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ACCOUNTING DEPARTMENT HANDBOOK

by

LEWIS SIDWELL

ACCOUNTANT

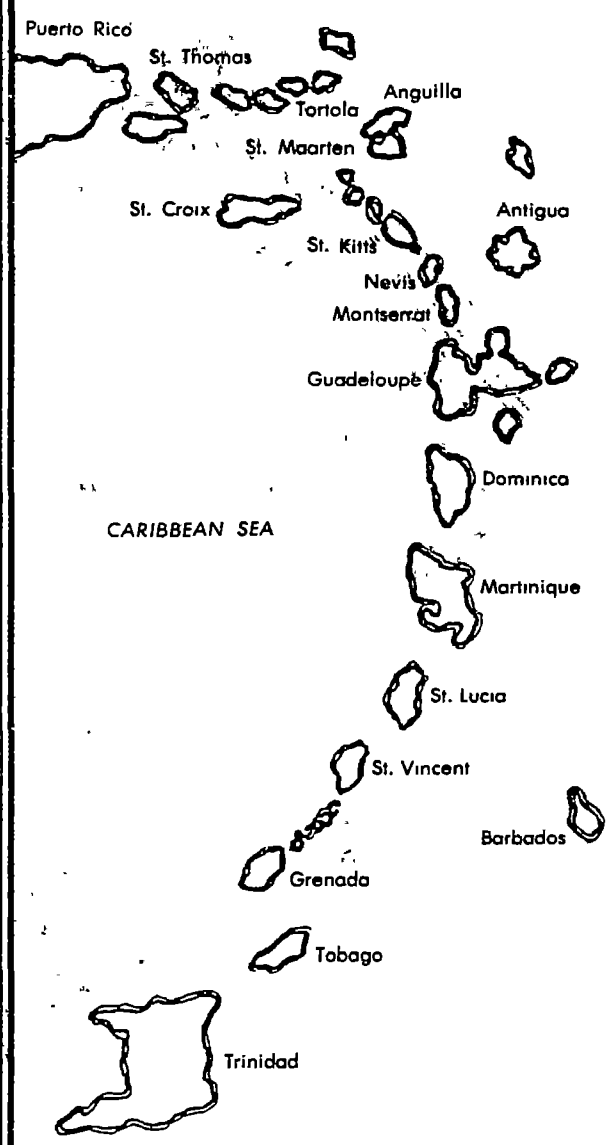
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A JOINT-VENTURE PROJECT OF THE GOVERNMENTS OF:

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CARIBBEAN BASIN WATER MANAGEMENT PROJECT

MONTserrat WATER AUTHORITY
ACCOUNTING DEPARTMENT HANDBOOK

Developed by

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Consultant to the Pan American Health Organization

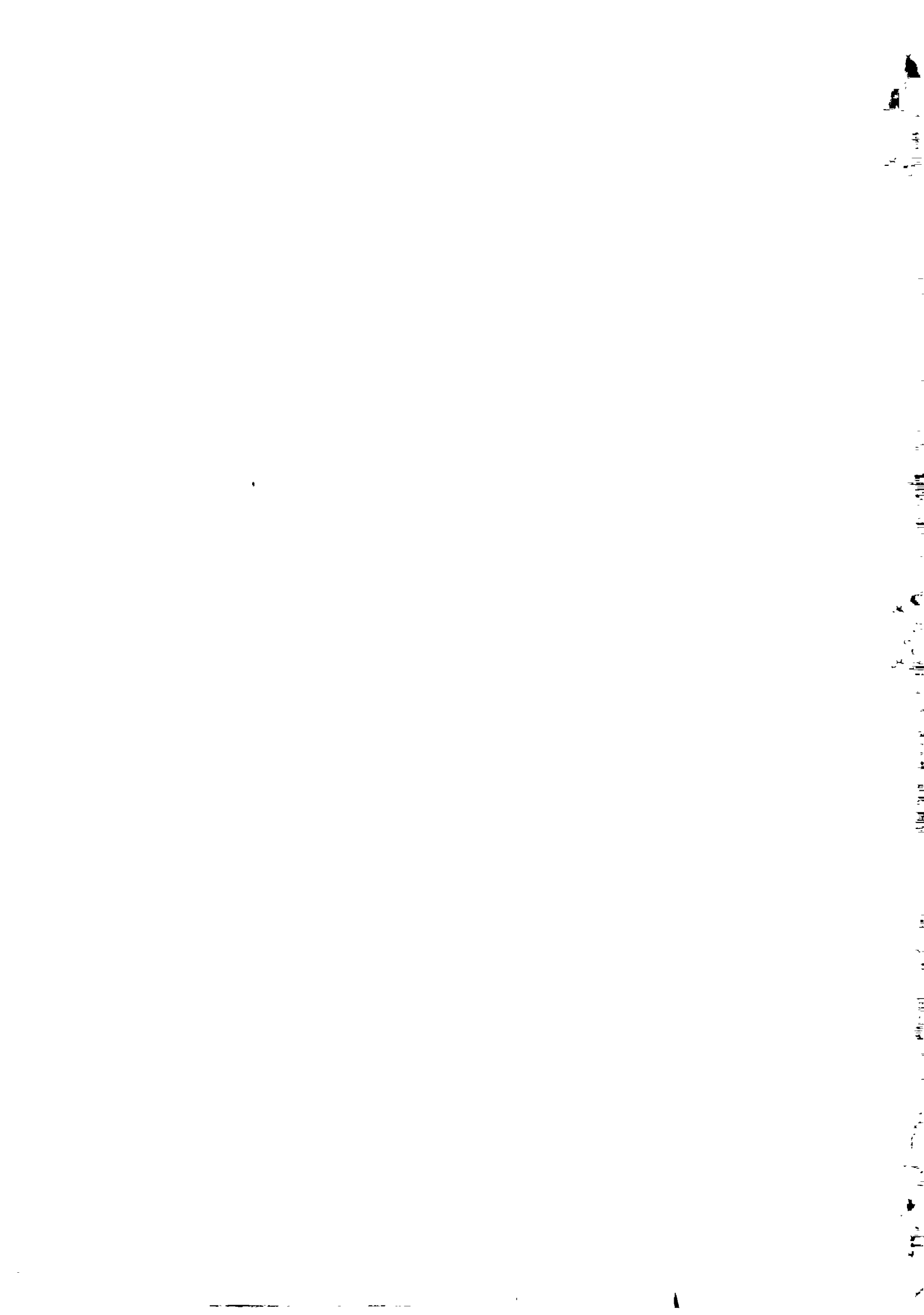
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LEWIS SIDWELL

PAHO/WHO Consultant



MONTSERRAT WATER AUTHORITY
ACCOUNTING DEPARTMENT HANDBOOK

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ACCOUNTING DEPARTMENT HANDBOOK

INTRODUCTION

In November 1979, PAHO (Pan American Health Organization) conducted a survey of ten Eastern Caribbean Water Utilities to determine the training needs of each utility. The results indicated that "Accounting Procedures" was ranked as the highest training priority in eight of the ten utilities. Consequently, a project was developed with the objective to update and streamline accounting procedures and practices in Eastern Caribbean Water Utilities. This handbook is a product of on-the-job training and interaction with accounting department personnel during project implementation. It is intended to serve three purposes:

- 1) To provide accounting staff with a day-to-day reference document;
- 2) To provide the Chief Accountant with a teaching aid for personnel in his department; and
- 3) To provide water utility management with an overview and insight into what to expect in the way of financial information from the accounting system; and how to use this information in performing their management functions more effectively.

INTRODUCTION (cont'd)

The procedures outlined in this handbook are not intended as the "ultimate" in accounting procedures for water utilities. Nor are they considered to be an elaborate set of accounting procedures. What is presented in this handbook, however, are the basic accounting procedures needed to ensure proper financial accountability for all phases of water utility activities. Although this handbook has been written to reflect the situation as it exists in Montserrat, these procedures can also be adapted to meet the needs of other developing water utilities.

Although this handbook presents basic accounting procedures, it is intended for a reader/user who already has a familiarity with simple accounting terms and principles. Consequently, although not all terminology is specifically defined, all procedures are clearly explained and set out. It should be possible for a newcomer to the MWA Accounting Department -- with coaching from the Chief Accountant -- to read this handbook and have a good understanding of the workings and procedures of that department.

Another important feature of this handbook is the listing of the responsibilities of each member of the accounting department staff found in Unit 1.



ACCOUNTING DEPARTMENT HANDBOOK

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CHAPTER 1: STAFF RESPONSIBILITIES

The purpose of this Unit is to provide accounting department personnel with easy access to those pages in the handbook that refer particularly to their responsibilities.

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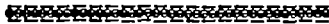
Billing Clerk

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1. Prepare customers' bills 109
2. Update customers' individual records 109
3. Update water record sheet 109

Cashier

1. Receive payments from customers 116
2. Prepare customers' receipts 116
3. Update customers' individual records 116
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CHAPTER 2: CHART OF ACCOUNTS

A chart of accounts has been designed that is based on the concept of a double-entry accounting system. Under a double-entry system, the resources (assets) of a utility equals its obligations (liabilities) and residual equity (equity). This algebraic arrangement, $\text{assets} = \text{liabilities} + \text{equity}$, is the fundamental accounting model upon which accounting systems are based.

The use of a double-entry system will facilitate record-keeping and report preparation. Also, it automatically calls attention to many types of errors and adds considerable reliability to the output of the accounting system. Further, the double-entry system assists one in understanding the significance of the relationship between balance sheet and income accounts, as well as between assets, liability and equity accounts.

The subsequent accounting procedures outlined in this handbook are based on the use of a double-entry accounting system.

MONTSERRAT WATER AUTHORITY

CHART OF ACCOUNTS*

I. Balance Sheet Accounts

A. Assets and Other Debits

1. 100 - 159 Utility Plant In Service

Source of Supply Plant

100	Land
101	Storage Tanks
102	Reservoirs
103	Intakes
104	Other

Pumping Plant

110	Pump Houses
111	Electrical Pumps
112	Diesel Pumps
113	Other

Water Treatment Plant

120	Water Treatment Equipment
121	Other

Supply and Distribution Plant

130	Supply and Distribution Mains
131	Meters
132	Hydrants
133	Other

* See Definition of Accounts beginning on Page 16.

General Plant

140	Land
141	Buildings
142	Office Furniture and Equipment
143	Vehicles
144	Other Equipment
145	Stores Equipment
146	Tools, Garage and Shop Equipment
147	Laboratory Equipment
148	Other

Accumulated Depreciation

150	Accumulated Depreciation - Utility Plant
151	Accumulated Depreciation - General Plant

2. 160 - 164 Work-in-Progress - Capital Projects Clearing

160	Work-in-Progress - Capital Projects
-----	-------------------------------------

3. 165 - 169 Restricted Assets

165	Replacement Fund
-----	------------------

4. 170 - 189 Current Assets

170	Cash Float
171	Cash in Bank
172	Accounts Receivable - Metered
173	" " - Water Sales to Ships
174	" " - Government Supplies
175	" " - Vacant Lots
176	" " - Water Connections
177	" " - Rechargeable Works
178	" " - Miscellaneous

4. 170 - 189 Current Assets (cont'd)

179	Accumulated Provisions for Doubtful Accounts
180	Advances to Employees
181	Unallocated Stores
182	Accrued Utility Revenue
183	Prepaid Expenses

5. 190 - 199 Other Debits

190	Preliminary Survey Charges
-----	----------------------------

B. Liabilities and Equity

1. 200 - 209 Long-Term Debt

200	Long-Term Debt
-----	----------------

2. 210 - 299 Current Liabilities

210	Long-Term Debt Payable Within One Year
211	Accounts Payable
212	Pension Scheme Payable
213	Income Tax Payable
214	N.P.F. Payable
215	Insurance Payable
216	Union Dues Payable
217	Wages Payable
218	Salaries Payable
219	Accrued Expenses

3. 300 - 399 Equity

300	Capital Contributions
301	Contributions in Aid of Construction
302	Appraisal Increase of Property
303	Accumulated Deficit or Surplus

II. Income Accounts

A. Revenue

1. 400 - 409 Water Operating Revenue

400	Metered Sales
401	Government Supplies
402	Water Sales to Ships

2. 410 - 419 Operating Revenue

410	Vacant Lots
411	Water Connections
412	Reconnections

3. 420 - 429 Non-operating Revenue

420	Rechargeable Works
421	Rent of Equipment
422	Income (Loss) From Sales of Fixed Assets
423	Income From Sales of Unallocated Stores
424	Interest Income
425	Other Revenue

B. Expenses

1. 500 - 509 Source of Supply Expenses

500	Personal Emoluments
501	Wages
502	Maintenance of Storage Tanks
503	" " Reservoirs
504	" " Intakes
505	Miscellaneous Expenses

2. 510 - 519 Pumping Expenses

510	Personal Emoluments
511	Wages
512	Fuel or Power Purchased for Pumping
513	Maintenance of Pump Houses
514	Maintenance of Pumping Equipment
515	Miscellaneous Expenses

3. 520 - 529 Water Treatment Expenses

520	Personal Emoluments
521	Wages
522	Chlorine and Chemicals Expense
523	Laboratory Expense
524	Maintenance of Water Treatment Equipment
525	Miscellaneous Expense

4. 530 - 549 Supply and Distribution Expenses

530	Personal Emoluments
531	Wages
532	Water Connection Expenses
533	Maintenance of Supply and Distribution Mains
534	" " Meters
535	" " Hydrants
536	" " Standpipes and Bathrooms
537	Fuel and Oil Expenses - Vehicles
538	Vehicles and Equipment Expenses
539	Road Repair Expense
540	Miscellaneous Expenses

5. 550 - 579 Administrative and General Expenses

550	Personal Emoluments
551	Wages
552	Travel Allowance
553	Stationery and Office Supplies
554	Electricity Expense
555	Postage and Telegrams Expense
556	Telephone Expense
557	Public Relations and Entertainment Expenses
558	Conferences, Meetings and Seminars Expense
559	Professional Fees
560	Maintenance of General Plant
561	Contributions N.P.F.
562	Contributions Pension Scheme
563	Group Life Insurance Expense
564	Workman's Compensation Insurance Expense
565	Bank Charges
566	Government Loan - Current Portion
567	Books, Periodicals and Publications Expense
568	Protective Clothing Expenses
569	Doubtful Accounts Expense
570	Miscellaneous General Expenses

6. 580 - 589 Provisions for Depreciation

580	Depreciation Expense - Utility Plant
581	" " - General Plant

7. 590 - 595 Clearing Accounts

590	Payroll Clearing
-----	------------------

DEFINITION OF ACCOUNTS

Assets and Other Debits 100 - 199

100 - 159 Utility Plant in Service

This caption consists of five sub-headings, Source of Supply Plant, Pumping Plant, Water Treatment Plant, Supply and Distribution Plant, and General Plant. A schedule showing the original cost, estimated useful life, and accumulated depreciation of the individual items shall be maintained. The amounts on the schedule for the total original cost and total accumulated depreciation shall correspond to the amounts in the general ledger for the said accounts. The cost of Utility Plant in Service is allocated to the following accounts:

100 Land

This account shall include the original cost of land acquired for the source of supply.

101 Storage Tanks

This account shall include the original cost of all storage tanks constructed in the water supply system.

102 Reservoirs

This account shall include the original cost of all reservoirs constructed for collecting and impounding at the source of supply.

103 Intakes

This account shall include the original cost of all intakes constructed at the source of supply.

104 Other

This account shall include the original cost of all other assets not included in the preceding source of supply accounts.

110 Pump Houses

This account shall include the original cost of all buildings used to house water pumps in the pumping system.

111 Electrical Pumps

This account shall include the original cost of electrical pumps used in the pumping system.

112 Diesel Pumps

This account shall include the original cost of diesel pumps used in the pumping system.

113 Other

This account shall include the original cost of all other assets not included in the preceding pumping accounts.

120 Water Treatment Equipment

This account shall include the original cost of all equipment used in the water treatment process.

121 Other

This account shall include the original cost of all other assets not included under water treatment equipment.

130 Supply and Distribution Mains

This account shall include the original cost of all mains used in the supply and distribution system.

131 Meters

This account shall include the original cost of all meters used in the supply and distribution system.

132 Hydrants

This account shall include the original cost of all hydrants used in the supply and distribution system.

133 Other.

This account shall include the original cost of all other assets not included in the preceding supply and distribution accounts.

140 Land

This account shall contain the original cost of land acquired for general purposes.

141 Buildings

This account shall contain the original cost of administrative, stores, maintenance, and other buildings not directly related to the distribution system.

142 Office Furniture and Equipment

This account shall include the original cost of administrative, engineering and maintenance office furniture and equipment such as typewriters, duplicating machine, adding machines, filing cabinets, drafting tables, desks, tables, chairs and other decorative furniture. Generally, items with an individual cost of \$100 or more would be included in this account. Items with a life expectancy of less than two years may be expensed.

143 Vehicles

This account shall include the total cost of vehicles such as cars, land rovers, trucks and motorcycles normally operated on the public roads.

144 Other Equipment

This account shall include the total cost of all other equipment such as air hammers, air compressors, heavy-duty equipment, etc.

145 Stores Equipment

This account shall include the cost of equipment relative to the storeroom function.

146 Tools, Garage and Shop Equipment

This account shall contain the cost of all maintenance, shop and garage equipment that would be used in servicing and repairing of other utility plants, fixed assets and vehicles.

147 Laboratory Equipment

This account shall include the cost of all permanent laboratory equipment and testing devices in excess of \$100.

148 Other

This account shall include the original cost of all other assets not included in the preceding general plant accounts.

150 Accumulated Depreciation - Utility Plant

This account shall be credited with the annual depreciation charge with a corresponding debit to account 580. When an item of utility plant is disposed of, that account shall be debited with the total accumulated depreciation for that item and the appropriate plant accounts (100 - 139) shall be credited. The difference between original cost less accumulated depreciation shall be transferred from the relevant plant account to account 422.

151 Accumulated Depreciation - General Plant

This account shall be credited with the annual depreciation charge with a corresponding debit to account 581. When an item of general plant is disposed of, that account shall be debited with the total accumulated depreciation for that item and the appropriate General Plant accounts (140 - 149) shall be credited. The difference between original cost less accumulated depreciation shall be transferred from the relevant plant account to account 422.

160 Work-In-Progress - Capital Projects

This account shall contain the totals of work in progress for each individual project. This account will be substantiated by separate subsidiary ledgers which would detail the cost of the individual capital projects. The cost to be included in work in progress will be materials, labour, transportation, electricity, direct charges, overhead and engineering. When the capital project is completed and approved, the actual construction cost will be transferred to the related plant account.

165 Replacement Fund

This account shall contain the total excess funds set aside for replacement of fixed assets such as vehicles, etc.

170 Cash Float

This account shall contain the balance of the cashier's float.

171 Cash In Bank

This account shall indicate the amount of funds on deposit with banks.

172 - 176 Accounts Receivable - Water Consumers

These accounts shall show the current unpaid balance of consumer water accounts. The amounts for each individual account shall be substantiated by a detailed listing of the ledger accounts.

177 Accounts Receivable - Rechargeable Works

This account shall contain the current unpaid balance of private development and plumbing services. The balance of this account shall be substantiated by a detailed listing of accounts owed to the Authority.

178 Accounts Receivable - Miscellaneous

This account shall show the current unpaid balance of miscellaneous accounts receivable. This account will balance to the detailed listing of accounts owed to the Authority for miscellaneous accounts receivable.

179 Accumulated Provisions For Doubtful Accounts

This account shall show the balance of consumer accounts whose collection is doubtful. This account shall be substantiated by a listing of all such accounts.

180 Advances to Employees

This account shall show the current unpaid balance of advances to employees. This account shall be substantiated by a listing of accounts owed by employees.

181 Unallocated Stores

This account shall contain the balances of materials and supplies in stock. This account shall be substantiated by a listing of the subsidiary stores ledger.

182 Accrued Utility Revenue

This account shall include the amount of current revenue earned but not yet billed as of the end of the accounting period.

183 Prepaid Expenses

This account shall include expenses paid in advance. At the end of each month a predetermined portion of prepaid expenses shall be allocated to specific expense accounts. The purchase of stamps will be reported as a prepaid expense but shall be allocated to specific expense accounts at the end of the year.

190 Preliminary Survey Charges

This account shall include the cost of all preliminary investigative study and engineering on projects that are as yet unfunded by loans or other financing. When the project funds become available and construction on the project begins, the accumulated cost will be transferred to a job assigned under accounts 160 - 164. A schedule shall be maintained which itemizes the cost of each preliminary survey charge and which balances to the ledger account.

Liability Accounts 200 - 299

200 - 209 Long-Term Debt

These accounts shall contain the outstanding, unpaid balance of loans payable under each long-term debt account. For each account, an itemized schedule shall be maintained showing each loan, repayments to date, and the outstanding balance.

210 Long-Term Debt Payable Within One Year

This account shall show the current portion of long-term debt from each account as calculated at the fiscal year end.

211 Accounts Payable

This account shall contain the unpaid invoices or bills to suppliers for which shipment was received or services rendered within the accounting period. This account shall be supported by an accounts payable subsidiary ledger (creditors ledger) showing the amounts unpaid at the end of the accounting period.

212 Pension Scheme Payable

The balance in this account will represent social security deducted at source and not yet paid to the pension scheme.

213 Income Tax Payable

The balance in this account will represent tax deducted at source and not yet paid.

214 N.P.F. Payable

The balance in this account will represent social security deducted at source and not yet paid the N.P.F.

215 Insurance Payable

The balance in this account will represent insurance deducted at source and not yet paid.

216 Union Dues Payable

The balance in this account will represent union dues deducted at source and not yet paid.

217 Wages Payable

This account will function as a clearing account for the net wages payable.

218 Salaries Payable

This account will function as a clearing account for the net salaries payable.

219 Accrued Expenses

This account shall include the amount of current liabilities incurred but not yet due as of the end of the accounting period. These items are generally services that are incurred with the passage of time such as salaries, wages and interest.

220 Consumer Deposits

This account shall be credited with amounts deposited by consumers as required for connections or private developments, The account will subsequently be debited as consumer charges are determined and billed.

Equity Accounts 300 - 399

300 Capital Contributions

This account shall include the contributions made by Government and other institutions that are not to be repaid. The amount shall be substantiated by a listing showing contributor, date and amount of each contribution.

301 Contributions in Aid of Construction

This account shall contain the accumulation of payments by contractors or others for construction of projects which subsequently become Utility Plant because ownership reverts to the Authority.

302 Appraisal Increase of Property

This account shall contain the credit adjustments for the increase in the value assigned to Utility Properties. Each appraisal must be kept separate and each must indicate the date of valuation and the person or firm who conducted the study.

303 Accumulated Deficit or Surplus

This account shall contain the residual of the accumulated yearly net incomes and losses of the Authority.

Revenue Accounts 400 - 499

400 Metered Sales

This account shall include all net billings for water supplies to metered customers.

401 Government Supplies

This account shall include all net billings to Government for water supplied to standpipes and Government buildings.

402 Water Sales to Ships

This account shall include all billings for water supplied to ships.

410 Vacant Lots

This account shall include all net billings for service charges for vacant lots.

411 Water Connections

This account shall include all billings made to customers, contractors, and others for connections of service lines.

412 Reconnections

This account shall include all billings made to customers for reconnection of water supply.

420 Rechargeable Works

This account shall include all billings made to private contractors and others for private developments and plumbing services.

421 Rent of Equipment

This account shall include all billings made to private contractors and others for rent of the Authority's equipment.

422 Income (Loss) From Sales of Fixed Assets

This account will be credited with the sale proceeds and debited with the net book value (cost less accumulated depreciation) of the assets plus costs incurred in the selling of the item.

423 Income From Sales of Unallocated Stores

This account will be credited with the sale of materials and supplies from the unallocated stores and debited with the related cost incurred in selling.

424 Interest Income

This account will be credited with income from interest on bank accounts.

425 Other Revenue

This account will be credited with any other non-operating revenue received which does not fall under any of the above non-operating revenue accounts.

Expense Accounts 500 - 599

500 Personal Emoluments

This account shall include the compensation, emoluments and other consideration for service on monthly paid officers and supervisors of the Authority properly chargeable to source of supply operations.

501 Wages

This account shall contain the compensation of employees (other than those described in 500) that are properly chargeable to source of supply operations.

502 Maintenance of Storage Tanks

This account shall include the cost of materials used and other expenses associated with maintaining storage tanks.

503 Maintenance of Reservoirs

This account shall include the cost of materials used and other expenses associated with maintaining collecting and impounding reservoirs.

504 Maintenance of Intakes

This account shall include the cost of materials used and other expenses associated with maintaining intakes.

505 Miscellaneous Expenses

This account shall contain expenses which are not readily assignable to other source of supply expense accounts.

510 Personal Emoluments

This account shall include the compensation, emoluments and other consideration for service of monthly paid officers and supervisors of the Authority properly chargeable to pumping operations.

511 Wages

This account shall contain the compensation of employees (other than those described in 510) that are properly chargeable to pumping operations.

512 Fuel or Power Purchased for Pumping

This account shall include the cost of electricity and diesel fuel used for the operation of water pumps.

513 Maintenance of Pump Houses

This account shall include the cost of materials used and other expenses associated with maintaining pump houses.

514 Maintenance of Pumping Equipment

This account shall include the cost of materials used, parts and other expenses associated with maintaining electric and diesel pumps.

515 Miscellaneous Expenses

This account shall contain expenses which are not readily assignable to other pumping expense accounts.

520 Personal Emoluments

This account shall include the compensation, emoluments and other consideration for service on monthly paid officers and supervisors of the Authority properly chargeable to water treatment operations.

521 Wages

This account shall contain the compensation of employees (other than those described in 520) that are properly chargeable to water treatment operations.

522 Chlorine and Chemicals Expense

This account shall include the cost of chlorine and other chemicals used in the water treatment process.

523 Laboratory Expense

This account shall include materials and chemicals used in the operation of the laboratory.

524 Maintenance of Water Treatment Equipment

This account shall include the cost of materials used, parts and other expenses associated with maintaining water treatment equipment, such as chlorinators, etc.

525 Miscellaneous Expenses

This account shall contain expenses which are not readily assignable to other water treatment expense accounts.

530 Personal Emoluments

This account shall include the compensation, emoluments and other consideration for service of monthly paid officers and supervisors of the Authority properly chargeable to supply and distribution operations.

531 Wages

This account shall contain the compensation of employees (other than those described in 530) that are properly chargeable to supply and distribution operations.

532 Water Connection Expenses

This account shall include all direct cost required to perform customer water connections. Such cost includes materials, labour, transportation, and supervision.

533 Maintenance of Supply and Distribution Mains

This account shall include the cost of materials used and other expenses associated with maintaining supply and distribution mains.

534 Maintenance of Meters

This account shall include the cost of materials used and other expenses associated with maintaining meters.

535 Maintenance of Hydrants

This account shall include the cost of materials used and other expenses associated with maintaining hydrants.

536 Maintenance of Standpipes and Bathrooms

This account shall include the cost of materials used and other expenses associated with maintaining standpipes and public bathrooms.

537 Fuel and Oil Expense - Vehicles

This account shall include the cost of fuel and oil purchased for use in normal operations for the Authority's transportation equipment.

538 Vehicles and Equipment Expenses

This account shall include the cost of repairs, parts, tyres, batteries and licensing of transportation and other equipment. The cost will be separated by individual vehicle numbers.

539 Road Repair Expenses

This account shall include the cost of materials used and other expenses associated with repairing roads.

540 Miscellaneous Expenses

This account shall contain expenses which are not readily assignable to other supply and distribution expense accounts.

550 Personal Emoluments

This account shall include the compensation, emoluments and other consideration for service of monthly paid officers and supervisors of the Authority properly chargeable to administrative operations.

551 Wages

This account shall contain the compensation of employees (other than those described in 550) that are properly chargeable to administrative and general operations of the Authority.

552 Travel Allowance

This account shall contain the cost of transportation, travel allowance and mileage allowances incurred by approved personnel in the Authority.

553 Stationery and Office Supplies

This account shall contain the cost of office supplies, stationery, printing and forms used in the administrative function.

554 Electricity Expense

This account shall be charged with the cost of electricity necessary to operate the lighting and equipment of the general office.

555 Postage and Telegrams Expense

This account shall contain the cost of postage stamps, cables and telegrams incurred by the administrative functions.

556 Telephone Expense

This account shall contain the cost of overseas and local telephone calls incurred by the Authority.

557 Public Relations and Entertainment Expenses

This account shall include the cost of activities designed to promote the services of the Authority and incidental expenses related with entertaining guests of the Authority.

558 Conferences, Meetings and Seminars Expense

This account shall contain the costs in attending conferences, meetings, seminars and conventions. Included will be the cost of transportation, meals, lodgings, and incidental expenses of outside consultants, advisers, instructors, lecturers, etc.

559 Professional Fees

This account shall contain the cost of consulting, audit and legal fees.

560 Maintenance of General Plant

This account shall contain the cost of maintenance and repair of office buildings and equipment.

561 Contributions N.P.F.

This account shall contain the employer's contributions of pensions for the Authority's personnel to N.P.F.

562 Contributions Pension Scheme

This account shall contain the employer's contributions of pensions for the Authority's personnel to the pension scheme.

563 Group Life Insurance Expense

This account shall contain the cost of health and life insurance for employees that is paid by the Authority.

564 Workman's Compensation Insurance Expense

This account shall contain the cost of insurance coverage for employees in case of injuries that is paid by the Authority.

565 Bank Charges

This account shall contain the cost of all bank charges.

CHAPTER 3: RECORDING OF CASH RECEIPTS AND DISBURSEMENTS

The control of cash is critical in any business because: (a) it is usually in short supply; and (b) it is easy to conceal and transport, and it is desired by everyone.

The control of cash involves careful planning of cash needs and control of expenditures and careful record-keeping to assure that all cash is properly accounted for. Thus, control of cash generally requires the following:

1. A detailed cash flow budget that specifies planned cash inflows and outflows (see Unit 5, Chapter 14).
2. A system of internal control that incorporates careful delegation of authority for handling cash receipts, cash disbursements and the related record-keeping. The details of the system of internal controls are discussed in this unit.
3. Proper accounting for all cash receipts and cash disbursements including assurances that there are no unauthorized uses of cash receipts or improper cash disbursements. This unit deals specifically with cash receipts and cash disbursements.

CASH RECEIPTS

Cash inflows of the Authority come mainly from customers' payments for water service. At the time cash is received by the Authority, a receipt is prepared by the cashier which automatically transfers the information onto the daily collection sheet (see Unit 4, Chapter 13). At the end of each day, the daily collection sheet is added and cross-added and reconciled with the cash taken in. Once reconciled, the cashier forwards the daily collection sheet to the Chief Accountant and the daily deposit is then made.

Since a large volume of transactions for cash receipts occur, a special cash receipts journal (see Figure 3.1) is used. This special journal is designed to accommodate all cash receipts. Therefore, it has a column for cash debit and several columns are designated for recurring credits, and a general column accommodates infrequent credits. The Chief Accountant maintains the journal. As mentioned above, at the end of each day the cashier forwards the daily collection sheet to the Chief Accountant. After each day's cash receipts are deposited in the bank, a copy of the deposit slip is reconciled with the daily collection sheet. Once reconciled, the Chief Accountant enters the daily totals from the daily collection sheet into the cash receipts journal. At the end of each month, the columns are added and cross-added and entered into the general ledger by the Chief Accountant (see illustrated cash receipt information on flow-chart, Figure 3.2).

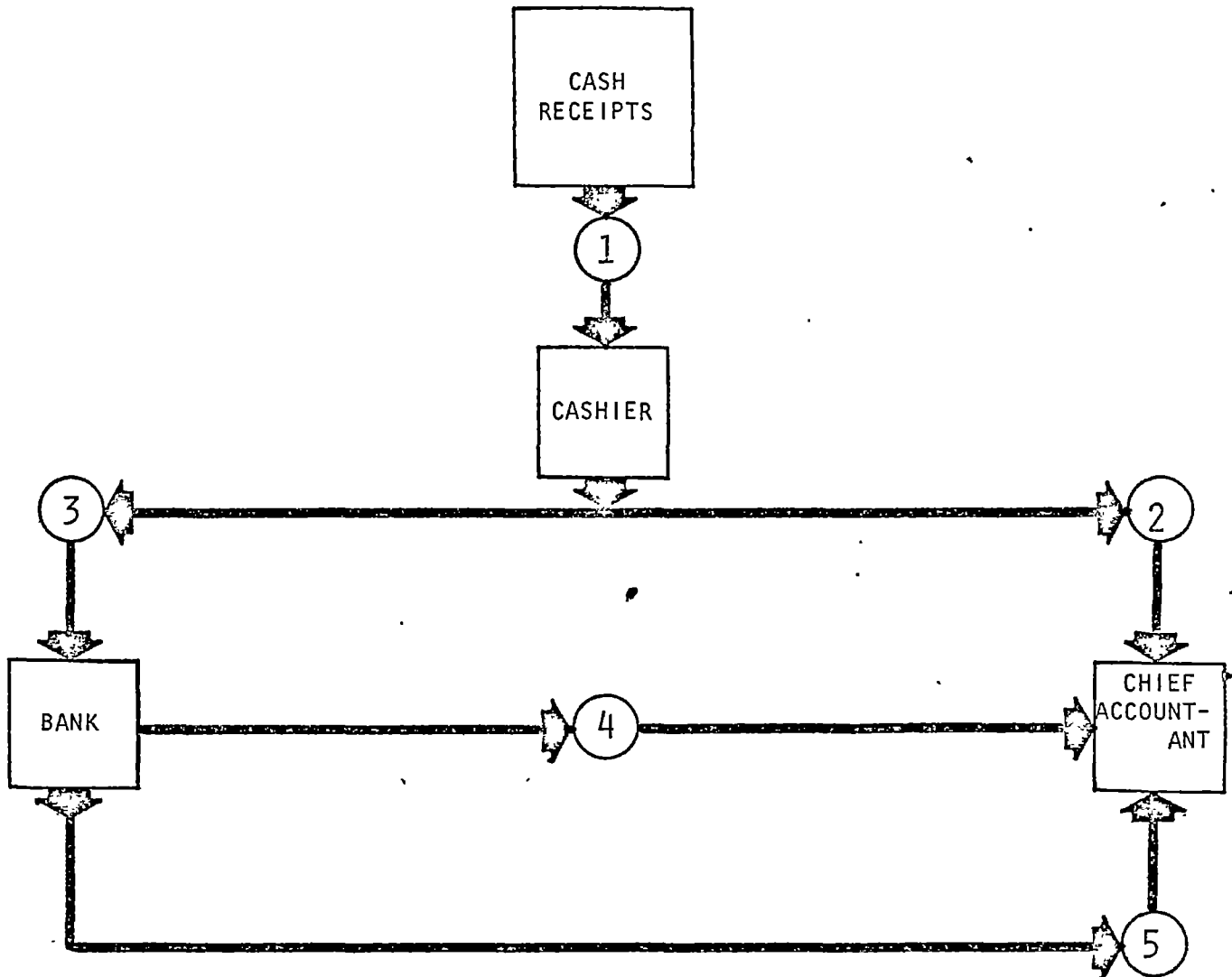
FIGURE 3.1

CASH RECEIPTS JOURNAL

DATE	REF	171	172	173	174	175	176	177	178	GENERAL	
		CASH	METERED	WATER SALES TO SHIPS	GOVT. SUPPLIES	VACANT LOTS	WATER CONNECTIONS	RECHARGEABLE WORKS	MISC- ELLANEOUS	ACCT. NO.	AMOUNT
		<u>POSTING</u>									
		- Post all month-end totals except General directly to the General Ledger.									
		- Post the individual items in the General column directly to the General Ledger.									

FIGURE 3.2

FLOW OF INFORMATION REGARDING CASH RECEIPTS



- ①. Payments from customers or other sources are made in person to the cashier. The cashier prepares a daily collection sheet showing the amounts received.
- ②. At the end of each day the cashier forwards the daily collection sheet to the Chief Accountant.
- ③. At the end of each day the cashier deposits the day's cash receipts in the bank.
- ④. The Chief Accountant receives a deposit slip from the bank each day. The deposit slip is reconciled with the daily collection sheet and the totals from the daily collection sheet are entered into the cash receipts journal.
- ⑤. At month-end, the bank sends a bank statement showing the opening cash balance, daily deposits, cheques drawn against the account and the closing cash balance. The Chief Accountant then prepares a bank reconciliation.

HIGHLIGHTS

The procedures just discussed for handling cash receipts are adequate to attain control of all cash received. The highlights of the controls are:

1. There is a continuous and uninterrupted flow of cash from the initial receipt to deposit in the bank. This requires:
 - (a) immediate counting of all cash received;
 - (b) immediate recording of all cash received; and
 - (c) timely deposit of all cash received.
2. Separation of all responsibilities for the cash-handling and cash-recording functions. In this manner an effective system of internal controls is implemented.
3. Continuous and close supervision of all cash-handling functions by the Chief Accountant.

CASH DISBURSEMENTS

The Montserrat Water Authority also handles a large volume of cash disbursements. To accommodate all cash payments, a special journal called a cash disbursements journal (see Figure 3.3) is used. This special journal has a column for cash credit and a number of debit columns including one for general accounts. The debit columns are set up because they are frequently recurring debits, and the General column is for infrequent debits.

All cash disbursements are made by cheque. After the Accounts Assistant receives the supporting documents (purchase order and suppliers' invoice) from the Chief Accountant, he/she prepares a payment voucher (see Figure 3.4). From the payment voucher, the Accounts Assistant prepares a cheque for the amount of

FIGURE 3.4
PAYMENT VOUCHER

MONTERRAT WATER AUTHORITY PAYMENT VOUCHER				
Voucher No. : _____		Date _____		
Cheque No. : _____				
Payee : _____				
Account No.	Particulars of Payment	Quantity	Rate	Amount
<p>We certify that the above amount is correct as to the rates and prices.</p> <p>Payment Authorized By _____ Payment Certified By _____</p> <p>Engineer/Manager _____ Chief Accountant _____</p> <p>Received the above amount the _____ day of _____, 19__.</p> <p style="text-align: right;">_____ Signature of Recipient</p>				

the voucher and then enters the information into the cash disbursements journal. At the end of every month, the journal is added and cross-added by the Accounts Assistant and forwarded to the Chief Accountant who then posts the monthly totals to the general ledger.

Once the cheque is prepared and entered into the cash disbursements journal, the payment voucher, cheque and supporting documents (purchase order and suppliers' invoice) are passed to the Chief Accountant (see illustrated cash disbursements information on flow-chart, Figure 3.5). The Chief Accountant reviews all documents, certifies the payment voucher, signs the cheque, and forwards the documents to the Manager/Engineer for final authorization. Once the Manager/Engineer authorizes the payment voucher and counter-signs the cheque, the cheque is distributed to the payee. The payment voucher with its supporting documents is filed in order of cheque number within the month by the Accounts Assistant.

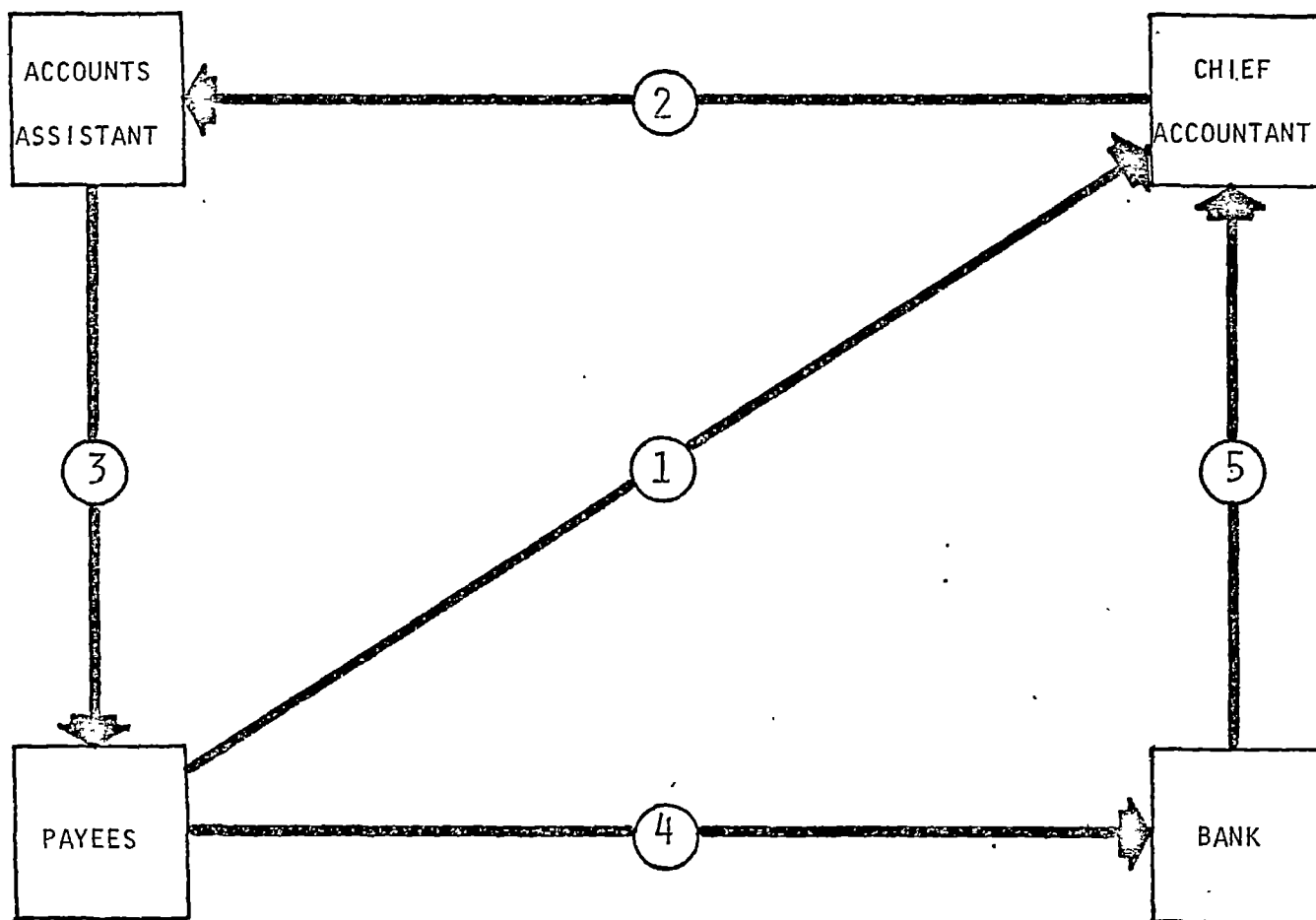
HIGHLIGHTS

The procedures just discussed for handling cash disbursements are adequate to retain control of all cash payments. The highlights of the controls are:

1. All cash disbursements are made by cheque. There is no petty cash system.
2. Cheques are prepared and signed only when supported by adequate documentation and verification.
3. Responsibilities are separate for cash disbursement documentation, cheque writing, cheque signing and record-keeping.
4. All cash disbursement and record-keeping functions are supervised continuously and closely.

FIGURE 3.5

FLOW OF INFORMATION REGARDING CASH DISBURSEMENTS



- ① The Chief Accountant receives invoices and bills from payees (merchants, contractors, employees, etc.).
- ② The Chief Accountant approves payment for invoices and bills and forwards them to the Accounts Assistant.
- ③ The Accounts Assistant prepares cheques for the invoices and bills, has the cheques signed, and sends them directly to the payees.
- ④ The payees present the cheques to the bank for payment and the bank balance is reduced by the amount of the cheques.
- ⑤ The bank sends a bank statement, together with cancelled cheques, to the Chief Accountant at the end of each month. The Chief Accountant then prepares a bank reconciliation.

BANK RECONCILIATION

It is also necessary that the bank balance according to the bank statement be reconciled monthly with the bank balance according to the Authority's books. This reconciliation should be performed by an employee having no other connection with the accounting records or the handling of cash. The reconciliation of bank book balances serves two important purposes:

1. control - it serves to check the accuracy of the records of both the bank and the Authority; and
2. accounting entries - it provides information for entries on the books of the Authority for items reflected on the bank statement that have not been recorded by the Authority (e.g., a bank service charge).

Reconciliation of the bank balance with the balance of the cash in bank account (171) requires an analysis of the monthly bank statement and the cash records maintained by the Authority. Generally there will be a difference between the two cash balances. The usual causes of differences between the cash balance per bank statement and the cash balance on the books of the Authority may be classified as follows:

- A. Items already recorded as cash receipts in the books of the Authority but not yet added to the bank balance on the bank statement.

EXAMPLE:

1. Unrecorded deposits - deposits made up and deposited in the bank by the Authority but not reported by the bank on the current bank statement.

- B. Items already added to the bank balance but not recorded in the Authority's books.

EXAMPLES:

1. Interest allowed the Authority by the bank but not yet recorded in the Authority's books.
2. Collections by the bank for the Authority but not yet recorded on the Authority's books.

- C. Items already recorded as cash disbursements on the Authority's books but not deducted by the bank from the bank statement.

EXAMPLE:

1. Outstanding cheques - cheques written and properly recorded in the Authority's books but not yet cleared through the bank.
- D. Items already subtracted from the bank balance but not recorded in the Authority's books.

EXAMPLE:

1. Bank service charge.

It is possible to reconcile the bank and book balances by working from the bank balance to the book balance, or the opposite, or to reconcile both the book balance and the bank balance to a common amount known as the true cash balance. The "true balance" method is recommended and illustrated in Figure 3.6.

FIGURE 3.6

BANK RECONCILIATION

<u>Bank Balance</u>		<u>Book Balance</u>	
Balance per bank	\$1,404	Balance per books	\$1,535
Additions:		Additions:	
Unrecorded Deposits	<u>550</u>	Interest collected by bank	<u>20</u>
	1,954		1,555
Deductions:		Deductions:	
Outstanding Cheques:		Bank Charges	
No. 401	150		<u>4</u>
No. 410	200		
No. 412	<u>53</u>		
	<u>403</u>		
TRUE CASH BALANCE	<u>\$1,551</u>	TRUE CASH BALANCE	<u>\$1,551</u>

SUMMARY OF PROCEDURES FOR HANDLING

CASH RECEIPTS

PROCEDURES	PERFORMED BY
<p>1. (a) Receive cash from customers.</p> <p>(b) Write receipt which automatically transfers onto the daily collection sheet.</p> <p>(c) Give the customer the receipt for payment.</p> <p>(d) Forward daily collection sheet to Chief Accountant at the end of every day.</p>	Cashier
<p>2. Arrange for the deposit of the day's receipts.</p>	Chief Accountant
<p>3. (a) Receive a copy of the deposit slip from the daily deposit with the bank.</p> <p>(b) Compare the deposit slip with the daily collection sheet.</p> <p>(c) Enter totals from the daily collection sheet into the cash receipts journal.</p>	Chief Accountant
<p>4. (a) Add and cross-add cash receipts journal at the end of each month.</p> <p>(b) Post the monthly totals from the cash receipts journal to the general ledger.</p>	Chief Accountant

SUMMARY OF PROCEDURES FOR HANDLING

CASH DISBURSEMENTS

PROCEDURES

PERFORMED BY

<p>1. (a) Receive copy of purchase order and supplier's invoice from Chief Accountant.</p> <p>(b) Prepare payment voucher. If several invoices are to be paid at the same time, list invoice amounts and indicate total.</p> <p>(c) Prepare a cheque from the payment voucher.</p> <p>(d) Update cash disbursement journal.</p> <p>(e) Forward payment voucher, cheque, and supporting documents to Chief Accountant.</p>	<p>Accounts Assistant</p>
<p>2. (a) Review documents.</p> <p>(b) Certify Payment Voucher.</p> <p>(c) Sign cheque.</p> <p>(d) Forward documents to Manager/Engineer.</p>	<p>Chief Accountant</p>
<p>3. (a) Review documents.</p> <p>(b) Authorize Payment Voucher.</p> <p>(c) Counter-sign cheque.</p> <p>(d) Forward documents to Clerical Officer for distribution of cheque to payee.</p>	<p>Manager/Engineer</p>
<p>4. At the end of each month, the cash disbursements journal is added and cross-added and passed to the Chief Accountant.</p>	<p>Accounts Assistant</p>
<p>5. Approve cash disbursements journal and post month-end totals to the general ledger.</p>	<p>Chief Accountant</p>

SUMMARY OF PROCEDURES FOR PREPARING A
BANK RECONCILIATION

PROCEDURES

PERFORMED BY

1. Receive bank statement and supporting documents from the bank.	Chief Accountant
2. Ensure that all entries on the bank statement are properly supported by valid documents.	Chief Accountant
3. File the cashed cheques for each month numerically.	Chief Accountant
4. Pull previous month's bank reconciliation and mark off any reconciling items which have been cleared in the current month.	Chief Accountant
5. Carry forward to current reconciliation any uncleared items from the previous month's reconciliation.	Chief Accountant
6. Prepare reconciliation - true balance method.	Chief Accountant

CHAPTER 4: RECOGNITION OF REVENUE AND EXPENSES

This chapter focusses on recognition of revenue and expenses. As the accumulated deficit or surplus of the Authority is computed by subtracting expenses from revenues, it is essential that procedures for recognizing both revenues and expenses be established. The first part of this chapter will discuss the recognition of revenue while the latter part will cover recognition of expenses.

RECOGNIZING REVENUES

A general rule in accounting is that revenue is recognized at the time when there has been an exchange transaction involving a transfer of goods or services. In more visible terms, it is when ownership of goods passes (by possession, use or title) or when services are rendered. In following this rule, sales of water service - which is the major item of revenue for the Authority - is recognized on the basis of customer billings (as accrual basis accounting is used). Once revenue has been recognized by the Authority, the revenue must then be classified in order to facilitate management in the planning and control of revenues.

The revenues of Montserrat Water Authority are divided into the following three categories: Water Operating Revenues, Operating Revenues and Non-Operating Revenues. Water operating revenues are revenues derived from the sale of water. These revenues represent the major source of revenue to the Authority. The types of water operating revenues, together with their account numbers, are as follows:

1. Metered Sales (400);
2. Government Supplies (401); and
3. Water Sales to Ships (402).

Although water operating revenues represent the major source of revenue to the Authority, operating revenues represent a significant amount. Operating revenues are revenues that are closely allied to the sale of water and are classified as follows:

1. Vacant Lots (410);
2. Water Connections (411); and
3. Reconnections (412).

Non-operating revenues are revenues not derived from the Authority's normal operations of supplying water. Included in this category are:

1. Rechargeable Works (420);
2. Rent of Equipment (421);
3. Income (loss) from Sale of Fixed Assets (422);
4. Income from Sale of Unallocated Stores (423);
5. Interest Income (424); and
6. Other Revenue (425).

Having discussed revenue recognition and classification, procedures on how to record revenues will be discussed next.

RECORDING REVENUES

Sales of water to all customers are metered. The charge to customers, therefore, is based on the rate schedule applied to the amount of water delivered through each meter. In order to determine the amount of water sales, the quantity of water consumed by each customer, as determined by a meter, must be read and recorded monthly by a meter reader.

After the customers' meters are read, the readings are entered in meter reading books and forwarded to the billing department. Once here, the billing clerks prepare the customers' bills which automatically transfer onto the water record sheet (see Unit 4, Chapter 12). The water record sheets are forwarded to the Senior Clerical Officer who totals these sheets and records the information in the sales journal.

The sales journal (see Figure 4.1), is a special journal designed to accommodate entries for sales only. As mentioned above, the Senior Clerical Officer maintains this journal. When the water record sheets and bills for jobs completed (connections, reconnections, and rechargeable works) are received from the billing department, the Senior Clerical Officer enters the amounts in the sales journal. At the end of each month, the columns are added and the journal is passed to the Chief Accountant. The Chief Accountant reviews the journal and posts the month-end totals directly to the general ledger. The totals of the various columns are debited and credited to their respective accounts receivable and revenue accounts.

RECOGNIZING EXPENSES

The second part of this unit deals with the recognition of expenses. Expenses may be defined as the use of assets and services in the creation of revenue. A brief discussion concerning the cost principle is necessary before procedures related to the recognition of expenses are discussed.

The cost principle, often referred to as the "historical cost principle", is a basic accounting principle that underlies the entire accounting process. It holds that cost (the amount of resources given up to acquire goods and services) is the appropriate basis for initial accounting recognition of all asset acquisitions, service acquisitions, expenses, liabilities, and equity. It also holds

that subsequent to acquisition, cost values are retained throughout the accounting process. So the original cost of goods purchased by the Authority or services rendered to the Authority will be the measuring stick used in determining the operating expenses of the Authority.

In examining the recognition of expenses, procedures related to recording purchases must first be discussed. Since most Caribbean Water Authorities - Montserrat included - are unable to "bulk" purchase many materials due to financial constraints, a piecemeal approach to purchasing materials is necessary. This type of approach involves a large number of purchases; therefore, a large number of transactions must be recorded. Rather than entering every transaction in the general journal, a special journal is used to facilitate the record-keeping. This special journal is called a purchases journal.

A Purchases Journal (see Figure 4.2) is designed for purchases only. The Clerical Officer maintains this journal. After materials and supplies have been purchased, received, and checked, the storekeeper forwards a copy of the purchase order and supplier's invoice to the Chief Accountant (see Unit 3, Chapter 8). Once the documents are received, the Chief Accountant compares the supplier's invoice with the corresponding purchase order to make sure of these points:

1. Goods ordered must have been received in good condition and be those covered by the invoice;
2. Terms, unit prices, shipping charges and other details must agree with order specifications; and
3. Computations must be correct.

If all documents agree, the Chief Accountant forwards the supplier's invoice and purchase order to the Clerical Officer.

FIGURE 4.2

PURCHASES JOURNAL

DATE	INVOICE NO.	211	181	553	538	533	570	160	GENERAL		
		ACCOUNTS PAYABLE	UNALLOCATED STORES	OFFICE SUPPLIES EXPENSE	VEHICLES AND EQUIPMENT EXPENSE	MAINT. OF SUPPLY AND DIST. MAINS	MISCELLANEOUS GENERAL EXPENSES	CAPITAL PROJECTS JOB NO.	ACCOUNT NO.	AMOUNT	
		<u>POSTING</u>									
		- Post all month-end totals for the accounts directly to the general ledger except the General accounts.									
		- Post each individual item in the General accounts to the particular account in the general ledger.									
		- Post the individual items within the Capital Projects column to the particular job card.									

When the Clerical Officer receives the purchase order and supplier's invoice from the Chief Accountant, the information is entered in the purchases journal. The purchases journal has a column for credit accounts payable. During the month, each amount in this column will be credited to the individual creditor's accounts in the accounts payable subsidiary ledger (creditor's ledger).

There are also several columns in the purchases journal for frequently recurring debits and the General column for infrequent debits. The unallocated stores column is for materials and supplies that are going to be used to replenish the storeroom stock. The remaining columns are for materials and supplies that are going to be put to immediate use, thus, they will not be placed in the storeroom stock and will be expensed off right away. The amounts in the capital projects column will not only be debited to the 160 account but will also be debited to the particular job card in the capital projects subsidiary ledger.

At the end of each month, the purchases journal is added and forwarded to the Chief Accountant. The Chief Accountant posts all month-end totals for the accounts directly to the general ledger except the General accounts. Each individual item in the General accounts is posted to the general ledger.

Once the Clerical Officer enters the information in the purchases journal, the purchase order and supplier's invoice are passed back to the Chief Accountant to begin the cash disbursement process (see Unit 2, Chapter 3). After the cheque has been prepared and approved, the documents are passed to the Clerical Officer to debit the individual creditor's accounts in the accounts payable subsidiary ledger (creditor's ledger). After this, the cheque is distributed for payment.

Expenses are also recognized at the time when materials and supplies are issued from the storeroom stock. When the storekeeper issues materials from the storeroom, a stores issue voucher (S.I.V.) is completed (see Unit 3, Chapter 8).

At the end of each day, the storekeeper forwards the day's S.I.V.'s to the Chief Accountant to enter in the stores issue voucher journal.

The stores issue voucher (S.I.V.) journal (see Figure 4.3), is a special journal designed to record all issues of materials and supplies from the storeroom stock. This journal has a column for unallocated stores which will be credited for the amount of each S.I.V. The corresponding debit will be recorded in the several frequently recurring debit columns or in the General column for infrequent debits. The amounts in the capital projects column will not only be debited to the 160 account but will also be debited to the particular job card in the capital projects subsidiary ledger.

At the end of each month, the S.I.V. journal is added and cross-added. The Chief Accountant posts all month-end totals for the accounts directly to the general ledger. The individual items within the capital projects column are posted to their particular job cards.

With the mention of capital projects above, accounting for capital projects should be discussed briefly. Every capital project begins with a survey. When the survey is completed and the project designed, the preliminary charges are posted to account 190. Once the project is approved, it is assigned a job number, a requisition is prepared for materials to be used on the project and passed to the storekeeper. The storekeeper either has to purchase the desired materials or the materials are in stock and will need to be issued from the storeroom. The procedures for handling purchases and issues for capital projects have already been discussed in this unit.

The total costs for materials, labour, transportation, preliminary charges (transferred from account 190), and other direct charges and overhead will be accumulated on a job card in the capital projects subsidiary ledger.

FIGURE 4.3

STORES ISSUE VOUCHER JOURNAL

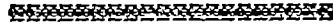
DATE	S. I. V. NO.	181	538	537	533	534	532	160	GENERAL	
		UNALLOCATED STORES	VEHICLE AND EQUIPMENT EXPENSE	FUEL AND OIL EXPENSE	MAINT. OF SUPPLY AND DIST. MAINS	MAINT. OF METERS	WATER CONNECTION EXPENSE	CAPITAL PROJECTS JOB NO.	ACCOUNT NO.	AMOUNT
		<u>POSTING</u>								
		- Post all month-end totals for the account directly to the general ledger except the General accounts.								
		- Post each individual item in the General accounts to the particular account in the general ledger.								
		- Post the individual items within the Capital Project column to the particular job card.								

Each month, the balance in the capital projects account (160) will be balanced to the detailed listing of jobs from the capital projects subsidiary ledger.

When the project is completed and approved, the accumulated costs of the project are transferred from the capital projects account (160) to the appropriate Utility Plant account. The journal entry in the general journal would be as follows:

GENERAL JOURNAL

DATE	ACCOUNTS AND EXPLANATION	LEDGER FOLIO	AMOUNTS	
			DEBIT	CREDIT
6-1	Asset (specify)	?	100,000.00	
	Work-In-Progress - Capital Projects	160		100,000.00
	To record transfer of completed job			
	from the Work-In-Progress account.			



SUMMARY OF PROCEDURES FOR
RECOGNITION OF REVENUE

PROCEDURES

PERFORMED BY

1. (a) Read meter. (b) Forward meter readings to billing department.	Meter Reader
2. (a) Prepare customers' bills and update water record sheet. (b) Forward water record sheets to Senior Clerical Officer.	Billing Clerk
3. (a) Total water record sheets. (b) Post totals from water record sheets to sales journal. (c) At end of month, total sales journal. (d) Forward sales journal to Chief Accountant.	Senior Clerical Officer
4. Post month-end totals from sales journal to general ledger.	Chief Accountant

SUMMARY OF PROCEDURES FOR

RECORDING PURCHASES

PROCEDURES

PERFORMED BY

<p>1. (a) Receive supplier's invoice and purchase order from storekeeper. (b) Cross-reference documents for approval. (c) Forward documents to Clerical Officer.</p>	<p>Chief Accountant</p>
<p>2. (a) Receive supplier's invoice and purchase order from Chief Accountant. (b) Record approved invoice in purchases journal. (c) Update creditor's ledger. (d) Forward supplier's invoice and purchase order back to Chief Accountant.</p>	<p>Clerical Officer</p>
<p>3. (a) At end of month, add columns in the purchases journal. (b) Forward purchases journal to Chief Accountant.</p>	<p>Clerical Officer</p>
<p>4. (a) Post totals from the purchases journal directly to the general ledger. (b) Post individual totals from the capital projects column to the particular job card.</p>	<p>Chief Accountant</p>

SUMMARY OF PROCEDURES FOR

RECORDING ISSUANCE OF STORES STOCK

PROCEDURES

PERFORMED BY

<p>1. (a) Receive copies of completed S.I.V.'s from the storekeeper. (b) Record all stores issue vouchers in the S.I.V. journal.</p>	<p>Chief Accountant</p>
<p>2. At end of month, add and cross-add columns in the S.I.V. journal.</p>	<p>Chief Accountant</p>
<p>3. (a) Post all totals from the S.I.V. journal to the general ledger. (b) Post individual totals from the capital projects column to the particular job card,</p>	<p>Chief Accountant</p>

SUMMARY OF PROCEDURES FOR ACCOUNTING FOR

CAPITAL PROJECTS

PROCEDURES

PERFORMED BY

<p>1. (a) Perform survey and design project. (b) Prepare requisition for materials to be needed for project.</p>	<p>Chief Engineer</p>
<p>2. Have project approved and assign job number.</p>	<p>Chief Accountant</p>
<p>3. Accumulated total costs for materials, labour, transportation, other direct charges and overhead on job card.</p>	<p>Chief Accountant</p>
<p>4. Approve completed project.</p>	<p>Chief Engineer</p>
<p>5. (a) Receive advice that project is completed. (b) Ensure that all accounting transactions covering the period in which the project is completed are posted to the job card. (c) Transfer accumulated costs to the appropriate Utility Plant account by a journal entry.</p>	<p>Chief Accountant</p>
<p>NOTE: Balance Work-in-Progress for capital projects monthly to the detailed listing of the jobs.</p>	<p>Chief Accountant</p>

CHAPTER 5: TIMEKEEPING AND PAYROLLCHAPTER 5: TIMEKEEPING AND PAYROLL

Labour costs are one of the major cost elements in the operations of water authorities. These costs must be carefully controlled for good management. A typical system of accounting for labour costs includes keeping records of time worked, computing and recording earnings, and charging labour costs to specific functions of the Authority. This unit will deal with the three procedures just mentioned.

The procedure for keeping records of the time worked by each employee is called timekeeping. The time records serve as a basis for figuring gross wages. From these amounts, appropriate deductions can be computed to determine the net earnings. The timekeeping at Montserrat Water Authority is done by the Work Supervisor. This person completes a time book for all workers under his supervision. At the end of each week, the supervisor forwards his completed time book to the Accounts Assistant in the accounting department and is issued a duplicate time book for the upcoming week. The time book indicates the total hours worked by the employee each day, but it does not show the particular jobs worked on, or what type of work was performed. Since labour costs are charged to specific functions of the Authority, some record showing the use of time must be prepared. Employee's time sheets are used for this purpose.

The employee's time sheet (see Figure 5.1) shows the week ending, employee's name, description of work done each day and total hours and overtime hours worked. At the end of each week, the employee submits his or her time sheet to the Supervisor who checks the submitted times of each employee. After a check has been made to ensure that the times are correct, the Supervisor forwards the time sheets to the Manager/Engineer to be rechecked. Once checked by the Manager/Engineer, the time sheets are forwarded to the Accounts Assistant in the accounting department.

At the end of each week, all the time sheets are received by the Accounts Assistant, who must complete the following procedures:

- Comparison of hours shown on the time sheets of each employee with hours shown on the Supervisor's time book.
- Investigation of discrepancies between time sheets and time books.
- Entry of earnings of the time sheets.
- Entry in the Worker's Pay List of the number of hours worked during the week by each worker.

The timekeeping activity described in the last step above provides the data needed by the Accounts Assistant for computing earnings and completing labour cost records.

FIGURE 5.1

EMPLOYEE'S TIME SHEET

MONTSERRAT WATER AUTHORITY		Week Ending: _____	
Time Sheet		Name: _____	
Day	Description of Work	Hours Worked	
		Regular	O.T.
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			
Monday			
Tuesday			
Checked by Foreman		Checked by Engineer	
Total Hours			
Notes		Hours	Rate
		Plain Time	@
		Overtime	@

The record of hours worked each week by weekly paid workers is transferred weekly from the time sheets to the weekly Worker's Pay List (see Figure 5.2). After the hours worked by each employee during the week have been entered on the list, hourly rate, gross pay and total earnings are computed and extended. Appropriate deductions are made and entered in the proper columns, and the net pay for each employee is determined.

At the end of the payroll period, the total gross earnings and the totals for each of the various liabilities are posted directly from the Worker's Pay List to the general journal. From the general journal entry, the amounts are posted to the general ledger accounts. The required entry is shown below:

DATE	ACCOUNT AND EXPLANATIONS	LEDGER FOLIO	AMOUNTS	
			DEBIT	CREDIT
6-1	<i>Payroll Clearing</i>	590	5,000.00	
	<i>Income Tax Payable</i>	213		500.00
	<i>N.P.F. Payable</i>	214		500.00
	<i>Insurance Payable</i>	215		200.00
	<i>Union Dues Payable</i>	216		100.00
	<i>Wages Payable</i>	217		3,700.00
	<i>To record weekly payroll.</i>			

Once the journal entry is completed by the Accountant, the employees are paid. Montserrat Water Authority pays weekly paid employees by cash. The Worker's Pay List is processed like any other payment voucher. A check is drawn and cashed for the amount of the Worker's Pay List. The money is turned over to the paymaster. The paymaster places each employee's net earnings in a separate pay packet. The recipient must sign the Worker's Pay List for each payment received.

An employer is required to keep an individual record for each employee's earnings and deductions. This information is taken from the Worker's Pay List at the end of each pay period and posted to the individual earnings record of each employee.

The procedures for timekeeping, computing and recording have been dealt with. Charging labour costs to specific functions of the Authority will be covered next.

CHARGING LABOUR COSTS

After workers' earnings are computed through various timekeeping and recording operations, they are analyzed for further cost processing. Data obtained by analysis are the bases for charging labour costs to specific functions or jobs of the Authority.

Each week an analysis of the time sheets filled out by weekly paid employees is prepared. The analysis shows the labour cost incurred on each job or function of the Authority. An analysis of time sheets is shown in Figure 5.3.

Once the labour costs have been broken down at the end of the payroll period, payroll costs are transferred to various labour heads through a general journal entry shown below. The total costs are credited to Payroll Clearing account. Labour costs are debited to the various labour heads.

Journal Entry Required

DATE	ACCOUNT AND EXPLANATION	LEDGER FOLIO	AMOUNTS	
			DEBIT	CREDIT
6-1	Source of Supply	501	500.00	
	Pumping	511	500.00	
	Water Treatment	521	500.00	
	Supply and Distribution	531	2,000.00	
	General	551	500.00	
	Work-In-Progress	160	1,000.00	
	Payroll Clearing	590		5,000.00
	To distribute weekly payroll cost.			

FIGURE 5.3

ANALYSIS OF TIME SHEETS

Montserrat Water Authority Analysis of Time Sheets Week Ended May 8, 1981			
<u>Source of Supply</u>	<u>Pumping</u>	<u>Water Treatment</u>	<u>General</u>
\$264	\$225	\$300	\$250
199	190	120	140
<u>37</u>	<u>85</u>	<u>80</u>	<u>110</u>
\$500	\$500	\$500	\$500

<u>Supply and Distribution</u>		<u>Work-In-Progress</u>	
		<u>Job No.</u>	<u>Amount</u>
\$ 720			
680		17	\$ 550
425		15	300
<u>175</u>		9	<u>150</u>
\$2,000			\$1,000

Source of Supply	\$ 500
Pumping	500
Water Treatment	500
Supply and Distribution	2,000
General	500
Work-In-Progress	<u>1,000</u>
TOTAL	<u><u>\$5,000</u></u>

The preceding procedures for timekeeping and payroll apply to weekly paid workers. Monthly paid workers' times are analyzed like those of the weekly paid workers but are distributed to different accounts. Also, monthly paid workers are paid by check instead of cash. The journal entries for monthly paid payroll are shown below.

Journal Entries Required

I.

DATE	ACCOUNTS AND EXPLANATION	LEDGER FOLIO	AMOUNTS	
			DEBIT	CREDIT
6-1	Payroll Clearing	590	10,000.00	
	Income Tax Payable	213		2,000.00
	N.P.F. Payable	214		1,000.00
	Insurance Payable	215		500.00
	Union Dues Payable	216		100.00
	Salaries Payable	218		6,400.00
	To record monthly payroll.			

II.

DATE	ACCOUNTS AND EXPLANATION	LEDGER FOLIO	AMOUNTS	
			DEBIT	CREDIT
6-1	Source of Supply	500	1,000.00	
	Pumping	510	500.00	
	Water Treatment	520	1,000.00	
	Supply and Distribution	530	1,500.00	
	Administrative	550	5,000.00	
	Work-In-Progress - Capital Projects	160	1,000.00	
	Payroll Clearing	590		10,000.00
	To distribute monthly payroll costs.			

HIGHLIGHTS

The steps in dealing with labour costs are shown below.

1. Record the number of hours worked each day by each employee (time book).
2. Record hours and type of work performed each day by each employee (time sheets).
3. Convert labour hours into dollar amounts.
4. Prepare a record (Worker's Pay List) of total earnings, deductions and net pay of all employees as a basis for posting labour costs.
5. Maintain a cumulative record of earnings, deductions and net pay for each employee (individual earnings record).
6. Charge labour cost to specific jobs or functions of the Authority by making a general journal entry from the analysis of time sheets.

SUMMARY OF PROCEDURES FOR
TIMEKEEPING AND PAYROLL

PROCEDURES

PERFORMED BY

<p>1. (a) Receive time book from Supervisor and time sheets from the Manager. (b) Compare hours on time book with hours on time sheets. (c) Clear discrepancies.</p>	<p>Accounts Assistant</p>
<p>2. Calculate individual employee's payroll and record on time sheets.</p>	<p>Accounts Assistant</p>
<p>3. Check accuracy of individual payroll calculations.</p>	<p>Accounts Assistant</p>
<p>4. Transfer individual employee's payroll on to the Worker's Pay List and calculate source deductions. Add and cross add Worker's Pay List.</p>	<p>Accounts Assistant</p>
<p>5. Approve Worker's Pay List.</p>	<p><u>Chief Accountant and Manager</u></p>
<p>6. Prepare Journal Entry to record transaction.</p>	<p><u>Chief Accountant</u></p>
<p>7. Obtain cash from bank. Prepare pay packets. Distribute pay packets and obtain signatures of payee.</p>	<p>Paymaster</p>
<p>8. Prepare analysis of time sheets and distribute labour costs into divisions, i.e. Source of Supply, Pumping, Water Treatment, Supply and Distribution, General and Work-In-Progress.</p>	<p>Accounts Assistant</p>
<p>9. Journalize in general journal the analysis of time sheets. This is to distribute payroll costs.</p>	<p>Chief Accountant</p>

CHAPTER 6: DEPRECIATION

The importance of depreciation as an expense may be readily seen upon examination of the financial statements of any business with a relatively large investment in plant and equipment. It is understandable then that depreciation is of particular importance to water utilities because of the large investments in the water utility plants. This Chapter deals with determining and accounting for depreciation.

Depreciation may be defined as the accounting process of allocating the cost expiration of plant and equipment against periodic revenue. Stated differently, as the economic service life of the asset expires with the passage of time and through use, the cost thereof must be systematically allocated to operations as a current cost (depreciation charge). This is in conformance with the matching principle.

There are four steps involved in determining and accounting for depreciation. The first step involves examining the causes of depreciation. The next step is to consider the factors in calculating the depreciation charge. Thirdly, a method of depreciation must be selected and the fourth step is the actual recording of the depreciation charge.

CAUSES OF DEPRECIATION

The causes of depreciation may be classified as follows:

PHYSICAL FACTORS

1. Wear and tear from operations.
2. Deterioration and decay resulting from the action of time and other elements.

FUNCTIONAL FACTORS

1. Inadequacy.
- 2.. Obsolescence.

The two physical factors, as they affect the service life of a water utility plant asset, are self-explanatory. Inadequacy occurs when facilities are no longer large enough to meet the increased service required, although still in good condition and quite capable of the service originally expected of it. Obsolescence may arise as a result of the outmoding of a water utility plant asset due to new designs, inventions and other improvements.

Depreciation accounting takes into account all predictable factors that tend to limit the economic usefulness of a water utility plant asset to the Authority. The periodic depreciation charge must be based upon the physical and functional causes of depreciation when estimating the service life of an asset.

FACTORS IN CALCULATING THE DEPRECIATION CHARGE

The periodic depreciation charge should represent the allocation of the original cost (less the net salvage value) of the utility plant (excluding land) over the estimated useful life of the asset. Therefore, the factors which must be considered in calculating the periodic depreciation charge are:

1. Original cost.
2. Estimated salvage value.
3. Estimated service life.

Clearly, determination of depreciation is based on one "actual" and two "estimated" factors. The original cost of an asset represents the actual purchase price or costs to construct the depreciable asset. The salvage value is the estimated amount which may be recovered through sale, trade-in allowance, or by other means when the asset is finally retired from service. In estimating the service life of an asset, consideration must be given to the causes of depreciation acting to terminate the useful life of the asset (see causes of depreciation). The Authority's past experience for a particular type of asset and information relating to probable future conditions must be taken into consideration as well.

METHOD OF DEPRECIATION

There are a number of depreciation methods that one can use to compute the depreciation charge that should be recorded each period. However, the straight-line method of depreciation is recommended because of its simplicity.

The straight-line method relates depreciation directly to the passage of time rather than specific use. This method allocates an equal charge for depreciation in each of the periods of the service life of the asset. Under the straight-line method, the depreciation charge (D) per period may be determined by dividing the original cost (C) minus net salvage value (S) by the total number of estimated years (N) in the service life of the asset. The use of this formula for computing the periodic depreciation charge is illustrated below.

$$D = \frac{C - S}{N} \quad \text{or} \quad D = \frac{100 - 10}{3} = \$30 \text{ per year}$$

The application of straight-line depreciation for the above illustrative example and the accounting entries involved is presented in Figure 6.1.

FIGURE 6.1

STRAIGHT-LINE DEPRECIATION METHOD

YEAR	DEPRECIATION EXPENSE (DR)	ACCUMULATED DEPRECIATION (CR)	BALANCE ACCUMULATED DEPRECIATION	UNDEPRECIATED ASSET BALANCE
0	--	--	--	\$100
1	\$30	\$30	\$30	70
2	30	30	60	40
3	<u>30</u>	<u>30</u>	90	10 (Salvage value)
	\$90	\$90		

RECORDING DEPRECIATION

The periodic depreciation charge is recorded as a debit to both Depreciation Expense - Utility Plant (580) and Depreciation Expense - General Plant (581) and a credit to the corresponding contra asset accounts, Accumulated Depreciation - Utility Plant (150) and Accumulated Depreciation - General Plant (151) in the General Journal at the end of each accounting period. The entry is illustrated below.

General Journal Entry

DATE	ACCOUNTS AND EXPLANATION	LEDGER FOLIO	AMOUNTS	
			DEBIT	CREDIT
6-1	Depreciation Expense - Utility Plant	580	30.00	
	Depreciation Expense - General Plant	581	30.00	
	Accumulated Depreciation - Utility Plant	150		30.00
	Accumulated Depreciation - General Plant	151		30.00
	To record the depreciation expense for 19B.			

PROCEDURES

SUMMARY OF RESPONSIBILITIES FOR
DEPRECIATION

PERFORMED BY

<ol style="list-style-type: none"> 1. Approve the cost, useful life and net salvage value of the depreciable asset as indicated, before it is recorded in the books of account. 2. Apply straight-line method of depreciation to depreciable asset. 3. Record amount of periodic depreciation in accounting records by a journal entry in the General Journal. 	<p>Chief Accountant</p> <p>Chief Accountant</p> <p>Chief Accountant</p>
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CHAPTER 7: CONTROL ACCOUNTS, SUBSIDIARY LEDGERS AND SPECIAL JOURNALS

The general accounting procedures outlined in the preceding units apply information processing tools known as special journals, subsidiary ledgers and control accounts. This unit examines these elements of the system.

CONTROL ACCOUNTS AND SUBSIDIARY LEDGERS

The general ledger is the main ledger; it includes an account for each asset, liability, equity, revenue and expense. To facilitate record-keeping for accounts that involve a large amount of detail, selected general ledger accounts are designated as control accounts to which only summary information is posted. The details related to these control accounts are maintained in a separate subsidiary ledger. Thus, a control account is supplemented by its specially designated subsidiary ledger. For example, accounts receivable, because of the large number of consumers, is designated as a control account in the general ledger. It is therefore supported by a separate accounts receivable subsidiary ledger which is composed of individual consumer accounts.

SPECIAL JOURNAL

Both general and special journals are source journals used in the system. Even though extensive use is made of special journals, there is a need for a general journal in which to record those transactions that cannot be recorded in special journals. These transactions include payroll and adjusting and closing journal entries.

A special journal serves the same purpose as a general journal except that it is designed to handle only one type of transaction because of the large volume of transactions of a particular type. Each special journal, therefore, is designed specifically to simplify the data processing tasks involved in journalizing and posting a particular type of transaction. The special journals used in the system are as follows:

1. Sales Journal - designed for sales entries only;
2. Purchases Journal - designed for purchases only;
3. Cash Receipts Journal - designed for all cash receipts;
4. S.I.V. Journal - designed for all unallocated store issues; and
5. Cash Disbursements Journal - designed for all cash payments.

POSTING

The mechanics for posting amounts from the special journals to the general ledger are simple. At the end of each month, the amount columns (except for the general column) are added and posted to the general ledger. The general column is posted individually to the general ledger. Figure 7.1 shows a pictorial view of source journals to be posted to the general ledger.

SUMMARY

This Chapter was intended to review the concepts underlying special journals, control accounts, and subsidiary ledgers. This Chapter also serves to emphasize two primary efficiencies that may result from their use:

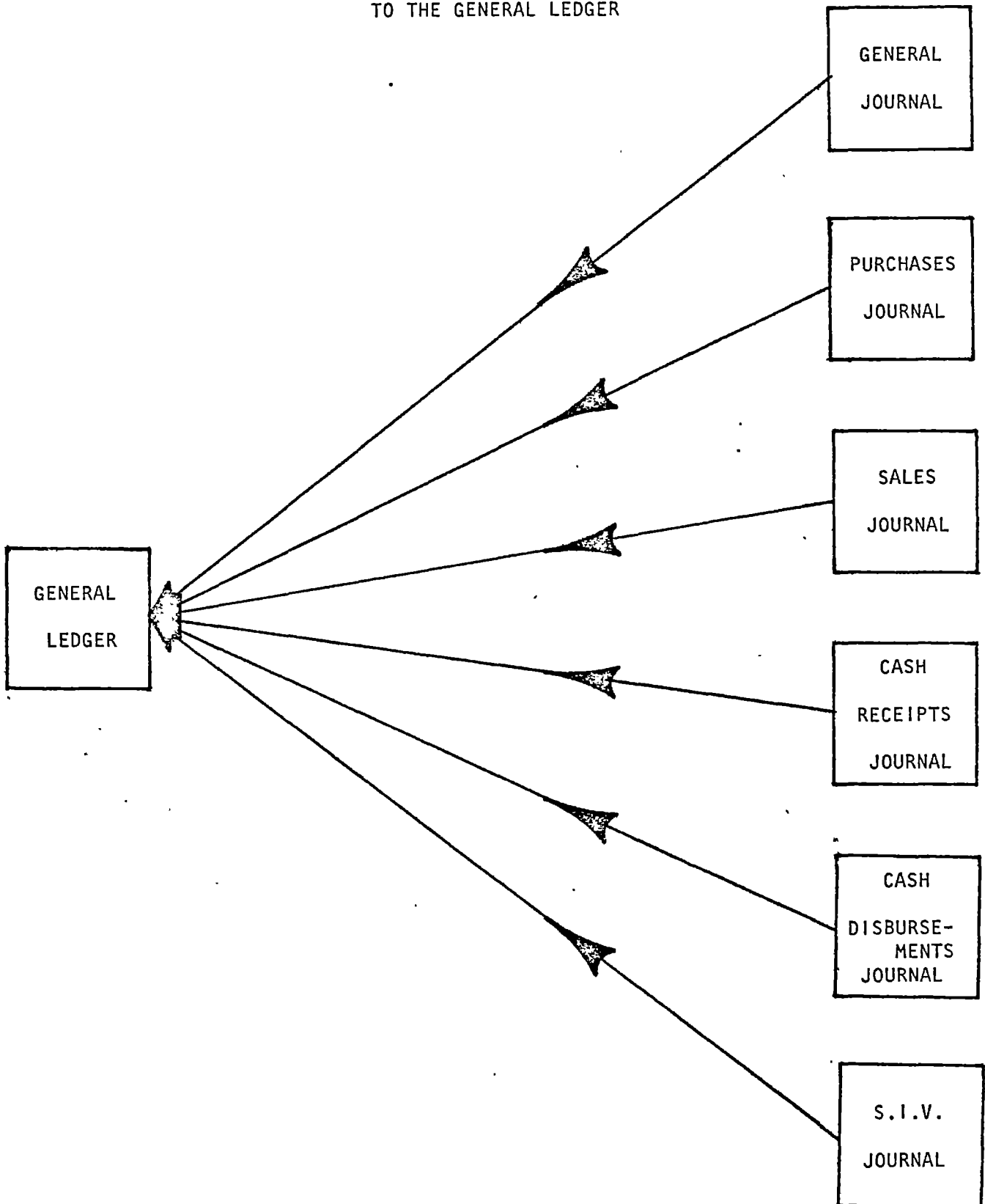
- journalizing is simplified; and
- posting is simplified.

Also, it can be seen from the discussions in Chapters 3 and 4 that the use of special journals result in two more efficiencies for the accounting department:

- .subdivision of work is simplified; and
- a highly trained person is not needed to maintain a special journal or a subsidiary ledger that involves only one type of transaction.



FIGURE 7.1
PICTORIAL VIEW OF SOURCE JOURNALS TO BE POSTED
TO THE GENERAL LEDGER





ACCOUNTING DEPARTMENT HANDBOOK

Unit 3	
Inventory Procedures	
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CHAPTER 8: PURCHASING MATERIALS

The last unit presented the procedures required for recording and posting the Authority's cost figures to the general ledger. Now it is time to discuss where the cost figures originated. The next three chapters will examine the detailed procedures and records to account for materials purchased and used.

MATERIALS PURCHASING PROCEDURES

The responsibility for purchasing materials and supplies is given to the storekeeper. This person must buy materials in correct quantities, at a proper time, and at the most economical cost to the Authority. Also, the storekeeper has to keep informed on various sources of supply, negotiate purchases and follow through on deliveries. The routine work of the storekeeper begins upon receipt of a requisition order.

A requisition order (see Figure 8.1) is a properly authorized written request for materials and supplies. A project supervisor prepares an order for materials and supplies needed for an upcoming project or an area supervisor requisitions materials daily for normal operations. The requisition order is prepared in duplicate. The original is sent to the storekeeper as a request for materials. The carbon copy is retained by the requesting supervisor.

FIGURE 8.1
REQUISITION ORDER

Requisition Order	No. 58
	_____ 19 _____
From _____	
To _____	

Please Supply:	
Signed _____	

When the storekeeper receives the requisition order, a check of the stores ledger cards is made in order to find out if the items requested are in stock. If not, a source of supply must be selected. In choosing a supplier, the storekeeper considers availability of materials, dependability, quality of materials, delivery date and similar factors as well as price.

After the supplier has been chosen, the storekeeper completes a purchase requisition. A purchase requisition (see Figure 8.2) is a properly authorized written request for the purchase of materials and supplies. An original and one carbon copy of the purchase requisition are made. The original is sent to the Chief Accountant. The carbon copy is retained in the storeroom files.

Once the Chief Accountant receives the purchase requisition from the storekeeper, a purchase order is prepared. A purchase order (see Figure 8.3) is a written authorization to the supplier to deliver the specified materials and supplies. The order contains all necessary details, such as description, quantity, unit price and account number or job number to be charged.

Three copies of the purchase order are prepared by the Chief Accountant. The original and second copies are forwarded to the storekeeper, with which he purchases the materials and supplies. The final copy remains with the Chief Accountant.

A written order must be completed for every purchase. The Chief Accountant or Manager must authorize every purchase. At the end of each month, the Chief Accountant verifies that all numbered purchase orders either have been sent to the suppliers, as shown by carbon copies, or are on hand. This ensures that purchase orders are used only for authorized purposes.

FIGURE 8.3
PURCHASE ORDER

<p>MONTSERRAT WATER AUTHORITY</p> <p>No. 2218 Date _____</p> <p style="text-align: center;">Local Purchase Order</p> <p>To _____</p> <p>Please Supply the Following Items _____</p> <p>_____</p> <p>Ordered By _____ Authorized By _____</p> <p>Account No. _____ Job No. _____</p>					
Item No.	Description	Quantity	Cost		Items checked and found correct. Signature _____ Date _____
			Unit Cost	Total	

The storekeeper ensures that the materials and supplies along with their invoices are delivered to the storeroom. When the materials are received, the storekeeper is responsible for unpacking them, checking quantities and physical condition. After counting and inspecting the materials, the storekeeper signs the purchase order verifying that the items have been checked and found correct. Occasionally, damaged or defective materials are received. These items will be returned to the supplier immediately.

If the materials and supplies are to be kept in inventory, the storekeeper records the receipt of materials in the stores ledger by making an entry on the appropriate stores ledger card (see Figure 8.4). A separate card is kept for each type of material. The card shows receipts, issues and balance on hand, along with identification.

Once the entry is made on the appropriate stores ledger card or if no entry is required, the purchase order and supplier's invoice are forwarded to the Chief Accountant by the storekeeper. The flow of information and documents related to the purchasing of materials and supplies is illustrated in Figure 8.5.

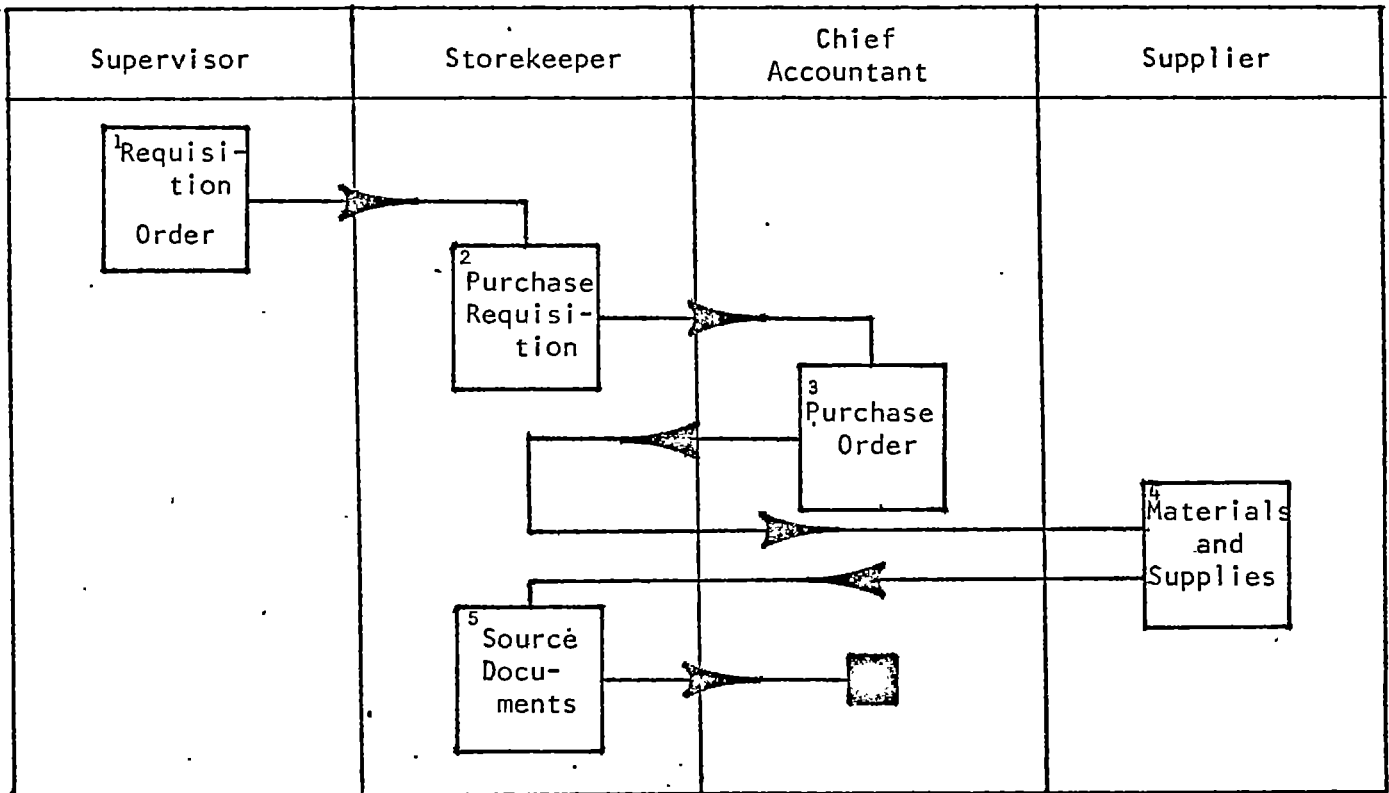
PRINCIPLES OF INTERNAL CONTROL

The purchasing procedures outlined on the preceding pages are practical and efficient. They also follow important principles of internal control.

- A request for a purchase must be made by an authorized person.
- A purchase order must be prepared and approved by an authorized person after a requisition has been received.
- All materials received must be carefully checked to see that they correspond to those ordered and are in good condition.
- Various steps in the purchasing procedure are delegated to different persons to lessen the risk of fraud or error:

FIGURE 8.5

FLOW OF INFORMATION AND DOCUMENTS RELATED
TO THE PURCHASING OF MATERIALS AND SUPPLIES



Description

1. The requisition order is prepared in duplicate by the supervisor indicating the items and quantities desired. The original copy is forwarded to the storekeeper.
2. The purchase requisition is prepared in duplicate by the storekeeper indicating the items to be purchased and the quantities to be purchased. The original copy is forwarded to the Chief Accountant.
3. A purchase order is prepared by the Chief Accountant indicating the desired items to be purchased and the quantities to be purchased. Three copies of the purchase order are prepared and the original and second copies are returned to the storekeeper to purchase materials. The remaining copy is kept by the preparer.
4. Materials and Supplies are sent from the supplier to the storeroom along with the supplier's invoice.
5. A copy of the purchase order and supplier's invoice is forwarded by the storekeeper to the Chief Accountant for payment.

SUMMARY OF PROCEDURES FOR

PURCHASING MATERIALS

PROCEDURES

PERFORMED BY

<p>1. (a) Receive requisition order from supervisor (b) Prepare purchase requisition from requisition order. (c) Forward purchase requisition to Chief Accountant</p>	<p>Storekeeper</p>
<p>2. (a) Receive purchase requisition from storekeeper (b) Prepare purchase order from purchase requisition (c) Forward original and second copies of purchase order to storekeeper</p>	<p>Chief Accountant</p>
<p>3. Purchase materials and supplies</p>	<p>Storekeeper</p>
<p>4. (a) Ensure delivery of materials and supplies to store-room (b) Check quantity and condition of goods (c) Sign and date "Items checked and found correct" on the purchase order</p>	<p>Storekeeper</p>
<p>5. Update stores ledger card</p>	<p>Storekeeper</p>
<p>6. Forward purchase order and supplier's invoice to Chief Accountant</p>	<p>Storekeeper</p>

CHAPTER 9: STORING AND ISSUING MATERIALS

Control measures for purchasing must be matched by safeguard procedures for storing and issuing materials. These precautions are needed to avoid theft, obsolescence, damage and waste. Controls should begin the instant that materials arrive in the storeroom and from the moment that their receipt is recorded on the stores ledger card.

STORAGE

Admission to the storeroom area is restricted to the stores personnel under the immediate supervision of the storekeeper. The storekeeper is responsible for the stores ledger, for the protection of materials in the storeroom, and for the identification of the materials. Each type of material is assigned a letter and number, indicating its location. Materials and supplies are stored in a systematic manner in bins, on racks, or on shelves.

ISSUANCE

The use of all materials must be limited to properly authorized purposes. No materials or supplies may be requisitioned from the storeroom without a written form called a requisition order (see Figure 8.1). This requisition is prepared in duplicate by the area or project supervisor. The original copy is sent to the storeroom and the remaining copy is kept by the preparer.

Upon receipt of the requisition order, the storekeeper checks that the requisition presented to the stores is properly completed and duly authorized. Next, the storekeeper checks the stores ledger cards to find out if the items requested are in stock. If so, the storekeeper fills the requisition order with the correct items in the correct amounts.

Then a stores issue voucher (S.I.V.), (see Figure 9.1), is prepared by the storekeeper in triplicate showing the quantity and description of the item issued, narrative and head for charges, and the signature of issuer and receiver of the issued items.

Once the items are received and signed for, the storekeeper enters the unit price and computes and enters the total cost on the S.I.V. After completing the cost computations on the S.I.V., the storekeeper records the entry in the issued section of the stores ledger card, computes the new quantity on hand and records it in the balance section.

A stores ledger card (see Figure 8.4) is kept for all types of materials and supplies on hand. Each card serves as a perpetual inventory record. The stores ledger is a subsidiary ledger controlled by the Unallocated Stores account in the General Ledger. At the end of the accounting period, the sum of the dollar amount balances on the stores ledger cards should equal the balance on the control account.

Once the information from the S.I.V. has been recorded on the related stores ledger card, the storekeeper forwards the original and second copies of the S.I.V. to the Chief Accountant and keeps the remaining copy attached to the corresponding requisition order for the storeroom files. The flow of information and documents related to the issuance of materials and supplies are illustrated in Figure 9.2.

FIGURE 9.1

STORES ISSUE VOUCHER

Ref.	No.	Materials Issued	Rate	Amount	Remarks

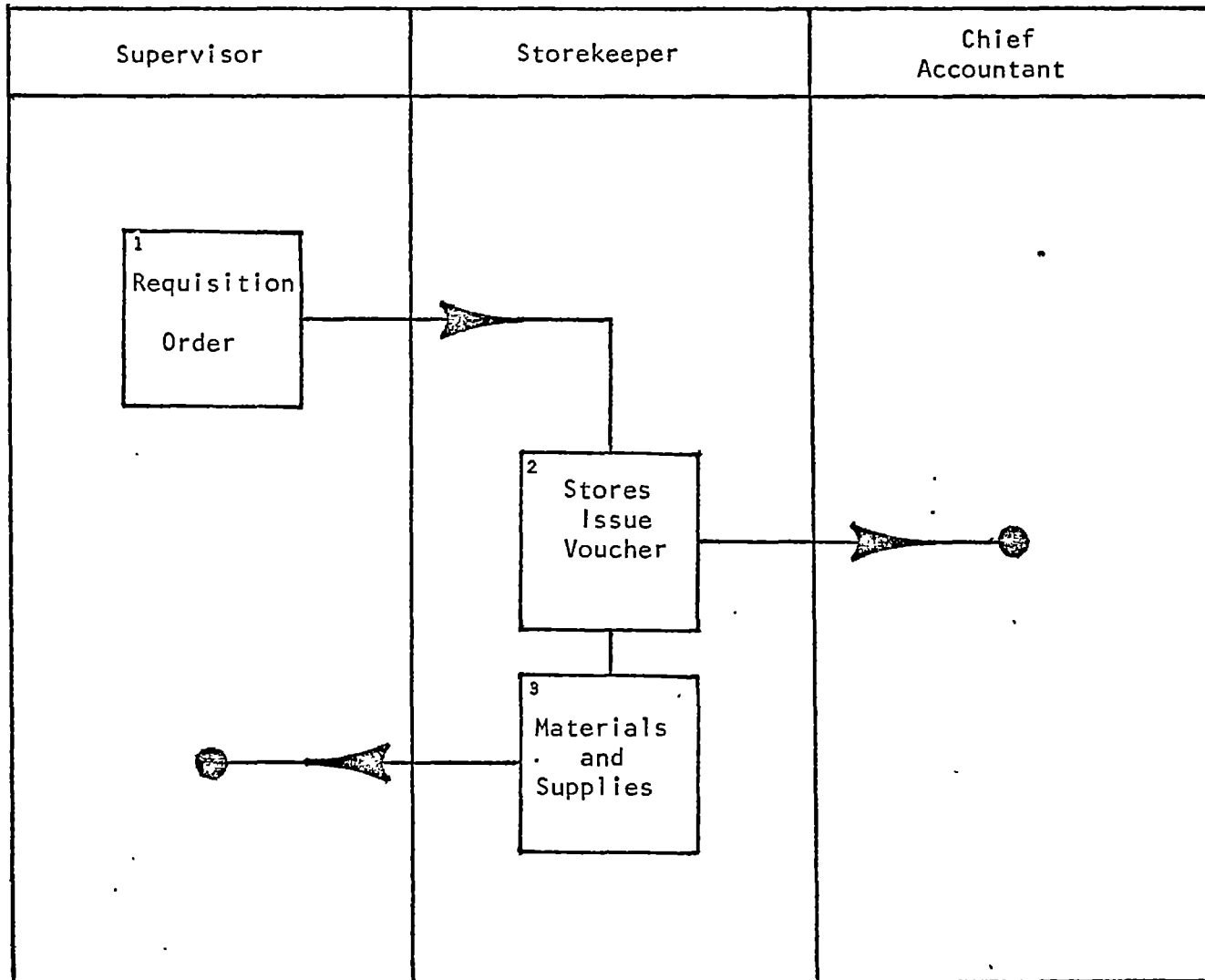
Received the above stores in good condition

Date _____ Recipient _____

Materials above required for the following work _____

FIGURE 9.2

FLOW OF INFORMATION AND DOCUMENTS RELATED TO
THE ISSUANCE OF MATERIALS AND SUPPLIES



Description

1. The requisition order is prepared by the supervisor indicating the items and quantities desired. The original copy is forwarded to the storekeeper.
2. A stores issue voucher (S.I.V.) is prepared by the storekeeper indicating the items and quantities of materials issued from the storeroom and unit prices of all materials issued. Three copies of the S.I.V. are prepared and the original and second copies are sent to the Chief Accountant. The remaining copy is kept by the storekeeper.
3. Materials and supplies are issued from the storeroom to the requisitioning supervisor.

PRINCIPLES OF INTERNAL CONTROL

The preceding procedures for storing and issuing materials reflect certain principles of internal control.

- Admittance to the storeroom is restricted.
- Stores ledger card records are maintained covering all receipts and issues.
- Each type of material is clearly identified, stored in a particular place and carefully protected while in storage.
- Materials are issued only upon proper written authorization.
- The accounting system permits a periodic check of the stores ledger against the balance of the Unallocated Stores control account.

~~~~~

SUMMARY OF PROCEDURES FOR  
ISSUANCE OF STORES STOCK

PROCEDURES

PERFORMED BY

|                                                                                                                                                        |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 1. Check that the requisition order presented to the stores is properly completed and duly authorized                                                  | Storekeeper |
| 2. Fill requisition order with the correct items in the correct amounts                                                                                | Storekeeper |
| 3. Prepare S.I.V. in triplicate showing the total price of item issued. Cross reference the S.I.V. to the requisition order                            | Storekeeper |
| 4. Ensure that the prices listed on the S.I.V. are in accordance with the established pricing policy. Ensure that the S.I.V. is arithmetically correct | Storekeeper |
| 5. Update the stores ledger cards from the S.I.V.                                                                                                      | Storekeeper |
| 6. Forward two copies of completed S.I.V. to the Chief Accountant                                                                                      | Storekeeper |

**CHAPTER 10: CONTROLLING INVENTORY**

The materials and supplies inventory of Montserrat Water Authority is comprised of different items, including chemicals for the treatment of water, maintenance materials and supplies, construction materials and supplies, and materials held primarily for jobs and contract work. With substantial capital investments flowing in and out of the storeroom daily, it is essential that the Authority maintain an effective inventory system to control and safeguard these investments.

PERPETUAL INVENTORY SYSTEM

A perpetual inventory system is advocated and is particularly useful to control and safeguard inventory. When this system is used, detailed subsidiary records (stores ledger cards) are maintained for each item of inventory. An Unallocated Stores control account is maintained on a current basis. The detailed inventory records for each different item provide for recording receipts, issues and balances on hand in both quantities and dollar amounts. Thus, the physical amount and valuation of materials on hand at any time are readily available from the accounting records and consequently, a physical inventory count is unnecessary except to check on the accuracy of the inventory records from time to time. Such checks (physical counts) are usually made at least annually.



Since perpetual inventory records are kept by the Authority, unit cost and total cost are computed each time materials are received or issued. In order to obtain the total cost (valuation) of inventory, the average costing method is applied.

#### AVERAGE COSTING METHOD

Under this method, the units and cost of each new purchase are added to the balances already on hand when the purchase is received, and a new average cost per unit is computed. At the time materials are issued, they are charged out at the new average cost per unit. When another purchase is received a new average cost per unit is calculated. In order to learn how this method is applied, examine the transactions on the following page (Figure 10.1).

One major advantage of the average cost method is that it minimizes the influence of wide fluctuations in the purchase price of materials and supplies during the period. The principal drawback is the large number of mathematical computations that have to be made if purchases occur frequently.

Figure 10.1 shows that a perpetual inventory system operates to record and control both receipts and issues of materials. Entries are made on the stores ledger cards as follows:

- Materials Purchased. Entry recorded as goods are received. Data taken from purchase order.
- Materials Issued. Entry recorded as goods are issued. Data taken from S.I.V.

Related entries will be made in the Unallocated Stores account in the General Ledger as follows:

- Materials Purchased. Summary posting at end of month from Purchases Journal's Unallocated Stores column.



- Materials Issued. Summary posting at end of month from S.I.V. Journal's Unallocated Stores column.

At the end of the period, the balance of the Unallocated Stores account should equal the total of the dollar amount balances on the stores ledger cards.

#### REASONS FOR DIFFERENCES

With any inventory system though, some differences are almost certain to occur in inventory records. Some reasons for these differences might be the following:

- Failure to post receipts.
- Failure to post issues.
- Incorrect posting of receipts and issues.
- Computation errors in day-to-day posting.

Another difference, such as the following, may arise from the nature of the materials and supplies or from storage conditions:

- Spoilage as a result of natural processes or from storage conditions.

The following differences require special attention:

- Losses due to theft of materials by employees.
- Losses arising from theft by outsiders owing to inadequate storeroom protection.
- Losses due to short weight or short measure.
- Losses due to unnecessary or deliberate scrapping of materials that are still useful.





ACCOUNTING DEPARTMENT HANDBOOK

| Unit 4                                     |             |
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| Billing and Collection Procedures          |             |
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**CHAPTER 11: METER READING**

Customers' billings and collections form an important phase of the Water Authority's operations, in that customers payments for water service provide the main continuing inflow of cash to the Authority. This phase of the Authority's operations must be well planned and effective procedures must be established to ensure this continuing inflow of cash. This unit focuses on billing and collection procedures. To facilitate discussion the unit is divided into three chapters as follows:

- Chapter 11 - Meter Reading
- Chapter 12 - Customer Billing
- Chapter 13 - Customer Collections

METER READING

Unless the Authority charges its customers a flat rate per period for water service, the charge to customers will be based on the rate schedule applied to the amount of water delivered through each water meter. In order to determine this amount, the quantity of water consumed by each customer, as determined by a meter, must be read and recorded monthly by a meter reader.

When a water utility has a small number of metered customers, meters can be read within a few days. However, when a water utility has a large number of metered customers, meter reading must be scheduled continuously throughout

each month. In order to establish meter reading on a continual basis, the area serviced by the Authority must first be divided into meter reading districts.

Once the service area is divided into meter reading districts, a schedule to read meters on a continuous cycle each month must be established. For example, if the service area is divided into twelve districts, three districts can be read during the first week of every month, three districts can be read during the second week of every month, and so forth. At the end of every week, the meter readings are sent to the billing clerks to be processed. It should be noted that a meter reader should be rotated from one district to another each month. Rotating meter readers serves as an important internal control measure.

At the time the meters are being read, the meter reader records the readings on a meter card (see Figure 11.1). A meter card is prepared for each metered customer and shows the name, address, account number and meter number, as well as the present reading, consumption and observations. The meter reader also computes the quantity of water consumed at this time. This way, the meter reader can note any abnormal consumption, examine the meter himself, and record his findings on the meter card. Abnormal consumption figures may result from erroneous meter readings, leaks, or defective meters.

It is fairly safe to assume that a meter reader will miss some readings in a given district during the week scheduled. The Authority can require the meter reader to return to the location the next day to secure the reading of an estimate bill (based on the past three months' consumption) can be sent to the customer whose meter was not read. This procedure is acceptable and recommended as long as two or more consecutive estimate bills are not permitted.





SUMMARY OF PROCEDURES FOR

METER READING

PROCEDURES

PERFORMED BY

|                                                                                                                                                                                      |                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <p>1. (a) Read meter.<br/>(b) Record meter reading on meter card.<br/>(c) Compute quantity of water consumed.<br/>(d) Forward meter cards to billing clerks at end of each week.</p> | <p>Meter Reader</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|

**CHAPTER 12: CUSTOMER BILLING**

In Chapter 11, procedures for determining the amount of water consumed by each customer were discussed. This chapter will examine the procedures for billing each customer for water consumed. It should be noted that when a water utility charges customers on a flat-rate basis (unmetered), the procedures will be the same as those outlined in this chapter.

There are a number of systems which may be used by a water utility to prepare bills, process collections, and maintain customers' records. For small water utilities, it is appropriate to use a manual system. A particular manual system is outlined in this chapter and the next which is called the "Duplicate Processing System". This system provides for maximum efficiency and internal control.

CUSTOMER BILLING

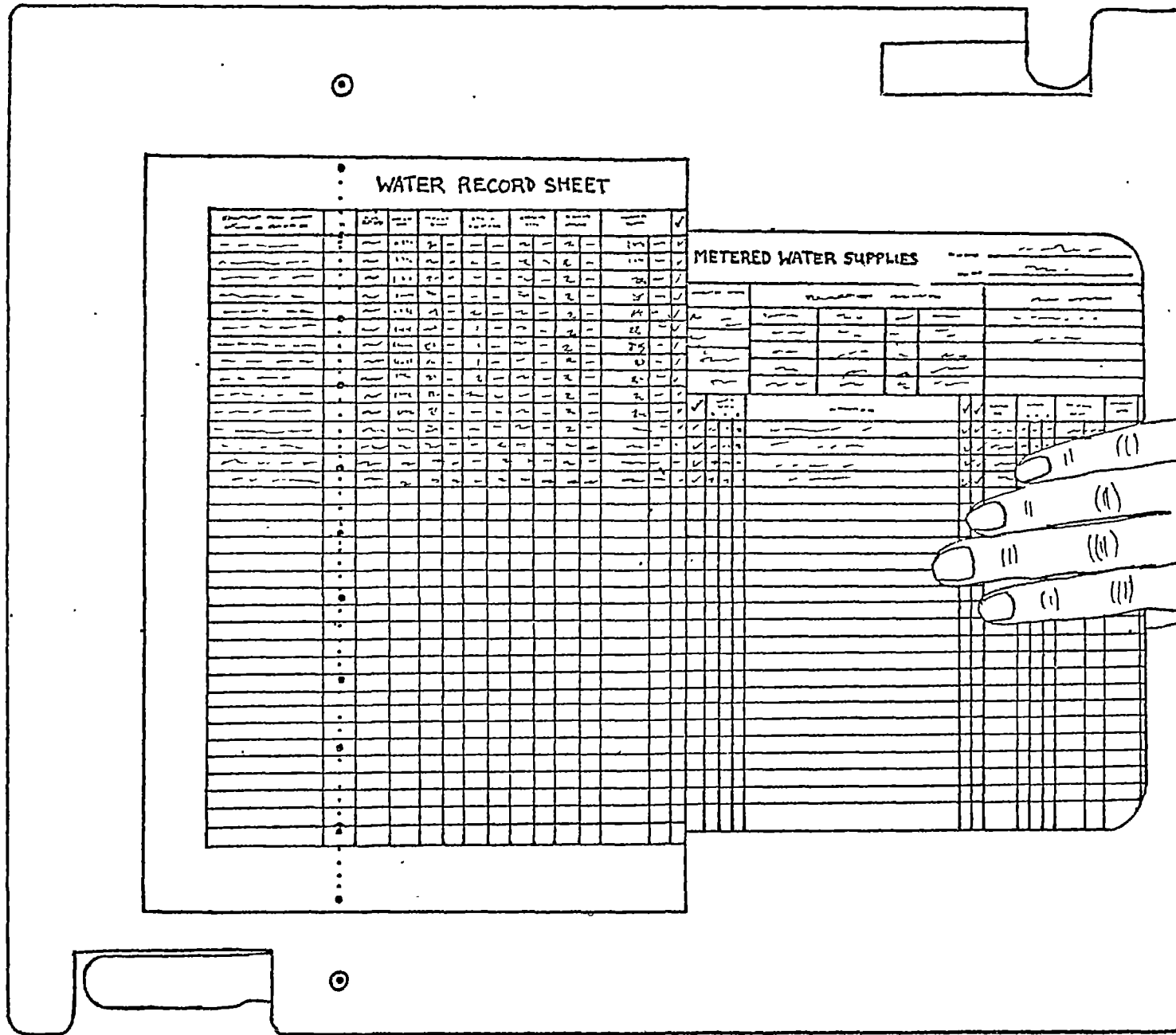
As mentioned in the preceding chapter, the meter reader forwards the meter cards to the billing clerks in the accounting department. From these cards, the billing clerks must:

- Prepare customers' bills;
- Update each customer's individual record with the amount billed; and
- Update water record sheets.

In order for the billing clerks to accomplish these three tasks, the "Duplicate Processing System" must be employed. Figures 12.1 - 12.4 illustrate how the system operates.

Once the system is in operation, it is important that individual customer records be grouped according to how the service area was divided for meter reading purposes. This division can provide information for each district in regards to sales of water (both quantity and dollars); total and average customer consumption; and number of residential, commercial and industrial customers. This type of information can be used in evaluating present rate schedules and developing new water rate schedules.

This division also allows for bookkeeping controls to be kept. The individual account balances can be reconciled periodically with district control balances; and district control balances reconciled with Customer Accounts Receivable control accounts in order to facilitate discovery and correction of bookkeeping errors. This system also provides for the routine verification of bills to see that consumption has been correctly computed, rates have been correctly applied and unpaid balances have been correctly carried forward.



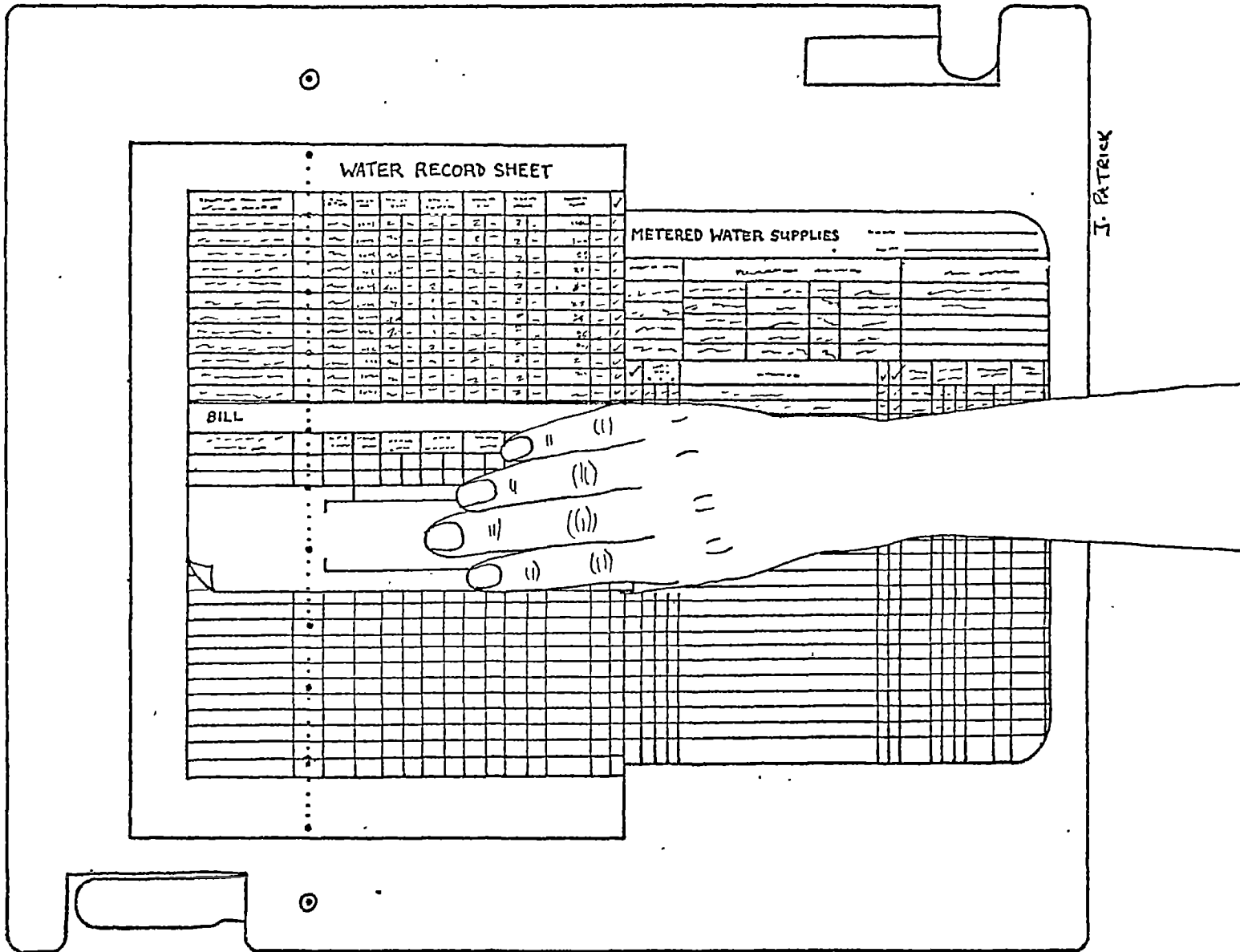
J. PATRICK

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12.1 ILLUSTRATION OF CUSTOMER BILLING (STEP 1)

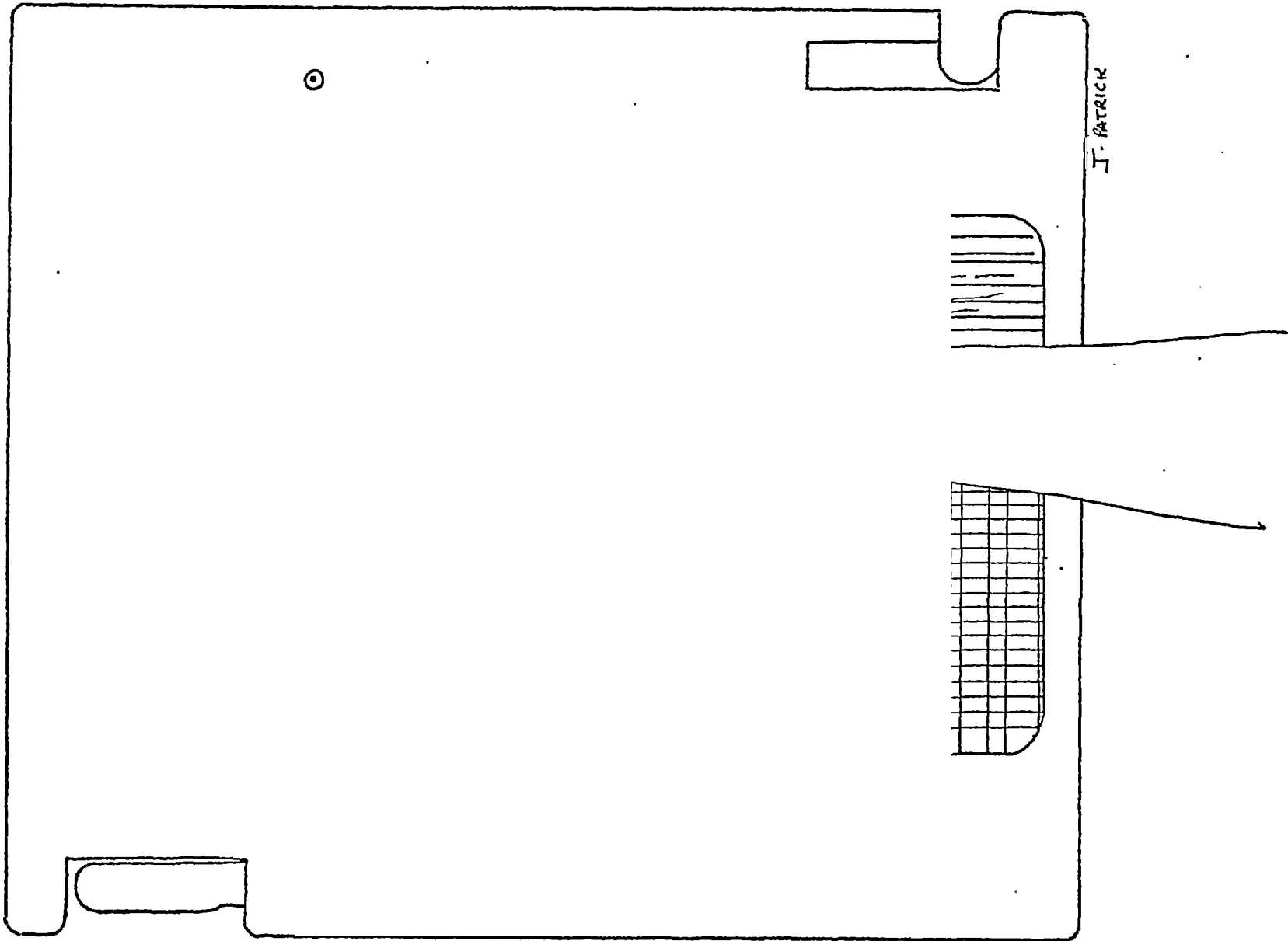
Place Individual Customer's Record underneath Water Record Sheet, lining up first blank line on each.

F W 26-05/26  
Appendix V



12.2 ILLUSTRATION OF CUSTOMER BILLING (STEP 2)

Place Bill over Water Record Sheet, lining up accordingly.



12.3 ILLUSTRATION OF CUSTOMER BILLING (STEP 3)

Record necessary information on bill and remove bill from peg board in order to record customer's name and address.

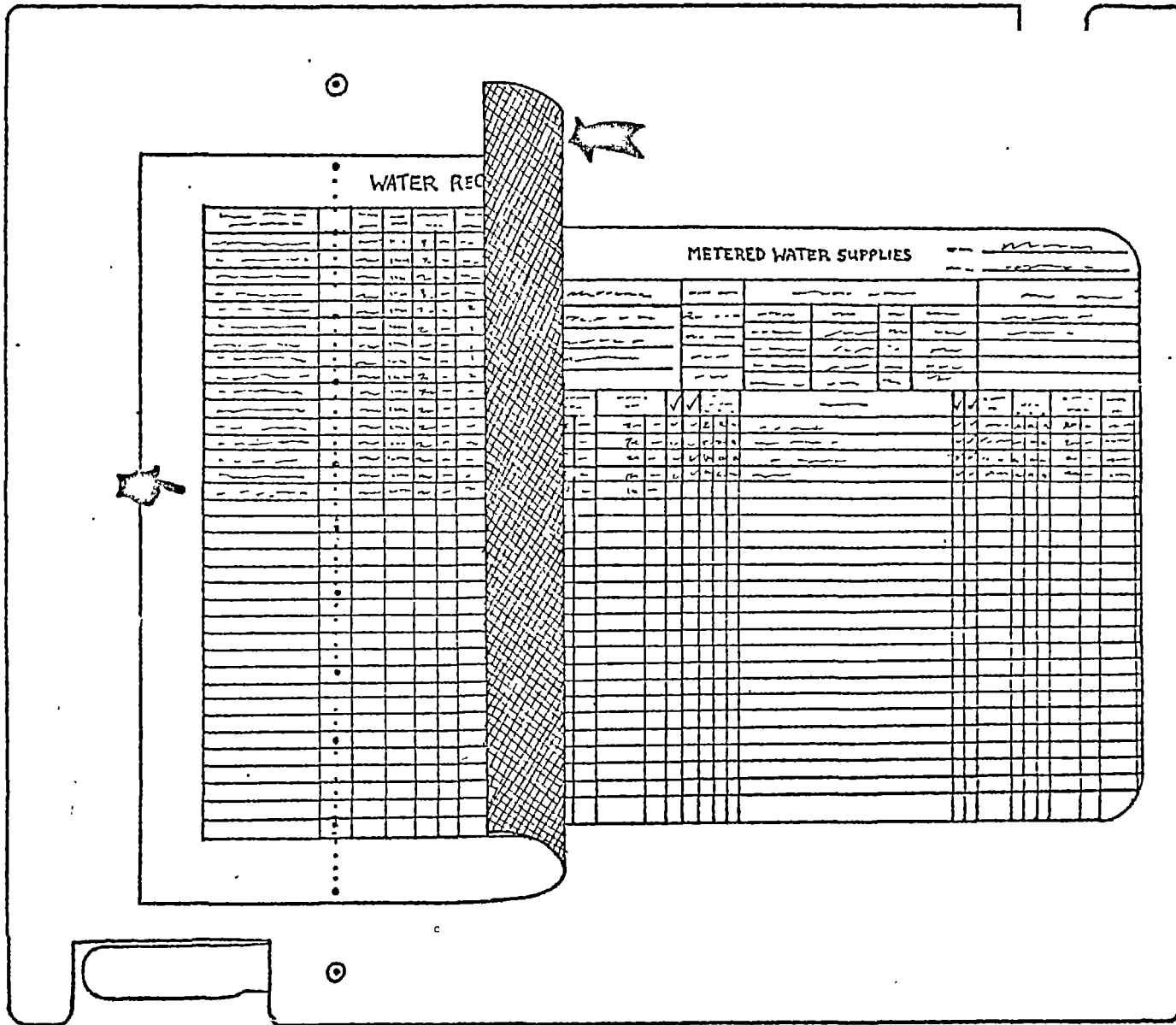


This indicates the new line recorded on both the Water Record Sheet and the Individual Customer's Record.



This indicates the carbon backing on the Water Record Sheet.

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I. PATRICK

12.4 Illustration of Customer Billing (Step 4)

Because of the carbonized backs on the bill and the Water Record Sheet, both Water Record Sheet and Individual Customer's Record are updated at the same time the bill is written.



SUMMARY OF PROCEDURES FOR

CUSTOMER BILLING

PROCEDURES

PERFORMED BY

|                                                                                                                                                                                                                                     |                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <ol style="list-style-type: none"><li>1. Receive meter cards from meter reader.</li><li>2. (a) Prepare customers' bills.</li><li>    (b) Update customers' individual records,</li><li>    (c) Update water record sheet.</li></ol> | Billing Clerk<br>Billing Clerk |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|

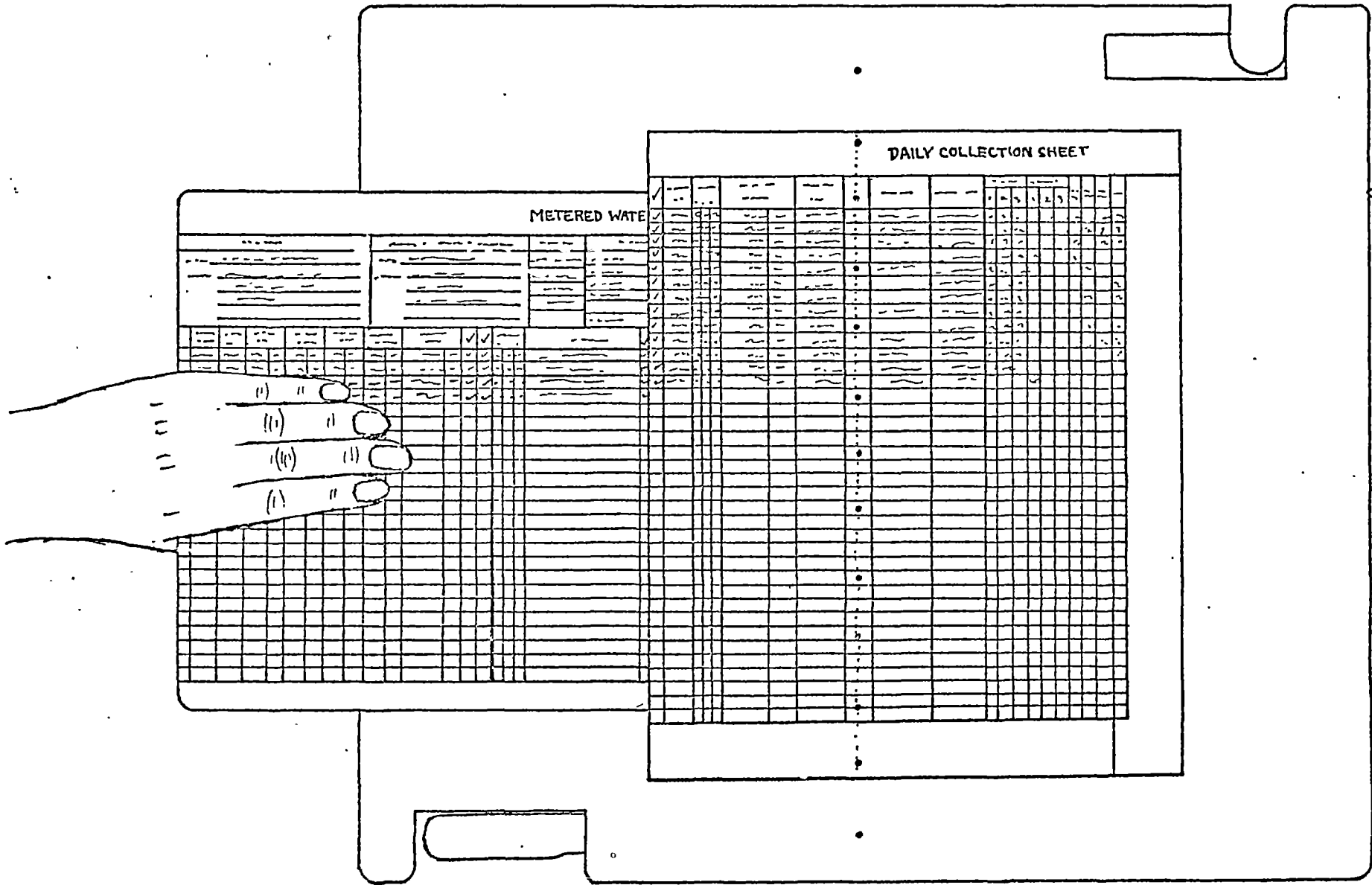
**CHAPTER 13: CUSTOMER COLLECTIONS**

Unit 4 is divided into three chapters: meter reading, customer billing and customer collections. Meter reading and customer billing were discussed in Chapters 11 and 12 respectively. This chapter focuses on customer collections.

CUSTOMER COLLECTIONS

Upon receipt of payment from customers, the water utility must prepare a receipt for each customer, update each individual customer's record and summarize individual collections, so that a decrease in the Customer Accounts Receivable control accounts can be recorded. Using the "Duplicate Processing System", the cashier is able to perform these three functions at one time. Figures 13.1 - 13.4 illustrate how the system operates.

Since bills are sent to customers for water already consumed, the water utility is in effect extending credit to customers on a continuing basis. This inevitably leads to some losses due to uncollectibility. These losses are considered to be a normal expense of business. However, to ensure that these losses are kept to a minimum, a water utility must establish credit and collection policies. To ensure that these credit and collection policies are being followed, listing of past-due customer accounts by age should be prepared periodically. This process involves an analysis of each individual customer account that is past due. It requires the preparation of an aging schedule similar to Figure 13.5.

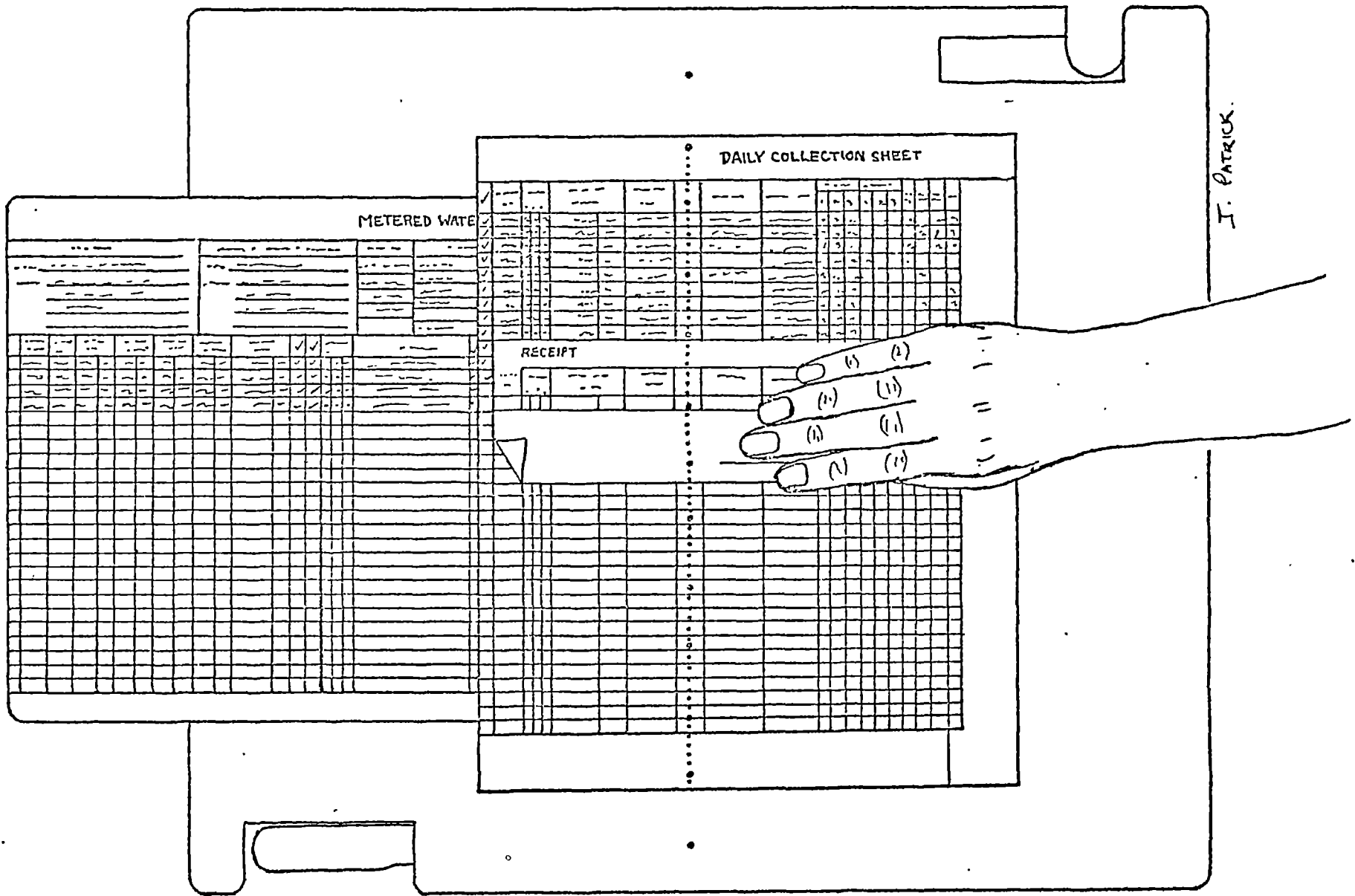


J. PATRICK

13.1 Illustration of Customer Collections (Step 1)

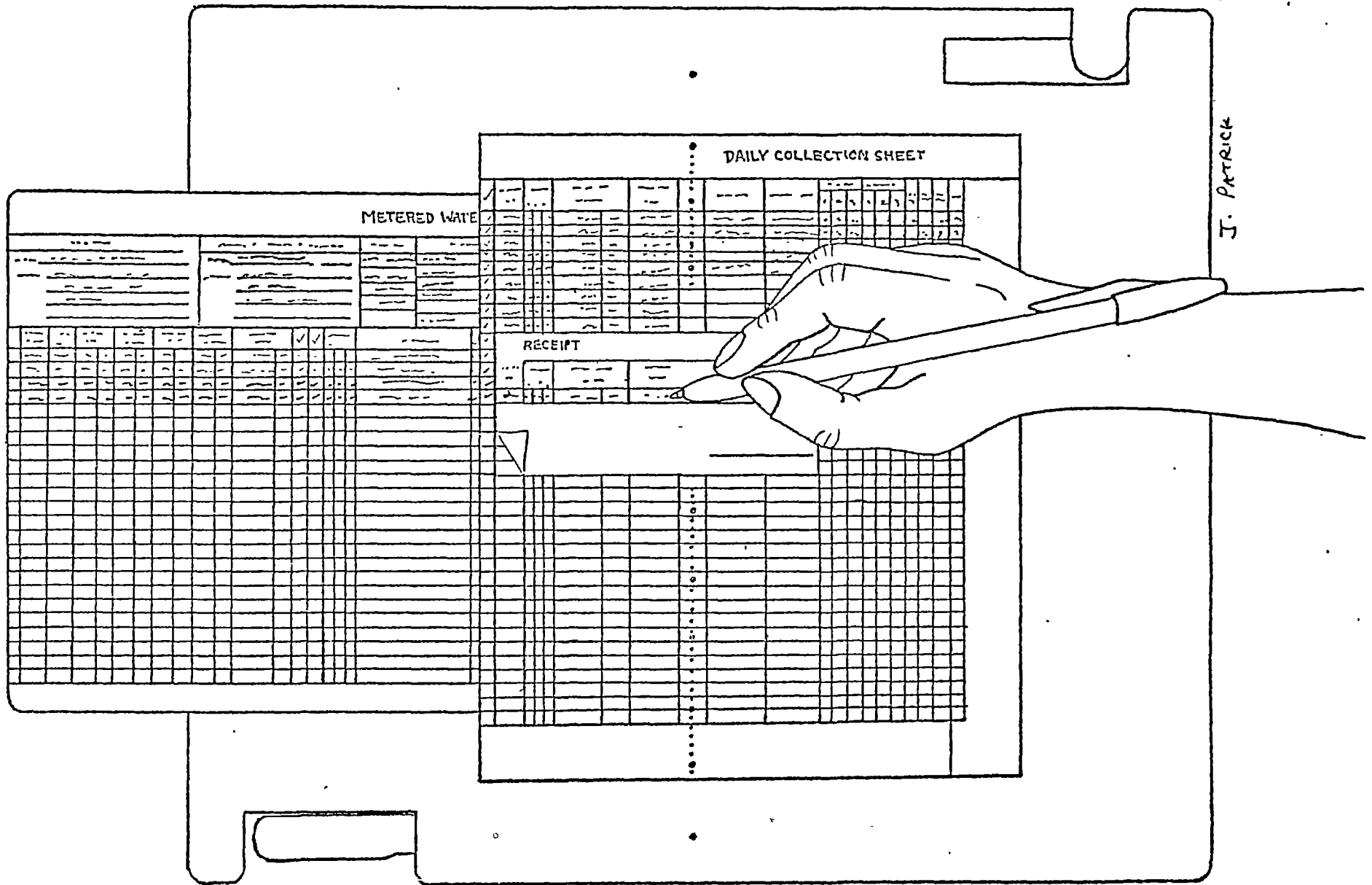
Place Individual Customer's Record underneath Daily Collection Sheet, lining up desired line on Individual Customer's Record with first blank line on Daily Collection Sheet.

FW26-05/26  
Appendix W



13.2 Illustration of Customer Collections (Step 2)

Place receipt over Daily Collection Sheet, lining up accordingly.



13.3 Illustration of Customer Collections (Step 3)

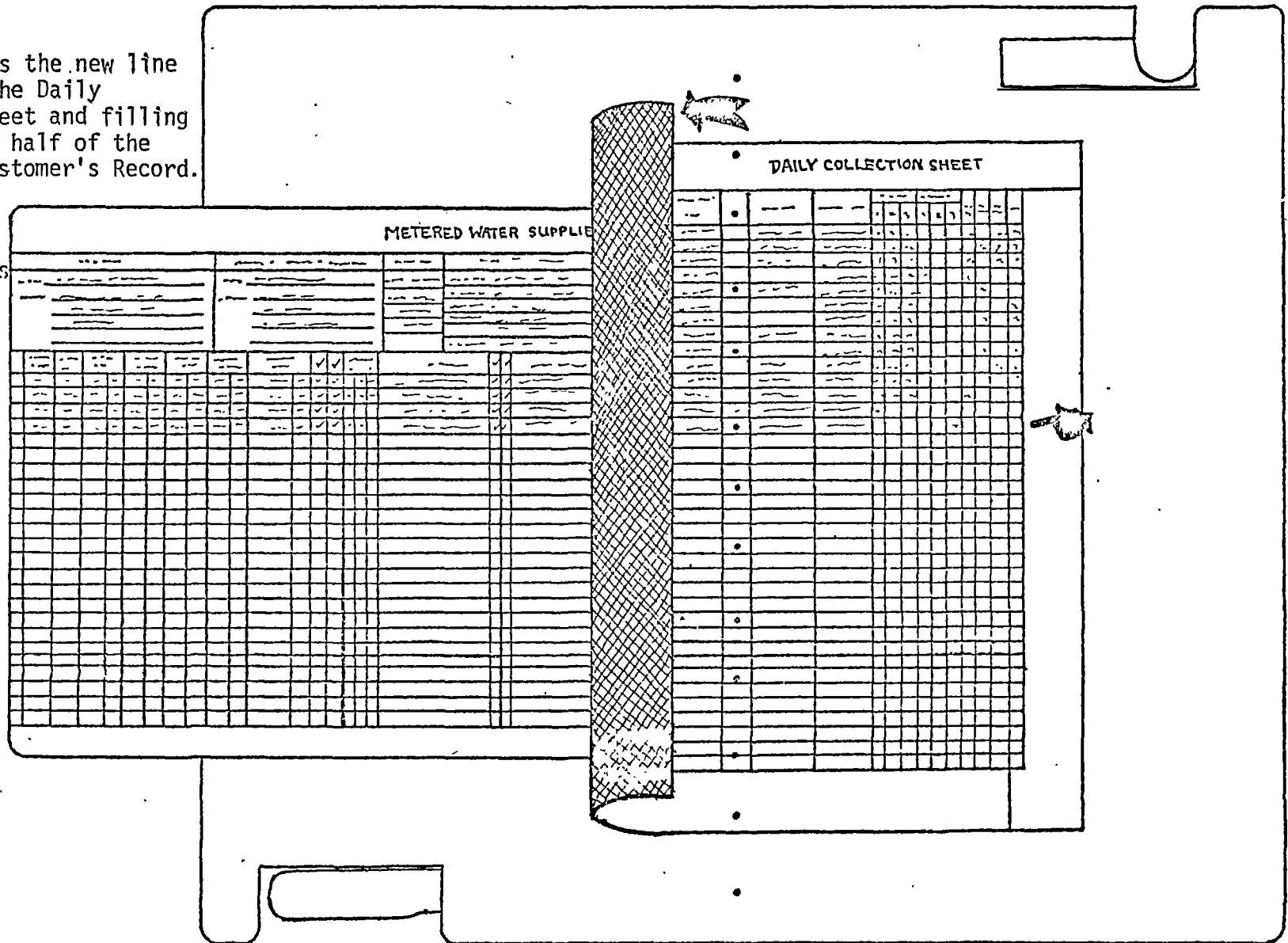
Record necessary information on receipt, post amount received to proper summary column on Daily Collection Sheet and remove receipt from pegboard to give to customer.



This indicates the new line recorded on the Daily Collection Sheet and filling in the second half of the Individual Customer's Record.



This indicates the carbon backing on the Daily Collection Sheet.



J. PATRICK

13.4 Illustration of Customer Collections (Step 4)

Because of the carbonized backs on the receipt and the Daily Collection Sheet, both Daily Collection Sheet and Individual Customer's Record are updated at the same time the receipt is prepared.

HIGHLIGHTS

This Unit has examined the necessary procedures required to maintain an effective billing and collection system. They include the following:

1. The amount of water consumed by each customer must be determined at regular intervals;
2. Each customer must be billed for the amount of water he/she consumes;
3. Payments from customers must be received, hence, credit and collection policies must be established to ensure customers pay their bills; and
4. Proper records of the amounts due from each customer must be maintained.

FIGURE 13.5

AGING SCHEDULE FOR ACCOUNTS RECEIVABLE

| CUSTOMER | RECEIVABLE<br>BALANCE<br>DEC. 31, 19B | NOT<br>PAST DUE | PAST DUE   |            |                 |
|----------|---------------------------------------|-----------------|------------|------------|-----------------|
|          |                                       |                 | 1-30 DAYS  | 31-60 DAYS | OVER 60<br>DAYS |
| ARCHER   | \$ 300.00                             | \$ 120.00       | \$ 100.00  | \$ 80.00   | .00             |
| HOYTE    | 525.00                                | 85.00           | 70.00      | 115.00     | \$ 255.00       |
| SEALY    | 210.00                                | 110.00          | 90.00      |            |                 |
| ST. JOHN | 175.00                                | 60.00           | 45.00      | 40.00      | 30.00           |
| TOTAL    | \$17,250.00                           | \$10,100.00     | \$4,150.00 | \$1,750.00 | \$1,250.00      |

SUMMARY OF PROCEDURES FOR

CUSTOMER COLLECTIONS

PROCEDURES

PERFORMED BY

|                                                                                                                                                                                                                      |                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <ol style="list-style-type: none"><li>1. Receive payments from customers.</li><li>2. (a) Prepare customers' receipts.<br/>(b) Update customers' individual records.<br/>(c) Update daily collection sheet.</li></ol> | <p>Cashier.</p> <p>Cashier.</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|





ACCOUNTING DEPARTMENT HANDBOOK

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**CHAPTER 14: BUDGETS**

In the previous units, attention was focused on the accounting procedures designed to record financial transactions after they have taken place. However, with inflation, high interest rates, high labour costs and the fact that money is in very short supply, alert management cannot afford to sit back and wait to see what happens. Instead, management must try to plan operations in advance and control these operations in order to achieve planned results. This unit examines the financial tools which management will need to plan and control the operations of the Authority effectively.

One such tool through which management can plan future operations is the budget. The budget is a formalized plan which sets out in monetary terms the expected results of the Authority. There are few tools as useful to management as the budget. The budget forces management to look ahead. In this way they can make definite plans, see prospective troubles, and take corrective action if necessary. It also provides a means for coordinating activities and plans so as to achieve the basic objectives for the Authority.

This Chapter examines the three basic budgets which are essential if management desires to successfully plan future operations. They are the operating budget, capital expenditure budget and cash flow budget.

### OPERATING BUDGET

The operating budget (see Figure 14.1), is an important aid to management in planning for sufficient levels of revenue to meet the costs of rendering service to customers. It also provides the groundwork for planning capital expenditures and developing the cash flow budget.

The Accountant assists management in preparing the operating budget. However, preparing a successful operating budget and adhering to it does not just happen. There are a number of principles and procedures that must be followed. They include:

- The operating budget must reflect attainable goals with respect to revenues and expenses. It must not, therefore, be a Utopian model based on wishful thinking.
- The operating budget should be based on a rigorous analysis of past results, modified by probable future changes.
- The budget period must be of reasonable length. The standard period for planning operations is one year.
- A monthly report should be prepared comparing actual results with the budget. Any significant difference between the two should be explained and corrective action taken where necessary. (See statement of income on page 135).

FIGURE 14,1

STATEMENT OF ESTIMATED INCOME<sup>1</sup>

Year Ended 31 December 19 B

(With Comparative Figures for 19 A)

|                                | Original<br>Budget<br>19 A          | Actual <sup>2</sup><br>19 A | Proposed<br>Budget<br>19 B |
|--------------------------------|-------------------------------------|-----------------------------|----------------------------|
|                                | (Expressed in Thousands of Dollars) |                             |                            |
| Operating Revenues:            |                                     |                             |                            |
| Sale of Water                  | \$1,000                             | \$1,100                     | \$1,400                    |
| Vacant Lots                    | 50                                  | 25                          | 40                         |
| Water Connections              | 150                                 | 175                         | 200                        |
| Reconnections                  | 50                                  | 25                          | 60                         |
| Total Operating Revenues       | <u>\$1,250</u>                      | <u>\$1,325</u>              | <u>\$1,700</u>             |
| Operating Expenses:            |                                     |                             |                            |
| Source of Supply               | \$ 150                              | \$ 100                      | \$ 150                     |
| Pumping                        | 250                                 | 400                         | 500                        |
| Water Treatment                | 50                                  | 60                          | 80                         |
| Supply and Distribution        | 400                                 | 340                         | 350                        |
| Administrative and General     | 300                                 | 200                         | 320                        |
| Depreciation Expense           | 50                                  | 50                          | 60                         |
| Total Operating Expenses       | <u>\$1,200</u>                      | <u>\$1,150</u>              | <u>\$1,460</u>             |
| Net Operating Income           | 50                                  | 175                         | 240                        |
| Net Non-operating Income       | <u>50</u>                           | <u>35</u>                   | <u>60</u>                  |
| Income before Interest Expense | <u>\$ 100</u>                       | <u>\$ 210</u>               | <u>\$ 300</u>              |
| Interest Expenses:             |                                     |                             |                            |
| Interest on Long-term Debt     | 50                                  | 50                          | 70                         |
| Other Interest Expenses        | <u>20</u>                           | <u>40</u>                   | <u>45</u>                  |
| Total Interest Expense         | <u>70</u>                           | <u>90</u>                   | <u>115</u>                 |
| Net Income                     | <u>\$ 30</u>                        | <u>\$ 120</u>               | <u>\$ 185</u>              |

Notes:

- (1) The above represents a sample summarized operating budget which should be prepared for the approval of the Board. All amounts will be supported by detailed schedules which should be available on request.
- (2) Since the next year's budget will be prepared before the end of the current year, "Actual" represents the actual of the first ten months, plus estimates for the remaining two months.

Preparation of the operating budget begins with the estimation of operating revenues. Operating revenues are a function of water demand (if a large portion of customers are metered). Past water sales are analyzed and future conditions such as an increase in water connections and other conditions are forecast. From this data, operating revenues can be estimated for the coming year.

Next, operating expenses are to be determined. The use of historical data is an important factor in estimating operating expenses. Historical data serves as a useful guide in estimating labour and materials required for activities that have been performed by the Authority in the past. To the extent that past circumstances are not expected to exist in the future, historical data must be modified in order to develop budgeted operating expenses.

The final step is the preparation of the estimated statement of income (or operating budget) for the coming year, reflecting the results of the budget plan. Once prepared, it is presented to the Board for approval. All amounts in the operating budget will be supported by detailed schedules which would be available to the Board on request.

#### CAPITAL EXPENDITURE BUDGET

In addition to the operating budget, a capital expenditure budget should be prepared. The Capital Expenditure Budget (see Figure 14.2), is management's plan for additions to and retirements of the utility plant. This budget not only emphasizes desired changes in the utility plant, it also focuses attention on financial, manpower, and materials requirements thus compelling management to make early plans to meet these needs. In addition, the capital expenditure budget serves as a tool of management control over capital expenditures.

SAMPLE

FIGURE 14.2

THREE YEAR CAPITAL EXPENDITURE SUMMARY  
 19 B, 19 C AND 19 D  
 (EXPRESSED IN THOUSANDS OF DOLLARS)

| <u>Project No.</u> | <u>Description</u>                          | <u>Estimated Expenditures or Retirements</u> | <u>Expenditures or Retirements as of 31 December 19 A</u> | <u>Expenditures or Retirements Needed to Complete</u> | <u>Budgeted Expenditure or Retirements</u> |               |                |
|--------------------|---------------------------------------------|----------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------|--------------------------------------------|---------------|----------------|
|                    |                                             |                                              |                                                           |                                                       | 19 B                                       | 19 C          | 19 D           |
| 10                 | Construction of Storage Tank at Long Ground | \$ 500                                       | --                                                        | \$500                                                 | \$200                                      | \$300         | --             |
| 11                 | Replacement of Mains in Plymouth            |                                              |                                                           |                                                       |                                            |               |                |
|                    | Expenditure                                 | 250                                          | \$200                                                     | 50                                                    | 30                                         | 15            | \$ 5           |
|                    | Retirements                                 | (60)                                         | (49)                                                      | (11)                                                  | (7)                                        | (3)           | (1)            |
| 12                 | St. John's Reservoir                        |                                              |                                                           |                                                       |                                            |               |                |
|                    | Expenditure                                 | 1,000                                        | 100                                                       | 900                                                   | 150                                        | 250           | 500            |
|                    | Retirements                                 | (125)                                        | (2)                                                       | (123)                                                 | (15)                                       | (8)           | (100)          |
| 13                 | Replacement of Pumps at Salem               |                                              |                                                           |                                                       |                                            |               |                |
|                    | Expenditure                                 | 50                                           | --                                                        | 50                                                    | 25                                         | 25            | --             |
|                    | Retirements                                 | (25)                                         | --                                                        | (25)                                                  | (15)                                       | (10)          | --             |
|                    | Total Expenditure                           | <u>\$1,800</u>                               | <u>\$300</u>                                              | <u>\$1,500</u>                                        | <u>\$405</u>                               | <u>\$590</u>  | <u>\$505</u>   |
|                    | Total Retirements                           | <u>\$ (210)</u>                              | <u>\$(51)</u>                                             | <u>\$(159)</u>                                        | <u>\$(37)</u>                              | <u>\$(21)</u> | <u>\$(101)</u> |

The capital expenditure budget should be prepared for a period of at least three years and should be revised annually. The current year is dropped, the plans for the two remaining years are reviewed and modified if necessary and the budget is extended for an additional year, so that it remains a three year plan.

The capital expenditure budget is supported by individual project budgets (see Figure 14.3). Typically, each individual project budget will include the following information:

1. Project number.
2. Description of project.
3. Proposed starting and expected completion dates.
4. Estimated costs.
5. Estimated incremental revenues and expenses associated with the project.

The individual project budgets along with the capital expenditure budget should be submitted to the Board for review and approval.

#### CASH FLOW BUDGET

Based on the operating budget and capital expenditure budget, a cash flow budget should be prepared. The Cash Flow Budget (see Figure 14.4), indicates the expected cash receipts, disbursements and cash balances during the period. This budget results from the need to prepare a comprehensive finance plan to indicate how the operating and capital budgets will be financed. The cash flow budget should be prepared for at least one year and by quarters, with the earliest quarter forecast by months.



SAMPLE

FIGURE 14.3

INDIVIDUAL PROJECT BUDGET

Project No. 11 Classification: Supply and Distribution Mains

Description of Project:

Replacement of six blocks of 6 in. main with 10 in. main

Location:

Downtown Plymouth area

Justification for Project:

10 in. main will replace badly deteriorated 6 in. main thereby reducing maintenance expenses and increasing reliability of service. Additional capacity resulting from replacement will enable the Authority to meet service demands of new customers in adjacent areas.

Estimated Incremental Cost of Project:

|                                                  |                |                  |
|--------------------------------------------------|----------------|------------------|
| Cost of laying 10 in. main                       |                |                  |
| Direct cost: Labor . . . . .                     | \$ 50,000      |                  |
| Materials . . . . .                              | <u>150,000</u> | \$200,000        |
| Indirect cost: Engineering and supervision . . . | 40,000         |                  |
| Administrative and general . . .                 | <u>5,000</u>   | <u>45,000</u>    |
| Total cost: . . . . .                            |                | \$245,000        |
| Cost of retiring 6 in. main:                     |                |                  |
| Removal cost . . . . .                           |                | <u>5,000</u>     |
| Total cost of project . . . . .                  |                | <u>\$250,000</u> |

Estimated Annual Incremental Income from Project:

|                                          |              |                  |
|------------------------------------------|--------------|------------------|
| Increase in Operating Revenues . . . . . | \$ 20,000    |                  |
| Decrease in Operating Expenses . . . . . | <u>7,000</u> |                  |
| Increase in Operating Income . . . . .   |              | <u>\$ 27,000</u> |

Estimated Period of Construction: From April 19 A to May 19 D

SAMPLE

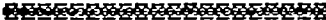
FIGURE 14.4  
STATEMENT OF ESTIMATED CASH FLOW  
YEAR ENDING 19 B

|                                             | <u>1ST QUARTER</u> |                  |                  | <u>2ND QUARTER</u> | <u>3RD QUARTER</u>  | <u>4TH QUARTER</u> |
|---------------------------------------------|--------------------|------------------|------------------|--------------------|---------------------|--------------------|
|                                             | <u>Jan.</u>        | <u>Feb.</u>      | <u>March</u>     |                    |                     |                    |
| Estimated cash balance, beginning of period | \$ 50,000          | \$52,485         | \$ 51,615        | \$ 66,275          | \$ 24,905           | (\$ 8,890)         |
| Estimated cash receipts during period:      |                    |                  |                  |                    |                     |                    |
| Sale of Water                               | \$100,000          | \$100,000        | \$120,000        | \$350,000          | \$370,000           | \$381,000          |
| Vacant Lots                                 | 2,000              | 2,000            | 2,000            | 6,000              | 6,000               | 6,000              |
| Water Connections                           | 1,000              | 1,000            | 1,000            | 3,000              | 3,000               | 3,000              |
| Reconnections                               | 500                | 500              | 500              | 1,500              | 1,500               | 1,500              |
| Rechargeable Works                          | 210                | 350              | 1,750            | 4,700              | 6,215               | 5,315              |
| Rent of Equipment                           | 430                | 510              | 2,740            | 6,255              | 5,430               | 6,210              |
| Sale of Fixed Assets                        | - 0 -              | - 0 -            | - 0 -            | - 0 -              | 2,170               | 29,175             |
| Sales of Unallocated Stores                 | 610                | 1,125            | 760              | 3,170              | 3,660               | 4,200              |
| Capital Contributions                       | 40,000             | 40,000           | 40,000           | 120,000            | 120,000             | 120,000            |
| Contributions in Aid of Construction        | 25,000             | 20,000           | 20,000           | 65,000             | 65,000              | 85,000             |
| Loans                                       | - 0 -              | - 0 -            | - 0 -            | - 0 -              | - 0 -               | - 0 -              |
| Customer Deposits                           | 500                | 500              | 500              | 1,500              | 1,500               | 1,500              |
| Other                                       | 115                | 200              | 375              | 1,330              | 1,200               | 1,395              |
| Total cash received                         | <u>\$170,365</u>   | <u>\$166,185</u> | <u>\$189,625</u> | <u>\$562,545</u>   | <u>\$585,675</u>    | <u>\$644,295</u>   |
| Total cash available                        | <u>\$220,365</u>   | <u>\$218,670</u> | <u>\$241,240</u> | <u>\$628,820</u>   | <u>\$610,580</u>    | <u>\$635,405</u>   |
| Estimated cash disbursements during period: |                    |                  |                  |                    |                     |                    |
| Salaries and Wages                          | \$ 91,175          | \$ 92,345        | \$ 92,720        | \$372,000          | \$381,000           | \$384,000          |
| Purchase of Materials and Supplies          | 50,495             | 47,990           | 53,145           | 151,645            | 157,215             | 162,990            |
| Interest                                    | 25,000             | 25,000           | 25,000           | 75,000             | 75,000              | 75,000             |
| Purchase of Fixed Assets                    | - 0 -              | - 0 -            | - 0 -            | - 0 -              | - 0 -               | - 0 -              |
| Loans                                       | - 0 -              | - 0 -            | - 0 -            | - 0 -              | - 0 -               | - 0 -              |
| Other                                       | 1,210              | 1,720            | 2,100            | 5,270              | 6,255               | 6,170              |
| Total cash disbursed                        | <u>\$167,880</u>   | <u>\$167,055</u> | <u>\$174,965</u> | <u>\$603,915</u>   | <u>\$619,470</u>    | <u>\$628,160</u>   |
| Estimated cash balance, end of period       | <u>\$ 52,435</u>   | <u>\$ 51,615</u> | <u>\$ 66,275</u> | <u>\$ 24,905</u>   | ( <u>\$ 8,890</u> ) | <u>\$ 7,245</u>    |

The statement of estimated cash flow should be for a period of at least one year with greater detail included for the months immediately following. The cash flow statement should be updated monthly.

Since the cash flow budget is prepared for a year in advance, the estimates are somewhat unreliable. The budget, therefore, needs to be updated monthly in order for the estimates to serve as useful financial tools in planning.

The cash flow budget is of crucial importance to management. It permits management to anticipate future cash deficiencies and will assist management in planning ahead for short-term or long-term financing as needed. The cash flow budget not only provides a tool for advance planning but later it will serve to evaluate actual results so that the managerial effectiveness and efficiency can be measured.



**CHAPTER 15: MANAGEMENT REPORTS**

The responsibility of management when conducting the affairs of the Authority is to achieve its basic objectives for the utility as established by its policy making group. In achieving these objectives, management must plan operations in advance and control these operations in order to achieve planned results. Chapter 14 discussed the financial tools (budgets) through which management can effectively plan future operations. This Chapter will examine the tools which management will need to control these operations.

For control purposes, management will need to have access to periodic performance reports. The purpose of these reports is to enable management to compare actual results with the budget plan in order to call immediate attention to problem areas and deviations from plans. The reports also provide a quickly and easily understood means of measuring performance.

When preparing reports for management, the accountant must observe a number of well-established reporting principles. They include:

- To be useful, a report must be presented while it can provide information needed to influence decisions. Therefore, reports must be submitted on a timely basis.
- Reports must be accurate. However, when management desires information quickly and asks for approximate figures, the accountant should not hesitate to provide them with the understanding that they are subject to later correction.

- The higher the echelon of management to which a report is directed, the more summarized the report should be. However, complete information can be made available to those who want it.
- Reports must be clear, not only to the accountant who prepared them, but also to the reader for whom it was prepared.

Keeping the above reporting principles in mind, the accountant should provide management with reports concerning operating results, capital expenditures and financial position.

The primary report for controlling operations is the monthly statement of income (see Figure 15.1). This report compares the actual operating results for the month with the budgeted figures for the same month. Also included are the actual and budgeted figures for the year to date. The statement of income enables management to spot troubled areas, seek explanations for significant differences between actual and budget figures and to take corrective action when necessary.

If specific problem areas on the statement of income require further analysis, management should be provided with a detailed schedule of the statement of income (see Figure 15.2) showing the problem area(s). From this information, management can detect the precise area(s) of trouble, seek explanations from those responsible and take corrective action if necessary.

In addition to monthly operating reports, management is also concerned with reports that show the amount of capital expenditures and status of capital expenditure projects. These reports provide management with control over capital expenditures by comparing actual and budgeted cost. From these comparisons, significant variations can be investigated so that proper control action can be taken for the remainder of the project and/or for future projects.

SIMPLE

FIGURE 15.1  
STATEMENT OF INCOME (LOSS)  
MONTH ENDED 31 MAY 19 B

|                                               |                          |                         |                          | Year to Date            |                         |                        |
|-----------------------------------------------|--------------------------|-------------------------|--------------------------|-------------------------|-------------------------|------------------------|
|                                               | ACTUAL                   | BUDGETED                | OVER<br>(UNDER)          | ACTUAL                  | BUDGETED                | OVER<br>(UNDER)        |
| <b>Operating Revenues:</b>                    |                          |                         |                          |                         |                         |                        |
| Sale of Water                                 | \$112,170                | \$105,000               | \$ 7,170                 | \$561,115               | \$525,000               | \$36,115               |
| Vacant Lots                                   | 1,725                    | 2,000                   | (275)                    | 8,175                   | 10,000                  | (1,825)                |
| Water Connections                             | 1,125                    | 1,000                   | 125                      | 5,615                   | 5,000                   | 615                    |
| Reconnections                                 | <u>220</u>               | <u>500</u>              | <u>(280)</u>             | <u>1,830</u>            | <u>2,500</u>            | <u>(620)</u>           |
| <b>Total Operating Revenues</b>               | <b><u>\$115,240</u></b>  | <b><u>\$108,500</u></b> | <b><u>\$ 6,740</u></b>   | <b><u>\$576,785</u></b> | <b><u>\$542,500</u></b> | <b><u>\$34,285</u></b> |
| <b>Operating Expenses:</b>                    |                          |                         |                          |                         |                         |                        |
| Source of Supply                              | \$ 2,410                 | \$ 2,600                | \$ (190)                 | \$ 12,905               | \$ 14,000               | \$(1,095)              |
| Pumping                                       | 22,115                   | 21,500                  | 615                      | 114,150                 | 113,450                 | 700                    |
| Water Treatment                               | 6,005                    | 7,210                   | (1,205)                  | 38,110                  | 42,190                  | (4,080)                |
| Supply and Distribution                       | 45,220                   | 26,170                  | 19,050                   | 176,500                 | 148,500                 | 28,000                 |
| Administrative and General                    | 22,000                   | 22,015                  | (15)                     | 111,250                 | 113,000                 | (1,750)                |
| Depreciation Expense                          | <u>10,000</u>            | <u>10,000</u>           | <u>- 0 -</u>             | <u>50,000</u>           | <u>50,000</u>           | <u>- 0 -</u>           |
| <b>Total Operating Expenses</b>               | <b><u>\$107,750</u></b>  | <b><u>\$ 89,495</u></b> | <b><u>\$18,255</u></b>   | <b><u>\$502,915</u></b> | <b><u>\$431,140</u></b> | <b><u>\$21,775</u></b> |
| <b>Net Operating Income (Loss)</b>            | <b><u>\$ 7,490</u></b>   | <b><u>\$ 19,005</u></b> | <b><u>\$(11,515)</u></b> | <b><u>\$ 73,870</u></b> | <b><u>\$ 61,360</u></b> | <b><u>\$12,510</u></b> |
| <b>Net Non-operating Income</b>               | <b><u>11,220</u></b>     | <b><u>10,000</u></b>    | <b><u>1,220</u></b>      | <b><u>55,330</u></b>    | <b><u>50,000</u></b>    | <b><u>5,330</u></b>    |
| <b>Income (Loss) before Interest Expenses</b> | <b><u>\$ 18,710</u></b>  | <b><u>\$ 29,005</u></b> | <b><u>\$(10,295)</u></b> | <b><u>\$129,220</u></b> | <b><u>\$111,360</u></b> | <b><u>\$17,840</u></b> |
| <b>Interest Expenses:</b>                     |                          |                         |                          |                         |                         |                        |
| Interest on Long-term Debt                    | 20,000                   | 20,000                  | - 0 -                    | 100,000                 | 100,000                 | - 0 -                  |
| Other Interest                                | <u>- 0 -</u>             | <u>- 0 -</u>            | <u>- 0 -</u>             | <u>+ - 0 -</u>          | <u>- 0 -</u>            | <u>- 0 -</u>           |
| <b>Net Income (Loss)</b>                      | <b><u>\$ (1,290)</u></b> | <b><u>\$ 9,005</u></b>  | <b><u>\$(10,295)</u></b> | <b><u>\$ 29,220</u></b> | <b><u>\$ 11,360</u></b> | <b><u>\$17,840</u></b> |

**Note:** The above format of reporting monthly/quarterly operations will enable the manager to seek explanations for significant differences between actual and budgeted and to take corrective action where necessary.

FIGURE 15.2

DETAILS OF STATEMENT OF INCOME (LOSS)

SAMPLE

|                                              | Month of May     |                 |                 | Year to Date     |                  |                 |
|----------------------------------------------|------------------|-----------------|-----------------|------------------|------------------|-----------------|
|                                              | Actual           | Budgeted        | Over (Under)    | Actual           | Budgeted         | Over (Under)    |
| <b>Operating Expenses:</b>                   |                  |                 |                 |                  |                  |                 |
| Source of Supply                             | \$ 2,410         | \$ 2,600        | (\$ 190)        | \$ 12,905        | \$ 14,000        | (\$ 1,095)      |
| Pumping                                      | 22,115           | 21,550          | 615             | 114,150          | 113,450          | 700             |
| Water Treatment                              | 6,005            | 7,210           | (1,205)         | 38,110           | 42,190           | (4,080)         |
| Supply and Distribution                      | 45,220           | 26,170          | 19,050          | 176,500          | 148,500          | 28,000          |
| Administrative and General                   | 22,000           | 22,015          | (15)            | 111,250          | 113,000          | (1,750)         |
| Depreciation Expense                         | 10,000           | 10,000          | - 0 -           | 50,000           | 50,000           | - 0 -           |
| <b>Total Operation Expenses</b>              | <b>\$107,750</b> | <b>\$89,495</b> | <b>\$18,255</b> | <b>\$502,915</b> | <b>\$731,140</b> | <b>\$21,775</b> |
| <b>Supply and Distribution Expenses</b>      |                  |                 |                 |                  |                  |                 |
| Personal Emoluments                          | \$ 1,800         | \$ 1,800        | - 0 -           | \$ 9,000         | \$ 9,000         | - 0 -           |
| Wages                                        | 17,110           | 10,250          | 6,860           | 72,655           | 64,255           | 8,400           |
| Water Connection Expenses                    | 600              | 750             | (150)           | 3,200            | 3,750            | (550)           |
| Maintenance of Supply and Distribution Mains | 15,910           | 7,350           | 8,060           | 50,420           | 41,210           | 9,210           |
| "    " Meters                                | 510              | 500             | 10              | 2,300            | 2,500            | (200)           |
| "    " Hydrants                              | 105              | 170             | (65)            | 650              | 850              | (200)           |
| "    " Standpipes and Bathrooms              | 1,700            | 320             | 1,380           | 6,150            | 2,000            | 4,150           |
| Fuel and Oil Expense - Vehicles              | 5,410            | 3,200           | 2,210           | 21,170           | 16,000           | 5,170           |
| Vehicles and Equipment Expenses              | 1,790            | 1,200           | 590             | 8,680            | 6,000            | 2,680           |
| Road Repairs Expense                         | - 0 -            | - 0 -           | - 0 -           | 1,610            | 2,435            | (825)           |
| Miscellaneous Expenses                       | 285              | 130             | 155             | 665              | 500              | 165             |

Reports on the amount of capital expenditures and status of capital expenditure projects should be prepared for management on a monthly basis. Figure 15.3 is a monthly report comparing actual and budgeted capital expenditures for projects completed during the month. Figure 15.4 is a monthly report comparing actual and budgeted capital expenditures for projects not yet completed.

Reports concerning financial position should also be prepared for management. These reports usually take the form of a balance sheet. The balance sheet (see Figure 15.5) should be submitted to management on a yearly or quarterly basis and should provide comparative data for at least two comparable periods. Management will be particularly interested in the working capital position (current assets minus current liabilities). Management may want to keep more up-to-date with the working capital position and desire daily or weekly reports concerning the Authority's cash position and/or monthly reports concerning aged listings of accounts receivable, listings of usage of materials and supplies and a summary of debt service.

Managers are not the only ones interested in the Authority's working capital position. The Caribbean Development Bank (CDB), banks and other loan agencies also require balance sheets from their borrowers.

It can be readily seen how important budgets and management reports are in planning and controlling activities of the Authority. The Manager and the Chief Accountant must work together to ensure that appropriate and accurate financial data is used as the basis for effective management decisions.



SAMPLE

FIGURE 15.3

REPORT ON CAPITAL PROJECTS COMPLETED DURING THE MONTH

| <u>PROJECT NO.</u> | <u>DESCRIPTION</u>                          | <u>ACTUAL EXPENDITURE</u> | <u>BUDGETED EXPENDITURE</u> | <u>OVER (UNDER)</u> | <u>COMMENTS</u>                                      |
|--------------------|---------------------------------------------|---------------------------|-----------------------------|---------------------|------------------------------------------------------|
| 10                 | Construction of Storage Tank at Long Ground | \$511,020                 | \$500,000                   | \$11,020            | Slight cost overrun due to wage increase for workers |
|                    | TOTAL                                       | <u>\$511,020</u>          | <u>\$500,000</u>            | <u>\$11,020</u>     |                                                      |

FIGURE 15.4

REPORT ON UNCOMPLETED CAPITAL PROJECTS AT THE END OF THE MONTH

| <u>PROJECT NO.</u> | <u>DESCRIPTION</u>               | <u>BUDGETED EXPENDITURE</u> | <u>COMMITTED</u> | <u>EXPENDED</u>  | <u>NOT EXPENDED/ COMMITTED</u> | <u>STATUS OF PROJECT</u> |
|--------------------|----------------------------------|-----------------------------|------------------|------------------|--------------------------------|--------------------------|
| 11                 | Replacement of Mains in Plymouth | \$ 250,000                  | \$15,110         | \$214,990        | \$ 19,900                      | 75% completed            |
| 12                 | St. John's Reservoir             | \$1,000,000                 | \$122,150        | \$508,350        | \$369,000                      | 50% completed            |
| 13                 | Replacement of Pumps at Salem    | \$ 50,000                   | \$ 27,360        |                  | \$ 22,640                      | Not Started              |
|                    | TOTALS                           | <u>\$1,300,000</u>          | <u>\$164,620</u> | <u>\$723,840</u> | <u>\$411,540</u>               |                          |

SAMPLE

FIGURE 15.5

BALANCE SHEET

31 DECEMBER 19 B

| <u>ASSETS</u>                             | 19 B                      | 19 A                      | <u>LIABILITIES AND EQUITY</u>          | 19 B                    | 19 A                    |
|-------------------------------------------|---------------------------|---------------------------|----------------------------------------|-------------------------|-------------------------|
| <b>Current Assets</b>                     |                           |                           | <b>Current Liabilities</b>             |                         |                         |
| Cash . . . . .                            | \$ 52,055                 | \$ 35,170                 | Long-term Debt Payable Within          |                         |                         |
| Accounts Receivable . . . . .             | 126,770                   | 151,250                   | One Year . . . . .                     | \$ 600,000              | \$ 600,000              |
| Accumulated Provisions for Doubtful . . . |                           |                           | Accounts Payable . . . . .             | 52,125                  | 49,550                  |
| Accounts (Deduction) . . . . .            | (15,210)                  | (11,440)                  | Sundry Payables . . . . .              | 1,640                   | 2,440                   |
| Advances to Employees . . . . .           | 39,105                    | 45,400                    | Accrued Expenses . . . . .             | 2,550                   | 3,455                   |
| Unallocated Stores . . . . .              | 1,104,040                 | 990,500                   | Customer Deposits . . . . .            | <u>1,660</u>            | <u>955</u>              |
| Accrued Utility Revenue . . . . .         | 56,170                    | 47,120                    | <b>Total Current Liabilities . . .</b> | <b><u>657,975</u></b>   | <b><u>656,400</u></b>   |
| Prepaid Expenses . . . . .                | <u>12,440</u>             | <u>9,650</u>              |                                        |                         |                         |
| <b>Total Current Assets . . . . .</b>     | <b><u>\$1,375,370</u></b> | <b><u>\$1,267,650</u></b> | <b>Long-Term Debt</b>                  |                         |                         |
| <b>Other Debits</b>                       |                           |                           | ODB . . . . .                          | \$1,870,550             | 2,470,550               |
| Preliminary Survey Charges . . . . .      | <u>7,415</u>              | <u>2,550</u>              | Barclay's Bank . . . . .               | 30,000                  | 30,000                  |
| <b>Restricted Assets</b>                  |                           |                           | Other . . . . .                        | <u>5,455</u>            | <u>- 0 -</u>            |
| Replacement Fund . . . . .                | <u>67,500</u>             | <u>52,660</u>             |                                        | <u>1,906,005</u>        | <u>2,500,550</u>        |
| <b>Utility Plant</b>                      |                           |                           | <b>Equity</b>                          |                         |                         |
| Utility Plant In Service . . . . .        | 8,641,295                 | 7,421,560                 | Capital Contributions . . . . .        | 2,440,500               | 2,000,500               |
| Accumulated Depreciation (Deduction) . .  | <u>(1,350,000)</u>        | <u>(1,230,000)</u>        | Contributions in Aid of                |                         |                         |
| Work-In-Progress - Capital Projects . . . | 7,291,295                 | 6,191,560                 | Construction . . . . .                 | 4,200,000               | 2,710,400               |
|                                           | <u>599,960</u>            | <u>460,990</u>            | Accumulated Surplus . . . . .          | <u>137,060</u>          | <u>107,560</u>          |
|                                           | <u>7,991,255</u>          | <u>6,652,550</u>          | <b>Total Equity . . . . .</b>          | <b><u>6,777,560</u></b> | <b><u>4,818,460</u></b> |
|                                           | <u>\$9,341,540</u>        | <u>\$7,975,410</u>        |                                        |                         |                         |
|                                           |                           |                           | Balance                                | <u>\$9,341,540</u>      | <u>\$7,975,410</u>      |

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