE - OUTGOING          1334.51   0.36%           3328.27    0.36%
  43620.0    ORDER/SHIPPING FORMS PRINTING          53.60   0.01%            134.00    0.01%
  43630.0    POSTAGE                               639.36   0.17%           1596.48    0.17%
             TOTAL                         $      2027.47   0.55%    $       5058.75    0.55%

             OTHER EXPENSES
  43710.0    TAXES-LICENSES-FEES                   258.47   0.07%            258.47    0.02%
  43720.0    INSURANCE                            1118.36   0.30%           2712.02    0.29%
  43730.0    TRAVEL & EMPLOYEE BUSINESS EXP.       374.75   0.10%            925.63    0.10%
  43740.0    COMMUNICATIONS                       3260.53   0.89%           8131.76    0.89%
  43750.0    DOUBTFUL ACCOUNTS                     982.80   0.26%           2604.42    0.28%
  43760.0    DUES AND SUBSCRIPTIONS                180.00   0.04%            450.00    0.04%
  43770.0    OTHER FREIGHT - IN                    434.08   0.11%           1072.18    0.11%
  43780.0    ALLOW'L CUSTOMER UNDERPAYMENT           0.00   0.00%              0.00    0.00%
  43790.0    MISCELLANEOUS                         109.67   0.02%            265.95    0.02%
             TOTAL                         $      6718.66   1.83%    $      16420.43    1.80%

  43810.0    TRANSFER IN FROM OTHER DEPTS.           0.00   0.00%              0.00    0.00%


             CREDITS
  43910.0    DIRECT LABOR TRANSFERRED OUT       -48201.59  13.16%        -120287.07   13.19%
  43920.0    OVERHEAD APPLIED                   -11628.94   3.17%         -27851.31    3.05%
  43990.0    EST. O'HEAD (OVER)UNDER ABSORBD        0.00   0.00%              0.00    0.00%
             TOTAL                         $    -59830.53  16.33%    $    -148138.38   16.24%

             TOTAL DEPARTMENT EXPENSES      $    137942.35  37.67%    $     339371.53   37.21%

             NON-OPERATING (INCOME)EXPENSE
  44100.0    (GAIN)LOSS ON PROP./EQUIP. SALE        0.00   0.00%              0.00    0.00%
  44200.0    INTEREST (INCOME)EXPENSE             1985.03   0.54%           5260.33    0.57%
             TOTAL                         $      1985.03   0.54%    $       5260.33    0.57%

             ESTIMATED INCOME TAXES
  45100.0    FEDERAL                             33215.75   9.07%          82939.73    9.09%
  45200.0    STATE                                6643.15   1.81%          16587.95    1.81%
             TOTAL                         $     39858.90  10.88%    $      99527.68   10.91%


             TOTAL EXPENSE                 $    388035.49 105.97%    $     956846.06  104.93%
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                          IMPRESSIVE PRODUCTS                         DATE 05/31/78
                       QUARTERLY INCOME STATEMENT                        PAGE 4

  ACCOUNT        NAME                           QUARTER    PCT              YTD BAL    PCT



          DEBIT TOTAL                          480961.00                  1177397.02
          CREDIT TOTAL                         468394.82                  1163852.42

          RETAINED EARNINGS                    -12566.18                   -13544.60
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                              IMPRESSIVE PRODUCTS                                    DATE 05/31/78
                           QUARTERLY BALANCE SHEET                                   PAGE 1

                             PREVIOUS QUARTER  1

 ACCOUNT        NAME                                                QUARTER


                ASSETS


                CURRENT ASSETS

                  CASH
 11110.0            REVENUE BANK                          $      29455.26
 11150.0            PETTY CASH                                     152.15
                  REVENUE BANK                                   $              29607.41

                  ACCOUNTS RECEIVABLE
                    TRADE ACCOUNTS RECEIVABLE
 11412.0              FINISHED GOODS SALES RECEIVABLE   107331.18
 11414.0              CONSULTING FEES RECEIVABLE          1500.00
 11419.0              ALLOW FOR DOUBTFUL ACCOUNTS        -2900.67
                      TOTAL                               $     105930.51
 11420.0            EMPLOYEE RECEIVABLES                          1857.60
 11490.0            OTHER ACCOUNTS RECEIVABLE                        0.00
                  TOTAL                                          $             107788.11

                  INVENTORY - FINISHED GOODS
 11610.0            FINISHED GOODS (AT MFG. COST)              383795.00
 11620.0            RAW MATERIALS                               1050.87
 11630.0            OTHER INVENTORY                                 0.00
                  TOTAL                                          $             384845.87

                  PREPAID EXPENSE
 11810.0            PREPAID INSURANCE                               0.00
 11820.0            PREPAID TAXES                                3507.86
 11890.0            OTHER PREPAID EXPENSES                          0.00
                  TOTAL                                          $               3507.86

                  CONSULTING
                  CONTRACTS-IN-PROCESS
 11910.0            DIRECT LABOR                                 5400.00
 11920.0            OVERHEAD                                     2700.00
                    OTHER DIRECT CHARGES
 11942.0              DIRECT MATERIALS                   189.50
 11944.0              OUTSIDE SERVICE                      0.00
 11946.0              FREIGHT - IN                        79.12
 11948.0              TRAVEL                              143.33
                      TOTAL                               $        411.95
 11990.0            CREDITS                                         0.00
                  TOTAL                                          $               8511.95

                  TOTAL CURRENT ASSETS                           $             534261.20
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                              IMPRESSIVE PRODUCTS                                    DATE 05/31/78
                           QUARTERLY BALANCE SHEET                                   PAGE 2

                             PREVIOUS QUARTER  1

 ACCOUNT        NAME                                                QUARTER


                DEFERRED PRODUCTION COSTS
 13010.0          DIRECT LABOR                           $     295000.00
 13020.0          OVERHEAD                                      35400.00
                  OTHER DIRECT CHARGES
 13042.0            DIRECT MATERIALS                     7000.00
 13044.0            OUTSIDE SERVICES                    12500.00
 13046.0            FREIGHT - IN                          51.25
                    TOTAL                                 $      19551.25
 13990.0          CREDITS                                        -546.00
                TOTAL                                            $             349405.25


                PROPERTY & EQUIPMENT

                  COST
 15110.0            MACHINERY & EQUIPMENT                      245899.55
 15120.0            FURNITURE & FIXTURES                        30000.00
 15130.0            LEASEHOLD IMPROVEMENTS                          0.00
                  TOTAL                                          $             275899.55

 15800.0          CONSTRUCTION-IN-PROCESS                                          0.00

                  ACCUMULATED DEPRECIATION
 15910.0            MACHINERY & EQUIPMENT                      -93333.00
 15920.0            FURNITURE AND FIXTURES                     -12121.00
 15930.0            LEASEHOLD IMPROVEMENTS                          0.00
                  TOTAL                                          $            -105454.00

                  TOTAL PROPERTY & EQUIPMENT                     $             170445.55


                TOTAL ASSETS                                     $            1054112.00
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                              IMPRESSIVE PRODUCTS                              DATE 05/31/78
                              QUARTERLY BALANCE SHEET                          PAGE 3

                              PREVIOUS QUARTER   1

   ACCOUNT        NAME                                        QUARTER


                         LIABILITIES &
                    STOCKHOLDERS' EQUITY

                 CURRENT LIABILITIES

   21100.0       NOTES PAYABLE                             $    168000.00
   21200.0       CURRENT MATUR. ON L-T DEBT                         0.00
   21300.0       VOUCHERS PAYABLE                              101250.65
   21400.0       SALES TAX PAYABLE                               7894.21

                 INCOME TAX PAYABLE
   21510.0          FEDERAL                      0.00
   21520.0          STATE                        0.00
                    TOTAL                                  $        0.00

                 PAYROLL TAXES PAYABLE
   21610.0          FEDERAL INCOME TAX WITHHOLDING   35748.00
   21620.0          FICA                            9542.31
   21630.0          FEDERAL UNEMPLOYMENT TAX        1637.29
   21640.0          STATE INCOME TAX WITHHOLDING    5428.99
   21650.0          SDI                             1376.26
   21660.0          STATE UNEMPLOYMENT TAX          1954.26
                    TOTAL                                  $    55687.11

                 ACCRUED LIABILITIES
   21710.0          PAYROLL                         0.00
   21720.0          VACATION                        8620.00
   21730.0          PROPERTY TAXES                  1400.00
   21790.0          OTHER ACCRUED LIABILITIES       0.00
                    TOTAL                                  $    10020.00

   21810.0       UNEARNED INCOME                                  500.00
   21820.0       CUSTOMER OVERPAYMENTS                           1255.00
   21830.0       UNIDENTIFIED CUSTOMER RECEIPTS                  1950.00

                 TOTAL CURRENT LIABILITIES                 $   346556.97


                 LONG TERM LIABILITIES
   22100.0       NOTES PAYABLE                                 200000.00
   22200.0       DEFERRED INCOME TAXES PAYABLE                      0.00
                 TOTAL                                     $   200000.00
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                              IMPRESSIVE PRODUCTS                              DATE 05/31/78
                              QUARTERLY BALANCE SHEET                          PAGE 4

                              PREVIOUS QUARTER   1

   ACCOUNT        NAME                                        QUARTER


                 STOCKHOLDERS' EQUITY
   23100.0       CAPITAL STOCK                             $   300000.00
   23200.0       ADDITIONAL PAID-IN CAPITAL                         0.00
   23900.0       RETAINED EARNINGS                             207555.03
                 TOTAL                                     $   507555.03


                 TOTAL LIAB. & STOCKHOLDERS' EQ.           $  1054112.00

                 DEBIT TOTAL                  1163012.67
                 CREDIT TOTAL                 1163012.67

                 PROOF                              0.00
```

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```
                    ( 4 )                      ( SFK )
                                               ( 15 )

              ┌─────────────┐           ┌─────────────┐
              │  G/L REPORTS │           │  G/L REPORTS │
              │    mask 3    │           │   LOADING    │
   ( A )─────▶│             │           │     MENU     │
              └──────┬──────┘           └──────┬──────┘
                     │                         │
              ┌──────┴──────┐           ┌──────┴──────┐
              │    keyin    │           │  load Menu  │
              │ report type │           │   G/L000    │
              └──────┬──────┘           └──────┬──────┘
                     │                         │
                    ╱ ╲         YES          ( 0 )
                   ╱entry╲───────────┐
                   ╲ = 0 ╱          │
                   ╲(EXIT)╱          │
                     ╲?╱
                      │ NO
                      │
                    ╱ ╲         YES    ┌─────────────┐
                   ╱report╲──────────▶│    keyin    │
                   ╲type=1╱           │report format│
                   ╲(TRIAL)╱          └──────┬──────┘
                     ╲?╱                     │
                      │ NO                   │
                    ╱ ╲         YES          │
                   ╱report╲─────────────────▶│
                   ╲type=2╱                   │
                   ╲(SPECIAL)╱                │
                     ╲?╱                      │
                      │ NO                    │
                    ╱ ╲         YES    ┌──────┴──────┐
                   ╱report╲──────────▶│    keyin    │
                   ╲type=3╱           │report format│
                   ╲(MONTHLY)╱        └─────────────┘
                     ╲?╱
                      │ NO
                    ╱ ╲         YES    ┌─────────────┐
                   ╱report╲──────────▶│    keyin    │
                   ╲type=4╱           │report format│
                   ╲(QUARTERLY)╱      └──────┬──────┘
                     ╲?╱                     │
                      │ NO           ┌───────┴─────┐
                                     │    keyin    │
                                     │report quarter│
                                     └──────┬──────┘
                    ( C )                  ( B )
                   page 2                  page 2
```

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B

ENTRY
CORRECT?

keyin response
(1 = yes, 0 = no)

NO ← entry = 1
(YES)
?

YES

printer
ready
? → YES

NO

PRINTER
NOT
READY

turn
printer
on

requested
report

A
page 1

C

report type = 5
(MOVE TOTALS)

keyin
MOVE direction

ENTRY
CORRECT?

keyin response
(1 = yes, 0 = no)

entry = 1
(YES)
? → YES

NO

HAVE YOU
RUN ALL YOUR
REPORTS?

keyin response
(1 = yes, 0 = no)

entry = 1
(YES)
? → NO

YES

WORKING...
DO NOT
INTERRUPT

perform
requested
move operation

A
page 1

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PURPOSE: Add, change or delete Account records.

WHEN: As needed.

TO EXIT: Enter an operation code of '0', or SFK15 any time.

Each General Ledger account must have a record on the Account file before any posting may be posted to it in General Ledger Update.

This program allows you to add new accounts and change, delete, or print a listing of existing Account records. As discussed in Chapter 3, you must enter an Account record not only for each regular General Ledger account, but also for each heading, title and total you have included in your chart of accounts.

The initial display appears as CRT 5-1.

CRT 5-1

```
G/L ACCOUNT FILE MAINTENANCE
ENTER OPERATION CODE (0=EXIT; 1=ADD; 2=CHANGE/DELETE; 3=PRINT)
X
<bulletin>
ACCOUNT
1)NAME
2)ACCOUNT TYPE              9)THIS MONTH
3)REPORT TYPE             10)THIS YEAR
4)NORMAL BALANCE          11)THIS QTR
5)TOTAL LEVEL             12)1ST PREV QTR
6)EXTRA LINE ADV          13)2ND PREV QTR
7)SALES ACCOUNT           14)3RD PREV QTR
8)SPECIAL REPORT          15)LAST YEAR
```

d = display only,   x = enter only,   z = enter or display with option to change

SELECT OPERATION

1)   Enter operation code (0-4).

   0 - EXIT. Program ends. The Menu is loaded.

   1 - ADD. Add a new Account record to the Account file. Proceed to step 2.

   2 - CHANGE/DELETE. Change or delete an existing Account record. Proceed to step 4

   3 - PRINT. Print a listing of existing G/L Account records. Proceed to step 7.

OPERATION IS ADD

2)   Enter account number (0-99999.9/99).

   ƀ - Abort ADD operation. Select a new operation, return to step 1

   Account number - Request to add this account to the Account file. A check is made to see if the requested
   account number is already on the Account file:

   If yes, the bulletin ALREADY ON FILE is flashed. A new account number is requested, repeat this step

   If no, new account information is requested; proceed to step 3

3)   Enter field values as requested.

   See Table 5-1 for field details. When entry is complete, you may make changes; proceed to step 5.

OPERATION IS CHANGE/DELETE

4)   Enter account number (0-99999.9/99).

   ƀ - Abort CHANGE/DELETE operation. Select a new operation, return to step 1

   Account number - Request to change or delete this record. A check is made to see if the requested account
   number is on the Account file:

   If yes, display current information. You may make changes; proceed to step 5

   If no, the bulletin NOT ON FILE is flashed. A new account number is requested; repeat this step

Change or Delete

ENTER FIELD TO CHANGE (99=DELETE)

5)   Enter field number (0-15, 99).

   0 - No changes. Save record on Account file

   If operation is ADD, return to step 2

   If operation is CHANGE/DELETE, return to step 4

   1-15 - Enter field value when requested. See Table 5-1 for field details. The next change is requested; repeat
   this step.

   99 - Request to DELETE this Account record. Proceed to step 6

Verify DELETE

ENTER DELETE CODE

6)   Verify DELETE operation.

   DEL - DELETE operation is effected. This Account record is deleted. The bulletin RECORD DELETED is
   flashed.

   If operation is ADD, return to step 2

   If operation is CHANGE/DELETE, return to step 4

   Anything else - DELETE operation is aborted. The same Account record remains on display, and the next
   change is requested; return to step 5

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Table 5-1. G/L Account Fields

Field	Description
1	**NAME** (31 characters). Name or description of account.
2	**ACCOUNT TYPE** (0-3). If there is no sub-account number as part of the account number, a '0' Account Type is assigned automatically. See Table 3-E in Chapter 3 for detailed Account Type descriptions. 0 - Regular. 1 - Title. 2 - Total. 3 - Heading.
3	**REPORT TYPE** (1-2). 1 - Income Statement. For income and expense 2 - Balance Sheet. For assets and liabilities.
4	**NORMAL BALANCE** (1-2). 1 - Debit. 2 - Credit.
5	**TOTAL LEVEL** (0-9). Indicate position or level of inclusion when printing account totals. Further discussion provided in Chapter 3.
6	**EXTRA LINE ADVANCE** (0-9). 0-8 - The number of blank lines to print between this account and the following record on the General Ledger financial reports. 9 - Printer advance paper to the top of a new page.
7	**SALES ACCOUNT** (0-1). Indicate whether this account should apply towards total sales. 0 - No, not a sales account. 1 - Yes, include in sales account percentages.
8	**SPECIAL REPORT** (0-1). Indicate whether this report should be included on the "special" report which may be printed in the Report program. 0 - No, do not include on the special report. 1 - Yes, include on the special report.
9	**THIS MONTH** (-9999999.99 - +9999999.99). Amount which has been posted to this account this month.
10	**THIS YEAR** (-9999999.99 - +9999999.99). Amount posted to this account this year.
11	**THIS QUARTER** (-9999999.99 - +9999999.99). Amount posted to this account this quarter.
12	**FIRST PREVIOUS QUARTER** (-9999999.99 - +9999999.99). Amount posted to this account one quarter prior to current quarter.
13	**SECOND PREVIOUS QUARTER** (-9999999.99 - +9999999.99). Amount posted to this account two quarters prior to current quarter.
14	**THIRD PREVIOUS QUARTER** (-9999999.99 - +9999999.99). Amount posted to this account three quarters prior to current quarter.
15	**LAST YEAR** (-9999999.99 - +9999999.99). Amount posted to this account last year.

OPERATION IS PRINT

To prepare for this operation load standard paper into the printer, then make sure the printer is turned on and ready to print.

7) Enter report type (0-3).

   0 - PRINT operation is aborted. A new operation is requested, return to step 1.

   1 - DESCRIPTIONS. A General Ledger Accounts report listing account descriptive fields (account fields 1-8) will be printed All account types are included A sample Descriptions report is shown in Report 5-1 When the report is completed, another report may be printed; repeat this step

   2 - AMOUNTS. A General Ledger Accounts report listing account amount fields (account fields 9-15) will be printed Only regular type accounts (account type 0) are included. A sample Amounts report is shown in Report 5-2 When the report is completed, another report may be printed, repeat this step

   3 - BOTH. A General Ledger Accounts report including both descriptive and amount fields will be printed All account types are included, but amounts are printed only for regular type accounts (account type 0). A sample of this type of report is shown in Report 5-3 When the report is completed, another report may be printed; repeat this step

Report 5-1. General Ledger Accounts ("Descriptions")

```
                              IMPRESSIVE PRODUCTS                              DATE 05/31/78
                              GENERAL LEDGER ACCOUNTS                          PAGE 1

ACCOUNT    NAME

10000.0 ASSETS                              SUB 50  TITLE    BALANCE SHEET  DB  LEVEL 8  2 LINES        SPECIAL REPT
11000.0 CURRENT ASSETS                      SUB 50  HEADING  BALANCE SHEET  DB  LEVEL 6  1 LINES
11100.0 CASH                                SUB 50  HEADING  BALANCE SHEET  DB  LEVEL 5
11110.0 REVENUE BANK                                REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11150.0 PETTY CASH                                  REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11199.0 REVENUE BANK                        SUB 50  TOTAL    BALANCE SHEET  DB  LEVEL 5  1 LINES
11400.0 ACCOUNTS RECEIVABLE                 SUB 50  HEADING  BALANCE SHEET  DB  LEVEL 5                 SPECIAL REPT
11410.0 TRADE ACCOUNTS RECEIVABLE           SUB 50  HEADING  BALANCE SHEET  DB  LEVEL 2
11412.0 FINISHED GOODS SALES RECEIVABLE             REGULAR  BALANCE SHEET  DB  LEVEL 0                 SPECIAL REPT
11414.0 CONSULTING FEES RECEIVABLE                  REGULAR  BALANCE SHEET  DB  LEVEL 0                 SPECIAL REPT
11419.0 ALLOW FOR DOUBTFUL ACCOUNTS                 REGULAR  BALANCE SHEET  CR  LEVEL 0                 SPECIAL REPT
11419.0 TOTAL                               SUB 50  TOTAL    BALANCE SHEET  DB  LEVEL 2
11420.0 EMPLOYEE RECEIVABLES                        REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11490.0 OTHER ACCOUNTS RECEIVABLE                   REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11499.0 TOTAL                               SUB 50  TOTAL    BALANCE SHEET  DB  LEVEL 5  1 LINES
11600.0 INVENTORY - FINISHED GOODS          SUB 50  HEADING  BALANCE SHEET  DB  LEVEL 5
11610.0 FINISHED GOODS (AT MFG. COST)               REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11620.0 RAW MATERIALS                               REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11630.0 OTHER INVENTORY                             REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11699.0 TOTAL                               SUB 50  TOTAL    BALANCE SHEET  DB  LEVEL 5  1 LINES
11800.0 PREPAID EXPENSE                     SUB 50  HEADING  BALANCE SHEET  DB  LEVEL 5
11810.0 PREPAID INSURANCE                           REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11820.0 PREPAID TAXES                               REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11890.0 OTHER PREPAID EXPENSES                      REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11899.0 TOTAL                               SUB 50  TOTAL    BALANCE SHEET  DB  LEVEL 5  1 LINES
11900.0 CONSULTING                          SUB 50  HEADING  BALANCE SHEET  DB  LEVEL 5
11900.0 CONTRACTS-IN-PROCESS                SUB 51  HEADING  BALANCE SHEET  DB  LEVEL 5
11910.0 DIRECT LABOR                                REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11920.0 OVERHEAD                                    REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
11940.0 OTHER DIRECT CHARGES                SUB 50  HEADING  BALANCE SHEET  DB  LEVEL 2
11942.0 DIRECT MATERIALS                            REGULAR  BALANCE SHEET  DB  LEVEL 0                 SPECIAL REPT
11944.0 OUTSIDE SERVICE                             REGULAR  BALANCE SHEET  DB  LEVEL 0                 SPECIAL REPT
11946.0 FREIGHT - IN                                REGULAR  BALANCE SHEET  DB  LEVEL 0                 SPECIAL REPT
11948.0 TRAVEL                                      REGULAR  BALANCE SHEET  DB  LEVEL 0                 SPECIAL REPT
11949.0 TOTAL                               SUB 50  TOTAL    BALANCE SHEET  DB  LEVEL 2
11990.0 CREDITS                                     REGULAR  BALANCE SHEET  CR  LEVEL 2                 SPECIAL REPT
11999.0 TOTAL                               SUB 40  TOTAL    BALANCE SHEET  DB  LEVEL 5  1 LINES
11999.0 TOTAL CURRENT ASSETS                SUB 50  TOTAL    BALANCE SHEET  DB  LEVEL 6  TOP/PAGE
13000.0 DEFERRED PRODUCTION COSTS           SUB 50  HEADING  BALANCE SHEET  DB  LEVEL 6
13010.0 DIRECT LABOR                                REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
13020.0 OVERHEAD                                    REGULAR  BALANCE SHEET  DB  LEVEL 2                 SPECIAL REPT
13040.0 OTHER DIRECT CHARGES                SUB 50  HEADING  BALANCE SHEET  DB  LEVEL 2
13042.0 DIRECT MATERIALS                            REGULAR  BALANCE SHEET  DB  LEVEL 0                 SPECIAL REPT
13044.0 OUTSIDE SERVICES                            REGULAR  BALANCE SHEET  DB  LEVEL 0                 SPECIAL REPT
13046.0 FREIGHT - IN                                REGULAR  BALANCE SHEET  DB  LEVEL 0                 SPECIAL REPT
13049.0 TOTAL                               SUB 50  TOTAL    BALANCE SHEET  DB  LEVEL 2
13990.0 CREDITS                                     REGULAR  BALANCE SHEET  CR  LEVEL 2                 SPECIAL REPT
13999.0 TOTAL                               SUB 50  TOTAL    BALANCE SHEET  DB  LEVEL 6  2 LINES
15000.0 PROPERTY & EQUIPMENT                SUB 50  HEADING  BALANCE SHEET  DB  LEVEL 6  1 LINES
```

Report 5-2. General Ledger Accounts ("Amounts")

ACCOUNT	NAME	THIS MO	THIS YEAR	THIS QTR	PREV QTR-1	PREV QTR-2	PREV QTR-3	LAST YEAR
11110.0	REVENUE BANK	20235.25	20235.25	20235.25	29455.26	32400.78	35640.86	32400.78
11150.0	PETTY CASH	40.00	40.00	40.00	152.15	167.36	184.10	167.36
11412.0	FINISHED GOODS SALES RECEIVABLE	100941.03	100941.03	100941.03	107331.18	118064.29	129870.72	118064.29
11414.0	CONSULTING FEES RECEIVABLE	1500.00	1500.00	1500.00	1500.00	1650.00	1815.00	1650.00
11419.0	ALLOW FOR DOUBTFUL ACCOUNTS	3028.23	3028.23	3028.23	2900.67	3190.73	3509.81	3190.73
11420.0	EMPLOYEE RECEIVABLES	1030.00	1030.00	1030.00	1857.60	2043.36	2247.69	2043.36
11490.0	OTHER ACCOUNTS RECEIVABLE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11610.0	FINISHED GOODS (AT MFG. COST)	266195.00	266195.00	266195.00	383795.00	422174.50	464391.95	422174.50
11620.0	RAW MATERIALS	929.13	929.13	929.13	1050.87	1155.95	1271.55	1155.95
11630.0	OTHER INVENTORY	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11810.0	PREPAID INSURANCE	877.24	877.24	877.24	0.00	0.00	0.00	0.00
11820.0	PREPAID TAXES	0.00	0.00	0.00	3507.86	3858.64	4244.51	3858.64
11890.0	OTHER PREPAID EXPENSES	63.50	63.50	63.50	0.00	0.00	0.00	0.00
11910.0	DIRECT LABOR	5400.00	5400.00	5400.00	5400.00	5940.00	6534.00	5940.00
11920.0	OVERHEAD	2700.00	2700.00	2700.00	2700.00	2970.00	3267.00	2970.00
11942.0	DIRECT MATERIALS	513.75	513.75	513.75	189.50	208.45	229.29	208.45
11944.0	OUTSIDE SERVICE	86.19	86.19	86.19	0.00	0.00	0.00	0.00
11946.0	FREIGHT - IN	22.07	22.07	22.07	79.12	87.03	95.73	87.03
11948.0	TRAVEL	143.33	143.33	143.33	143.33	157.66	173.42	157.66
11990.0	CREDITS	1000.00	1000.00	1000.00	0.00	0.00	0.00	0.00
13010.0	DIRECT LABOR	300000.00	300000.00	300000.00	295000.00	324500.00	356950.00	324500.00
13020.0	OVERHEAD	36000.00	36000.00	36000.00	35400.00	38940.00	42834.00	38940.00
13042.0	DIRECT MATERIALS	6770.00	6770.00	6770.00	7000.00	7700.00	8470.00	7700.00
13044.0	OUTSIDE SERVICES	25000.00	25000.00	25000.00	12500.00	13750.00	15125.00	13750.00
13046.0	FREIGHT - IN	0.00	0.00	0.00	51.25	56.37	62.01	56.37
13990.0	CREDITS	0.00	0.00	0.00	546.00	600.60	660.66	600.60
15110.0	MACHINERY & EQUIPMENT	350000.00	350000.00	350000.00	245899.55	270489.50	297538.45	270489.50
15120.0	FURNITURE & FIXTURES	30000.00	30000.00	30000.00	30000.00	33000.00	36300.00	33000.00
15130.0	LEASEHOLD IMPROVEMENTS	2000.00	2000.00	2000.00	0.00	0.00	0.00	0.00
15800.0	CONSTRUCTION-IN-PROCESS	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15910.0	MACHINERY & EQUIPMENT	100000.00	100000.00	100000.00	93333.00	102666.30	112932.93	102666.30
15920.0	FURNITURE AND FIXTURES	13333.00	13333.00	13333.00	12121.00	13333.10	14666.41	13333.10
15930.0	LEASEHOLD IMPROVEMENTS	571.00	571.00	571.00	0.00	0.00	0.00	0.00
21100.0	NOTES PAYABLE	180000.00	180000.00	180000.00	168000.00	184800.00	203280.00	184800.00
21200.0	CURRENT MATUR. ON L-T DEBT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21300.0	VOUCHERS PAYABLE	95467.85	95467.85	95467.85	101250.65	111375.71	122513.28	111375.71
21400.0	SALES TAX PAYABLE	3221.00	3221.00	3221.00	7894.21	8683.63	9551.99	8683.63
21510.0	FEDERAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21520.0	STATE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21610.0	FEDERAL INCOME TAX WITHHOLDING	16250.00	16250.00	16250.00	35748.00	39322.80	43255.08	39322.80
21620.0	FICA	3915.24	3915.24	3915.24	9542.31	10496.54	11546.19	10496.54
21630.0	FEDERAL UNEMPLOYMENT TAX	783.13	783.13	783.13	1637.29	1801.01	1981.12	1801.01
21640.0	STATE INCOME TAX WITHHOLDING	2659.94	2659.94	2659.94	5428.99	5971.88	6569.07	5971.88
21650.0	SDI	652.35	652.35	652.35	1376.26	1513.88	1665.27	1513.88
21660.0	STATE UNEMPLOYMENT TAX	1495.57	1495.57	1495.57	1954.26	2149.68	2364.65	2149.68
21710.0	PAYROLL	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21720.0	VACATION	12480.00	12480.00	12480.00	8620.00	9482.00	10430.20	9482.00
21730.0	PROPERTY TAXES	1400.00	1400.00	1400.00	1400.00	1540.00	1694.00	1540.00
21790.0	OTHER ACCRUED LIABILITIES	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Report 5-3. General Ledger Accounts ("Both")

ACCOUNT	NAME		THIS MO	THIS YEAR	THIS QTR	PREV QTR-1	PREV QTR-2	PREV QTR-3	LAST YEAR
10000.0	ASSETS	SUB 50 TITLE BALANCE SHEET DB LEVEL 8 2 LINES					SPECIAL REPT		
11000.0	CURRENT ASSETS	SUB 50 HEADING BALANCE SHEET DB LEVEL 6 1 LINES							
11100.0	CASH	SUB 50 HEADING BALANCE SHEET DB LEVEL 5							
11110.0	REVENUE BANK	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			20235.25	20235.25	20235.25	29455.26	32400.78	35640.86	32400.78
11150.0	PETTY CASH	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			40.00	40.00	40.00	152.15	167.36	184.10	167.36
11199.0	REVENUE BANK	SUB 50 TOTAL BALANCE SHEET DB LEVEL 5 1 LINES							
11400.0	ACCOUNTS RECEIVABLE	SUB 50 HEADING BALANCE SHEET DB LEVEL 5					SPECIAL REPT		
11410.0	TRADE ACCOUNTS RECEIVABLE	SUB 50 HEADING BALANCE SHEET DB LEVEL 2							
11412.0	FINISHED GOODS SALES RECEIVABLE	REGULAR BALANCE SHEET DB LEVEL 0					SPECIAL REPT		
			100941.03	100941.03	100941.03	107331.18	118064.29	129870.72	118064.29
11414.0	CONSULTING FEES RECEIVABLE	REGULAR BALANCE SHEET DB LEVEL 0					SPECIAL REPT		
			1500.00	1500.00	1500.00	1500.00	1650.00	1815.00	1650.00
11419.0	ALLOW FOR DOUBTFUL ACCOUNTS	REGULAR BALANCE SHEET CR LEVEL 0					SPECIAL REPT		
			3028.23	3028.23	3028.23	2900.67	3190.73	3509.81	3190.73
11419.0	TOTAL	SUB 50 TOTAL BALANCE SHEET DB LEVEL 2							
11420.0	EMPLOYEE RECEIVABLES	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			1030.00	1030.00	1030.00	1857.60	2043.36	2247.69	2043.36
11490.0	OTHER ACCOUNTS RECEIVABLE	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			0.00	0.00	0.00	0.00	0.00	0.00	0.00
11499.0	TOTAL	SUB 50 TOTAL BALANCE SHEET DB LEVEL 5 1 LINES							
11600.0	INVENTORY - FINISHED GOODS	SUB 50 HEADING BALANCE SHEET DB LEVEL 5							
11610.0	FINISHED GOODS (AT MFG. COST)	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			266195.00	266195.00	266195.00	383795.00	422174.50	464391.95	422174.50
11620.0	RAW MATERIALS	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			929.13	929.13	929.13	1050.87	1155.95	1271.55	1155.95
11630.0	OTHER INVENTORY	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			0.00	0.00	0.00	0.00	0.00	0.00	0.00
11699.0	TOTAL	SUB 50 TOTAL BALANCE SHEET DB LEVEL 5 1 LINES							
11800.0	PREPAID EXPENSE	SUB 50 HEADING BALANCE SHEET DB LEVEL 5							
11810.0	PREPAID INSURANCE	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			877.24	877.24	877.24	0.00	0.00	0.00	0.00
11820.0	PREPAID TAXES	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			0.00	0.00	0.00	3507.86	3858.64	4244.51	3858.64
11890.0	OTHER PREPAID EXPENSES	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			63.50	63.50	63.50	0.00	0.00	0.00	0.00
11899.0	TOTAL	SUB 50 TOTAL BALANCE SHEET DB LEVEL 5 1 LINES							
11900.0	CONSULTING	SUB 50 HEADING BALANCE SHEET DB LEVEL 5							
11900.0	CONTRACTS-IN-PROCESS	SUB 51 HEADING BALANCE SHEET DB LEVEL 5							
11910.0	DIRECT LABOR	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			5400.00	5400.00	5400.00	5400.00	5940.00	6534.00	5940.00
11920.0	OVERHEAD	REGULAR BALANCE SHEET DB LEVEL 2					SPECIAL REPT		
			2700.00	2700.00	2700.00	2700.00	2970.00	3267.00	2970.00
11940.0	OTHER DIRECT CHARGES	SUB 50 HEADING BALANCE SHEET DB LEVEL 2							
11942.0	DIRECT MATERIALS	REGULAR BALANCE SHEET DB LEVEL 0					SPECIAL REPT		
			513.75	513.75	513.75	189.50	208.45	229.29	208.45
11944.0	OUTSIDE SERVICE	REGULAR BALANCE SHEET DB LEVEL 0					SPECIAL REPT		
			86.19	86.19	86.19	0.00	0.00	0.00	0.00

A

5

SFK 15

B

A

A

G/L ACCOUNT FILE MAINTENANCE
mask 4

G/L ACCOUNT F/M LOADING MENU

ADD

PRINT

ENTER OPERATION CODE (0 = EXIT, 1 = ADD, 2 = CHANGE/DELETE, 3 = PRINT)

load Menu G/L000

keyin account number

ENTER REPORT TYPE (0 = NONE; 1 = DESCRIPTIONS; 2 = AMOUNTS; 3 = BOTH)

keyin operation code

0

account number = ∅ ?   YES

keyin report type

operation code = 0 (EXIT) ?   YES

NO

account number already used on Account file ?   NO

report type = 0 ?   YES

NO

operation code = 1 (ADD) ?   YES

YES

printer ready ?   YES

NO

bulletin: **ALREADY ON FILE**

NO

operation code = 2 (CHANGE/DELETE) ?   YES

C
page 2

bulletin: **PRINTER NOT READY**

NO

keyin requested field values

operation code = 3 (PRINT)

D
page 2

turn printer on

requested General Ledger Accounts report

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PURPOSE: **Recover wasted space in the G/L Account file.**

WHEN: **End of year, or as needed.**

TO EXIT: **Enter an initial response of [RETURN].**

When records are "deleted" through Account File Maintenance, the space on the file is not automatically reused. This wasted space builds up over time. Reorganize is run to recover wasted space within the file. At the same time, Account records are reordered in account number order so that record accessing will be most efficient after reorganization.

The program we supply in this book merely loads the real reorganize program. Your programmer may supply you with additional instructions if he deems them necessary for running the reorganize program which he installs.

This program requires virtually no user action. You need merely tell it when to begin.

START AND END

```
G/L ACCOUNT FILE REORGANIZE
OK TO BEGIN?
```

1)   **Start reorganize?** (1-0).

    1 - Yes, reorganize. The reorganize processor is loaded Continue according to your programmer's instructions

    Anything else - No, exit. End Program The Menu is loaded

```
                          ( 6 )
                            │
                            ▼
                    ┌───────────────┐
                    │      G/L       │
                    │   ACCOUNT      │
                    │     FILE       │
                    │  REORGANIZE    │
                    └───────────────┘
                            │
                            ▼
                    ┌───────────────┐
                    │    OK TO       │
                    │    BEGIN?      │
                    └───────────────┘
                            │
                            ▼
                    ┌───────────────┐
                    │ keyin response │
                    └───────────────┘
                            │
                            ▼
                        ◇ entry = 1 ◇──── YES ────┐
                        ◇  (yes)  ◇               │
                        ◇    ?    ◇               │
                            │                     │
                            │ NO                  │
                            ▼                     ▼
                    ┌───────────────┐     ┌───────────────┐
                    │  REORGANIZE   │     │  load your    │
                    │  NOT BEGUN.   │     │  reorganize   │
                    │   LOADING     │     │  processor    │
                    │    MENU       │     └───────────────┘
                    └───────────────┘             │
                            │                     ▼
                            ▼             ┌───────────────┐
                    ┌───────────────┐     │ execute your  │
                    │     load      │     │  reorganize   │
                    │     Menu      │     │  processor    │
                    │   G/L000      │     └───────────────┘
                    └───────────────┘             │
                            │                     ▼
                            ▼                  ( end )
                          ( 0 )
```
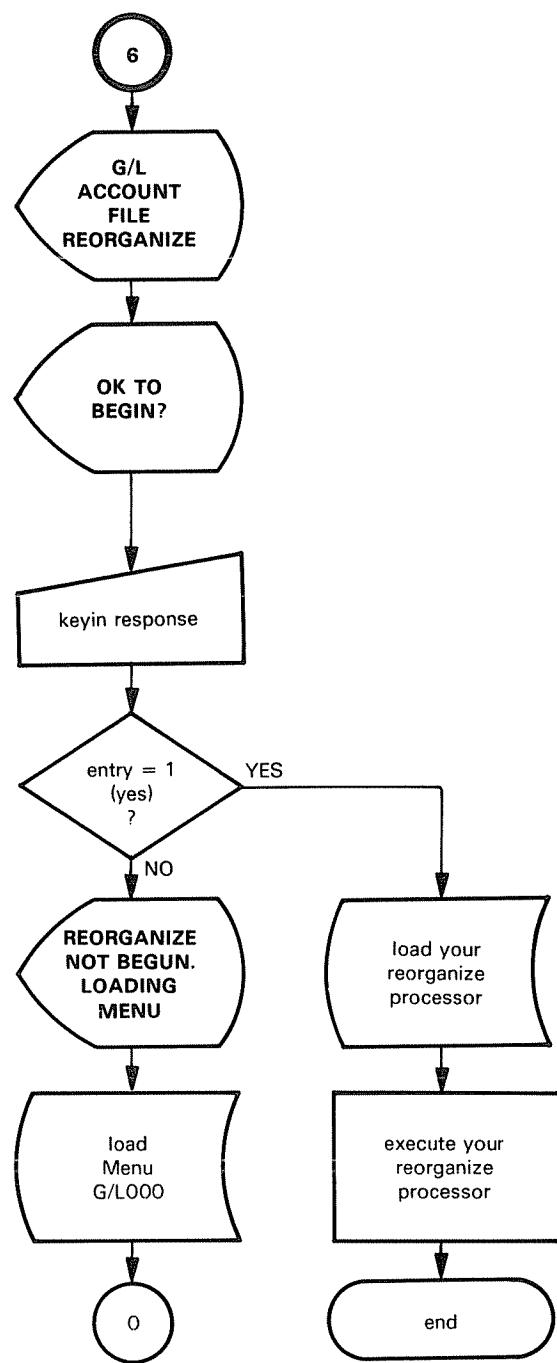
Chapter Five
SPECIAL HARDWARE AND BASIC FEATURES

The General Ledger programs were developed and tested on a Wang Laboratories 2200B minicomputer system with 16K bytes of program memory (that does not include the BASIC interpreter), and with a disk to hold the program and data files. This chapter describes the features of the Wang system that are most likely to be different from one computer to the next. Only features that affect the General Ledger programs are included.

CRT DISPLAY SCREEN

The Wang 2200B has a 16-row by 64-column CRT display screen, which the programs use for operator prompting and data review. If you have a smaller CRT screen on your computer system, you will have to redo the CRT layouts that do not fit your screen and rewrite the programs to use your layouts. Program changes will probably not be necessary if your CRT screen is larger, since the programs will just ignore any extra space.

The CRT cursor can be positioned anywhere on the screen prior to displaying or inputting data without affecting characters already displayed. This means it is possible to display any part of a line without having to redisplay the entire screen or even the whole line. This feature is very useful for displaying data from different records of the same file, for example. A program can clear the screen and display a mask (the labels that describe the record's fields). Then, in response to an operator entry, it can fill in the mask with the values for a specific record. Values from different records can be displayed subsequently without affecting the mask. New values for specific data fields can be entered right where the old values were displayed.

The CRT display speed is selectable. This feature is used to display flashing bulletins.

The CRT display has a standard 64-element ASCII character set of upper-case letters, digits, punctuation marks, arithmetic operators, relational operators, etc. It also recognizes the special hexadecimal codes listed in Table 5-A.

Table 5-A. Special CRT Hexadecimal Codes

Hexadecimal Code	CRT Action
01	Cursor home (upper left corner)
03	Clear screen and cursor home
08	Cursor left one space (←)
09	Cursor right one space (→)
0A	Cursor down one line (↓)
0C	Cursor up one line (↑)

KEYBOARD

The keyboard used for manual data entry includes standard alphabetic, numeric, and punctuation keys. In addition, there are 16 special function keys (SFK's). General Ledger only uses SFK15. Pressing SFK15 during normal keyboard entry generates a hexadecimal code 0F which the program interprets as a request from the operator to return to the Menu. Instead, you could reload the Menu program whenever the keyboard generates hexadecimal code 03. Simultaneously depressing the CONTROL and C keys will generate hexadecimal 03 on many keyboards.

HIGH-SPEED OUTPUT

A 132-column printer is the standard high-speed output device for all reports. It has a standard 64-element ASCII character set of upper-case letters, digits, punctuation marks, arithmetic operators, relational operators, etc. It also uses special hexadecimal code 01 (no printed output) and OC (top of form).

If your printer has more than 132 columns, the programs will ignore the excess columns. On the other hand, a smaller printer will require changing the programs that print full width reports. You will have to redesign the reports to print a shorter line, either by deleting some information or by printing some information on extra lines.

NUMERICS AND NUMERIC EXPRESSIONS

A numeric expression can be a variable, function or constant. It can also be any valid (in the conventional algebraic sense) combination of variables, functions and constants connected by arithmetic operators.

Numeric constants can be integers (signed or unsigned) or floating point numbers (signed or unsigned). They can be written using standard decimal notation, for example:

```
2
+2
-3.675
1234.56
-123456
-0.000001
```

Numeric constants can also be written using scientific notation. The letter E is used to indicate "times 10 to the power", as follows:

```
0.0001 can be written as 1E-4
100 can be written as 1E2
1000 can be written as 1E3
```

A numeric variable can be a letter or a letter followed by a digit. In addition to simple numeric variables, singly or doubly subscripted array variables can also be used. Numeric arrays must always be dimensioned, using a DIM statement, on a line preceding the first array reference in the program. Subscripts cannot be less than 1 nor greater than 255.

The same letter may be used to represent a simple variable and an array name in the same program. Thus, A and A(1) can both be used in the same program; they are independent and unrelated variables. Singly and doubly subscripted arrays may not share the same name, however. All simple numeric variables and each element of a numeric array are automatically set to zero before program execution.

The precedence rules for evaluating numeric expressions are:

1) Evaluate expressions enclosed in parentheses
2) Exponentiate
3) Multiply or Divide
4) Add or Subtract

ALPHANUMERICS (STRINGS)

Alphanumeric variables are named with either a letter followed by a dollar sign, or with a letter followed by a digit followed by a dollar sign. Singly and doubly subscripted alphanumeric arrays can also be used, and are named the same way as simple alphanumeric variables. A simple variable and an array can have the same name in the same program. Thus, A$ and A$(1) can both be used in the same program; they are independent and unrelated variables. Singly and doubly subscripted arrays cannot have the same name.

The maximum length of a simple alphanumeric variable can be defined in a DIM statement, and must be between 1 and 64. Undimensioned variables default to a maximum length of 16 characters. A variable's length must be dimensioned on a line that precedes its first reference in a program, or the default length will be used.

Singly and doubly subscripted alphanumeric arrays are also dimensioned using the DIM statement. Each subscript must be between 1 and 255. Array element maximum length may also be specified (all elements have the same maximum length: between 1 and 64 characters). If the element length is not specified, it defaults to 16 characters.

Following is an example of alphanumeric variable and array dimensioning:

100 DIM A$,A1$3,A2$40,A$(5),B$(5,2)6,B1$(3,3)

A$ is a simple alphanumeric variable with a maximum length of 16 characters. A1$ is a simple alphanumeric variable with a maximum length of 3, A2$ is a simple alphanumeric variable with a maximum length of 40, A$() is an alphanumeric array with 5 elements, each having a length of 16, B$() is a doubly subscripted alphanumeric array with 10 total elements, each having a length of 6, and B1$() is a doubly subscripted alphanumeric array with a total of 9 elements, each having a length of 16.

During program execution, **simple aphanumeric variables and alphanumeric array elements (collectively termed "string variables" in the following paragraphs) may be assigned values shorter than their maximum length.** If this happens, trailing blanks are automatically added to fill out the variable. Trailing blanks are not considered to be part of string values. String variables are assigned the value of one blank before program execution begins.

There are three built-in alphanumeric functions which may be implemented differently in other versions of BASIC:

1) **STR (string variable, expression [,expression])** causes a substring of the specified string variable to be used. The substring starting character is denoted by the first expression, and its length is given (optionally) by the second expression. If no length is specified, the remainder of the string is used (up to, but not including any trailing blanks). When the STR function is used in a LET statement, characters are transferred as illustrated in Table 5-B.

2) **LEN (string variable)** determines the number of characters in the specified variable, excluding trailing blanks. For example, if A$ = "AB C", then LEN (A$) = 4.

3) **HEX (hexadecimal number)** generates the character specified by the hexadecimal digits. For example, PRINT HEX (41422043) will print AB C.

Table 5-B. Using STR with LET

DIM A$13,B$13 A$ = "1234567890 " B$ = "ABCDEFGHIJ "	
LET statement	Value of A$
A$ = B$	"ABCDEFGHIJ "
STR(A$,2) = B$	"1ABCDEFGHIJ "
STR(A$,2,2) = B$	"1AB4567890 "
A$ = STR(B$,2)	"BCDEFGHIJ "
STR(A$,2) = STR(B$,2)	"1BCDEFGHIJ "
STR(A$,2,2) = STR(B$,2,2)	"1BC4567890 "
A$ = STR(B$,2,3)	"BCD "
STR(A$,2) = STR(B$,2,3)	"1BCD567890 "
STR(A$,2,2) = STR(B$,2,3)	"1BC4567890 "
STR(A$,2,2) = STR(B$,2,1)	"1B34567890 "

COMMON VARIABLES

Common variables can be defined using a COM statement (similar to DIM). They retain their values from one program to the next. The Menu uses a common variable to hold the file name of the program to be loaded while it is loading a keyed access subroutine package (see Chapter 6, page 91).

Reorganize uses common variables to pass file names to the final reorganize program.

BASIC SYNTAX

In Wang BASIC, there can be more than one program statement on a line. Each statement except the last must be terminated with a colon. Thus, only the first statement on the line can (and must) have a line number.

Wang's BASIC interpreter ignores spaces in program text, but we have included them for better readability.

BASIC STATEMENTS

Quite a few of the program statements used in this book are unique to Wang's extended BASIC. They are listed below in two groups: general and disk access statements. Each of these statements is shown in detail, along with alternate methods of performing the same function in standard BASIC wherever practicable. **The following symbols are used in statement descriptions:**

SYMBOL	EXPLANATION
#n	**Logical file number n.** Used for data file identification. Example: #1
"name"	**One- to eight-character disk file name** enclosed in quotes. Examples: "G/L000", "G/LOF110"
argument list	**A series of alphanumeric and/or numeric variables and/or array names.** Example: A$, B, C$( ), D( )
expression	**A numeric expression.** Example: A(1)*3.10-(Z/20)
line number	**One- to four-digit BASIC line number.** Example: 6000
XX	**Two hexadecimal digits** regarded as one byte of data. Examples: 0A, 5F, FF
{ }	**One of the enclosed items is required.**
[ ]	**The enclosed item is optional.**
variable	**An alphanumeric or numeric variable.** Examples: A$, X0
image	**[±] [## ...] [.] [## ...]** Further explanation at statements that use it.

GENERAL STATEMENTS

● **CONVERT expression TO alphanumeric variable, (image)**

Example: 100 CONVERT A*3 TO A$, (##.##)

Convert the value of the numeric expression to an ASCII character string using the specified image. Images observe the following rules:
1) Starting with a plus (+) sign puts the sign of the expression's value (+ or -) into the string.
2) Starting with a minus (-) sign puts a blank for positive values or a minus (-) for negative values into the string.
3) An unsigned image generates an unsigned string.
4) The pre-decimal digits are right justified at the decimal point with zero fill. The post-decimal digits are left justified at the decimal point with zero fill.

This command is generally used to facilitate manipulation of individual digits in a numeric value. You can usually isolate digits with a series of expressions that use the INT (integer) function.

- ● **CONVERT alphanumeric variable TO numeric variable**

  Example: CONVERT A$ TO A

  > **Convert the ASCII representation of a number to a numeric value.** This statement can be used to change a number in ASCII format (isolated by the previous version of CONVERT) back into numeric form.

- ● **DEFFN' integer (variable [, variable...])**

  Example: 100 DEFFN' 32(A3)

  > **Define the starting point of a marked subroutine.** Marked subroutines can be called by using a GOSUB' statement (see GOSUB'). Additionally, subroutine '15 can be called by pressing SFK15 whenever keyboard input is allowed (see KEYIN). **Marked subroutines can receive the values of parameters passed to them by the main program.** The variables enclosed in parentheses that form the optional parameter list in the DEFFN' statement receive the values of corresponding arguments in the calling GOSUB' statement (see GOSUB'). These marked subroutines can be replaced by standard "line number" subroutines by removing the DEFFN' statement and changing the calling sequence as described under GOSUB'.

- ● **GOSUB' integer [(subroutine argument [, subroutine argument...])]**

  Example: 200 GOSUB' 32(256)

  > **Branch to the subroutine marked by the corresponding DEFFN' statement.** Then when a RETURN statement occurs, branch back to the statement following the GOSUB'. A subroutine argument can be an alphanumeric variable or a numeric expression. Subroutine arguments must agree in number and type with the parameter list in the DEFFN' statement. The easiest way to explain the interaction of these two lists is to illustrate how the numbered subroutine could be replaced by a standard BASIC "line number" subroutine.

Standard	Wang
100 A = X+Y	.
110 B = 3	.
120 C$ = "TAXABLE PAY "	.
130 GOSUB 500	130 GOSUB' 100 (X+Y,3,"TAXABLE PAY ")
.	.
.	490 DEFFN' 100 (A,B,C$)
500 PRINT C$;A+B	500 PRINT C$;A+B
510 RETURN	510 RETURN

Both of the programs above do the same thing. Values are assigned to variables A,B and C$ prior to the subroutine call, but using different techniques.

- ● **HEXPRINT** $\left\{ \begin{array}{l} \text{alphanumeric variable} \\ \text{alphanumeric array designator} \end{array} \right\}$ $\left[\left\{ \begin{array}{l} ; \\ , \end{array} \right\} \left\{ \begin{array}{l} \text{alphanumeric variable} \\ \text{alphanumeric array designator} \end{array} \right\} ... \right] [;]$

  Example: 100 HEXPRINT A$

  > **Print the hexadecimal representation of the characters in the alphanumeric variables.**

● **%[chr] fmt [chr fmt...]**

where chr = any sequence of one or more printable characters (except #)

$$fmt = \begin{bmatrix} \$ \\ + \\ - \end{bmatrix} [\ \#[,]..][.][\#...]$$

Example: 100 % -##.## LESS -##.## = -##.##

Specify the format of printed output generated by the PRINTUSING statement, according to the following rules:

1) Starting with a plus (+) sign causes the value's sign (+ or -) to print immediately preceding the first digit.
2) Starting with a minus (-) sign causes a blank for positive values or a minus (-) sign for negative values to print immediately preceding the first digit.
3) Starting with a dollar ($) sign causes a dollar sign to print immediately preceding the first digit.
4) If neither a plus (+), minus (-), nor dollar ($) sign is used and the value is negative, a minus (-) sign is printed before printing the formatted value (the line is one character longer).
5) Pre-decimal digits are right adjusted with blank fill. Post-decimal digits are left adjusted and truncated or zero filled. Values too large for the format cause the format specification to print (i.e., #'s are printed instead of digits).
6) Alphanumeric values are left justified with blank fill or truncation on the right.

● **INIT** $\left(\begin{matrix} XX \\ \text{"character"} \end{matrix}\right) \left\{\begin{matrix} \text{alphanumeric variable} \\ \text{alphanumeric array name} \end{matrix}\right\} \left[,\left\{\begin{matrix} \text{alphanumeric variable} \\ \text{alphanumeric array name} \end{matrix}\right\} ...\right]$

Example: 100 INIT("A")A$

Initialize every character of each alphanumeric variable or array on the specified list to the character in parentheses. INIT can be replaced by one or more LET statements within a FOR/NEXT loop.

● **KEYIN alphanumeric variable, line number, line number**

Example: 385 KEYIN X$, 395, 525

Accept a single character from the keyboard without echoing it to the CRT. If no character is ready, continue program execution with the next BASIC statement. If SFK15 was pressed, continue program execution at the second line number. If any other key was pressed, continue execution at the first line number. Refer to the discussion of SFK's earlier in this chapter.

● **NUM (alphanumeric variable)**

Example: 100 X = NUM(A$)

This built-in function determines the number of sequential valid numeric characters (that is, the digits 0 through 9, E,.,+,-) in the specified alphanumeric variable.

- **PACK (image)** $\begin{Bmatrix} \text{alphanumeric variable} \\ \text{alphanumeric array name} \end{Bmatrix}$ **FROM** $\begin{Bmatrix} \text{numeric array} \\ \text{name expression} \end{Bmatrix} \left[, \begin{Bmatrix} \text{numeric array} \\ \text{name expression} \end{Bmatrix} ... \right]$

Example: 100 PACK (##.##)A$() FROM A()

Pack the numeric values from the specified numeric expressions into the specified alphanumeric variables, using the provided image, in binary coded decimal (BCD) format.

1) Each byte (i.e., each character) of the receiving alphanumeric variables can hold two digits.
2) The sign (+ or -), if present, takes one-half byte.
3) Absolute values are packed when no sign is specified.
4) No decimal point is packed. The decimal point is restored by the UNPACK image.
5) Post-decimal digits are truncated or zero filled as necessary, and pre-decimal digits are zero filled.

PACK effectively reduces the amount of space needed to store numeric values. It can be omitted and the numeric values stored as numeric variables.

- **PRINTUSING line number [,print element** $\begin{Bmatrix} ; \\ , \end{Bmatrix}$ **...][;]**

Example: 200 PRINTUSING 100,A,B,A-B

Print the values of the print elements according to the format specified by the image located at the referenced line number. If there are more print elements than formats in the image statement, the image is reused starting with the first format. A PRINT statement can be used in place of a PRINTUSING statement, but columns will not line up as well.

- **SELECT select parameter [,select parameter...]**

Example: 100 SELECT #1B10,PRINT 215

Select which disk to use in disk operations, or whether to print on CRT or printer. The CRT print speed can also be selected.

- **UNPACK (image)** $\begin{Bmatrix} \text{alphanumeric array name} \\ \text{alphanumeric variable} \end{Bmatrix}$ **TO**

$\begin{Bmatrix} \text{numeric array name} \\ \text{numeric variable} \end{Bmatrix} \left[, \begin{Bmatrix} \text{numeric array name} \\ \text{numeric variable} \end{Bmatrix} ... \right]$

Example: 150 UNPACK(##.##)A$() TO A()

Unpack numeric values packed in binary coded decimal (BCD) format by a PACK statement.

DISK ACCESS STATEMENTS

- **DATALOAD DC [#n,] argument list**

Example: 100 DATALOAD DC #1,J$()

Read a logical data record from disk file #n (#0 if #n not specified) and assign the values to the variables in the argument list. Each time this statement is executed, the next sequential logical record is read from the data file. If there are more variables in the argument list than values in the logical record, another logical record is read. If there are more values than variables, the excess data is ignored. Executing this statement updates the current sector address for the file to the starting address of the next consecutive logical record. If an end-of-file record is encountered, the end-of-file condition is set.

- **DATALOAD DC OPEN T [#n,] "name"**

Example: 100 DATALOAD DC OPEN T #1, "JOB"

Open a data file for subsequent loading and saving of data. The logical file number specified (#n) is assigned to the file name provided. Subsequent references to the opened file are via the logical file number. Logical file 0 is used if no logical file number is specified. Files are automatically closed when a program is ended.

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- **DATASAVE DC[#n,]** $\begin{Bmatrix} \text{END} \\ \text{argument list} \end{Bmatrix}$

Example: 100 DATASAVE DC #1,J$()

Write the values of the variables in the argument list onto the disk as one logical record. Start at the current sector address associated with the specified file. Specifying the END parameter causes an end-of-file record to be written. Update the file's current sector address to the sector following the last one written (except after END).

- **DBACKSPACE [#n,]** $\begin{Bmatrix} \text{BEG} \\ \text{expression S} \end{Bmatrix}$

Example: 100 DBACKSPACE BEG

If the BEG parameter is specified, set the current sector address to the beginning sector address of the specified file. Otherwise, decrease the current sector address by the truncated value of the expression.

- **DSKIP [#n,]** $\begin{Bmatrix} \text{END} \\ \text{expression S} \end{Bmatrix}$

Example: 100 DSKIP 3*A S

If the END parameter is specified, set the current sector address to the end-of-file record address for the specified file. Otherwise, increase the current sector address by the truncated value of the expression.

- **DATALOAD BA T [#n,] (sector address, variable) alphanumeric array name**

Example: 100 DATALOAD BA T #3,A$()

Read one sector (256 bytes) of unformatted data at the specified sector address. Set the variable to the next consecutive sector address after the read.

- **DATASAVE BA T [#n,] (sector address, variable) alphanumeric array name**

Example: 100 DATASAVE BA T #3,A$()

Write one sector (256 bytes) of unformatted data at the specified sector address. The variable receives the address of the next consecutive sector.

- **LIMITS [#n,] ["name"] variable 1, variable 2, variable 3**

Example: 100 LIMITS T #1,A,B,C

If the file name is specified, variable 1 receives the file start address, variable 2 receives the file end address and variable 3 receives the number of sectors currently used plus 2. If no name is used for the logical file number specified, variable 1 receives the start address, variable 2 receives the end address and variable 3 receives the current address.

- **LOAD DC T [#n,]** $\begin{Bmatrix} \text{alphanumeric variable} \\ \text{"name"} \end{Bmatrix}$ **[,line number 1 [,line number 2]]**

Example: LOAD DCT "G/L000"

Load a program under program control by performing the following functions:
1) Stop current program execution.
2) Clear program lines from memory, starting with line number 1 and ending with line number 2. If line number 2 is not specified, clear all lines starting with line number 1. If no line numbers are specified, clear all program lines.
3) Clear all non-common variables.
4) Load the specified program. The program being loaded will be combined with any program lines present; a loading line replaces an existing line having the same line number.
5) Run the program now in memory, starting at the first specified line number (if none specified, start with the lowest line number in memory).

Chapter Six
CHANGING GENERAL LEDGER

The General Ledger programs in this book are fairly general purpose, but you still may want to (or have to) make changes to them. This chapter discusses some of the changes you can make, but in no way exhausts all possibilities for program modification. Before you attempt to make any changes, you should be thoroughly familiar with the standard version of General Ledger. This means knowing generally what each program does and how all of the programs work together. It also means knowing in detail just how each program you are going to change works. You must know what is on each data file, how the data files interact, and especially how the data files are used by the programs you intend to change. You will have to know how to change CRT masks. Finally, you will find that actually writing the program changes will be much easier if you know how the various common subroutines work — including the keyed file accessing subroutines.

Throughout this chapter, we identify programs both by their Menu name (for example, Reports or Account File Maintenance) and their program file name (for example, G/L040 or G/L050). The program listings in Chapter 8 are identified by program file name.

PASSWORD

One thing you are sure to want to change is the password. In Menu G/L000 line 6100, you will find a call to subroutine '37 requesting entry of the four-character password. The next line verifies the entry. Replace the letters PASS with your own password, and if your password is not four characters long, change the '37 subroutine call to input the correct length password.

PROGRAMMABLE PROGRAM LOAD

We took advantage of the Wang LOAD DC statement's ability to add new program lines to some or all of an existing program in developing the Menu program. **The Menu loads programs in two steps. First, it loads a package of keyed access subroutines (according to the parameter in the Menu's DATA list), then it loads the main program.** This way, the package of subroutines exists only once on the disk instead of being duplicated with each program that uses it.

You can still use the Menu to control program loading even if your BASIC cannot combine programs under program control, as long as it can load another program under program control (first erasing the existing program). Change Menu G/L000 to disregard the subroutine package type code (in the DATA table), always loading just the actual program (not loading a set of subroutines first). Also, be sure that every program on the disk includes the keyed accessing subroutines it needs.

If your BASIC has no provisions for programmable loading of other programs, you will not be able to use the Menu at all. In this case, you will have to load programs as you need them, by program file name or whatever scheme your computer system employs. You will have to change every program so that it stops when it is finished, rather than attempting to reload the Menu.

TESTING FOR PRINTER READY

Every program that prints a report tests the printer to make sure it is on and ready to print. The first step of the test is to display the bulletin PRINTER NOT READY on the CRT. Then the program tries to "print" non-printing character codes on the printer. If the printer is not ready, the computer waits in a state of suspended animation. As soon as the printer is ready, the non-printing character "prints" on the printer, the program clears the bulletin from the CRT, and the program continues.

If your computer-printer interface does not go into suspended animation like this, you will have to omit or modify subroutine '60 in all programs that use it (see Table 7-B).

MULTIPLE COMPANIES

General Ledger does not have the facilities for built-in multiple company operations the way the Payroll described in *Payroll With Cost Accounting* does. You can implement multiple company General Ledger operations by having separate General Ledger disks for each different company. Of course, this actually means you have a separate General Ledger for each company, rather than one General Ledger for all companies.

FILE REORGANIZE

The Account File Reorganize program (G/L060), described in Chapter 4 on page 81, automatically loads Wang's file reorganize utility subsystem starting with KFAM3503, which in turn loads other Wang reorganize subsystem modules. Wang provides the reorganize utilities with their Integrated Support System (ISS). They are described in the ISS user's manual.

KFAM3503 requires a work file the same size as the Account file, G/L0F110. The work file can be on a different disk than G/L0F110. If you do not have enough space for such a work file, you can use Wang's utility KFAM3003 instead of G/L060-KFAM3503-etc. KFAM3003 is a stand-alone program that reorganizes the Account file in place. The ISS manual provides operating instructions.

If you do not have a Wang computer, use your computer's reorganize utility program. Some computer systems don't need file reorganize programs because they dynamically re-use space freed by record deletion. Your file reorganize program may interface to G/L060, or you may have a stand-alone utility.

CONVERTING KEYED ACCESSING TO RANDOM ACCESSING

Some versions of BASIC are not capable of keyed accessing; you have to provide the exact location of the record you want to access. This poses no problem for sequentially accessed files (even if your program has to increment its own pointer to randomly access the next sequential record).

The Account file is designed for keyed file accessing, with the Account Number field as the key. Thus the account number has no direct relationship to the Account record's physical position on the Account file. In other words, there is no combination of addition, subtraction, multiplication, or division operations you can perform on an account number that will tell you where to find the corresponding Account record. Instead, the account numbers logically group Account records. Related accounts have similar account numbers. The chart of accounts in Table 3-C on page 15 illustrates this. For example, account numbers with a first digit of '1' are Asset accounts. Further, if the second digit is '5', they are Property and Equipment assets. If the third digit is '1', the accounts are Cost of property and equipment assets.

While this scheme is certainly useful, it is not indispensible. Account numbers can be a function of the record number; in fact, the account number can be the same as the record number. You need make only minor program modifications to effect this change.

As published, the programs retrieve Account file data in a two-step process. First, they locate the desired record by executing a statement with the following format:

GOSUB'13x (～～)

where x is a digit between 0 and 9. The second step actually reads the data, and is executed with a statement with this format:

DATA LOAD DC #1,L$,D$

With random accessing, there is no need for a subroutine to locate Account records, since the account number directly specifies the record location. So you can delete all of the GOSUB'13x (～～) statements. You must also replace the DATA LOAD DC statement with a statement or statements that will read the data for the record number specified by the account number.

In addition, there are some specific changes to the Reports program (G/L050). This program assumes that balance sheet accounts start with account number 10000.0 and that income and expense statement accounts start with account number 30000.0. Change lines 6180 and 6200 to retrieve your first balance sheet account and income and expense statement account, respectively.

This same program assumes that account number 99999.0 is a special record containing sales account totals (see page 23). Change lines 6160 and 6670 to use the record number of your special sales account totals record instead.

This scheme for random accessing of the Account file affects only the account numbering. You must still observe the other rules for setting up your chart of accounts in the Account file that we explained in Chapter 3. Among other things, this means that Asset accounts must precede Liability accounts, which must precede Income accounts, which must precede Expense accounts. Report titles, headings, and totals must have Account records of their own. With random accessing it is even more important to draw up your chart of accounts carefully before entering it on the computer. The accounts will be numbered sequentially; their logical order on the Account file, and hence on the financial reports, corresponds exactly with their physical order.

With sequential accessing, there is no way to insert new records between adjacent existing records. You can always write a program to move the records around in the Account file, opening up space for records you need to add. But beware — if you move records around, their account numbers change. Figures 6-A and 6-B illustrate this. Notice on Figure 6-A that we want to insert a new total account after account 175 Brochure Printing and Mailing. To do this, we must first move all accounts from 176 Outside Prep. Work on Ads onward down one space in the file. Figure 6-B shows the new record in place, with account number 176. Notice how all the accounts we moved down in the file have a new account number.

168	Advertising
175	Brochure Printing and Mailing
176	Outside Prep. Work on Ads
177	Other Advertising

Radio and Television
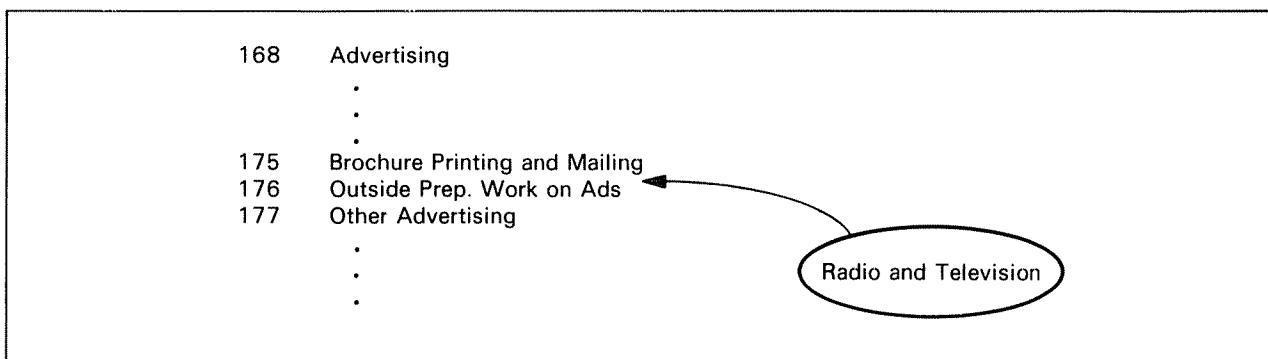
Figure 6-A. A New Account to Insert

168	Advertising
175	Brochure Printing and Mailing
176	Radio and Television
177	Outside Prep. Work on Ads
178	Other Advertising
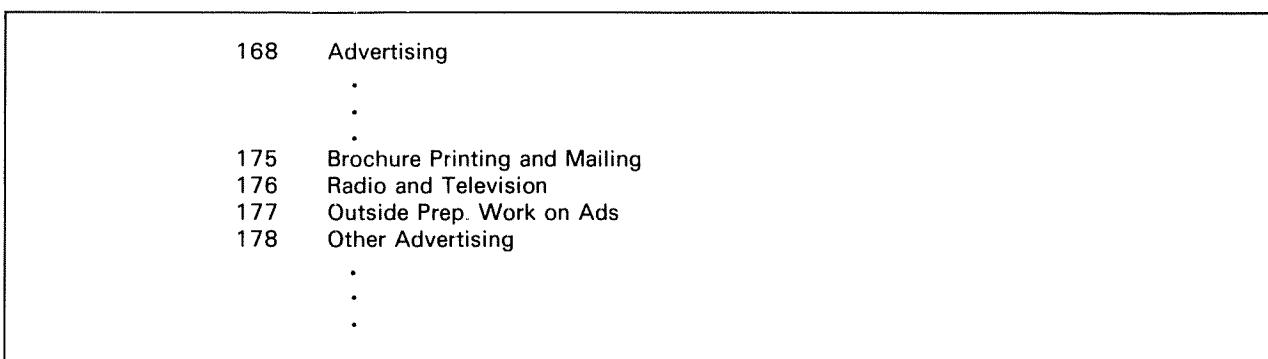
Figure 6-B. A New Account Inserted

ADDITIONAL SOURCES OF EXTERNAL POSTINGS

The General Ledger programs accept postings to any account from outside programs via the External Posting file. The programs in the Osborne & Associates publication *Accounts Payable and Accounts Receivable* use this file. Other application programs can make postings as well. Thus your Payroll, Order Entry, Inventory, Cash Receipts, and other programs can automatically update the General Ledger accounts.

Before you can prepare your program to make General Ledger postings, you must become familiar with the External Posting file layout on page 7. The External Posting file is blocked 16 records per sector on the Wang computer, which is a hard-sectored system. You may not have to worry about sector boundaries and record blocking on your computer. But if you do, be sure your application program correctly blocks records on the External Posting file. Furthermore, your program must put a 0 in the Account Number fields of all unused records in a sector.

Always add your postings to the end of the External Posting file, and always write an end-of-file marker following the last posting or block of postings.

The External Posting file layout lists the data items that your program must provide for each posting. They are the General Ledger account number, a code describing the source of the posting, the month and day the posting is made, a six-digit reference number, and the posting amount. The General Ledger presently recognizes four source codes: 0 for Payroll, 1 for Accounts Payable, 2 for Accounts Receivable, and 3 for General Ledger. The General Ledger Update program (G/L030) prints a summary of postings by source code for each account on the update report. The report format permits only four source codes. If you decide to add more source codes, you will have to modify the update report in G/L030.

COST DETAIL FROM POSTING RECORDS

You may want a detailed analysis of account activity over an extended period of time (i.e. more than one month on the update activity report). The very information you need goes by the board every month when the Update program (G/L030) erases the External Posting file. If you save the postings on a holding file during the Update program, they will be available when you want a long-term analysis. You will have to write a new program to sort the holding file by account number, date, etc., and to print a report based on the sort. Also, you must purge the holding file periodically so that it does not overflow with postings during some Update.

BUDGETING

The General Ledger has no provision for budgeting. You can add it. First you must establish some new Account record fields which will keep track of budget amounts for each account. There are three unused fields shown in the Account file layout (on page 6) which could be monthly, quarterly, and yearly budget amounts. The variables for these three fields are S(8), S(9), and S(10).

You will want to make occasional adjustments to these fields, so you should change the Account File Maintenance program (G/L010) to include them. Account File Maintenance is useful for making changes to account balances now and then, but is too cumbersome to use for entering a monthly budget amount for every account, and it provides no audit trail. Therefore, you should write a new program or series of programs to enter monthly, quarterly, or yearly budget amounts, update the Account file with these amounts, and print a report that details the activity.

Finally, you will need a new report to print a budget analysis. This report will probably include budget amounts, actual amounts, and perhaps the actual amount as a percent of budget. The report could be a replacement for the existing "special" report in G/L040. That way you could use the Special Report field on each Account record to control which accounts would print on the budget analysis report. The report could also be a new program.

DEPARTMENTALIZING

This General Ledger will support multiple departments, but only if you change the Account file contents and make some program changes. The easiest way to do this is to make the last digit of the account number be the department number. The Account file will have to be much larger since it must have enough room to hold one record for each department for each account that you departmentalize. Each Account record must identify which department it belongs to. Figures 6-C and 6-D illustrate this effect using part of the sample chart of accounts from Table 3-C. Figure 6-C shows part of the chart of accounts before departmentalization; Figure 6-D shows the same part of the chart of accounts after departmentalization.

```
        43200.0/50     Materials and Supplies
        43210.0/00         Computer Materials and Supplies
        43220.0/00         Raw Materials and Supplies
        43230.0/00         Stationery Materials and Supplies
        43290.0/00         Other Materials and Supplies
        43299.0/50     Total
```

Figure 6-C. Accounts Without Departmentalization

```
        43200.0/50     Materials and Supplies
        43210.0/00         Computer Materials and Supplies - General
        43210.1/00         Computer Materials and Supplies - Department 1
        43210.2/00         Computer Materials and Supplies - Department 2
        43220.0/00         Raw Materials and Supplies - General
        43220.1/00         Raw Materials and Supplies - Department 1
        43220.2/00         Raw Materials and Supplies - Department 2
        43230.0/00         Stationery Materials and Supplies - General
        43230.1/00         Stationery Materials and Supplies - Department 1
        43230.2/00         Stationery Materials and Supplies - Department 2
        43290.0/00         Other Materials and Supplies - General
        43290.1/00         Other Materials and Supplies - Department 1
        43290.2/00         Other Materials and Supplies - Department 2
        43299.0/50     Totals
```

Figure 6-D. Accounts With Departmentalization

Using this scheme to identify an account's department number limits program changes to the Reports program (G/L040). By making a few changes to this program, you can get separate financial reports for each department. The program must ask the operator for the department to report. Then as it goes through the Account file sequentially generating the report, it must bypass records for accounts that are not in the specified department, except that it should include all title, heading, and total records. The changes shown below for G/L040 will departmentalize the financial reports. You will also need to change the CRT mask 3 as shown on page 96.

```
                    new line:
            6070 GOSUB'34(605,1,0,9)
                 :D=X0

                 change line 6240:

            6240 GOSUB'110(2)
                 IF L3>0 THEN 6245
                 IF D=0 THEN 6245
                 IF D<> (L1-INT(L1))*10 THEN 6220
            6245 IF R=2 THEN 6250
                 IF L4<>S THEN 6660
```

MASK 3

```
        0         1         2         3         4         5         6
        0123456789012345678901234567890123456789012345678901234567890123
  0   0 G/L REPORTS
 64   1
128   2
192   3
256   4 + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + +
320   5 + TYPE        + FORMAT        + QUARTER      + MOVE          +
384   6 + 0=EXIT      + 1=INCOME STMT + 0=CURRENT    + 1=MONTHLY     +
448   7 + 1=TRIAL     + 2=BALANCE     + 1=1ST PREVIOUS+ 2=QUARTERLY  +
512   8 + 2=SPECIAL   + + + + + + +   + 2=2ND PREVIOUS+ 3=YEARLY     +
576   9 + 3=MONTHLY   + DEPARTMENT *  + 3=3RD PREVIOUS+             +
640  10 + 4=QUARTERLY + 0=ALL DEPTS   +             +              +
704  11 + 5=MOVE TOTALS +             +             +              +
768  12 + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + + +
832  13
896  14
960  15
```

ADD

Chapter Seven
FILE AND PROGRAM INITIALIZATION

This chapter lists the data files you must initialize and specifies what data you must put in them before you can begin regular processing. It also includes operating instructions for a stand-alone utility program that you can use to set up and subsequently modify CRT masks. In addition, you will find descriptions of standard subroutines that are used throughout the General Ledger programs.

DATA FILE INITIALIZATION

You must reserve space for the Account, External Posting, Direct Posting, General Information, and CRT Mask files on the disk in order to run the General Ledger programs. In addition, you must initialize each file. The following paragraphs describe each file's requirements.

The Account file must have room for one record for each regular General Ledger account, each financial report title, each financial report heading, and each financial report total. There must also be a special record for totals of the sales accounts. This is all explained in more detail in the "Setting Up the Chart of Accounts" section in Chapter 3.

The External Posting file must have room enough to store all the postings from external sources (e.g., Accounts Payable) that will occur in one month. If this is not possible, you will have to run the General Ledger Update program as the file becomes full. Initialize this file by writing an end-of-file marker at the beginning of the file.

The Direct Posting file must have enough room to hold as many postings as you will enter from the Direct Entry program (not from an external source) in one month. If this is not possible, you will have to run the General Ledger Update program more than once a month. Initialize this file by writing an end-of-file marker at the beginning of the file.

The General Information file must have at least two records, and may have as many as eleven. The General Ledger program will only use two records. However, this file is compatible with the General Information file in the Osborne & Associates books *Payroll With Cost Accounting* and *Accounts Payable and Accounts Receivable.* General Ledger's General Information file has one more field than the file in the other books, the Fiscal Year Ends field. The changes necessary to adapt the Payroll, Accounts Payable, and Accounts Receivable programs to use General Ledger's General Information file are discussed later in this chapter. Initialize every field of each record in the General Information file to zero, then use the General Information File Maintenance program to fill in the real data.

The CRT Mask file must have room for six records. When you first define this file, place an end-of-file record at the beginning of the file. Then enter the masks using the CRT Mask File Maintenance program. The CRT layouts at the end of this chapter show the exact positioning of text on the masks.

COMMON SUBROUTINES

There are a number of subroutines that are commonly used throughout the General Ledger programs. The common subroutines each program uses are not included in its listing in Chapter 8. Instead, the common subroutines are listed together in one place in Chapter 8 as program G/L SUBS. This means as you enter each program into your computer, you must include the subroutines it needs from the G/L SUBS program listing.

Table 7-A lists the subroutines, the lines they occupy, and brief descriptions of each one's purpose. Table 7-B shows which subroutines each of the General Ledger programs uses. Note that whenever a program uses a special version of a common subroutine, that special version is included with the program listing; do not replace it with the standard version from G/L SUBS. You can use the two tables to determine which program lines from G/L SUBS each General Ledger program will need. For example, Table 7-B shows that program G/L030 uses common subroutines '40, '72, '42, '41, '60,

'130, '132, '139, '110, '111, and '112. It also uses a special version of subroutine '113, but the listing for this special version is included in the listing for G/L030. Turning to Table 7-A, we can list the line numbers each of the common subroutines uses:

'40 lines 690-695	'130 lines 2000-2110
'72 lines 691-695	'132 lines 2010-2110
'42 lines 700-705	'139 lines 2030-2110
'41 lines 820-840	'110 lines 3500-3510
'60 line 1000	'111 line 3550
	'112 lines 3600-3630

Consolidating these line numbers, we see that program G/L030 needs the common subroutines on lines 690-705, 820-840, 1000, 2000-2110, and 3500-3630.

The more complex common subroutines are described in greater detail below. Seven of these subroutines are used to access the Account file by key. Keyed file accessing, as described in Chapter 2, is a way of locating specific data records by looking up the unique, identifying field of data (the key) in an index that cross references the key with the actual record location. Subroutines '130 through '139 inquire into and manipulate the index of keys. These subroutines, nominally located between lines 2000 and 2110, all transfer program control immediately to lines between 100 and 199.

Program lines 100 through 199, which perform the actual keyed accessing, are not furnished with this book. If you own a Wang computer, you can use their KFAM-3 keyed accessing subroutines, modules KFAM0003 and KFAM0103. You must modify both modules slightly to work with the General Ledger programs, as follows:

1) Change COM statements to DIM statements. (Remove non-array numeric variables from COM statements.)

2) Renumber to start at line 100 and end by line 199 (line 101 must have only a RETURN statement on it).

3) Add these two lines:
1 GOTO 6000
6000 LOAD DC T P$ 6000

KFAM0003 and KFAM0103 only locate desired records; data transfer is accomplished in the main General Ledger programs. KFAM0003 and KFAM0103 determine the location of a desired record and position the disk in preparation for the next DATA LOAD or DATA SAVE statement. All simple and array variables beginning with the letters Q, T, and V, both numeric and alphanumeric, are reserved for these program modules.

If you do not have a Wang computer, you will have to convert the General Ledger programs to use your computer's keyed file accessing (also called indexed sequential accessing). Alternatively, Chapter 6 describes a way to use random accessing on the Account file.

Here is an explanation of the more complex subroutines:

'32(A1) -- Position the CRT to location A1. The CRT has 1024 different locations, numbered from 0 to 1023. The first line contains locations 0-63, the second line has locations 64-127, and so on.

'34(X1,X2,X3,X4) -- Input alphanumeric data. The data is input at CRT location X1. X2 specifies the maximum number of characters that may be input, including sign and decimal point for numeric entry. If X4 is zero, alphanumeric input is specified and X0$ returns the entered value. When numeric entry is indicated (X4 non-zero), entered values must be greater than or equal to X3 and less than or equal to X4. Numeric entry is returned in X0. All entry is terminated by pressing the RETURN key. Pressing the BACKSPACE key erases and allows re-entry of the last entered character. Pressing the LINE ERASE key erases and restarts the current entry. If SFK15 is pressed, program execution transfers to the Menu.

'35(X2$) -- Flash the error bulletin X2$ on the fourth line of the CRT.

'36(A2) -- Without erasing existing characters, advance the CRT cursor A2 spaces (i.e., move it to the right).

Table 7-A. Summary of Common Subroutines

Number	Lines		Purpose
32(A1)	200 -	215	CRT Cursor Position
33(A1)	240 -	260	CRT Mask Load/Display
34(X1,X2,X3,X4)	310 -	525	Input Data at Location X1
35(X2$)	615		Display Error Bulletin
36(A2)	215		Non-erasing Horizontal Tab (CRT)
37(X2,X3,X4,X4$)	660 -	665	Input with Prompt Message
38(A4)	670 -	675	Input Date at Location A4
39(A1,X0$)	680 -	695	Display Packed Date at Location A1
40(X0$)	690 -	695	Print Packed Date
41(X4$,A1)	820 -	840	Print Report Headings as Needed
42(A1)	700 -	705	Load and Unpack Company A1
43(A1)	720		Pack, Save Company A1
46(A1,X0)	760 -	770	Display Phone Number at Location A1
47(X0)	770		Print Phone Number
60	1000		Check for Printer Ready
72(X0)	691 -	695	Print Numeric Date
110(A1)	3500 -	3510	Load, Unpack Account Record
111(A1)	3550		Pack, Save Account Record
112(A1)	3600 -	3630	Load, Unpack Posting Record
113(A1)	3650 -	3680	Pack, Save Posting Record
130(T6,T7,Q2,Q3,V7$)	2000 -	2110	Open File for Keyed Accessing
131(T6,T1$)	2005 -	2110	Delete Record from Keyed File
132(T6,T1$)	2010 -	2110	Find Record in Keyed File
133(T6,T1$)	2015 -	2110	Add Record to Keyed File
135(T6)	2020 -	2110	Find First Record in Keyed File
137(T6)	2025 -	2110	Find Next Record in Keyed File
139(T6)	2030 -	2110	Close File for Keyed Accessing

'37(X2,X3,X4,X4$) -- Display operator prompt message X4$ on the second line of the CRT. Input numeric or alphanumeric data on the third line of the CRT. Except for the input location, the description of subroutine '34 applies to this subroutine also.

'38(A4) -- Use subroutine '34 to input a six-digit date at CRT location A4. The first two digits are the month number (must be between 1 and 12), the next two digits are the day number (must be between 1 and 31), and the last two digits are the year number. The entered date is returned as a numeric value in X0 and as a packed numeric value in X3$. The entered date is redisplayed with slashes separating the month and day, and day and year.

'39(A1,X0$) -- Display, at CRT location A1, the date packed in X0$. Separate month and day, and day and year with slashes.

'40(X0$) -- Print the date packed in X0$. Separate the month and day, and day and year with slashes.

'41(X4$,A1) -- Check the line counter to see if the current report page has been filled. If so, advance to the next page, increment the page counter, print the report headings, and reset the line counter. X4$ is the report title. A1 is the report width, in columns.

'42(A1) -- Load and unpack the system General Information record. If A1 is not zero, load and unpack the General Information record for company number A1.

'43(A1) -- Pack and save the system General Information record. If A1 is not zero, pack and save the General Information record for company number A1.

'72(X0) -- Print or display numeric date X0, with slashes separating month and day, and day and year.

'130(T6,T7,Q2,Q3,V7$) -- Performs a DATA LOAD DC OPEN for data file V7$ and its companion index file. T6 is a file identification number (must be between 1 and 3) that is associated with the newly opened data file and is used to reference that data file in subsequent calls to keyed accessing subroutines. T7 is the logical file number assigned to the index file. Q2 is the logical file number assigned to the data file. Q3 must always receive the value 1. This subroutine must be executed for each data file that is to be key accessed before any of the other keyed accessing subroutines can be used. Upon return, status variable Q$ can either be blank (subroutine executed OK) or X (one of the parameters passed was incorrect).

'131(T6,T1$) -- Deletes key T1$ from the index for file T6. Locates the data record for key T1$ in data file T6, but does not alter that data record, nor remove it from the file. Deleting the key from the index file effectively prevents further accessing of its associated data record. Upon return, status variable Q$ can be blank (subroutine executed OK), N (key T1$ is not in index) or X (improper parameters).

'132(T6,T1$) -- Locates the data record for key T1$ on data file T6. If the key cannot be found, the file's current sector address is set to the location of the record with the key that immediately precedes the position key T1$ would occupy, were it in the index. Upon return, status variable Q$ can be blank (subroutine executed OK), N (key T1$ is not in index) or X (improper parameters).

'133(T6,T1$) -- Key T1$ is added to the index for file T6. The file's current sector address is set to the next available location on the data file. Upon return, status variable Q$ can be blank (subroutine executed OK), D (T1$ duplicates a key already in the index), S (no more room available either in the data file or the index for more records or keys) or X (improper parameters).

'135(T6) -- Locates the record with the lowest key in the index for file T6. Upon return, status variable Q$ can be blank (subroutine executed OK), N (no records on file) or X (improper parameters).

'137(T6) -- Locates the record with the key that sequentially follows the last record accessed on file T6. This subroutine must not be the first keyed accessing subroutine executed after opening file T6 (by executing subroutine '130). This subroutine has unpredictable results if it is the first keyed accessing subroutine executed following a keyed accessing subroutine that returned a non-blank (error condition) status code for file T6. It will work properly following subroutine '132 with a return code of N (key not in index), though. Upon return, status variable Q$ can be blank (subroutine executed OK), E (end-of-file, the last record accessed had the highest key in the index) or X (improper parameters).

'139 (T6) -- Closes currently opened file T6 and its companion index file. File identifier T6 and logical file numbers T7 and Q2 (assigned in subroutine '130) are then available for reuse. Following execution of this subroutine, T6 cannot be used to reference the data file opened against it in subroutine '130. Upon return, status variable Q$ can be blank (subroutine executed OK) or X (improper parameters).

Table 7-B. Common Subroutine Usage
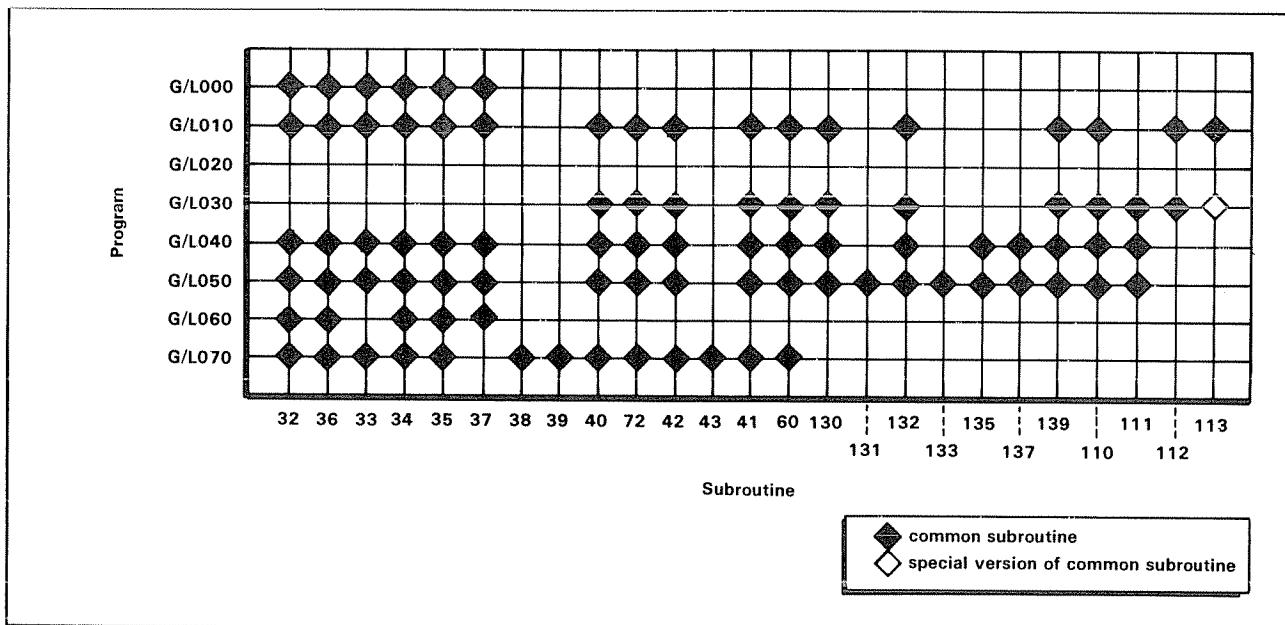
FILE REORGANIZE

The Account File Reorganize program (G/L060) is designed to use Wang Laboratories' KFAM file reorganize sub-system. Wang's Integrated Support System (ISS) manual describes the sub-system in detail. The sub-system includes ISS program modules KFAM3503, KFAM3603, KFAM3703, and KFAM0103. In order to use this sub-system with the General Ledger programs, you must rename KFAM0103 to KFAM3803 (i.e. program KFAM0103 must exist on your disk as KFAM3803). Also, you must change line 3072 of KFAM3503 to:

3072 LOAD DC T #0, "KFAM3803" 3072,3072

COORDINATING WITH PAYROLL, ACCOUNTS PAYABLE, AND ACCOUNTS RECEIVABLE

The General Information file (G/IOF010) in this book is the same as the General Information file in the *Payroll With Cost Accounting* and *Accounts Payable and Accounts Receivable* books, except that this General Information file has an additional field, the Fiscal Year Ends field. Payroll, Accounts Payable, and Accounts Receivable can use this General Information file, but you must replace their General Information File Maintenance programs (P/R010 and A/P110) with program G/L070. You must also use common subroutines '42 and '43 from G/L SUBS in all Payroll, Accounts Payable, and Accounts Receivable programs that use them (refer to Table 7-G in the *Payroll With Cost Accounting* and *Accounts Payable and Accounts Receivable* books).

As discussed in other chapters of this book, **General Ledger will accept postings to any account from external sources. The Accounts Payable and Accounts Receivable programs in the Osborne & Associates book** *Accounts Payable and Accounts Receivable* **are specifically designed to interface with the General Ledger programs.** For this interface to work, you must set up your disks so that the Account file (G/LOF110) and the External Posting file (G/LOF020) are on-line whenever the Accounts Payable Transaction Entry, Accounts Payable Update, Accounts Payable Check Calculate, Accounts Payable Transaction File Maintenance, and Accounts Receivable Update programs are running. These files must also be on-line when the General Ledger programs are running, of course.

To activate the link between General Ledger and Accounts Payable and Accounts Receivable, you must replace subroutine '113 on lines 3650-3660 in programs A/P030, A/P040, and A/R030 with subroutine '113 on lines 3650-3680 from G/L SUBS in this book. You must also delete some Accounts Payable and Accounts Receivable program lines as follows:

Program A/P010, delete lines 5415, 6055, 6403.
Program A/P030, delete line 6025.
Program A/P040, delete line 6025.
Program A/P120, delete lines 5415, 6055, 6403.
Program A/R030, delete line 6010.

CRT MASK FILE MAINTENANCE PROGRAM (CRTFM) OPERATING INSTRUCTIONS

```
CRTFM
```
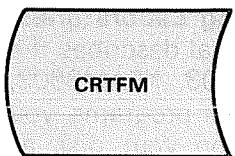
PROGRAM: CRT Mask File Maintenance

PURPOSE: Add, inspect, modify, or print CRT Masks.

WHEN: At setup time or as needed.

TO EXIT: Enter an operation code of 0, or SFK15.

Load and execute the CRTFM program.

ENTER IF FILE IS ON (F)IXED OR (R)EMOVABLE

1) Select file location (F,R).

F - CRT Mask file is on the fixed disk (disk address 310). Proceed to step 2.

R - CRT Mask file is on the removable disk (disk address B10). Proceed to step 2.

ENTER NAME OF FILE

2) Enter the name of the CRT mask file.

The standard name for the General Ledger CRT Mask file is CRT3.

If the file is located, proceed to step 3

If the file is not located, an error will result. Start the program over

```
CRT MASK FILE MAINTENANCE
ENTER OPERATION CODE
?_
<bulletin>
(0)END
(1)INQUIRE
(2)CHANGE-ADD-REPLACE
(3)PRINT
```

SELECT OPERATION

The display appears as CRT 7-C.

3) Enter operation code (0-3).

0 - END. You must enter '0'; you cannot simply enter RETURN. The program ends.

1 - INQUIRE. Inspect current contents of any or all CRT Mask records. Proceed to step 4

2 - CHANGE-ADD-REPLACE. Modify the current contents of any CRT Mask record. Proceed to step 5.

3 - PRINT. Print (on a line printer) CRT Mask records. Proceed to step 9.

```
CRT MASK FILE INQUIRY
ENTER FIRST MASK NUMBER
?_
<bulletin>
```

OPERATION IS INQUIRE

The display appears as CRT 7-D.

4) Enter mask number (0-n).

0 - The first mask on file is displayed (mask 1).

n - Display the mask at this record location on the file.

If this number is greater than the number of records on file, a new operation is requested; return to step 3.

Otherwise, the requested mask is displayed. You then have two options:

[RETURN] - You can see the next sequential mask on the file by pressing the RETURN key. Continue pressing [RETURN] until you have seen all you want; then press [E]. Or, if you key [RETURN] until there are no more records to be seen, the program automatically requests a new operation; return to step 3.

[E] - Press the [E] key to end the INQUIRE operation. Do not press [RETURN] after [E]. A new operation is requested; return to step 3.

```
CRT MASK FILE CHANGE-ADD-REPLACE
ENTER MASK NUMBER TO CHANGE (OR NEW)
?_
<bulletin>
```

OPERATION IS CHANGE-ADD-REPLACE

The display appears as CRT 7-E.

5) **Enter mask number** (1-999, NEW).

1-999 - Request to change the contents of the mask at this record location on the file

If this number is greater than the number of records on file, a new mask number is requested; repeat this step

Otherwise, you may continue the requested operation; proceed to step 6

NEW - **Create a new mask.** It will be recorded at the next record location on the file After this step, a new mask is entered as "changes"; proceed to step 6

Specify Location to Start Changes

LINE OR COMPOUND POSITION TO START CHANGES

6) **Enter line number** (0-15) **or compound position** (16-1023).

0-15 - Row number in which to start changes A column number is also requested; proceed to step 7

16-1023 - Request to start changes at this space location on the display A compound location is found by numbering each space on the mask, the first line containing spaces 0-63, the second line spaces 64-127, and so on Enter mask changes; proceed to step 8

105

7) **Enter column number** (0-63).

Request to start changes at the row and column specified. Enter mask changes; proceed to step 8.

8) **Change/create a mask.**

The cursor will move to the location you have specified. Change the displayed text by typing new characters directly over the old ones. There are several keys that perform special editing functions during the text replacement process:

RETURN - If you press this key on the last line, changes to the current mask end and you are asked for another mask number to change, return to step 5. Otherwise, the cursor moves to the first column on the next line and you can continue changes there.

PI (π) - Changes to this mask end. If the mask is NEW, it is saved at the next location on the file. Otherwise, this mask replaces the mask previously at the record location selected to change. You are asked for another mask number to change; return to step 5.

BACKSPACE - Each time you press this key, the cursor moves one space to the left without erasing any characters. Pressing this key when the cursor is at the first position on any line has no effect.

PRINT - Without erasing any existing characters, the cursor moves one space to the right. If you press this key at the end of a line, the cursor moves to the first column on the next line.

COS(- The cursor stays in the same column but moves one line down. If you press this key on the last line, changes to this mask end and you are asked for another mask number to change.

SIN(- The cursor stays in the same column but moves one line up. Pressing this key when the cursor is on the first line has no effect.

```
CRT MASK FILE PRINT
ENTER FIRST MASK NUMBER (O IF NONE)
?_

<bulletin>
```

OPERATION IS PRINT

The display appears as CRT 7-F.

9) Enter first mask number (0-999, SFK14).

0 - End the PRINT operation. You must enter the character '0'; simply pressing [RETURN] will not perform this function here. A new operation is requested; return to step 3.

1-999 - Begin printing mask templates with this mask record number. Proceed to step 10.

SFK14 - End the PRINT operation. A new operation is requested; return to step 3.

ENTER LAST MASK NUMBER

10) Enter mask number (first mask number - 999, SFK14).

Mask number - End printing with this mask number. The selected masks will be printed. Make sure your printer is turned on and ready to print. When printing is completed, a new mask print range is requested; return to step 9.

SFK14 - End the PRINT operation. (If the actual printing of the mask is in process when SFK14 is pressed, the printing will stop and SFK14 will become effective immediately thereafter.) A new operation is requested; return to step 3.

CRT MASK LAYOUTS

The following pages illustrate these CRT mask layouts:

1. Menu
2. G/L Direct Posting Entry/Print
3. G/L Reports
4. G/L Account File Maintenance
5. General Information File Maintenance

Use the utility program CRTFM (instructions provided on page 102) to initialize these masks.

MASK I

Column ruler: `0 0123456789 0123456789 0123456789 0123456789 0123456789 0123456789 0123`

Offset	Row	Content
0	0	G/L PROGRAM SELECTION MENU
64	1	
128	2	
192	3	
256	4	1) GENERAL INFORMATION F/M
320	5	2) DIRECT POSTING
384	6	3) POSTING UPDATE
448	7	4) REPORTS
512	8	5) ACCOUNT FILE MAINTENANCE
576	9	6) ACCOUNT FILE REORGANIZE
640	10	
704	11	
768	12	
832	13	
896	14	
960	15	

MASK 2

```
     0         1         2         3         4         5         6
     0123456789012345678901234567890123456789012345678901234567890123
 0  0 G/L DIRECT POSTING ENTRY/PRINT
64  1
128 2
192 3
256 4 ACCOUNT
320 5 1)DATE
384 6 2)REFERENCE                    OPENING BALANCE
448 7 3)AMOUNT                       CLOSING BALANCE
512 8
576 9
640 10
704 11
768 12
832 13
896 14
960 15
```

MASK 3

```
     0         1         2         3         4         5         6
     0123456789012345678901234567890123456789012345678901234567890123
 0  0 G/L REPORTS
64  1
128 2
192 3
256 4 +++++++++++++++++++++++++++++++++++++++++++++++++
320 5 + TYPE         + FORMAT       + QUARTER      + MOVE          +
384 6 + 0=EXIT       + 1=INCOME STMT + 0=CURRENT    + 1=MONTHLY     +
448 7 + 1=TRIAL      + 2=BALANCE     + 1=1ST PREVIOUS+ 2=QUARTERLY  +
512 8 + 2=SPECIAL    +               + 2=2ND PREVIOUS+ 3=YEARLY     +
576 9 + 3=MONTHLY    +               + 3=3RD PREVIOUS+             +
640 10 + 4=QUARTERLY +               +              +              +
704 11 + 5=MOVE TOTALS +             +              +              +
768 12 +++++++++++++++++++++++++++++++++++++++++++++++++++
832 13
896 14
960 15
```

MASK 4

Column ruler: 0 1 2 3 4 5 6 (0123456789 repeating)

Addr	Row	Content
0	0	G/L ACCOUNT FILE MAINTENANCE
64	1	
128	2	
192	3	
256	4	ACCOUNT / 9)THIS MONTH
320	5	1)NAME 10)THIS YEAR
384	6	2)ACCOUNT TYPE 11)THIS QTR
448	7	3)REPORT TYPE 12)1ST PREV QTR
512	8	4)NORMAL BALANCE 13)2ND PREV QTR
576	9	5)TOTAL LEVEL 14)3RD PREV QTR
640	10	6)EXTRA LINE ADV 15)LAST YEAR
704	11	7)SALES ACCOUNT
768	12	8)SPECIAL REPORT
832	13	
896	14	
960	15	

MASK 5

Column ruler: 0 1 2 3 4 5 6 (0123456789 repeating)

Addr	Row	Content
0	0	GENERAL INFORMATION FILE MAINTENANCE
64	1	ENTER FIELD TO CHANGE (16 TO PRINT; 0 TO EXIT)
128	2	
192	3	
256	4	1) COMPANY NUMBER 11) TODAY'S DATE
320	5	2) NEXT P/R CHECK 12) PERIOD START
384	6	3) O.T. RATE 13) PERIOD END
448	7	4) HOURLY RATE 14) PAYROLL NUMBER
512	8	5) FISCAL YR ENDS 15) DAY NUMBER
576	9	6) COMPANY NAME
640	10	7) ADDR
704	11	8)
768	12	9)
832	13	10)FED/STATE NOS.
896	14	
960	15	

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Chapter Eight
PROGRAM LISTINGS

This chapter contains the complete program listings for General Ledger. Each program listing has four parts. The first part contains the actual program lines. The second part lists the line numbers that are referenced somewhere in the program by various BASIC statements (GOTO, GOSUB, PRINTUSING, etc.), and the numbers of the referencing lines. The third part lists the variables that are referenced and the numbers of the referencing lines. The fourth part lists references to marked subroutines (i.e., defined by DEFFN' statements) and the numbers of the referencing lines.

There are several BASIC statements on most of the program lines. If your computer does not allow multiple statement lines, you will have to assign line numbers to the statements that fall between the existing line numbers. To facilitate this, and to improve readability, the programs are listed with only one statement on each printed line. Each line number is printed at the left margin and is followed by the first statement on that program line. Additional program statements from the same program line are then printed, one to a printed line, each preceded by a colon.

If you have to assign line numbers to every statement, you will discover that there are often more statements between already-defined line numbers than there are unused line numbers between those defined line numbers. This means you will have to renumber some of the existing program line numbers. If you do this, be sure to also change any GOTO's, GOSUB's, etc. that reference the line numbers you are changing. Use the line number cross reference part of each program listing to assist in this task.

Instead of imbedding program remarks (or comments) in the program listings themselves, we have placed them alongside the listings with a pointer to the statement(s) they pertain to. We have used the same technique to define the variables in the variable cross reference. To save space, we use the following abbreviations throughout the remarks:

        P/R - Payroll
        A/P - Accounts Payable
        A/R - Accounts Receivable
        G/L - General Ledger
        G/I - General Information

G/L000 Menu

Main program begins on line 6100	
Data table contains parameter pairs, one for each program: program file name and keyed file accessing subroutines requirement (0 = none, 1 = full set, 2 = inquiry only)	
Final step Load and run selected program	
Load keyed file accessing subroutines (automatically deleting lines 1 - 5999) Continue at line 6000 after loading	

```
PROGRAM LISTING                    G/L000                PAGE 1

    1 GOTO 6100
    5 REM G/L000 PROGRAM SELECTION MENU 1/79
    6 COM P$8
  101 RETURN
 5000  DATA "G/L070",0,"G/L010",2,"G/L020",2,"G/L040",2,"G/L050",1,"G
       /L060",0
 6000 LOAD DC T P$ 6000
 6100 SELECT DISK 310,#1310,#2310,#3310,#4310,#5310,#6310
      :GOSUB '33(1)
      :IF P$<>" " THEN 6105
      :GOSUB '37(4,0,0,"ENTER PASSWORD")
      :IF X0$="PASS"  THEN 6105
      :GOSUB '35("WRONG PASSWORD")
      :GOTO 6100
 6105 GOSUB '37(2,1,6,"CHOOSE PROGRAM BY NUMBER")
      :IF X0=21 THEN 6400
      :RESTORE X0*2-1
      :PRINT
      :PRINT HEX(010A0A0A);"-->LOADING PROGRAM";X0;TAB(63)
      :READ P$,X0
      :ON X0 GOTO 6120 ,6130
      :LOAD DC T P$
 6110 DEFFN'15
      :LOAD DC T"G/L000"
 6120 LOAD DC T"KFAM0003"  1 ,5999
 6130 LOAD DC T"KFAM0103"  1 ,5999
 6400 PRINT HEX(03)
      :END
```

G/L000

```
LINE NUMBER CROSS REFERENCE        G/L000                PAGE 1

0001 -  6120 6130
5999 -  6120 6130
6000 -  6000
6100 -  0001 6100
6105 -  6100 6100
6120 -  6105
6130 -  6105
6400 -  6105
```

G/L000

Name of program file to load	
Miscellaneous. temporary	
Password entered by operator	

```
VARIABLE CROSS REFERENCE           G/L000                PAGE 2

P$   - 0006 6100 6105
X0   - 6105 6105 6105 6105 6105
X0$  - 6100
```

G/L000

```
SPECIAL FUNCTION CROSS REFERENCE   G/L000                PAGE 3

' 15 -  6110
' 33 -  6100
' 35 -  6100
' 37 -  6100 6105
```

G/L010 Direct Posting Entry

Annotation	Code
Main program begins on line 6000	`1 GOTO 6000`
	`5 REM G/L010 DIRECT POSTING ENTRY/PRINT 1/79`
Save last (partial) block of postings, if any	`4000 DEFFN'83`
	`:IF G8<1 THEN 101`
	`:G8=17`
	`:GOSUB '113(3)`
	`:G8=0`
	`:RETURN`
Stop program if too few sectors (X0) are left on the Direct Posting file	`4020 DEFFN'84(X0)`
	`:IF X0>1 THEN 101`
	`:PRINT HEX(010A0A);"FILE FULL - RUN G/L UPDATE"`
	`:PRINT "KEY <CONTINUE> <RETURN> TO EXIT"`
	`:STOP`
	`:GOTO 6340`
Enter month and day for Posting Date field	`5000 UNPACK(##.##)G3$ TO P3`
	`:GOSUB '32(335)`
	`:PRINT TAB(5);`
	`:GOSUB '34(336,4,0,9999)`
	`:IF X0=0 THEN 5040`
	`:P3=X0/100`
Check for valid month	`:A1=INT(X0/100)`
	`:IF A1<1 THEN 5020`
	`:IF A1>12 THEN 5020`
Check for valid day	`:A1=X0-A1*100`
	`:IF A1<1 THEN 5020`
	`:IF A1<32 THEN 5040`
	`5020 GOSUB '35("BAD DATE")`
	`:GOTO 5000`
Display month/day	`5040 CONVERT P3*100 TO X0$,(####)`
	`:GOSUB '32(335)`
	`:PRINT STR(X0$,1,2);"/";STR(X0$,3,2);`
	`:RETURN`
Enter Reference Number field	`5060 GOSUB '34(398,6,0,999999)`
	`:P4=X0`
	`:RETURN`
Enter Posting Amount field	`5080 GOSUB '34(457,11,-9999999.99,9999999.99)`
	`:P5=X0`
Display new account balance	`:GOSUB '32(490)`
	`:PRINTUSING 5900 ,D(1)+P5`
	`:RETURN`
	`5900 %-#########.##`
	`5910 %#####.#    ##  ##/##  ######-#######.##`
	`5920 %### TOTAL DIRECT POSTINGS $##########.##`
Open Posting files, skip to end, compute current sizes	`6000 DATA LOAD DC OPEN T#4,"G/LOF020"`
	`:DATA LOAD DC OPEN T#3,"G/LOF030"`
	`:DSKIP #4,END`
	`:LIMITS T#4,A,A,A1`
	`:R9=A-A1`
	`:DSKIP #3,END`
	`:LIMITS T#3,A,A1,A2`
	`:R8=A1-A2-1`
Check for full Posting files. The External Posting file must have room for all records currently in the Direct Posting file.	`:GOSUB '84(R8)`
	`:R9=R9-A2+A`
	`:GOSUB '84(R9)`
	`:G9=R8`
	`:IF R8<R9 THEN 6020`
	`:G9=R9`
Clear Posting record variables. Open Account file for keyed file accessing. Retrieve G/I data	`6020 INIT(00)G$()`
	`:GOSUB '130(1,1,2,1,"G/LOF110")`
	`:GOSUB '42(1)`
Set Account Type field (P2) for direct postings. Request operation code and branch to appropriate program area	`6040 P2=3`
	`:GOSUB '33(2)`
	`:GOSUB '37(1,0,2,"ENTER OPERATION (0=EXIT, 1=POST, 2=PRINT)")`
	`:ON X0+1 GOTO 6340 ,6060 ,6200`
Enter direct postings. Request Account Number field; make sure it's on the Account file	`6060 GOSUB '34(264,7,0,99999.9)`
	`:P1=X0`
	`:IF X0=0 THEN 6040`
	`:PACK(#####.#)X0$ FROM X0,0`
	`:P1=X0`
	`:GOSUB '132(1,X0$)`
	`:IF Q$=" " THEN 6080`
	`:GOSUB '35("NOT ON FILE")`
	`:GOTO 6060`
Retrieve and display account data	`6080 GOSUB '110(2)`
	`:UNPACK(##.##)G3$ TO P3`
	`:P4,P5=0`
	`:GOSUB '32(272)`
	`:PRINT L1$;TAB(31)`
	`:GOSUB 5040`
	`:X0$="INCOME   STMT"`
	`:IF L4=1 THEN 6100`

G/L010

113

G/L010 Direct Posting Entry

```
                                              :X0$="BALANCE SHEET"
                                        6100 GOSUB '36(8)
                                              :PRINT X0$;", ";
                                              :X0$="DEBIT"
                                              :IF L5=1 THEN 6120
                                              :X0$="CREDIT"
                                        6120 PRINT X0$;" "
                                              :GOSUB '36(43)
                                              :PRINTUSING 5900 ,D(1)
```

Enter Reference and Amount fields.	`:GOSUB 5060` `:GOSUB 5080`

Allow changes to entries.	`6140  GOSUB '37(1,0,4,"ENTER FIELD TO CHANGE (0=NONE; 4=CANCEL)")`
	`:IF X0=0  THEN 6160`
	`:IF X0=4 THEN 6180`
	`:ON X0GOSUB 5000 ,5060 ,5080`
	`:GOTO 6140`

Save the posting. If it filled the file, subroutine '84 will end the program.	`6160  GOSUB '113(3)`
	`:GOSUB '35("RECORDED")`
	`:GOSUB '84(G9)`

Cancel the posting.	`6180 GOSUB '33(2)` `:GOTO 6060`

Print Save any postings just entered. Reposition Direct Posting file.	`6200 GOSUB '83`
	`:DBACKSPACE #3,BEG`
	`:G7=16`
	`:N,N1=0`
	`:H1=3`
	`:L=60`

Make sure printer is on; select printer for output.	`:GOSUB '60` `:SELECT PRINT 215(132)`
Retrieve next posting.	`6220  GOSUB '112(3)` `:IF G7>16  THEN 6320`

End of file?	`:IF P1<>0  THEN 6240`
	`:G7=16`
	`:GOTO 6220`

Skip over unused records at the end of the current block of postings.	`6240  H1=H1+1`
	`:IF H1<4  THEN 6260`
	`:PRINT`
	`:L=L+1`

Three postings are printed per line See if this posting should start a new line or not.	`:GOSUB '41("DIRECT GENERAL LEDGER POSTINGS",110)` `:H1=1`

Print posting data.	`6260  PRINTUSING 5910 ,P1,P2,INT(P3),100*(P3-INT(P3)),P4,P5;`
	`:IF H1=3  THEN 6280`
	`:PRINT ">-----<";`

Accumulate posting totals.	`6280 N=N+1` `:N1=N1+P5`
	`6300 GOTO 6220`

Print totals.	`6320 PRINT`
	`:PRINT HEX(0A);TAB(35);`
	`:PRINTUSING 5920 ,N,N1`
	`:GOTO 6040`

End program Encourage printing any postings that were just entered.	`6340 DEFFN'15`
	`:IF G8<1 THEN 6360`
	`:GOSUB '37(1,0,1,"DO YOU WANT A DIRECT POSTING LISTING?")`
	`:IF X0=1 THEN 6200`

If report isn't printed, save last block of postings.	`:GOSUB '83` `6360 GOSUB '139(1)`

Close Account file for keyed file access-ing Reload Menu	`6380 DATA SAVE DC CLOSEALL`
	`:PRINT HEX(03);"G/L DIRECT POSTING LOADING MENU"`
	`:LOAD DC T"G/L000"`

```
                                        6440 DEFFN'25"A$=";HEX(22);"G/L010";HEX(22);":SCRATCHTA$";HEX(0D)
                                        6460  DEFFN'26"SAVEDCT(A$)A$";HEX(0D)
```

G/L010

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G/L010   Direct Posting Entry

```
0101 -   4000 4020
5000 -   5020 6140
5020 -   5000 5000 5000
5040 -   5000 5000 6080
5060 -   6120 6140
5080 -   6120 6140
5900 -   5080 6120
5910 -   6260
5920 -   6320
6000 -   0001
6020 -   6000
6040 -   6060 6320
6060 -   6040 6060 6180
6080 -   6060
6100 -   6080
6120 -   6100
6140 -   6140
6160 -   6140
6180 -   6140
6200 -   6040 6340
6220 -   6220 6300
6240 -   6220
6260 -   6240
6280 -   6260
6320 -   6220
6340 -   4020 6040
6360 -   6340
```

G/L010

Miscellaneous, temporary	A	- 6000 6000 6000 6000 6000
Miscellaneous, temporary	A1	- 5000 5000 5000 5000 5000 5000 5000 6000 6000 6000 6000
Miscellaneous, temporary	A2	- 6000 6000 6000
Account file	D( )	- 5080 6120
Posting file	G$( )	- 6020
G/I file	G3$	- 5000 6080
Posting file blocking factor (loading)	G7	- 6200 6220 6220
Posting file blocking factor (saving)	G8	- 4000 4000 4000 6340
Sectors remaining on Posting file	G9	- 6000 6000 6160
Posting's position on printed line	H1	- 6200 6240 6240 6240 6240 6260
Line counter	L	- 6200 6240 6240
Account name	L1$	- 6080
Account's report type	L4	- 6080
Account's normal balance (DB or CR)	L5	- 6100
Number of postings printed	N	- 6200 6280 6280 6320
Cumulative $ amount of postings printed	N1	- 6200 6280 6280 6320
Posting account number	P1	- 6060 6060 6220 6260
Posting source code	P2	- 6040 6260
Posting date	P3	- 5000 5000 5040 6080 6260 6260 6260
Posting reference	P4	- 5060 6080 6260
Posting amount	P5	- 5080 5080 6080 6260 6280
Keyed file accessing status	Q$	- 6060
Space available on Direct Posting file	R8	- 6000 6000 6000 6000
Space available on External Posting file	R9	- 6000 6000 6000 6000 6000 6000
Miscellaneous, temporary	X0	- 4020 4020 5000 5000 5000 5000 5060 5080 6040 6060 6060 6060
		6140 6140 6140 6340
Miscellaneous, temporary	X0$	- 5040 5040 5040 6060 6060 6080 6080 6100 6100 6100 6120

G/L010

```
' 15 -   6340
' 25 -   6440
' 26 -   6460
' 32 -   5000 5040 5080 6080
' 33 -   6040 6180
' 34 -   5000 5060 5080 6060
' 35 -   5020 6060 6160
' 36 -   6100 6120
' 37 -   6040 6140 6340
' 41 -   6240
' 42 -   6020
' 60 -   6200
' 83 -   4000 6200 6340
' 84 -   4020 6000 6000 6160
' 110 -  6080
' 112 -  6220
' 113 -  4000 6160
' 130 -  6020
' 132 -  6060
' 139 -  6360
```

G/L020   Sort Postings

```
    1 GOTO 6000
    5 REM G/L020 SORT POSTINGS 1/79
 6000 DIM A$(15,16)14,S(16),C1$1,I$(16)14,J$(16)14
     :DIM L$(240)2,U$(16)1,V$(16)2,W$(15,16)2,A$27
     :INIT(0A)X1$
     :F=15
     :G=16
     :H=14
     :GOTO 6110
 6010 DEFFN'33
     :DBACKSPACE #2,BEG
     :DSKIP #2,(F+1)*(I-1)+S(I)S
     :DATA LOAD DC #2,I$()
     :S(I)=S(I)+1
     :IF END THEN 6020
     :IF S(I)<F+2 THEN 6030
 6020 PRINT "S(";I;")=";S(I);
     :STOP "SORT ERROR"
     :INIT(F0)I$()
 6030 MAT COPY I$() TO A$()<(I-1)*P1+1,P1>
     :U$(I)=HEX(01)
     :RETURN
 6040 DEFFN'23(Q,A$,Q1)
     :PRINT HEX(01);STR(X1$,1,Q);A$,
     :IF Q1=0 THEN 6060
     :PRINTUSING 6050 ,Q1;
 6050 %######
 6060 PRINT TAB(64)
     :RETURN
 6070 DEFFN'34
 6080 N0=G
     :MAT MOVE A$(),L$(S),N0 TO J$(J)
     :J=J+N0
     :S=S+N0
     :K0=K0+N0
     :PRINT "RECORD NUMBER:",
     :PRINTUSING 6050 ,K0;
     :PRINT HEX(0D0A0C)
     :IF STR(J$(1),1,1)=C1$ THEN 6100
     :IF J<=G THEN 6100
 6090 DATA SAVE DC #T1,J$()
     :J=1
     :INIT(F0)J$()
     :IF S<P+1 THEN 6070
 6100 RETURN
 6110 PRINT HEX(03);"G/L POSTING SORT/UPDATE"
 6120 PRINT "KEY RETURN TO BEGIN; ENTER 'END' TO EXIT"
     :INPUT A$
     :IF A$="END" THEN 6330
 6170 PRINT HEX(010A0A)
     :PRINT "WORKING...DO NOT INTERRUPT";TAB(64)
     :LIMITS T"G/LOF020",P,P,P
     :LIMITS T"G/LOF030",S,S,S
 6180 PRINT "MAX NUMBER OF RECORDS:    ",(S+P-4)*G
     :IF S+P>4 THEN 6190
     :SELECT P9
     :PRINT HEX(0A);"NO RECORDS"
     :SELECT P
     :GOTO 6350
 6190 DATA LOAD DC OPEN T#3,"G/LOF020"
     :DATA LOAD DC OPEN T#2,"WORKFILE"
     :DATA LOAD DC OPEN T#1,"G/LOF030"
     :INIT(F0)C1$,J$()
     :J,T=1
     :T1=2
     :P=F*G
     :P1=G*H
     :GOSUB '23(4,"SORT DIRECT POSTINGS",0)
 6200 M=0
 6210 DATA LOAD DC #T,I$()
     :IF END THEN 6255
     :IF M>0 THEN 6220
     :INIT(F0)A$()
 6220 M=M+1
 6230 MAT COPY I$() TO A$()<(M-1)*P1+1,P1>
     :IF M<F THEN 6210
 6240 MAT SORTA$() TO W$(),L$()
     :S=1
     :IF L-N=1 THEN 6250
     :GOSUB '23(5," ",0)
     :GOSUB '34
```

F, G, and H are input/output variable dimensions

Load one sector from each pre-sorted block into merge array A$()

Display status message

During pre-sort phase, save pre-sorted block A$() on Work file. During merge phase, save merge array A$() on External Posting file.

Await operator cue before beginning program

Open input files (External and Direct Posting files) Work file and output file (External Posting file) Initialize variables.

Sort blocks of postings, first from Direct Posting file, then from external Posting file. Save blocks of postings on Work file as they are sorted.

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G/L020 Sort Postings

```
                              :DATA SAVE DC #T1,J$()
                         6250 N=N+1
                              :GOSUB '23(7,"BLOCKS SORTED: ",N)
                              :ON L+1GOTO 6200 ,6270
                         6255 IF T=3 THEN 6260
                              :T=3
                              :GOSUB '23(4,"SORT EXTERNAL PUSTINGS",0)
                              :GOTO 6210
                         6260 L=1
                              :IF M>0 THEN 6240
                         6270 GOSUB '23(4,"MERGE SORTED BLOCKS",0)
                              :J,S=1
                              :T1=3
                              :K0=0
                              :DBACKSPACE #T1,BEG
                              :INIT(F0)J$()
                              :ON N+1GOTO 6320 ,6310
                         6280 INIT(F0)A$()
                              :FOR I=1 TO N
                              :GOSUB '33
                              :NEXT I
                              :INIT(01)U$()
                         6290 MAT MERGEA$() TO U$(),V$(),L$()
                              :S=1
                              :GOSUB '34
                              :IF N0=0 THEN 6300
                              :IF STR(J$(1),1,1)=C1$ THEN 6320
                         6300 I=VAL(U$(F+1))
                              :IF I=0 THEN 6290
                              :GOSUB '33
                              :GOTO 6290
                         6310 GOSUB '34
                         6320 DATA SAVE DC #T1,END
                              :GOSUB '23(9,"SORT COMPLETE",0)
                              :DBACKSPACE #2,BEG
                              :DATA SAVE DC #2,END
                              :DBACKSPACE #1,BEG
                              :DATA SAVE DC #1,END
                              :GOTO 6340
                         6330 DEFFN'15
                              :IF T1=3 THEN  101
                         6335 PRINT HEX(03);"G/L POSTING SORT LOADING MENU";
                              :LOAD DC T"G/L000"
                         6340 DATA SAVE DC CLOSEALL
                         6350 LOAD DC T"G/L030"6000
```

Using '33 to load sectors of sorted postings from each pre-sort block on Work file whenever necessary, merge pre-sorted blocks of postings and save on output file.

End output file. Erase Work file. Go load up-date processor

Reload Menu unless sort has begun.

Load report program

```
0101 -   6330
6000 -   0001 6350
6020 -   6010
6030 -   6010
6050 -   6040 6080
6060 -   6040
6070 -   6090
6100 -   6080 6080
6110 -   6000
6190 -   6180
6200 -   6250
6210 -   6230 6255
6220 -   6210
6240 -   6260
6250 -   6240
6255 -   6210
6260 -   6255
6270 -   6250
6290 -   6300 6300
6300 -   6290
6310 -   6270
6320 -   6270 6290
6330 -   6120
6340 -   6320
6350 -   6180
```

G/L020 Sort Postings

Miscellaneous, temporary	A$	– 6000 6040 6040 6120 6120
Sort array	A$( )	– 6000 6030 6080 6210 6230 6280
Hexadecimal F0 (end of file indicator)	C1$	– 6000 6080 6190 6290
Number of sectors sorted at one time	F	– 6000 6010 6010 6190 6230 6300
Number of records per sector	G	– 6000 6080 6080 6180 6190 6190
Bytes per record	H	– 6000 6190
Index	I	– 6010 6010 6010 6010 6010 6020 6020 6030 6030 6280 6280 6300 6300
Input array	I$( )	– 6000 6010 6020 6030 6210 6230
Index	J	– 6080 6080 6080 6080 6090 6190 6270
Output array	J$( )	– 6000 6080 6080 6090 6090 6190 6240 6270 6290
Number of records sorted/merged	K0	– 6080 6080 6080 6270
0 = more blocks to sort: 1 = all blocks sorted	L	– 6240 6250 6260
Index array (for sort/merge)	L$( )	– 6000 6080 6240 6290
Count of sectors sorted into A$( )	M	– 6200 6210 6220 6220 6230 6230 6260
Number of blocks sorted	N	– 6240 6250 6250 6250 6270 6280
Bytes to move (or just moved)	N0	– 6080 6080 6080 6080 6080 6290
Number of elements in A$( )	P	– 6090 6170 6170 6170 6180 6180 6190
Bytes used in each sector	P1	– 6030 6030 6190 6230 6230
Line number to print message on	Q	– 6040 6040
Quantity to print along with message	Q1	– 6040 6040 6040
Miscellaneous, temporary	S	– 6010 6080 6080 6080 6090 6170 6170 6170 6180 6180 6240 6270 6290
Which sector to use next in each block of sectors	S( )	– 6000 6010 6010 6010 6010 6020
Logical file number for input	T	– 6190 6210 6255 6255
Logical file number for output	T1	– 6090 6190 6240 6270 6270 6320 6330
Work array	U$( )	– 6000 6030 6280 6290 6300
Work array	V$( )	– 6000 6290
Work array	W$( )	– 6000 6240
Line feed characters	X1$	– 6000 6040

```
' 15 –   6330
' 23 –   6040 6190 6240 6250 6255 6270 6320
' 33 –   6010 6280 6300
' 34 –   6070 6240 6290 6310
```

G/L030 Posting Update

Main program begins on line 6000	

```
   1 GOTO 6000
   5 REM G/L030 POSTING UPDATE 1/79
  10 DIM E$(16)14,K$4,K1$4,K2$4,K3$4,C(6,2)
```

Print error report headings	

```
 835 X4$="SRCE  DATE    REF    AMOUNT"
    :IF F=0 THEN  837
    :FOR I1=1 TO 2
    :PRINT "ACCT NO  ";X4$;"          ";
    :NEXT I1
    :PRINT "ACCT NO  ";X4$
    :GOTO  840
```

Print update report headings	

```
 837 PRINT " ACCT     ";X4$;":::";X4$;":::";X4$;":::";X4$
```

Pack a blocked Posting record	

```
3660 DEFFN'113(A1)
    :PACK(#####.#)G$(G7)FROMP1
    :IF G7<16 THEN  101
    :DBACKSPACE #A1,1S
    :DATA SAVE DC #A1,G$()
    :RETURN
```

Save a full block of Posting records in its original place on disk	

```
4000 DEFFN'76
    :IF E2=0 THEN  101
    :PRINT
    :L=L+1
    :E2=0
    :GOSUB '41("G/L UPDATE",100)
    :RETURN
```

Postings may be printed more than one per line. At the end of a line, increment the line counter and check for page overflow	

```
4020 DEFFN'77
    :IF K1$=K3$ THEN  101
    :IF F1=1 THEN  101
    :GOSUB '110(2)
4040 D0=D(1)
4060 D(1)=D(1)+C
    :D(2)=D(2)+C
    :D(3)=D(3)+C
    :DBACKSPACE #2,1S
    :GOSUB '111(2)
    :IF E2=0 THEN 4080
    :PRINT
    :L=L+1
    :E2=0
4080 PRINT L1$;TAB(35);
    :PRINTUSING 5900 ,C(1,1),C(2,1),C(3,1),C(4,1);
    :PRINT TAB(94);"OPENING BAL";
    :PRINTUSING 5930 ,D0
4100 PRINT "  NET CHANGE";
    :PRINTUSING 5930 ,C;
    :PRINT TAB(29);
    :PRINTUSING 5930 ,C(1,2);C(2,2);C(3,2);C(4,2);
    :PRINT TAB(94);"CLOSING BAL";
    :PRINTUSING 5930 ,D(1)
    :PRINT HEX(0A0A)
```

After adding up all postings for a single account, retrieve the Account record, update it with the accumulated postings, save it, and print the account totals	

Keep a total of postings to credit accounts	

```
4120 IF L5=1 THEN 4140
    :C9=C9+C
    :GOTO 4160
4140 D9=D9+C
4160 L=L+4
    :F1=1
    :RETURN
```

Keep a total of postings to debit accounts	

Save one block of Error records	

```
4180 DEFFN'82
    :IF E1=0 THEN  101
    :DSKIP #3,END
    :DATA SAVE DC #3,E$()
    :DATA SAVE DC #3,END
    :INIT(00)E$()
    :E1=0
    :RETURN
5900 %P/R ###      A/P ###      A/R ###      G/L ###
5910 %## ##/## ######-########.##
5920 %#####.#
5930 %-#########.##
```

Start of main program. Retrieve G/l data. Open Error file and Posting file. Open Account file for keyed file accessing	

```
6000 GOSUB '42(1)
    :DATA LOAD DC OPEN T#3,"WORKFILE"
    :DATA LOAD DC OPEN T#4,"G/LOF020"
    :GOSUB '130(1,1,2,1,"G/LOF110")
    :PRINT HEX(03);"GENERAL LEDGER UPDATE"
6020   PRINT "PROCESSING...DO NOT INTERRUPT"
    :GOSUB '60
    :SELECT PRINT 215(132)
6040 L=66
    :G7=16
    :E1,E2=0
    :INIT(00)K1$,K2$,K3$,E$()
    :DBACKSPACE #3,BEG
```

Make sure printer is on. Select printer for output	

Initialize variables and file pointers	

G/L030

Description	Code

Retrieve next posting. Check for end of Posting file. Skip postings to account number 0. All regular accounts (which are the only ones that can be posted to) have zero sub-account numbers.	`:DBACKSPACE #4,BEG`
	`6060 GOSUB '112(4)`
	`    :IF G7>16  THEN 6280`
	`6080 IF P1=0 THEN 6060`
	`    :K$=G$(G7)`
	`    :STR(K$,4,1)=HEX(00)`

Current posting to same account as last posting? Current posting to same account as last error?	`    :IF K$=K1$ THEN 6120`
	`    :IF K$=K2$ THEN 6240`
	`    :GOSUB '77`
	`    :GOSUB '132(1,K$)`
	`    :IF Q$<>" " THEN 6240`

This posting is to a different account than the last posting. Update and print last account totals. Locate this account on Account file.	`    :GOSUB '41("G/L UPDATE", 100)`
	`6100 PRINTUSING 5920 ,P1;`
	`    :FOR I1=1 TO 6`
	`    :C(I1,1),C(I1,2)=0`
	`    :NEXT I1`

Print account number, clear totals, reset flags, etc. Print up to four postings (for the same account) per line. Don't print zero-amount postings.	`    :C,E2,F1=0`
	`    :K1$=K$`
	`6120 IF E2<4 THEN 6140`
	`    :GOSUB '76`
	`6140 IF P5=0 THEN 6200`
	`6160 IF E2>0 THEN 6170`
	`    :PRINT TAB(10);`

Start printing each line in the same column. Print posting data. Add posting amount to totals for current account.	`6170 PRINT " ";`
	`    :PRINTUSING 5910 ,P2;INT(P3);100*(P3-INT(P3));P4;P5;`
	`    :IF E2=3 THEN 6180`
	`    :PRINT ":::";`
	`6180  C=C+P5`
	`    :C(P2+1,1)=C(P2+1,1)+1`
	`    :C(P2+1,2)=C(P2+1,2)+P5`
	`    :E2=E2+1`

Resave posting on Posting file with zeroed Account Number field, preventing double updating if this program is rerun.	`6200 P1=0`
	`    :GOSUB '113(4)`
	`    :GOTO 6060`

Create Error record for bad posting. First, save any full block of Error records. Copy Posting data to Error record.	`6240 IF E1<16 THEN 6260`
	`    :GOSUB '82`
	`6260 E1=E1+1`
	`    :E$(E1)=G$(G7)`
	`    :K2$=K$`
	`    :GOTO 6200`

End of Posting file encountered. Finish printing and updating last posting and account totals. Save final block of Error records.	`6280 GOSUB '76`
	`    :GOSUB '77`
	`    :GOSUB '82`
	`6300  L=L+5`

Make sure there's enough room to print update recaps. Print update recap.	`    :GOSUB '41("G/L UPDATE",100)`
	`6320 PRINT HEX(0A0A);"TOTAL NET CHANGE:"`
	`    :PRINT HEX(0A);"DEBIT ACCOUNTS",`
	`    :PRINTUSING 5930 ,D9`
	`    :PRINT "CREDIT ACCOUNTS",`
	`    :PRINTUSING 5930 ,C9`
	`    :PRINT HEX(0A);"PROOF",`
	`    :PRINTUSING 5930 ,D9-C9`
	`    :PRINT`

Reset counters, flags, and Error file position for error report. Retrieve next Error record. Check for end of Error file. Print three errors per line. Accumulate error totals.	`6340 L=66`
	`    :C,C1=0`
	`    :E2=4`
	`    :G7=16`
	`    :F=1`
	`    :DBACKSPACE #3,BEG`
	`6360  GOSUB '112(3)`
	`    :IF P1=0  THEN 6440`
	`    :IF G7>16  THEN 6440`
	`6380 IF E2<3 THEN 6400`
	`    :PRINT`
	`    :L=L+1`
	`    :E2=0`
	`    :GOSUB '41("G/L POSTING ERRORS",100)`
	`6400 PRINTUSING 5920 ,P1;`
	`    :PRINT "    ";`
	`    :PRINTUSING 5910 ,P2;INT(P3);100*(P3-INT(P3));P4;P5;`
	`    :IF E2=2 THEN 6420`
	`    :PRINT "        ";`
	`6420 C=C+P5`
	`    :C1=C1+1`
	`    :E2=E2+1`
	`    :GOTO 6360`

End of Error file detected. Erase Error file and Posting file.	`6440 DBACKSPACE #3,BEG`
	`    :DATA SAVE DC #3,END`
	`    :DBACKSPACE #4,BEG`
	`    :DATA SAVE DC #4,END`
	`    :IF E2=0 THEN 6460`

G/L030 Posting Update

Print last line of error report, if any	`:GOSUB '76`
	`6460 PRINT HEX(0A);C1;" ERROR POSTINGS = $";`
Print error totals.	`:PRINTUSING 5930 ,C`
	`6480 DEFFN'15`
End program. Close Account file for keyed file accessing. Reload Menu.	`:GOSUB '139(1)`
	`:DATA SAVE DC CLOSEALL`
	`:LOAD DC T"G/L000"`

G/L030

```
0101 -   3660 4000 4020 4020 4180
0837 -   0835
0840 -   0835
4080 -   4060
4140 -   4120
4160 -   4120
5900 -   4080
5910 -   6170 6400
5920 -   6100 6400
5930 -   4080 4100 4100 4100 6320 6320 6320 6460
6000 -   0001
6060 -   6080 6200
6120 -   6080
6140 -   6120
6170 -   6160
6180 -   6170
6200 -   6140 6260
6240 -   6080 6080
6260 -   6240
6280 -   6060
6360 -   6420
6400 -   6380
6420 -   6400
6440 -   6360 6360
6460 -   6440
```

G/L030

Description	Var	References
Logical file number - Account file	A1	- 3660 3660 3660
Total postings to current account; error total	C	- 4060 4060 4060 4100 4120 4140 6100 6180 6180 6340 6420 6420 6460
Source of postings (A/P, etc.)	C( )	- 0010 4080 4080 4080 4080 4100 4100 4100 4100 6100 6100 6180 6180 6180 6180
Number of errors	C1	- 6340 6420 6420 6460
$ total of postings to credit accounts	C9	- 4120 4120 6320 6320
Account file	D( )	- 4040 4060 4060 4060 4060 4060 4060 4100
Account opening balance	D0	- 4040 4080
$ total of postings to debit accounts	D9	- 4140 4140 6320 6320
Error file	E$( )	- 0010 4180 4180 6040 6260
Error file blocking factor	E1	- 4180 4180 6040 6240 6260 6260 6260
Count postings on printed line	E2	- 4000 4000 4060 4060 6040 6100 6120 6160 6170 6180 6180 6340 6380 6380 6400 6420 6420 6440
In progress: 0 = update report, 1 = error listing	F	- 0835 6340
Account totals: 0 = not yet printed, 1 = printed	F1	- 4020 4160 6100
Posting file	G$( )	- 3660 3660 6080 6260
Posting file blocking factor	G7	- 3660 3660 6040 6060 6080 6260 6340 6360
Index	I1	- 0835 0835 6100 6100 6100 6100
Account file key	K$	- 0010 6080 6080 6080 6080 6080 6100 6260
Account currently being processed	K1$	- 0010 4020 6040 6080 6100
Account number of last error.	K2$	- 0010 6040 6080 6260
Hexadecimal zeros	K3$	- 0010 4020 6040
Line counter	L	- 4000 4000 4060 4060 4160 4160 6040 6300 6300 6340 6380 6380
Account name	L1$	- 4080
Account's normal balance (DB or CR)	L5	- 4120
Posting account number	P1	- 6080 6100 6200 6360 6400
Posting source code	P2	- 6170 6180 6180 6180 6180 6400
Posting date	P3	- 6170 6170 6170 6400 6400 6400
Posting reference	P4	- 6170 6400
Posting amount	P5	- 6140 6170 6180 6180 6400 6420
Keyed file accessing status	Q$	- 6080
Report heading	X4$	- 0835 0835 0835 0837 0837 0837 0837

G/L030

G/L030 Posting Update

```
' 15  -  6480
' 41  -  4000 6080 6300 6380
' 42  -  6000
' 60  -  6020
' 76  -  4000 6120 6280 6440
' 77  -  4020 6080 6280
' 82  -  4180 6240 6280
' 110 -  4020
' 111 -  4060
' 112 -  6060 6360
' 113 -  3660 6200
' 130 -  6000
' 132 -  6080
' 139 -  6480
```

G/L040 Reports

Annotation	Code
| Main program begins on line 6000. | ```
1 GOTO 6000
5 REM G/L040 REPORTS 1/79
10 DIM C1$17,D9$1
   :DIM G(3,10),S(10),H(2,3),H1(3)
20 DATA "TRIAL","SPECIAL","MONTHLY","QUARTERLY"," REPORT"," INCOME
   STATEMENT"," BALANCE SHEET"
``` |
| Print the appropriate page and column headings for various report types and formats | ```
831 IF R1=0 THEN 832
    :PRINT TAB(45);"PREVIOUS QUARTER ";R1
832 PRINT HEX(0A);" ACCOUNT          NAME";
    :ON RGOTO 833 , 834 , 835 , 836
``` |
| Trial report. | ```
833 IF S=2 THEN 834
    :PRINT TAB(59);"THIS MONTH      PCT";
    :IF G7<4 THEN 839
    :PRINT TAB(105);"QUARTER      PCT"
    :GOTO 839
``` |
| Special report. | ```
834 PRINT TAB(58);"THIS MONTH"
    :GOTO 839
``` |
| Monthly report. | ```
835 IF S=2 THEN 834
    :PRINT TAB(59);"THIS MONTH      PCT";
    :IF G7<2 THEN 839
    :GOTO 837
``` |
| Quarterly report. | ```
836 IF S=2 THEN 838
    :PRINT TAB(61);"QUARTER      PCT";
    :IF R1>0 THEN 837
    :IF G7<4 THEN 839
837 PRINT TAB(105);"YTD BAL      PCT"
    :GOTO 839
838 PRINT TAB(75);"QUARTER";
839 PRINT
    :PRINT HEX(0A)
    :D9$="$"
``` |
| Precede the first dollar amounts on each page with a dollar sign. | ```
4000 DEFFN'66(X0$,X0,X1,X2)
     :PRINT TAB(8);X0$;TAB(56);
     :IF R=4 THEN 4005
``` |
| Print recap line. | ```
     :PRINTUSING 5910 ,X0;
     :IF S<>1 THEN 4010
``` |
| Include monthly total. | ```
     :PRINT TAB(99);
     :IF R=3 THEN 4015
``` |
| Include quarterly total. | ```
4005 PRINTUSING 5910 ,X2;
     :IF R<>4 THEN 4010
     :IF S=1 THEN 4015
4010 PRINT
     :RETURN
``` |
| Include yearly total. | ```
4015 PRINT TAB(99);
     :PRINTUSING 5910 ,X1
     :RETURN
``` |
| Accumulate and print. | ```
4020 DEFFN'71(F,F1)
``` |
| Precede total amounts with a dollar sign. | ```
4040 IF L3=0 THEN 4060
     :D9$="$"
     :GOTO 4080
``` |
| Accumulate regular account to all total levels | ```
4060 FOR I=1 TO 10
     :G(F1,I)=G(F1,I)+S2*D(F1)
     :NEXT I
``` |
| You may delete this line. This subroutine is never used when L3 = 3 | ```
4080 IF L3<>3 THEN 4100
     :L6=10
``` |
| Print amount (with percent of sales on income statement). | ```
4100 PRINT TAB(55+(F-1)*(14+8*(2-S)));
     :PRINT D9$;
     :PRINTUSING 5910 ,G(F1,L6);
     :IF S=2 THEN 4120
     :PRINTUSING 5900 ,ABS(G(F1,L6)/H1(F1))*100;
``` |
| Clear all totals below and including the level just printed. | ```
4120 FOR I=1 TO L6
     :G(F1,I)=0
     :NEXT I
     :IF L5=2 THEN 4130
``` |
| Accumulate debit total | ```
     :H(1,F1)=H(1,F1)+D(F1)
     :RETURN
``` |
| Accumulate credit total. | ```
4130 H(2,F1)=H(2,F1)+D(F1)
     :RETURN
``` |
| Accounts with level 0, 1, or 2 print in column 1; with level 3, 4, or 5 in column 2; with level 6, 7, 8, or 9 in column 3 on balance sheet. | ```
4140 DEFFN'90
     :F=INT((L6+3)/3)
     :IF F<4 THEN 101
     :F=3
     :RETURN
``` |
| If Z9 = 0, make Z9 a large value (Z9 will be used as a divisor and must be > 0). | ```
4200 DEFFNZ(Z9)=Z9+(1-ABS(SGN(Z9)))*1E20
5000 IF L2<>0 THEN 101
     :ON SGOTO 5060 ,5040 ,5020
``` |
| Move totals (regular accounts only). | ```
5020 D(7)=D(2)
     :IF L4=2 THEN 5040
     :D(2)=0
``` |
| Yearly total. | ```
5040 D(6)=D(5)
     :D(5)=D(4)
``` |
| Zero This Year Total field of income and expense accounts | |
| Quarterly total. | |

G/L040 Reports

Zero This Quarter Total field of income and expense accounts	
Monthly total	
Zero This Month Total field of income and expense accounts	
Start of main program. Retrieve G/l data	
Compute effective month from Fiscal Year Ends field and current month (from To-day's Date field)	
Open Account file for keyed file access-ing	
Determine if any postings have not been updated	
Initialize report parameters	
Enter report type (0 = exit, 1 = trial, 2 = special, 3 = monthly, 4 = quarterly, 5 = move totals)	
Enter whether to move monthly, quarterly, or yearly totals	
Enter 1 for income statement, 2 for bal-ance sheet	
Enter which quarter to report (quarterly balance sheet/income statement only)	
Verify entry of report options	
Encourage operator to run all reports prior to moving totals	
Construct report title from type and for-mat options	
Make sure printer is on	
Select printer for output	
Zero totals	
Retrieve sales accounts total from special Account record - for use as divisors in computing % of sales	
If the quarter being reported is not in the current fiscal year, use last year's YTD sales total	
Position Account file to first balance sheet account	
Position Account file to first income state-ment account	
Locate next Account record. Retrieve ac-count data. Check for end of report. Con-vert Total Level field for use as total array index. Compute normal sign of account balance	

```
     :D(4)=D(3)
     :IF L4=2 THEN 5070
     :D(3)=0
5060 IF L4=2 THEN 5070
     :D(1)=0
5070 DBACKSPACE #2,1S
     :GOSUB '111(2)
     :RETURN
5900 % ###.##%
5910 %-#########.##
5920 %#####.#
6000 GOSUB '42(1)
     :UNPACK(##)G3$  TO G6
     :G7=12*((G6-G5+12)/12-INT((G6-G5+12)/12))
     :GOSUB '130(1,1,2,1,"G/L0F110")
     :LIMITS T#3,"G/L0F030",Z,Z,Z
     :LIMITS T#4,"G/L0F020",Y,Y,Y
6020 SELECT PRINT 005(64)
     :GOSUB '33(3)
     :IF (Z-2)*16+(Y-2)*16=0  THEN 6040
     :GOSUB '32(832)
     :PRINT "A MAXIMUM OF";Z-2;"DIRECT AND";Y-2;"INDIRECT POSTINGS NO
T UPDATED";
6040 R,R1,S,P=0
     :L=66
     :GOSUB '34(327,1,0,5)
     :R=X0
     :IF R=0   THEN 6800
     :IF R=2   THEN 6080
     :IF R<5   THEN 6060
     :GOSUB '34(375,1,1,3)
     :S=X0
     :GOTO 6100
6060  GOSUB '34(345,1,1,2)
     :S=X0
6080 IF R<>4 THEN 6100
     :GOSUB '34(362,1,0,3)
     :R1=X0
6100 GOSUB '37(1,0,1,"ENTRY CORRECT?")
     :IF X0=0  THEN 6020
     :IF R<>5  THEN 6120
     :GOSUB '37(1,0,1,"HAVE YOU RUN ALL YOUR REPORTS?")
     :IF X0=0  THEN 6020
     :GOSUB '32(192)
     :PRINT "WORKING...DO NOT INTERRUPT"
     :GOSUB '135(1)
6110 IF Q$<>" " THEN 6020
     :GOSUB '110(2)
     :GOSUB 5000
     :GOSUB '137(1)
     :GOTO 6110
6120 X4$=" "
     :RESTORE R
     :READ X4$
6140 RESTORE S+5
     :READ STR(X4$,LEN(X4$)+1)
     :GOSUB '60
     :GOSUB '32(192)
     :PRINT "PRINTING..."
     :SELECT PRINT 215(132)
     :INIT(00)X0$
     :UNPACK(#)X0$  TO G(),H()
6160 GOSUB '132(1,HEX(99999900))
     :GOSUB '110(2)
     :H1(1)=FNZ(D(1))
     :H1(2)=FNZ(D(2))
     :H1(3)=FNZ(D(3+R1))
     :IF INT((G7+2)/3)>R1 THEN 6180
     :H1(2)=FNZ(D(7))
6180 GOSUB '135(1)
     :IF S<>1 THEN 6240
6200 GOSUB '132(1,HEX(30000000))
     :IF Q$=" " THEN 6240
6220 GOSUB '137(1)
     :IF Q$<>" " THEN 6660
6240 GOSUB '110(2)
     :IF R=2 THEN 6250
     :IF L4<>S THEN 6660
6250 L6=L6+1
     :S2=1
     :IF L5=S1 THEN 6260
```

G/L040 Reports

Description	Code
	`:S2=-1`

Use requested quarterly totals	`6260 IF R1=0 THEN 6320`
	`:D(3)=D(3+R1)`
	`:D(1)=0`

If the quarter being reported is not in the current year, use last year's YTD total	`:IF INT((G7+2)/3)>R1 THEN 6320` `:D(2)=D(7)`

Include only regular accounts on the special report	`6320 IF R<>2 THEN 6340`
	`:IF L2<>0 THEN 6220`
	`:IF L9=0 THEN 6220`

Check for full page. Print title account's name in expanded type. Establish the standard account balance (DB or CR) which will prevail until the next title account comes up	`6340 GOSUB '41(X4$,110)`
	`:IF L3=3 THEN 6380`
	`:IF L3<>1 THEN 6360`
	`:PRINT HEX(0E);`
	`:S1=L5`
	`:GOTO 6380`
	`6360 IF L3<>0 THEN 6380`
	`:PRINTUSING 5920 ,L1;`

	`6380 PRINT TAB(8+9-L6);L1$;TAB(48);`

Print regular account's number. Print account name. Nothing else to print for title and heading accounts	`6400 IF L3=1 THEN 6420`
	`:IF L3=3 THEN 6420`
	`:ON RGOSUB 6460 ,6560 ,6580 ,6620`
	`:D9$=" "`
	`6420 PRINT`
	`:IF L7<9 THEN 6440`
	`:L=60`
	`:GOTO 6220`
	`6440 PRINT STR(X1$,1,L7+1)`
	`:L=L+L7+1`
	`:GOTO 6220`

Otherwise, branch to appropriate program area to continue printing	`6460 IF S=1 THEN 6480`
	`:GOSUB '90`
	`:GOSUB '71(F,1)`
	`:GOTO 6540`

If Extra Line Advance field is 9, advance to the next report page. Print extra blank lines.	`6480 GOSUB '71(1,1)`
	`:IF G7<4 THEN 6540`
	`:GOSUB '71(3,3)`

Monthly trial balance	`6540 IF L8=0 THEN  101`
	`:FOR I=1 TO 10`
	`:S(I)=S(I)+D(I)*S2`
	`:NEXT I`
	`:RETURN`

Trial income statement: include monthly and current quarter totals	`6560 PRINT TAB(55);`
	`:PRINTUSING 5910 ,D(1);`
	`:RETURN`

Accumulate new sales totals.	`6580 IF S=2 THEN 6600` `:GOSUB '71(1,1)`

Special report: print monthly totals	`:IF G7<2 THEN  101`
	`:GOSUB '71(3,2)`
	`:RETURN`

Monthly income statement: include monthly and yearly totals	`6600 GOSUB '90`
	`:GOSUB '71(F,1)`
	`:RETURN`

Monthly balance sheet: include monthly totals	`6620 IF S=2 THEN 6640`
	`:GOSUB '71(1,3)`
	`:IF R1>0 THEN 6630`
	`:IF G7<4 THEN  101`

Quarterly income statement: include quarterly and yearly totals.	`6630 GOSUB '71(3,2)` `:RETURN`

Quarterly balance sheet: include quarterly totals	`6640 GOSUB '90`
	`:GOSUB '71(F,3)`
	`:RETURN`

End of report. First, make sure there's enough room to print the recap (no recap on special report)	`6660 IF R=2 THEN 6020`
	`:L=L+7-2*S`
	`:GOSUB '41(X4$,110)`
	`:C1$="PROOF"`
	`:IF S=2 THEN 6720`
	`:C1$="RETAINED EARNINGS"`
	`:IF R<>1 THEN 6720`

After printing a trial income statement, retrieve the special sales totals record and replace the totals with new totals accumulated during this report.	`6670 GOSUB '132(1,HEX(99999900))` `:GOSUB '110(2)`

	`6680 FOR I=1 TO 10`
	`:D(I)=S(I)`
	`:NEXT I`

Replace monthly, yearly, and quarterly totals	`6700  DBACKSPACE #2,1S`
	`:GOSUB '111(2)`
	`:PRINT HEX(0A)`
	`:X0=S(2)`

Save updated special sales totals record.	`:IF INT((G7+2)/3)>R1 THEN 6710` `:X0=S(7)`
Print total debits, total credits, and bottom line (Proof/Retained Earnings)	`6710 GOSUB '66("SALES ACCOUNTS TOTAL",S(1),X0,S(3+R1))` `6720 PRINT HEX(0A);`

```
PROGRAM LISTING                        G/L040                    PAGE 4
        :GOSUB '66("DEBIT TOTAL",H(1,1),H(1,2),H(1,3))
        :GOSUB '66("CREDIT TOTAL",H(2,1),H(2,2),H(2,3))
        :PRINT HEX(0A)
        :GOSUB '66(C1$,H(2,1)-H(1,1),H(2,2)-H(1,2),H(2,3)-H(1,3))
        :GOTO 6020
   6600 DEFFN'15
        :PRINT HEX(03);"G/L REPORTS LOADING MENU";
        :GOSUB '139(1)
        :LOAD DC T"G/L000"
```

End program. Close Account file for keyed
file accessing. Reload Menu

G/L040

```
LINE NUMBER CROSS REFERENCE          G/L040                    PAGE 1

0101 -   4140 5000 6540 6580 6620
0832 -   0831
0833 -   0832
0834 -   0832 0833 0835
0835 -   0832
0836 -   0832
0837 -   0835 0836
0838 -   0836
0839 -   0833 0833 0834 0835 0836 0837
4005 -   4000
4010 -   4000 4005
4015 -   4000 4005
4060 -   4040
4080 -   4040
4100 -   4080
4120 -   4100
4130 -   4120
5000 -   6110
5020 -   5000
5040 -   5000 5020
5060 -   5000
5070 -   5040 5060
5900 -   4100
5910 -   4000 4005 4015 4100 6560
5920 -   6360
6000 -   0001
6020 -   6100 6100 6110 6660 6720
6040 -   6020
6060 -   6040
6080 -   6040
6100 -   6040 6080
6110 -   6110
6120 -   6100
6180 -   6160
6220 -   6320 6320 6420 6440
6240 -   6180 6200
6250 -   6240
6260 -   6250
6320 -   6260 6260
6340 -   6320
6360 -   6340
6380 -   6340 6340 6360
6420 -   6400 6400
6440 -   6420
6460 -   6400
6480 -   6460
6540 -   6460 6480
6560 -   6400
6580 -   6400
6600 -   6580
6620 -   6400
6630 -   6620
6640 -   6620
6660 -   6220 6240
6710 -   6700
6720 -   6660 6660
6800 -   6040
```

G/L040

G/L040   Reports

Label: "proof" or "retained earnings" ———— C1$	– 0010	6660	6660	6720									
Account file ———— D( )	– 4060	4120	4130	5020	5020	5020	5040	5040	5040	5040	5040	5040
	5040	5060	6160	6160	6160	6160	6260	6260	6260	6260	6260	6540
	6560	6680										
$ character ———— D9$	– 0010	0839	4040	4100	6400							
Column to print in (1, 2, or 3) ———— F	– 4020	4100	4140	4140	4140	6460	6600	6640				
Specifies which element of account totals (D( )) to use ———— F1	– 4020	4060	4060	4060	4100	4100	4100	4120	4120	4120	4120	4130
	4130	4130										
Report totals ———— G( )	– 0010	4060	4060	4100	4100	4120	6140					
G/l file ———— G3$	– 6000											
Month the fiscal year ends ———— G5	– 6000	6000										
Month from Today's Date field ———— G6	– 6000	6000	6000									
Effective month from start of fiscal year ———— G7	– 0833	0835	0836	6000	6160	6260	6480	6580	6620	6700		
Total debits, total credits ———— H( )	– 0010	4120	4120	4130	4130	6140	6720	6720	6720	6720	6720	6720
	6720	6720	6720	6720	6720	6720						
Sales accounts, total ———— H1( )	– 0010	4100	6160	6160	6160	6160						
Index ———— I	– 4060	4060	4060	4060	4120	4120	4120	6540	6540	6540	6540	6540
	6680	6680	6680	6680								
Line count ———— L	– 6040	6420	6440	6440	6660	6660						
Account number ———— L1	– 6360											
Account name ———— L1$	– 6380											
Sub-account number ———— L2	– 5000	6320										
Account type ———— L3	– 4040	4080	6340	6340	6360	6400	6400					
Account's report type ———— L4	– 5020	5040	5060	6240								
Account's normal balance ———— L5	– 4120	6250	6340									
Account's total level ———— L6	– 4080	4100	4100	4120	4140	6250	6250	6380				
Account's extra line advance ———— L7	– 6420	6440	6440									
Sales account? ———— L8	– 6540											
Include on special report? ———— L9	– 6320											
Page counter ———— P	– 6040											
Keyed file accessing status ———— Q$	– 6110	6200	6220									
Report type ———— R	– 0832	4000	4000	4005	6040	6040	6040	6040	6040	6080	6100	6120
	6240	6320	6400	6660	6660							
Specifies which quarter to print ———— R1	– 0831	0831	0836	6040	6080	6160	6160	6260	6260	6260	6620	6700
	6710											
Report format ———— S	– 0833	0835	0836	4000	4005	4100	4100	5000	6040	6040	6060	6140
	6180	6240	6460	6580	6620	6660	6660					
Special sales totals record (see D( )) ———— S( )	– 0010	6540	6540	6680	6700	6700	6710	6710				
Current standard account balance (CR or DB) ———— S1	– 6250	6340										
Sign of account balance ———— S2	– 4060	6250	6250	6540								
Miscellaneous, temporary ———— X0	– 4000	4000	6040	6040	6060	6080	6100	6100	6700	6700	6710	
Miscellaneous, temporary ———— X0$	– 4000	4000	6140	6140								
Miscellaneous, temporary ———— X1	– 4000	4015										
Line advance characters ———— X1$	– 6440											
Miscellaneous, temporary ———— X2	– 4000	4005										
Report title ———— X4$	– 6120	6120	6140	6140	6340	6660						
Active sectors in External Posting file + 2 ———— V	– 6000	6000	6000	6020	6020							
Active sectors in Direct Posting file + 2 ———— Z	– 6000	6000	6000	6020	6020							
Miscellaneous, temporary ———— Z9	– 4200	4200	4200									

G/L040

```
' 15 -  6800
' 32 -  6020 6100 6140
' 33 -  6020
' 34 -  6040 6040 6060 6080
' 37 -  6100 6100
' 41 -  6340 6660
' 42 -  6000
' 60 -  6140
' 66 -  4000 6710 6720 6720 6720
' 71 -  4020 6460 6480 6480 6580 6580 6600 6620 6630 6640
' 90 -  4140 6460 6600 6640
' 110 - 6110 6160 6240 6670
' 111 - 5070 6700
' 130 - 6000
' 132 - 6160 6200 6670
' 135 - 6100 6180
' 137 - 6110 6220
' 139 - 6800
```

| Main program begins on line 6000 | ```
1 GOTO 6000
5   REM G/L050 ACCOUNT F/M 1/79
10  DATA "REGULAR", "TITLE","TOTAL","HEADING","INCOME STMT.","BALA
    NCE SHEET","DB","CR","NO","YES"
``` |
| Print appropriate headings for either type of report. | ```
835 PRINT "ACCOUNT";TAB(10);"NAME";
    :IF F2=1 THEN  837
    :PRINT TAB(46);"THIS MO    THIS YEAR      THIS QTR    PREV QTR-1
    PREV QTR-2    PREV QTR-3    LAST YEAR";
837 PRINT
``` |
| At CRT location A1, display label number X0+1 from DATA table | ```
4100  DEFFN'90(A1,X0)
    :GOSUB '32(A1)
``` |
| At current CRT location, display label X0+1 from DATA table. | ```
4120  DEFFN'91(X0)
    :RESTORE X0+1
    :READ X0$
    :PRINT X0$;TAB(19)
    :RETURN
``` |
| At TAB position X1, print label X0+1 from DATA table | ```
4140  DEFFN'92(X0,X1)
    :RESTORE X0+1
    :READ X0$
    :PRINT TAB(X1);X0$;
    :RETURN
``` |
| Enter Account Number field. Enter Sub-account Number field. Locate record for account/sub-account just entered. | ```
5000  GOSUB '34(266,7,0,99999.9)
    :L1=X0
    :IF L1=0  THEN  101
    :GOSUB '34(274,2,0,99)
    :L2=X0
    :PACK(########)X0$ FROM L1*1000+L2
    :GOSUB '132(1,X0$)
    :RETURN
``` |
| Branch to enter the value for field F | ```
5100  ON F GOTO 5120 ,5140 ,5180 ,5200 ,5220 ,5240 ,5260 ,5280
    :GOTO 5300
``` |
| Enter Account Name field | ```
5120  GOSUB '34(330,31,0,0)
    :L1$=X0$
    :RETURN
``` |
| Enter Account Type field. Type must be 0 if Sub-account Number field is 0, and vice-versa. Display decoded Account Type field | ```
5140  L3=0
    :IF L2=0  THEN 5160
    :GOSUB '34(401,1,0,3)
    :L3=X0
    :IF L3=0 THEN 5140
5160 GOSUB '32(400)
    :PRINT L3;
    :GOSUB '91(L3)
    :RETURN
``` |
| Enter Report Type field. Display decoded Report Type field. | ```
5180  GOSUB '34(465,1,1,2)
    :L4=X0
    :GOSUB '90(467,L4+3)
    :RETURN
``` |
| Enter Normal Balance field. Display decoded Normal Balance field | ```
5200  GOSUB '34(529,1,1,2)
    :L5=X0
    :GOSUB '90(531,L5+5)
    :RETURN
``` |
| Enter Total Level field | ```
5220  GOSUB '34(593,1,0,9)
    :L6=X0
    :RETURN
``` |
| Enter Extra Line Advance field | ```
5240  GOSUB '34(657,1,0,9)
    :L7=X0
    :RETURN
``` |
| Enter whether this is a sales account. Display "yes" or "no" | ```
5260  GOSUB '34(721,1,0,1)
    :L8=X0
    :GOSUB '90(723,L8+8)
    :RETURN
``` |
| Enter whether this account is on the special report. Display "yes" or "no". | ```
5280  GOSUB '34(785,1,0,1)
    :L9=X0
    :GOSUB '90(787,L9+8)
    :RETURN
``` |
| Enter one of the amount fields | ```
5300  GOSUB '34(64*F-141,13,-999999999.99,999999999.99)
    :D(F-8)=X0
    :RETURN
``` |
| Display account data | ```
5400  GOSUB '32(265)
    :PRINTUSING 5920 ,L1;L2
    :GOSUB '36(11)
``` |
| Account Name field | ```
    :PRINT L1$;TAB(31)
    :GOSUB '36(17)
``` |
| Account Type field | ```
    :PRINT L3;
    :GOSUB '91(L3)
    :GOSUB '36(17)
``` |
| Report Type field | ```
    :PRINT L4;
5420  GOSUB '91(L4+3)
    :GOSUB '36(17)
    :PRINT L5;
    :GOSUB '91(L5+5)
``` |

G/L050   Account File Maintenance

```
                                           :GOSUB '36(17)
         Total Level field ──────────────  :PRINT L6
                                           :GOSUB '36(17)
    Extra Line Advance field ────────────  :PRINT L7
                                    5440    GOSUB '36(17)
    Sales Account Flag field ────────────  :PRINT L8;
                                           :GOSUB '91(L8+8)
                                           :GOSUB '36(17)
   Special Report Flag field ───────────   :PRINT L9;
                                           :GOSUB '91(L9+8)
                                    5460    GOSUB '32(384)
            Amount fields ───────────────  :FOR I=1  TO 7
                                           :GOSUB '36(52)
                                           :PRINTUSING 5910 ,D(I)
                                           :NEXT I
                                           :RETURN
                                    5900    %#####.#
                                    5910    %-#########.##
                                    5920    %######.#/##
Start of main program  Open Account file   6000  GOSUB '130(1,1,2,1,"G/LOFi10")
for keyed file accessing  Enter operation   6020   GOSUB '33(4)
code and branch to appropriate program     :GOSUB '37(1,0,3,"ENTER OPERATION CODE (0=EXIT; 1=ADD; 2=CHANGE/
                              area         DELETE; 3=PRINT)")
                                           :C=X0
                                           :ON C+1 GOTO 6500 ,6040 ,6180 ,6280
Operation is ADD  Enter account number     6040   GOSUB '33(4)
and make sure it's not already on file      :GOSUB '32(30)
Create key for account number just en-     :PRINT "ADD      ";
                            tered          6060   GOSUB 5000
                                           :IF L1=0  THEN 6020
                                           :IF Q$<>" " THEN 6080
                                           :GOSUB '35("ALREADY ON FILE")
                                           :GOTO 6060
                                    6080    GOSUB '133(1,X0$)
                                           :IF Q$<>" " THEN 6060
Enter  data  for  new  account  Enter      :FOR F=1  TO 8
amounts on regular accounts only           :GOSUB 5100
                                           :NEXT F
                                           :IF L3>0 THEN 6240
                                           :FOR F=9 TO 15
                                           :GOSUB 5100
                                           :NEXT F
                                           :GOTO 6240
Operation is  DELETE  Verify deletion      6160  GOSUB '37(3,0,0,"ENTER DELETE CODE")
Delete key, then branch back to appropri-   :IF X0$<>"DEL"  THEN 6240
                ate program area           :PACK(########)X0$FROML1*1E3+L2
                                           :GOSUB '131(1,X0$)
                                           :IF Q$<>" "  THEN  6240
                                           :GOSUB '35("RECORD DELETED")
                                           :GOSUB '33(4)
                                           :ON CGOTO 6040 ,6180
Operation is CHANGE/DELETE  Enter ac-      6180   GOSUB '32(30)
count number and make sure it is on file    :PRINT "CHANGE";
Retrieve and display account data          6200   GOSUB 5000
                                           :IF L1=0  THEN 6020
                                           :IF Q$=" "  THEN 6220
                                           :GOSUB '35("NOT ON FILE")
                                           :GOTO 6200
                                    6220    GOSUB '110(2)
                                           :DBACKSPACE #2,1S
                                           :GOSUB 5400
   Allow changes to displayed data         6240   GOSUB '37(2,0,99,"ENTER FIELD TO CHANGE (99=DELETE)")
                                           :F=X0
                                           :IF F=0   THEN 6260
                                           :IF F=99 THEN 6160
                                           :IF F>15 THEN 6240
                                           :GOSUB 5100
                                           :GOTO 6240
No more changes  Save data, then branch    6260   GOSUB '111(2)
back to appropriate program area           :ON C GOTO 6040 ,6180
                                    6280    GOSUB '32(30)
          Operation is PRINT               :PRINT "PRINT "
                                    6300  SELECT PRINT 005(64)
                                           :GOSUB '37(1,0,3,"ENTER REPORT TYPE (0=NONE; 1=DESCRIPTIONS; 2=A
Enter type of report  Set page and line    MOUNTS; 3=BOTH)")
counters. Make sure printer is on; select   :F2=X0
printer for  output  Retrieve G/l data     :IF F2=0  THEN 6020
Locate first Account record                :P=0
                                           :L=66
                                           :GOSUB '60
                                           :SELECT PRINT 215(132)
```

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G/L050   Account File Maintenance

```
                                :GOSUB '42(1)
                                :GOSUB '135(1)
                          6320  IF Q$<>" "  THEN 6300
                                :GOSUB '110(2)
                                :IF F2<>2  THEN 6340
                                :IF L2<>0  THEN 6480
                          6340  GOSUB '41("GENERAL LEDGER ACCOUNTS",110)
                                :PRINTUSING 5900 ,L1;
                                :PRINT TAB(8);L1$;
                                :IF F2=2  THEN 6460
                                :IF L2=0  THEN 6360
                                :PRINT TAB(40);"SUB";L2;
                          6360  GOSUB '92(L3,48)
                                :GOSUB '92(L4+3,61)
                                :GOSUB '92(L5+5,76)
                                :PRINT TAB(80);"LEVEL";L6;
                                :IF L7=9  THEN 6380
                                :IF L7=0  THEN 6400
                                :PRINT TAB(88);L7;"LINES";
                                :GOTO 6400
                          6380  PRINT TAB(89);"TOP/PAGE";
                          6400 IF L8=0 THEN 6420
                                :PRINT TAB(99);"SALES ACCT";
                          6420  IF L9=0  THEN 6440
                                :PRINT TAB(111);"SPECIAL REPT";
                          6440  PRINT
                                :L=L+1
                          6460  IF L2<>0  THEN 6480
                                :IF F2=1 THEN 6480
                                :PRINT TAB(40);
                                :PRINTUSING 5910 ,D(1);D(2);D(3);D(4);D(5);D(6);D(7)
                                :L=L+1
                          6480  GOSUB '137(1)
                                :GOTO 6320
                          6500  DEFFN'15
                                :PRINT HEX(03);"G/L ACCOUNT F/M LOADING MENU"
                                :GOSUB '139(1)
                                :LOAD DC T"G/L000"
```

Retrieve account data.

Include just regular accounts on "amounts only" report.

After checking for page overflow, print Account Number and Account Name fields.

Print regular account amounts except on "descriptions only" report.

Locate next account.

End of program. Close Account file for keyed file accessing. Reload Menu.

G/L050

```
0101 -  5000
0837 -  0835
5000 -  6060 6200
5100 -  6080 6080 6240
5120 -  5100
5140 -  5100 5140
5160 -  5140
5180 -  5100
5200 -  5100
5220 -  5100
5240 -  5100
5260 -  5100
5280 -  5100
5300 -  5100
5400 -  6220
5900 -  6340
5910 -  5460 6460
5920 -  5400
6000 -  0001
6020 -  6060 6200 6300
6040 -  6020 6160 6260
6060 -  6060 6080
6080 -  6060
6160 -  6240
6180 -  6020 6160 6260
6200 -  6200
6220 -  6200
6240 -  6080 6080 6160 6160 6240 6240
6260 -  6240
6280 -  6020
6300 -  6320
6320 -  6480
6340 -  6320
6360 -  6340
6380 -  6360
6400 -  6360 6360
6420 -  6400
6440 -  6420
6460 -  6340
6480 -  6320 6460 6460
6500 -  6020
```

G/L050

G/L050 Account File Maintenance

CRT location	A1	– 4100	4100								
Operation code	C	– 6020	6020	6160	6260						
Account file	D ( )	– 5300	5460	6460	6460	6460	6460	6460	6460	6460	
Field to enter or change	F	– 5100	5300	5300	6080	6080	6080	6080	6240	6240	6240 6240
Type of report	F2	– 0835	6300	6300	6320	6340	6460				
Index	I	– 5460	5460	5460							
Line counter	L	– 6300	6440	6440	6460	6460					
Account number	L1	– 5000	5000	5400	6060	6200	6340				
Account name	L1$	– 5120	5400	6340							
Sub-account number	L2	– 5000	5000	5140	5400	6160	6320	6340	6340	6460	
Account type	L3	– 5140	5140	5140	5160	5160	5400	5400	6080	6360	
Account's report type	L4	– 5180	5180	5400	5420	6360					
Account's normal balance	L5	– 5200	5200	5420	5420	6360					
Account's total level (DB or CR)	L6	– 5220	5420	6360							
Account's extra line advance	L7	– 5240	5420	6360	6360	6360					
Sales account	L8	– 5260	5260	5440	5440	6400					
Special report	L9	– 5280	5280	5440	5440	6420					
Page counter	P	– 6300									
Keyed file accessing status	Q$	– 6060	6080	6160	6200	6320					
Miscellaneous, temporary	X0	– 4100	4120	4120	4140	4140	5000	5000	5140	5180	5200 5220 5240
		5260	5280	5300	6020	6240	6300				
Miscellaneous, temporary	X0$	– 4120	4120	4140	4140	5000	5000	5120	6080	6160	6160 6160
TAB position	X1	– 4140	4140								

```
' 15 -  6500
' 32 -  4100 5160 5400 5460 6040 6180 6280
' 33 -  6020 6040 6160
' 34 -  5000 5000 5120 5140 5180 5200 5220 5240 5260 5280 5300
' 35 -  6060 6160 6200
' 36 -  5400 5400 5400 5420 5420 5420 5440 5440 5460
' 37 -  6020 6160 6240 6300
' 41 -  6340
' 42 -  6300
' 60 -  6300
' 90 -  4100 5180 5200 5260 5280
' 91 -  4120 5160 5400 5420 5420 5440 5440
' 92 -  4140 6360 6360 6360
' 110 - 6220 6320
' 111 - 6260
' 130 - 6000
' 131 - 6160
' 132 - 5000
' 133 - 6080
' 135 - 6300
' 137 - 6480
' 139 - 6500
```

G/L060 Reorganize

Wait for operator cue to begin.	
Load actual reorganize processor.	
End program. Reload Menu.	
These variables pass parameters to the actual reorganize processor.	

```
    5  REM G/L060 REORGANIZE 1/79
   20  PRINT HEX(03);"G/L ACCOUNT FILE REORGANIZE"
       :PRINT "OK TO BEGIN?"
       :INPUT X0
       :IF X0<>1  THEN  40
   30  PRINT HEX(030A0A0A0A);"REORGANIZE G/L ACCOUNT FILE"
       :LOAD DC T"KFAM3503"  1 ,3499
   40  DEFFN'15
       :PRINT HEX(03);"REORGANIZE NOT BEGUN. LOADING MENU.";
       :LOAD DC T"G/L000"
  101  RETURN
 4210  N1$="G/L0F110"
       :P1$="B10"
       :N2=1
       :P2$="B10"
       :N3$="WORKFILE"
       :P3$="B10"
       :O3$="Y"
       :O6$="C"
       :N4=1
       :P4$="B10"
       :O4$="Y"
       :N5$="G/L000"
       :P5$="B10"
```

G/L060

```
0001 -  0030
0040 -  0020
3499 -  0030
```

G/L060

Source file	N1$	- 4210
Source key file number	N2	- 4210
Output file	N3$	- 4210
Output key file number	N4	- 4210
Program to load after reorganizing	N5$	- 4210
Output file exists	O3$	- 4210
Output key file exists	O4$	- 4210
Copy output over source	O6$	- 4210
Disk address - source	P1$	- 4210
Disk address key file	P2$	- 4210
Disk address - output	P3$	- 4210
Disk address - output key file	P4$	- 4210
Disk address - program N5$	P5$	- 4210
Miscellaneous, temporary	X0	- 0020 0020

G/L060

```
15 -  0040
```

G/L070 General Information File Maintenance

Annotation	Program Listing
Program execution begins on line 6000.	
Display CRT maks 1. Display G/I data.	
Reload Menu.	
Enter field to change. Branch to subroutines to change fields requested.	

```
   1 GOTO 6000
   5 REM G/L070 GENERAL INFO. F/M 1/79
 101 RETURN
5300 GOSUB '33(5)
     :GOSUB '32(274)
5301 PRINT G1;TAB(9)
     :GOSUB '36(19)
     :PRINT G2;TAB(9)
     :GOSUB '36(19)
     :PRINT G3;TAB(9)
     :GOSUB '36(19)
     :PRINT G4;TAB(9)
     :GOSUB '36(19)
     :PRINT G5;TAB(9)
     :FOR I=1 TO 5
     :GOSUB '36(20)
     :PRINT STR(G2$(I),1,24)
     :NEXT I
5310 GOSUB '39(306,G3$)
     :PRINT
     :GOSUB '36(51)
     :GOSUB '40(STR(G3$,4))
     :PRINT
     :GOSUB '36(51)
     :GOSUB '40(STR(G3$,7))
     :PRINT
     :GOSUB '36(51)
     :HEXPRINT STR(G3$,12,1)
     :GOSUB '36(51)
     :HEXPRINT STR(G3$,15,1)
     :RETURN
5400 DEFFN'15
     :SELECT PRINT 005(64)
     :PRINT HEX(03);"G/I FM LOADING MENU"
     :LOAD DC T"G/L000"
5900 %COMPANY CODE ##     NEXT CHECK NO. ######     O.T. RATE ##.##
     HOURLY RATE ##.##     FISCAL YR ENDS ##
5910 %COMPANY NAME #######################################     FED/STATE TAX NUMB
     ERS     #############################
5920 %ADDRESS     ###########################     ####################
     ######     #############################
6000 GOSUB '42(1)
     :GOSUB 5300
6005 GOSUB '34(128,2,0,16)
     :C=X0
     :ON C+1GOSUB 5400 ,6010 ,6020 ,6030 ,6040 ,6045 ,6050 ,6050 ,
     6050 ,6050 ,6050 ,6060 ,6060 ,6060 ,6070 ,6080 ,6100
     :GOSUB '43(G1)
     :GOTO 6005
6010 GOSUB '34(275,2,1,10)
     :G1=X0
     :GOSUB '42(X0)
     :GOSUB '32(274)
     :GOSUB 5301
     :RETURN
6020 GOSUB '34(339,6,1,999999)
     :G2=X0
     :RETURN
6030 GOSUB '34(403,5,0,99.99)
     :G3=X0
     :RETURN
6040 GOSUB '34(467,5,0,99.99)
     :G4=X0
     :RETURN
6045 GOSUB '34(531,2,1,12)
     :G5=X0
     :RETURN
6050 GOSUB '34(595+64*(C-6),24,0,0)
     :G2$(C-5)=X0$
     :RETURN
6060 GOSUB '38(306+64*(C-11))
     :STR(G3$,1+3*(C-11),3)=X3$
     :RETURN
6070 GOSUB '34(498,2,1,3)
     :PACK(######)STR(G3$,10)FROMX0
     :RETURN
6080 GOSUB '34(562,2,1,14)
     :PACK(######)STR(G3$,13)FROMX0
     :RETURN
6100 GOSUB '60
     :SELECT PRINT 215(131)
```

G/L070

133

```
     :IF G1>0 THEN 6105
     :G2$(1)="GENERAL INFORMATION"
6105 L=60
     :P=0
     :GOSUB '41("GENERAL INFORMATION FILE MAINTENANCE",90)
6107 PRINT "PERIOD START";TAB(18);
     :GOSUB '40(STR(G3$,4))
     :PRINT
6110 PRINT "PERIOD END";TAB(18);
     :GOSUB '40(STR(G3$,7))
     :PRINT
6115 PRINT "PAYROLL NUMBER";TAB(18);
     :HEXPRINT STR(G3$,12,1)
6120 PRINT "DAY NUMBER";TAB(18);
     :HEXPRINT STR(G3$,15,1)
6123 IF G1=0 THEN 6200
6125 PRINT HEX(0A0A)
6130 PRINTUSING 5900 ,G1,G2,G3,G4,G5
     :PRINTUSING 5910 ,G2$(1),G2$(5)
     :PRINTUSING 5920 ,G2$(2),G2$(3),G2$(4)
6200 SELECT PRINT 005(64)
     :RETURN
```

G/L070

```
5300 -  6000
5301 -  6010
5400 -  6005
5900 -  6130
5910 -  6130
5920 -  6130
6000 -  0001
6005 -  6005
6010 -  6005
6020 -  6005
6030 -  6005
6040 -  6005
6045 -  6005
6050 -  6005 6005 6005 6005 6005
6060 -  6005 6005 6005
6070 -  6005
6080 -  6005
6100 -  6005
6105 -  6100
6200 -  6123
```

G/L070

G/L070 General Information File Maintenance

```
        Operation code ──────────── C   - 6005 6005 6050 6050 6060 6060
       Company number ──────────── G1  - 5301 6005 6010 6100 6123 6130
  Next P/R check number ──────────── G2  - 5301 6020 6130
              G/I file ──────────── G2$() - 5301 6050 6100 6130 6130 6130 6130 6130
P/R overtime rate multiplier ──────────── G3  - 5301 6030 6130
              G/I file ──────────── G3$ - 5310 5310 5310 5310 5310 6060 6070 6080 6107 6110 6115 6120
         P/R hourly rate ──────────── G4  - 5301 6040 6130
 Month the fiscal year ends ──────────── G5  - 5301 6045 6130
                 Index ──────────── I   - 5301 5301 5301
           Line counter ──────────── L   - 6105
           Page counter ──────────── P   - 6105
  Miscellaneous temporary ──────────── X0  - 6005 6010 6010 6020 6030 6040 6045
             Temporary ──────────── X0$ - 6050
  Today's date (packed BCD) ──────────── X3$ - 6060
```

```
' 15 -  5400
' 32 -  5300 6010
' 33 -  5300
' 34 -  6005 6010 6020 6030 6040 6045 6050 6070 6080
' 36 -  5301 5301 5301 5301 5301 5310 5310 5310 5310
' 38 -  6060
' 39 -  5310
' 40 -  5310 5310 6107 6110
' 41 -  6105
' 42 -  6000 6010
' 43 -  6005
' 60 -  6100
```

G/L SUBS   Common Subroutines

Description	Code

Execution begins on line 6000.	`1 GOTO 6000`
	`5 REM G/L SUBS   COMMON SUBROUTINES 1/79`
	`101 RETURN`

Position CRT cursor to location A3. Break A3 into line and column components. and use as the print-lengths of string variables containing horizontal and vertical tab characters.	`200 DIM X1$16,X2$64`
	`210 DEFFN'32(A3)`
	`:X1$,X2$=HEX(00)`
	`:INIT(0A)STR(X1$,2)`
	`:INIT(09)STR(X2$,2)`
	`:A1=INT(A3/64)`
	`:A2=A3-A1*64+1`
	`:PRINT HEX(0D01);STR(X1$,1,A1+1);`

Secondary entry point to the CRT cursor positioning subroutine. Perform a horizontal tab without erasing tabbed-over characters.	`215 DEFFN'36(A2)`
	`:PRINT STR(X2$,1,A2);`
	`:RETURN`

Load and display CRT mask A1. The mask is stored in four 256 byte segments.	`240 DIM X3$(4)64`
	`260 DEFFN'33(A1)`
	`:LIMITS T"CRT3",A0,A2,A2`
	`:A2=A0+(A1-1)*4`
	`:SELECT PRINT 005(65)`
	`:PRINT HEX(01)`
	`:FOR A1=0 TO 3`
	`:DATA LOAD BA T(A2,A2)X3$()`
	`:PRINT STR(X3$(1),1,64);STR(X3$(2),1,64);STR(X3$(3),1,64);STR(X3`
	`$(4),1,64);`
	`:NEXT A1`
	`:SELECT PRINT 005(64)`
	`:RETURN`

Input numeric or alphanumeric data at cursor position X1, checking for validity as specified by X3 and X4.	`310 DIM X$1,X0$64`
	`345 DEFFN'34(X1,X2,X3,X4)`
	`:SELECT PRINT 005(255)`

Redefine CPU internal line length counter for CRT.	`355 GOSUB '32(X1)` `:X5=1`

Display a field of asterisks at the specified input location.	`:INIT(2A)X0$`
	`:PRINT STR(X0$,1,X2);`
	`:X0$=" "`
	`:GOSUB '32(X1)`

Input one character from the keyboard (no echo to CRT). Go to line 395 if a regular key was struck. Go to line 525 if a Special Function Key (SFK) was struck.	`385 KEYIN X$, 395 , 525` `:GOTO 385`
Check for RETURN key.	`395 IF X$=HEX(0D) THEN 475`

If BACKSPACE was struck, back out the last character entered, if any.	`:IF X$<>HEX(08) THEN 430`
	`:IF X5=1 THEN 385`
	`:PRINT HEX(082A08);`
	`:X5=X5-1`
	`:STR(X0$,X5,1)=" "`
	`:GOTO 385`

Check for LINE ERASE (erases input by restarting input routine).	`430 IF X$=HEX(E5) THEN 355`
Disallow special code keys (e.g. PRINT. RUN, INDEX).	`:IF X$<HEX(20) THEN 385` `:IF X$>HEX(5F) THEN 385`

Check current position pointer, X2. against maximum input length count. X5. If within range, echo last input key to CRT and store in input buffer. X0$. Otherwise, ignore last key struck.	`:IF X5>X2 THEN 385`
	`:PRINT X$;`
	`:STR(X0$,X5,1)=X$`
	`:X5=X5+1`
	`:GOTO 385`

RETURN was struck. If alphanumeric data is being input. go to line 510. Otherwise, check that only numeric data is in the input buffer, and that it is within the upper and lower limits (X3, X4).	`475 IF X4=0 THEN 510`
	`:X0=0`
	`:IF X0$=" " THEN 480`
	`:IF NUM(X0$)<24 THEN 505`
	`:CONVERT X0$ TO X0`
	`:IF X0<X3 THEN 505`
	`:IF X0<=X4 THEN 510`
	`480 IF X0<X3 THEN 505`
	`:IF X0<=X4 THEN 510`
	`505 GOSUB '35("OUT OF RANGE")`
	`:GOTO 355`

Reset CPU internal line count for CRT.	`510 SELECT PRINT 005(64)` `:RETURN`
An SFK was pressed. If it was not SFK 15 ignore it. SFK 15 always reloads the Menu program.	`525 IF VAL(X$)<>15 THEN 355` `:GOSUB '15`

Flash a message on the fourth line of the CRT.	`615 DEFFN'35(X2$)`
	`:SELECT P2`
	`:FOR A1=1 TO 3`
	`:PRINT HEX(0D010A0A0A);X2$`
	`:PRINT HEX(0D010A0A0A);TAB(64)`
	`:NEXT A1`
	`:SELECT P`
	`:RETURN`

Display prompt message X4$ on the second line of the CRT. Input numeric or alphanumeric data on the third line of the CRT.	`660 DIM X4$64`
	`665 DEFFN'37(X2,X3,X4,X4$)`
	`:GOSUB '32(64)`
	`:PRINT TAB(64)`

Erase any previous prompt message and entry on the second and third lines.	`:PRINT TAB(64);`

G/L SUBS   Common Subroutines

Description	Code
| Call subroutine to do actual inputting of data | ```
:GOSUB '32(64)
:PRINT X4$
:GOSUB '34(128,X2,X3,X4)
:X4$=" "
:RETURN
``` |
| Input a date at CRT position A1. The date is input as six numeric digits. Limited validity checking is performed. The date is input as an alphanumeric string,converted to a numeric value, then packed into another alphanumeric string. The date is redisplayed with slashes separating month, day and year. | ```
670 DIM X3$3
673 DEFFN'38(A4)
:GOSUB '32(A4)
:PRINT " ";
:GOSUB '34(A4+2,6,0,0)
:IF NUM(X0$)<6 THEN  675
:IF STR(X0$,1,2)<"01" THEN   675
:IF STR(X0$,1,2)>"12" THEN   675
:IF STR(X0$,3,2)<"01" THEN   675
:IF STR(X0$,3,2)>"31" THEN   675
:CONVERT X0$ TO X0
:PACK(######)X3$FROMX0
:GOSUB '39(A4,X3$)
:RETURN
675 GOSUB '35("INVALID DATE")
:GOTO  670
``` |
| Display a packed date at CRT location A1. | ```
680 DEFFN'39(A1,X0$)
:GOSUB '32(A1)
``` |
| Unpack and print date with slashes between month, day, and year. | ```
690 DEFFN'40(X0$)
:UNPACK(######)X0$ TO X0
``` |
| Print numeric date | ```
691 DEFFN'72(X0)
:CONVERT X0 TO X0$,(######)
:PRINTUSING  695 ,X0$;STR(X0$,3);STR(X0$,5);
:RETURN
695 %##/##/##
``` |
| Load and unpack the General Information file data. If A1 is not zero, also load and unpack the General Information file data for company numer A1. | ```
700 DIM G1$9,G2$(5)24,G3$24
705 DEFFN'42(A1)
:DATA LOAD DC OPEN T"G/IOF010"
:DATA LOAD DC G1$,G3$
:IF A1=0 THEN  101
:DSKIP A1-1S
:DATA LOAD DC G1$,G2$()
:UNPACK(##)G1$ TO G1
:UNPACK(######)STR(G1$,2) TO G2
:UNPACK(##.##)STR(G1$,5) TO G3,G4
:UNPACK(##)STR(G1$,9) TO G5
:RETURN
``` |
| Pack and save General Information record for system or company data. | ```
720 DEFFN'43(A1)
:DATA LOAD DC OPEN T"G/IOF010"
:DATA SAVE DC G1$,G3$
:IF A1=0 THEN  101
:DSKIP A1-1S
:PACK(##)G1$FROMG1
:PACK(######)STR(G1$,2)FROMG2
:PACK(##.##)STR(G1$,5)FROMG3,G4
:PACK(##)STR(G1$,9)FROMG5
:DATA SAVE DC G1$,G2$()
:RETURN
``` |
| Subroutine to check for full printed page. If page not full, return. On full page, skip to top of next page, increment page counter and print page headings. | ```
820 DIM X4$64
825 DEFFN'41(X4$,A1)
:IF L<55  THEN  101
:P=P+1
:PRINT HEX(0C);TAB((A1-LEN(G2$(1)))/2);G2$(1);TAB(A1);"DATE ";
:GOSUB '40(G3$)
:PRINT
``` |
| Each program using this subroutine has its own lines between 830 and 840 which print column headings | ```
830 PRINT TAB((A1-LEN(X4$))/2);X4$;TAB(A1);"PAGE";P
:PRINT HEX(0A)
840 PRINT HEX(0A)
``` |
| Reset line counter and return. | ```
:L=6
:RETURN
``` |
| Print a "printer not ready" message on the CRT. Then print a blank line on the printer. If the printer is off, the CPU will hang, waiting for the printer to be turned on. Once the printer is on, erase the "printer not ready" message | ```
1000 DEFFN'60
:PRINT HEX(0D010A0A0A);"PRINTER NOT READY";
:SELECT PRINT 215
:PRINT HEX(01)
:PRINT HEX(01)
:SELECT PRINT 005
:PRINT HEX(0D);TAB(63)
:RETURN
``` |
| Open keyed file. | ```
2000 DEFFN'130(T6,T7,Q2,Q3,V7$)
:GOSUB '230(T6,T7,Q2,Q3,V7$)
:GOTO 2100
``` |
| Delete record from keyed file (delete key). | ```
2005 DEFFN'131(T6,T1$)
:GOSUB '231(T6,0,T1$)
:GOTO 2100
``` |
| Locate specific record in keyed file (find key). | ```
2010 DEFFN'132(T6,T1$)
:GOSUB '232(T6,0,T1$)
``` |

G/L SUBS   Common Subroutines

```
                                    :GOTO 2100
Add new record to keyed file (insert key).    2015 DEFFN'133(T6,T1$)
                                    :GOSUB '233(T6,0,T1$,0)
                                    :GOTO 2100
Find first record in keyed file (lowest key).  2020 DEFFN'135(T6)
                                    :GOSUB '235(T6)
                                    :GOTO 2100
Find next record in keyed file (next key).    2025 DEFFN'137(T6)
                                    :GOSUB '237(T6)
                                    :GOTO 2100
Close keyed file.                   2030 DEFFN'139(T6)
                                    :GOSUB '239(T6)
If file 2 was accessed (not applicable in    2100 IF T9<>1 THEN 2105
General Ledger), save record block factor        :W=Q
in W.                               2105 IF Q$<"O" THEN  101
Check status of key file access.        :IF Q$="S" THEN 2110
                                    :STOP "FILE ACCESS ERROR"
                                    :STOP
                                    :GOTO 2100
                                    2110 GOSUB '35("FILE FULL - RUN REORGANIZE")
                                    :RETURN
Load and unpack G/L Account record.    3500  DIM L$42,D$60,L1$31,D(10)
                                    3510  DEFFN'110(A1)
                                    :DATA LOAD DC #A1,L$,D$
                                    :UNPACK(#####.#)L$  TO L1
                                    :UNPACK(##)STR(L$,4)  TO L2,L3
                                    :L1$=STR(L$,6,31)
                                    :UNPACK(##)STR(L$,37)  TO L4,L5,L6,L7,L8,L9
                                    :UNPACK(-#########.##)D$ TO D()
                                    :RETURN
Pack and save G/L Account record.    3550  DEFFN'111(A1)
                                    :PACK(#####.#)L$ FROM L1
                                    :PACK(##)STR(L$,4) FROM L2,L3
                                    :STR(L$,6,31)=L1$
                                    :PACK(##)STR(L$,37) FROM L4,L5,L6,L7,L8,L9
                                    :PACK(-#########.##)D$ FROM D()
                                    :DATA SAVE DC #A1,L$,D$
                                    :RETURN
Unpack the next blocked G/L Posting    3600  DIM G$(16)14
record.                             3610  DEFFN'112(A1)
                                    :G7=G7+1
                                    :IF G7<17  THEN 3620
Load another block of G/L Posting        :DATA LOAD DC #A1,G$()
records.                            :IF END THEN  101
                                    :G7=1
                                    3620 IF STR(G$(G7),1,1)=HEX(F0) THEN 3630
                                    :UNPACK(#####.#)G$(G7)  TO P1
                                    :UNPACK(##)STR(G$(G7),4)  TO P2
                                    :UNPACK(##.##)STR(G$(G7),5)  TO P3
                                    3625  UNPACK(######)STR(G$(G7),7)  TO P4
                                    :UNPACK(-#######.##)STR(G$(G7),10)  TO P5
                                    :RETURN
End of file encountered.            3630  P1=0
                                    :RETURN
Pack a blocked G/L Posting record    3650 DIM G$(16)14
                                    3660 DEFFN'113(A1)
                                    :G8=G8+1
                                    :IF G8<17 THEN 3680
Save a full block of G/L Posting records;    :DATA SAVE DC #A1,G$()
start another                       :DATA SAVE DC #A1,END
                                    :DBACKSPACE #A1,1S
                                    :G9=G9-1
                                    :G8=1
                                    :INIT(00)G$()
                                    3680 PACK(#####.#)G$(G8)FROMP1
                                    :PACK(##)STR(G$(G8),4)FROMP2
                                    :PACK(##.##)STR(G$(G8),5)FROMP3
                                    :PACK(######)STR(G$(G8),7)FROMP4
                                    :PACK(-#######.##)STR(G$(G8),10)FROMP5
                                    :RETURN
```

G/L SUBS

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G/L SUBS Common Subroutines

```
0101 -   0705 0720 0825 2105 3610
0355 -   0430 0505 0525
0385 -   0385 0395 0395 0430 0430 0430 0430
0395 -   0385
0430 -   0395
0475 -   0395
0480 -   0475
0505 -   0475 0475 0480
0510 -   0475 0475 0480
0525 -   0385
0670 -   0675
0675 -   0673 0673 0673 0673 0673
0695 -   0691
2100 -   2000 2005 2010 2015 2020 2025 2105
2105 -   2100
2110 -   2105
3620 -   3610
3630 -   3620
3680 -   3660
6000 -   0001
```

Description	Var	References
Temporarily stores start sector of CRT Mask file	A0	- 0260 0260
Many temporary uses throughout com subs	A1	- 0210 0210 0210 0260 0260 0260 0260 0615 0615 0680 0680 0705 0705 0720 0720 0825 0825 0825 0830 0830 3510 3510 3550 3550 3610 3610 3660 3660 3660 3660
Many temporary uses throughout com subs	A2	- 0210 0215 0215 0260 0260 0260 0260 0260
Compund cursor position (temporary)	A3	- 0210 0210 0210
CRT location for data input (temporary)	A4	- 0673 0673 0673 0673
Account file	D$	- 3500 3510 3510 3550 3550
Account file	D( )	- 3500 3510
G/L Posting file	G$( )	- 3600 3610 3620 3620 3620 3620 3625 3625 3650 3660 3660 3680 3680 3680 3680 3680
Company number	G1	- 0705
G/I file	G1$	- 0700 0705 0705 0705 0705 0720 0720 0720 0720
Next P/R check number	G2	- 0705
Company name and address	G2$( )	- 0700 0705 0720 0825 0825
Overtime rate multiplier (P/R)	G3	- 0705
G/I file	G3$	- 0700 0705 0720 0825
G/I hourly rate (unused here)	G4	- 0705 0720
Month the fiscal year ends	G5	- 0705
Posting file blocking factor (loading)	G7	- 3610 3610 3610 3610 3620 3620 3620 3620 3625 3625
Posting file blocking factor (saving)	G8	- 3660 3660 3660 3660 3680 3680 3680 3680 3680
Sectors remaining in Posting file	G9	- 3660 3660
Line counter for reports	L	- 0825 0840
Account file	L$	- 3500 3510 3510 3510 3510 3510 3550 3550 3550 3550 3550
Account number	L1	- 3510
Account name	L1$	- 3500 3510 3550
Sub-account number	L2	- 3510
Account type	L3	- 3510 3550
Account's report type	L4	- 3510
Account's normal balance	L5	- 3510 3550
Account's total level	L6	- 3510 3550
Account's extra line advance	L7	- 3510 3550
Sales Account flag	L8	- 3510 3550
"Include account on special report" flag	L9	- 3510 3550
Page counter for reports	P	- 0825 0825 0830
Posting account number	P1	- 3620 3630
Posting source code	P2	- 3620
Posting date (month & day)	P3	- 3620
Posting reference	P4	- 3625
Posting amount	P5	- 3625
Blocking factor for keyed files	Q	- 2100
Keyed file access subroutine's execution status	Q$	- 2105 2105
Keyed file access subroutine's internal use	Q2	- 2000 2000
Keyed file access subroutine's internal use	Q3	- 2000 2000
Keyed file access subroutine's key	T1$	- 2005 2005 2010 2010 2015 2015
Keyed file access subroutine's file number	T6	- 2000 2000 2005 2005 2010 2010 2015 2015 2020 2020 2025 2025 2030 2030
Keyed file access subroutine's internal use	T7	- 2000 2000
Keyed file access subroutine's file number	T9	- 2100
Keyed file access subroutine's file name	V7$	- 2000 2000
Not used	W	- 2100
One-character keyboard input	X$	- 0310 0385 0395 0395 0430 0430 0430 0430 0430 0525
Value of numeric keyboard entry	X0	- 0475 0475 0475 0475 0480 0480 0673 0690 0691 0691
Value of alphanumeric keyboard entry	X0$	- 0310 0355 0355 0355 0395 0430 0475 0475 0475 0673 0673 0673 0673 0673 0673 0680 0690 0690 0691 0691 0691 0691
CRT location for keyboard entry (temporary)	X1	- 0345 0355 0355
Line feeds for vertical cursor positioning	X1$	- 0200 0210 0210 0210
Number of characters for keyboard entry	X2	- 0345 0355 0430 0665 0665
Horizontal cursor positioning characters	X2$	- 0200 0210 0210 0215 0615 0615
Lowest allowable numeric keyboard entry	X3	- 0345 0475 0480 0665 0665
Packed format of entered date	X3$	- 0670 0673 0673
Used temporarily to load and display CRT mask	X3$( )	- 0240 0260 0260 0260 0260 0260
Type of entry; highest allowable numeric	X4	- 0345 0475 0475 0665 0665
Miscellaneous, temporary	X4$	- 0660 0665 0665 0665 0820 0825 0830 0830
Count of current characters from keyboard entry	X5	- 0355 0395 0395 0395 0395 0430 0430 0430 0430

G/L SUBS   Common Subroutines

```
' 15 -  0525
' 32 -  0210 0355 0355 0665 0665 0673 0680
' 33 -  0260
' 34 -  0345 0665 0673
' 35 -  0505 0615 0675 2110
' 36 -  0215
' 37 -  0665
' 38 -  0673
' 39 -  0673 0680
' 40 -  0690 0825
' 41 -  0825
' 42 -  0705
' 43 -  0720
' 60 -  1000
' 72 -  0691
' 110 - 3510
' 111 - 3550
' 112 - 3610
' 113 - 3660
' 130 - 2000
' 131 - 2005
' 132 - 2010
' 133 - 2015
' 135 - 2020
' 137 - 2025
' 139 - 2030
' 230 - 2000
' 231 - 2005
' 232 - 2010
' 233 - 2015
' 235 - 2020
' 237 - 2025
' 239 - 2030
```

CRTFM CRT File Maintenance

```
   5   REM CRTFM   CRT FILE MAINTENANCE
 100   DIM A$(16)64
 130   DIM X1$16, X2$64, K9$(4)64, I$5, I0$40, I1$57, I2$40
 135   INIT(0A) X1$
 140   INIT(09) X2$
 145   INIT(00) STR(X1$,1,1),STR(X2$,1,1)
 150   GOTO 1000
 210   DEFFN' 16(I2$)
 215   GOSUB ' 21(192,1)
 220   SELECT P9
 225   PRINT I2$
 230   SELECT P0
 235   RETURN
 250   DEFFN' 17(A2)
 255   PACK(########) STR(I0$,2) FROM A2
 260   RETURN
 330   DEFFN' 19(A1,A2,I1$)
     : IF A2<>0   THEN   335
     : I0$=" "
 335   GOSUB ' 21(64,2)
 340   PRINT "ENTER "; I1$
 345   INPUT I0$
     : IF A2=0   THEN   385
 350   IF NUM(I0$)<16   THEN   375
 355   CONVERT I0$  TO  I0
 360   IF I0<A1   THEN   375
 365   IF I0>A2   THEN   375
 370   RETURN
 375   GOSUB ' 16("INVALID...REENTER")
 380   GOTO   335
 385   IF LEN(I0$)>A1   THEN   375
 390   RETURN
 580   DEFFN' 21(A3,A4)
 585   GOSUB ' 23(A3)
 595   PRINT TAB(63);
 600   A4=A4-1
     : IF A4=0   THEN   605
     : PRINT
     : GOTO   595
 605   GOTO   670
 620   DEFFN' 22(A1)
 625   CONVERT A1   TO  I0$, (######)
 630   PRINT STR(I0$,1,2); "-"; STR(I0$,3,2); "-"; STR(I0$,5,2)
 640   RETURN
 650   DEFFN' 23(A3)
 665   P3=INT(A3/64)
     : P4=A3-P3*64
 670   PRINT HEX(01)
     : PRINT HEX(01); STR(X1$,1,P3+1); STR(X2$,1,P4+1)
 680   RETURN
 700   DEFFN' 90(A5)
 730   K9=K8+(A5-1)*4
 750   SELECT PRINT 005(65)
 760   PRINT HEX(03)
     : FOR A5=0 TO 3
 770   DATA LOAD BA T#1,(K9,K9)K9$()
 780   PRINT  STR(K9$(1),1,64); STR(K9$(2),1,64); STR(K9$(3),1,64);
       STR(K9$(4),1,64);
 785   A$((A5*4)+1)=K9$(1)
     : A$((A5*4)+2)=K9$(2)
     : A$((A5*4)+3)=K9$(3)
     : A$((A5*4)+4)=K9$(4)
 790   NEXT A5
 800   SELECT PRINT 005(64)
 810   RETURN
1000   SELECT PRINT 005(64), #1 B10
1001 PRINT HEX(03)
     :GOSUB '19(1,0,"IF CRT MASK FILE IS ON (F)IXED OR (R)EMOVABLE")
1002   IF I0$="R" THEN 1003
     : SELECT #1310
1003 GOSUB '19(8,0,"NAME OF FILE")
     :F9$=I0$
1004   LIMITS T#1,F9$,K8,A3,A3
1010   DEFFN' 14
     : SELECT PRINT 005(64)
     : PRINT HEX(03); "CRT MASK FILE MAINTENANCE"
1015   DATA LOAD DC OPEN T #1,F9$
1020   PRINT HEX(0A0A0A); "(0)END"
1030   PRINT "(1)INQUIRE"
1040   PRINT "(2)CHANGE-ADD-REPLACE"
1050   PRINT "(3)PRINT"
```

Display error message. — 210

Input valid numeric or alphanumeric data. If A2 equals zero, input alphanumeric and A1 equals maximum input length. Otherwise, A2 equals low limit, A1 equals high limit of numeric input. — 330

Position cursor to CRT location A3 and erase A4 lines. — 580

Position cursor to CRT location A3. — 650

Load and display CRT mask A5. — 700

Open requested CRT file on unit specified. — 1000

Input operation code. Use subroutine to process operation. — 1010

```
                          1060   GOSUB '19(0,6,"OPERATION CODE")
                               : IF IO=0  THEN 1080
                          1070   ON IO GOSUB 2000 , 3000 , 4000
                               : GOTO 1010
```
End program.	`1080   DEFFN'15` `     : END`
Input first mask number to display.	`2000   PRINT HEX(03); "CRT MASK FILE INQUIRY"` `2010   GOSUB ' 19(0,999,"FIRST MASK NUMBER")`

Display mask, wait for keystroke, then display next mask. If E is struck, re-request operation code.	`2020   GOSUB ' 89(IO)`
	`     : IO$=" "`
	`2025   IF A1<0  THEN 3320`
	`2030   KEYIN IO$, 2040 , 2030`
	`     : GOTO 2030`
	`2040   IF IO$="E"  THEN 3320`
	`2050   IO=IO+1`
	`     : GOTO 2020`

Input number of mask to be changed. Display mask.	`3000   PRINT HEX(03); "CRT MASK FILE CHANGE-ADD-REPLACE"`
	`     : GOSUB ' 19(3,0,"MASK NUMBER TO CHANGE (OR NEW)")`
	`3010   IF IO$="NEW"  THEN 3500`
	`3020   CONVERT IO$  TO IO`
	`3030   GOSUB ' 89(IO)`
	`3035   IF A1<0  THEN 3000`
	`3040   K9=K9-4`

Input location on mask to start changes.	`3050   GOSUB ' 19(0,1023,"LINE OR COMPOUND POSITION TO START CHANGES")`
	`3055   IF IO<16  THEN 3060`
	`     : L=INT(IO/64)`
	`     : C=IO-L*64+1`
	`     : L=L+1`
	`     : GOTO 3090`
	`3060   L=IO+1`
	`3070   GOSUB ' 19(0,63,"COLUMN TO START CHANGES")`
	`3080   C=IO+1`
	`3090   GOSUB ' 21(0,3)`

Redisplay mask lines obliterated by input.	`3100   PRINT A$(1)`
	`     : PRINT A$(2)`
	`     : PRINT A$(3)`
	`3110   GOSUB ' 23((L-1)*64+C-1)`

Use subroutine to make changes. If SFK struck, re-request mask location to be changed.	`3120   FOR I=L TO 16`
	`3130   GOSUB ' 40`
	`     : IF C=-1  THEN 3050`
	`3140   NEXT I`

Save mask.	`3250   FOR A1=0 TO 3`
	`3260   K9$(1)=A$(A1*4+1)`
	`3270   K9$(2)=A$(A1*4+2)`
	`3280   K9$(3)=A$(A1*4+3)`
	`3290   K9$(4)=A$(A1*4+4)`
	`3300   DATA SAVE BA T$#1,(K9,K9) K9$()`
	`3310   NEXT A1`
	`3320   RETURN`
	`3500   DSKIP #1, END`
	`     : LIMITS T #1, K9, K9, K9`
	`3510   DSKIP #1, 4S`
	`3520   DATA SAVE DC #1, END`
	`     : INIT(20) A$()`
	`     : GOTO 3050`

Input number of mask to be printed. Make sure mask is on file, then print mask.	`4000   PRINT HEX(03); "CRT MASK FILE PRINT"`
	`     : GOSUB ' 19(0,999,"FIRST MASK NUMBER (0 IF NONE)")`
	`     :IF IO=0 THEN  390`
	`4005   F=IO`
	`     :GOSUB '19(F,999,"LAST MASK NUMBER")`
	`     :L=IO`
	`4020   FOR J=F TO L`
	`4030   GOSUB ' 88(J)`
	`4040   IF A1>=0  THEN 4075`
	`     : IO=(A3-2)/4`
	`4075   K9=K8+(J-1)*4`
	`4077   IF J>IO  THEN 3320`
	`     : SELECT PRINT 215(129)`
	`4090   GOSUB ' 91`
	`4092   PRINT HEX(0A0A0D);HEX(09); "MASK NO.";J`
	`4094   PRINT HEX(0A0A0A)`
	`     :NEXT J`
	`     :SELECT PRINT 005(64)`
	`     :GOTO 4000`

See if mask A1 is on file.	`5000   DEFFN' 88(A1)`
	`     : IF A1<0  THEN 5030`
	`5010   LIMITS T#1,F9$,A3, A3, A3`
	`5020   IF A1<=(A3-2)/4  THEN 5040`
	`5030   A1=-1`
	`5040   RETURN`

CRTFM   CRT File Maintenance

Description	Code
| If mask A1 is on file, load and display it. | ```
5050   DEFFN' 89(A1)
5060   GOSUB ' 88(A1)
5070   IF A1<0   THEN 5090
5080   GOSUB ' 90(A1)
5090   RETURN
``` |
| Input one line of CRT mask. | ```
5100   DEFFN' 40
5110   SELECT PRINT 005(255)
5120   FOR J=C TO 64
``` |
| Input one character. | ```
5130   KEYIN A$,5150 , 5140
       : GOTO 5130
``` |
| If any SFK struck, get new change location. | ```
5140   C=-1
       : RETURN
``` |
If RETURN struck, go to start of next line.	`5150   IF A$=HEX(0D)   THEN 5204`
	`5160   IF A$=HEX(CC)   THEN 5220`
If PI (π) struck, end changes for this mask.	`5165 IF A$=HEX(C7) THEN 5250`
If COS(struck, move up 1 line.	`5170   IF A$=HEX(C3)   THEN 5200`
	`5180   IF A$=HEX(08)   THEN 5230`
If SIN(struck, drop down 1 line.	`5185   IF A$=HEX(A0)   THEN 5245`
| | ```
5190   STR(A$(I),J,1)=A$
       : PRINT STR(A$(I),J,1);
``` |
| If BACKSPACE struck, back cursor up one space. | ```
5195 NEXT J
     : GOTO 5204
5200 C=J
     :PRINT HEX(0A);
     :GOTO 5205
``` |
| If PRINT struck, advance cursor one space. (no erasure). | ```
5204 C=1
     :PRINT
``` |
| Any other keystroke causes changes to mask. | ```
5205   IF I=16   THEN 5210
5210   SELECT PRINT 005(64)
       : RETURN
5220   I=17
       : GOTO 5210
5230   IF J=1   THEN 5130
       : PRINT HEX(08);
5240   J=J-1
       : GOTO 5130
5245   PRINT HEX(09);
       :GOTO 5195
5250 IF I=1 THEN 5130
     :I=I-2
     :PRINT HEX(0C);
     :C=J
     :RETURN
``` |
| Load and print CRT mask. | ```
5255   DEFFN' 91
5260   FOR A1=0 TO 3
5270   DATA LOAD BA T#1,(K9,K9)K9$()
5780   FOR A2=1  TO 4
       : PRINT K9$(A2)
       : NEXT A2
5790   NEXT A1
       : RETURN
5800   PRINT STR(K9$(1),1,64);
       : PRINT STR(K9$(3),1,64); K9$(4)
5810   GOTO 5790
``` |

```
0335 -   0330 0380
0375 -   0350 0360 0365 0385
0385 -   0345
0390 -   4000
0595 -   0600
0605 -   0600
0670 -   0605
1000 -   0150
1003 -   1002
1010 -   1070
1080 -   1060
2000 -   1070
2020 -   2050
2030 -   2030 2030
2040 -   2030
3000 -   1070 3035
3050 -   3130 3520
```

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```
3060  -  3055
3090  -  3055
3320  -  2025 2040 4077
3500  -  3010
4000  -  1070 4094
4075  -  4040
5030  -  5000
5040  -  5020
5090  -  5070
5130  -  5130 5230 5240 5250
5140  -  5130
5150  -  5130
5195  -  5245
5200  -  5170
5204  -  5150 5195
5205  -  5200
5210  -  5205 5220
5220  -  5160
5230  -  5180
5245  -  5185
5250  -  5165
5790  -  5810
```

CRTFM

VARIABLE CROSS REFERENCE   CRTFM   PAGE 2

Description	Var	References
Keyboard entry	A$	- 5130 5150 5160 5165 5170 5180 5185 5190
Entire 16-line mask	A$( )	- 0100 0785 0785 0785 0785 3100 3100 3100 3260 3270 3280 3290
		3520 5190 5190
Miscellaneous, temporary	A1	- 0330 0360 0385 0620 0625 2025 3035 3250 3260 3270 3280 3290
		3310 4040 5000 5000 5020 5030 5050 5060 5070 5080 5260 5790
Miscellaneous, temporary	A2	- 0250 0330 0330 0345 0365 5780 5780 5780
Miscellaneous, temporary	A3	- 0580 0585 0650 0665 0665 1004 1004 4040 5010 5010 5010 5020
Number of CRT lines to erase	A4	- 0580 0600 0600 0600
Mask number to display	A5	- 0700 0730 0760 0785 0785 0785 0785 0790
Column to start mask changes in	C	- 3055 3080 3110 3130 5120 5140 5200 5204 5250
Start of mask print range	F	- 4005 4005 4020
Mask file name	F9$	- 1003 1004 1015 5010
Index	I	- 3120 3140 5190 5190 5205 5220 5250 5250 5250
Not used	I$	- 0130
Numeric keyboard entry	I0	- 0355 0360 0365 1060 1070 2020 2050 2050 3020 3030 3055 3055
		3055 3060 3080 4000 4005 4005 4040 4077
Alphanumeric keyboard entry	I0$	- 0130 0255 0330 0345 0350 0355 0385 0625 0630 0630 0630 1002
		1003 2020 2030 2040 3010 3020
Prompt message	I1$	- 0130 0330 0340
Bulletin	I2$	- 0130 0210 0225
Index	J	- 4020 4030 4075 4077 4092 4094 5120 5190 5190 5195 5200 5230
		5240 5240 5250
Start address of CRT Mask file	K8	- 0730 1004 4075
Next sector of current mask	K9	- 0730 0770 0770 3040 3040 3300 3300 3500 3500 3500 4075 5270
		5270
Mask load/save buffer	K9$( )	- 0130 0770 0780 0780 0780 0780 0785 0785 0785 0785 3260 3270
		3280 3290 3300 5270 5780 5800 5800 5800
Line to make mask changes on	L	- 3055 3055 3055 3055 3060 3110 3120 4005 4020
Cursor column position	P3	- 0665 0665 0670
Cursor line position	P4	- 0665 0670
Line feeds for vertical cursor positioning	X1$	- 0130 0135 0145 0670
Horizontal cursor positioning characters	X2$	- 0130 0140 0145 0670

CRTFM

SPECIAL FUNCTION CROSS REFERENCE   CRTFM   PAGE 3

```
' 14  -  1010
' 15  -  1080
' 16  -  0210 0375
' 17  -  0250
' 19  -  0330 1001 1003 1060 2010 3000 3050 3070 4000 4005
' 21  -  0215 0335 0580 3090
' 22  -  0620
' 23  -  0585 0650 3110
' 40  -  3130 5100
' 88  -  4030 5000 5060
' 89  -  2020 3030 5050
' 90  -  0700 5080
' 91  -  4090 5255
```

Conversions of Osborne & Associates' Payroll with Cost Accounting, Accounts Payable and Accounts Receivable, and General Ledger are being made so the programs are ready to run on many popular systems. Programs are also being offered on a variety of media — floppy disk, cassette, hard disk, etc. Independent consultants and businesses are marketing their own conversions. For a copy of a current list of conversions, fill out the form below and mail it to Osborne & Associates (a photocopy of the form will do). Remember, names are constantly being added to this list, so if you don't find what you need at first, you may want to request another list at a later date.

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- Accepts directly entered postings
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