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Cooperative creamery accounting

Delmer D. Brubaker

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Cooperative Creamery Accounting

by Delmer D. Brubaker

Farm Credit Administration, Washington, D. C.
Cooperative Research and Service Division

Bulletin No. 39

• June 1939

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The Cooperative Research and Service Division conducts research studies and service activities relating to problems of management, organization, policies, merchandising, sales, costs, competition, and membership, arising in connection with the cooperative marketing of agricultural products and the cooperative purchase of farm supplies and services; publishes the results of such studies; confers and advises with officials of farmers' cooperative associations; and cooperates with educational agencies, cooperative associations and others in the dissemination of information relating to cooperative principles and practices.

Copies of this publication may be obtained upon request, while a supply is available, from the

*Director of Information and Extension
Farm Credit Administration, Washington, D. C.*

Cooperative Creamery Accounting

by DELMER D. BRUBAKER

Senior Agricultural Economist

FARM CREDIT ADMINISTRATION

Cooperative Research and Service Division

WASHINGTON, D. C.

BULLETIN No. 39

JUNE 1939

For sale by the Superintendent of Documents, Washington, D. C. - - - - - Price 35 cents

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Cooperative Creamery Accounting

THE success or failure of any business often may be determined by its accounting methods and the completeness and accuracy of its records. Many creameries do not keep enough information or do not keep existing records in proper form to make accessible the information needed in the conduct of the business. Adequate records are important to a cooperative creamery since policies are determined by officers and managers, who must depend on the creamery records for information concerning sales of products; the service given by different types of equipment; the unit expenses of operation; the costs of different grades of fuel; the number of employees required to do a given piece of work; the extent of territory from which products may be profitably gathered; the earning power of cream stations; the quality of products, and other phases of operations.

There are many texts dealing with all phases of money accounting, and the scientific practices are well described therein. This bulletin is not offered as a comprehensive treatise on accounting. Its purpose is to present methods of installing and maintaining business records that will be applicable to the needs of the small cooperative creamery, to illustrate various forms that may be used, and to discuss the several accounts in a balance sheet, the classes into which they may be arranged, and some of the monthly statements which creameries should make, in such a way that bookkeepers, officers, and managers of small creameries will find the information useful in the keeping and interpretation of their records.

Some of the officers and managers of cooperative creameries are not fully informed on accounting methods and do not appreciate the importance of keeping and using business records. Some do not realize the necessity for looking forward to the payment of maturing obligations. For these reasons, much of the discussion herein digresses from accounting into the field of operating policies—such as the sug-

NOTE.—Acknowledgment is made of the assistance and helpful criticism of W. R. Kelly, K. B. Gardner, and members of the legal staff of the Farm Credit Administration; members of the agricultural extension services of Iowa, Minnesota, and Wisconsin; representatives of the State departments of agriculture of Minnesota and Wisconsin; and other accountants and cooperative workers.

gestion to maintain separate bank accounts for specific uses, the discussion of membership relations, the advisability of paying dividends, deciding between building or buying a plant, and other points. As far as possible, nontechnical terms have been used so that the meaning will be clear to those who most need to make use of the material.

Instead of completely classifying the forms and processes under topics, an attempt has been made to arrange the material and the description of procedure in the order in which they will be needed by the bookkeeper or secretary of a cooperative creamery. For this reason, some subjects—such as balancing the books or closing them—will be discussed in more than one section of the bulletin.

No attempt has been made to discuss the accounting practices of large associations which operate a number of plants or which handle fluid milk and manufacture products other than butter.

Section I

Accounting Forms and Procedure

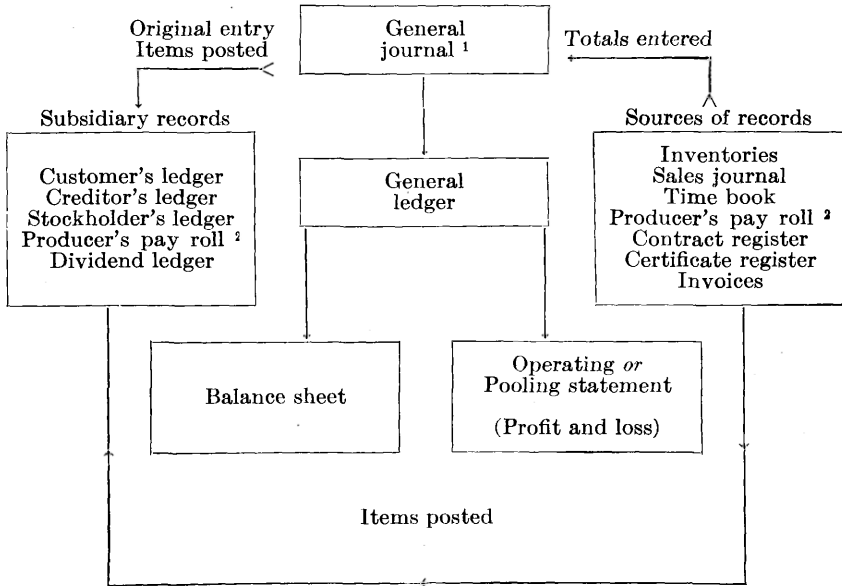
THE purpose of this section is to give an outline of the manner of presentation employed in the following pages, to describe some of the major forms illustrated and to explain some of the financial statements used by the average small cooperative creamery.

Section II discusses the procedure which an operating association might employ in transferring its business records to a new set of forms and gives a brief description of the more common creamery accounts and their uses.

Setting up a system of accounts for a new association is described in section III. Receiving products and the accounting forms relating to producers' records are discussed in section IV. In section V are given the forms and an explanation of the uses of records for plant processing and the sale of merchandise. A method of closing the books and the preparation of the balance sheet and operating statement may be found in section VI, while section VII discusses briefly the interpretation of a balance sheet.

The order of presentation and discussion of the forms and operations described, is the order in which transactions occur and in which the forms are needed. The final result of the recording of financial transactions is shown in a balance sheet and operating (profit and loss) statement. In a small cooperative creamery a chart of the course of money records is usually as shown on page 3.

Chart of Money Records



¹ The general journal is used as a cash book and a check register, and for making original entries and entering summaries of sources of records.
² The producer's pay roll, as illustrated, is a book of original entry for some items, such as hauling charges and stock deductions. It is a summary of producer's invoices for merchandise and statements of product accounts, and a source of records for journal entries. In addition, as used here, it serves as producer's ledger, which accounts for its appearance as both a source of records and a subsidiary record.

In many instances there are original records from which the "sources of records", in the above chart, are made up. Sales tickets are often made out at the time sales are made and they are entered later on the sales journal. A time book may be made up from time cards, and membership contracts often are the original records from which a contract register is written up. None of such original record forms have been illustrated herein, except the receipts for merchandise sold or delivered for shipment.

Ledger Accounts

The list of accounts in a general ledger may be long, as this ledger contains a complete record of the business, although the detail of many of its accounts is found in subsidiary records, as illustrated in the above chart. Below is such a list. It contains more accounts than are shown in the following pages, but does not include all the accounts which the manager or officers of a creamery may wish to keep.

Asset Accounts:

Cash.
Petty cash.
Banks.
Accounts receivable:
 Trade.
 Patrons.
Notes receivable: Short term.
Inventories:
 Dairy products.
 Dairy supplies for sale.
Certificates of other associations.
Investments: Stocks and bonds.
Properties not used in the business.
Special bank accounts.
Meter deposits.
Members' subscriptions: Notes and contracts.
Real estate, including well and other land improvements.
Buildings, in use.
Plant machinery and equipment.
Trucks.
Office furniture and fixtures.
Cans, cases, bottles.
Office supplies.
Plant supplies.
Prepaid insurance.
Prepaid licenses.
Prepaid organization expense.
Unissued stock:
 Common.
 Preferred.
Treasury stock.

Liability Accounts:

Accounts payable:
 Trade.
 Producers.
Accrued interest, on mortgages, contracts, and notes and guaranteed on certificates held by members and others.
Accrued taxes.
Accrued labor.
Mortgages payable.
Equipment contracts payable.
Maturing certificates of indebtedness or interest.
Reserves for—
 Doubtful accounts receivable.
 Depreciation of buildings.
 Depreciation of machinery and equipment.
 Depreciation of trucks.
 Depreciation of furniture and fixtures.

Liability Accounts—Continued.

Authorized capital stock:

Common.

Preferred.

Members' subscriptions: For stock or other forms of capital.

Additional payments on stock or other capital.

Nonmaturing certificates of indebtedness or interest.

Reserve for dividends or interest on capital, if such are not guaranteed.

Reserve for contingencies.

Sinking fund, surplus, and general reserves.

Operating account.

Current year's earnings.

Expense Accounts:

Rent.

Labor.

Fuel, power, light, water.

Product supplies: Salt, color, starter, etc.

Package supplies: Wrappers, cartons, etc.

General supplies: Acid, disinfectants, cleaning compound, etc.

Office supplies.

Collecting milk and cream.

Freight and drayage.

Trucks: Drivers' wages, gas, oil, repairs.

Directors' fees and expenses.

Manager's salary and expenses.

Clerical.

Printing, stationery, office supplies.

Postage.

Telephone and telegraph.

Reserves for—

Doubtful accounts.

Depreciation.

Interest.

Insurance.

Repairs and maintenance.

Taxes.

Income Accounts:

Products.

Rental income.

Discount earned.

It is not believed to be necessary for the small cooperative creamery to use a system of ledger account numbering. For this reason account numbering has not been discussed.

Description of Forms

The Simple Journal

There are many forms of journals, the simplest of which has only two money columns, one each for debits and credits, as shown below:

Date	Name	Items	Debits	Credits

In appendix A may be found a common form of journal which is satisfactory for a business of any size. With it is illustrated a treatment of expense items which is often convenient, although not necessary, for a small association but is usually necessary where a considerable detail of expenses is desired.

The general journal used in this bulletin as Form 1, is often called a "Split Journal" because its columns are divided, with all debit columns on the left side and credit columns on the right side.

Expense accounts, as used in this bulletin for purposes of illustration, are as follows:

Plant:

- 101—Labor.
- 102—Supplies, packages.
- 103—Supplies, general.
- 104—Fuel, power, light, water.
- 105—Miscellaneous.

Trucking:

- 110—Collecting cream.
- 111—Freight and drayage.

Office and general:

- 112—Directors' fees and expenses.
- 113—Salaries and wages.
- 114—Supplies.

Office and general—Continued.

- 115—Postage, telephone, and telegraph.
- 116—Insurance and licenses.
- 117—Miscellaneous.

Reserves:

- 118—Depreciation, buildings.
- 119—Depreciation, equipment.
- 120—Depreciation, trucks.
- 121—Taxes.
- 122—Interest.
- 123—Doubtful accounts.
- 124—Miscellaneous.

The columns in this journal provide for a convenient classification of the more common creamery accounts, and this arrangement is used in all illustrations of journal entries in the following pages. The methods of using the totals of journal columns for creating control accounts will be described later.

General Journal

In some dairy areas it is a common practice to provide columns in the general journal for the quantities of products sold. The method suggested in this publication is to use a sales journal with product

columns, thus reserving the general journal for entries of money only. This also will save journal space for a more complete detail of the financial records.

For the small or medium-size creamery it is convenient to use the journal as a cash book and check register and, also, as a book of original entry of items for which there are no special journals. In addition, the illustrations herein include the transferring of the totals of all special journals to the general journal, in order to obtain a monthly total of all transactions. Some accountants do not advise accumulation of all the business in the general journal. They build up control accounts by posting all general and special journal totals directly to the control accounts in the general ledger. As this method is too complicated for many cooperative creamery bookkeepers, the use of a journal for assembling a month's transactions has been found to be more satisfactory and more accurate.

As an illustration: Producers' credits are figured on individual cards or statements or on a producers' pay-roll sheet; producers' debits are on the sales journal, supply records, check stubs, haulers' summary, and pay-roll sheets, and it is necessary to assemble them before the balance of the producers' accounts can be determined. It is advisable to make a permanent record of the assembling of these figures from their several sources, from which record the volume of the business may be calculated, and from which the several accounts may be proven. A general journal supplies a form for such permanent record.

Individual transactions, for which special journals are not provided, are recorded in the general journal, in the order in which they occur. The monthly totals of special journals are entered here also. This makes it possible to get a total in one place, of all money transactions for each month. Records of quantities of products are kept in a separate set of forms.

Attention should be given to the manner of entering expenses in this journal form. Separate columns have been provided for only a part of the expense items, with a miscellaneous column for the other expenses. This arrangement has been found convenient in the intensive dairy section of the Central West, where operators wish to avoid use of a detail expense register, yet need more expense detail than the width of the ordinary journal will allow.

However, it is possible and frequently advisable to have only three or four expense columns in the journal, which are used for classes of expense. Items in these columns are posted to a register and the totals to the general ledger, as illustrated in appendix A.

In the method used in this bulletin, the totals of the special expense columns and the items entered in the miscellaneous column are posted to their respective accounts in the general ledger.

Special Journals

Special journals which are used to record special types of transactions, may include the following:

- Cash book—for all cash receipts and disbursements.
- Check register—for bank deposits and checks.
- Sales journal—to record sales of dairy products or supplies.
- Pay-roll sheet—record of payments to producers.
- Contract register—membership contracts and subscriptions.
- Stock or certificate register—record of capital certificates issued.

The forms and uses of all except the cash book and the check register are illustrated in the following pages.

Ledgers

Ledgers are books of accounts, into which money transactions, as compiled in the general or special journals, are posted. A general ledger contains a summary of the financial affairs of a business. Subsidiary ledgers and registers contain the items which make up and support some of the accounts in the general ledger.

Many forms of ledger sheets are carried in stock by stationers, and any of them will be found serviceable. Form 2, which may be used for all ledgers, is convenient because of the columns for debit and credit balances:

Ledger Form

FORM 2.

----- (Title of account) -----						Page No.	Account No.
Date	Items	Posting reference	Debits	Credits	Debit balance	Credit balance	

One stock ledger form may serve for all classes of accounts in the average creamery. Each class can be carried in a separate section, with an index sheet and a tab to indicate its contents. Frequently, it is convenient to separate different classes of accounts into ledgers as follows:

- General ledger—association's private business.
- Contract ledger—stockholders' accounts.
- Dividend ledger—dividends paid on stock.
- Producers' ledger—(pay-roll sheet herein) shippers' milk and cream accounts.
- Customers' ledger—accounts of buyers.
- Creditors' ledger—accounts of those who sell to the association; that is, accounts payable.

Other subsidiary ledgers may include the following:

Notes receivable register—for notes owing to the association.

Notes payable register—for notes the association owes to others.

Some of these, such as the records of notes receivable and notes payable, are similar to accounts receivable and accounts payable. They are in the nature of ledgers and are used when the number of notes is too great to be kept conveniently in a general ledger. Any or all of them may be kept for the purpose of dividing the work when the volume of business is too large for one or a few bookkeepers to handle.

This list of ledger forms, which is incomplete, is given as an illustration of the different classes of transactions which each cooperative creamery may have, whether or not it records or classifies them. In a small business, some of these ledger forms may be combined. A larger business might require separate ledgers for each class of accounts, because one bookkeeper could not do all the work and two persons cannot work on one book at the same time. Again, if an association has several plants, it will be necessary to keep accounts of the expenses of each separately, and it may be desirable to subdivide those expenses further than illustrated in this publication.

Control Accounts

A control account usually is a general ledger account. It controls the subsidiary ledger accounts by verifying their accuracy. The totals of ledger balances must agree with the balance of the control accounts; that is, if the individual debit and credit items, posted to each account in the customers' ledger, are posted in total to the customer-control account in the general ledger, the total of the balances of the individual accounts in the customers' ledger must equal the balance of the customer-control account in the general ledger. The same is true of the control accounts of all subsidiary ledgers and registers.

The control account for the general ledger usually is composed of the totals of all journal columns except those of the subsidiary ledgers. This method of arriving at and using control accounts is explained in more detail in section III on procedure for a new association and is illustrated on pages 84 and 85. In taking off a trial balance of any ledger except the general ledger, the order of accounts is not material. However, as one of the purposes of the general ledger trial balance is to aid in the preparation of a balance sheet, it is desirable that the accounts in the general ledger be arranged in definite classes.

Other record forms and accounts will be described in the order in which they may appear in accounting procedure.

Balance Sheet

A balance sheet is a statement of the assets, liabilities, and net worth of a business, usually made as of the end of each month. It is a list of what the business owns and what it owes, more frequently arranged in one of two forms, as follows:

1. With the items arranged in the form of a statement, first the assets, followed by the liabilities and net worth.

2. With the items arranged in the form of a ledger account—assets on the left side and liabilities and net worth on the right side.

In either form the assets and liabilities are divided into classes similar to the following:

Current assets.	Current liabilities.
Fixed assets.	Long-term liabilities.
Other assets.	Net worth.
Deferred and prepaid items.	
Total.	Total.

Some of the subdivisions of these classes of accounts are shown in the sample balance sheet (pp. 12 and 13).

A trial balance is a list of the balances from the accounts in the ledgers or other record books, taken usually in the order in which they appear in the ledger. The purpose is to prove the accuracy of posting and other arithmetical work and, in the case of a general ledger trial balance, to aid in the preparation of the balance sheet and operating statement. The order of accounts in the trial balances on pages 46 and 85 has been arranged to separate the control accounts for subsidiary ledgers, and to get a separate total of those items controlled by the general ledger control account. The trial balances of the subsidiary ledgers are taken separately.

Operating or Pooling Statements

A "pooling statement" is a statement of operations. In a cooperative it takes the place of the profit-and-loss statement used by private businesses. It is an assembly of all items of income and expense for the purpose of determining how much can be paid for products received during the pooling period which, among dairy cooperatives, is usually 2 weeks or a month. The use of a pooling statement is explained later and is illustrated on page 58.

Section II

Installation by an Operating Association

AN operating association can install a new system of accounts by entering its existing financial condition upon the new set of forms. If the accounts of the association are in fairly good condition, the process will be simplified. The first requirement is to assemble the facts of the association's financial condition in the form of a balance sheet. In most instances it is advisable that a certified public accountant be employed to make changes in accounting systems.

Below is a balance sheet in which arbitrary amounts have been entered for purposes of illustration. It does not include all the

EXHIBIT 1¹

Balance Sheet

DECEMBER 31, 19--.

ASSETS

	Percent- age of total ²	Items	Totals	Class totals
<i>Current assets</i>				
1. Cash (on hand for deposit)			\$7.88	
2. Petty cash			11.24	
3. Bank			3,918.32	
4. Accounts receivable		2,217.54		
62. Less reserve for doubtful accounts		802.14	1,415.40	
5. Notes receivable (maturing within 1 year)			200.00	
6. Product inventories			8,589.72	
7. Patrons' supplies (strainers, cans, etc., see inventory)			128.70	
Total current assets	34.61			14,351.26
<i>Miscellaneous assets</i>				
15. Members' contracts or notes (see Contract register and net worth)			X	
16. Investments (certificates of indebtedness of regional sales agency)			752.00	
17. Special bank accounts:				
Dividends on stock			1,000.00	
Mortgage installment			1,000.00	
18. Meter deposits			15.00	
19. Lot 16, block 4, Brown's Addition	22.21		6,441.44	9,208.44
<i>Fixed assets</i>				
25. Land—lots 2, 3, 4, block 18			500.00	
26. Plant building, cost in 1924		9,200.00		
63. Less reserve for depreciation		2,300.00	6,900.00	
27. Plant equipment (see appraisal)		8,750.00		
64. Less reserve for depreciation		X	8,750.00	
28. One 1-ton truck, present value			300.00	
29. Office equipment (see appraisal)	40.81		475.00	16,925.00
<i>Supplies and prepaid expenses</i>				
35. Office supplies (see inventory)		80.50		
36. Plant supplies (see inventory)		820.00	900.50	
37. Insurance (see insurance register)		73.20		
38. Auto license	2.37	8.00	81.20	981.70
Total assets	100.00			41,466.40

¹ The numbers of accounts are only for the purpose of reference in the discussion of this balance sheet.

² This column contains the ratios of classes of accounts to the total balance sheet footings. For explanation and uses see sec. VII, Interpretation of Balance Sheet, pp. 88 to 90.

Balance Sheet—Continued.

LIABILITIES

	Percent- age of total	Items	Totals	Class totals
<i>Current liabilities</i>				
	<i>Percent</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
45. Accounts payable.....			857.57	
46. Notes payable (Jones' note).....			150.00	
47. Contract payable (new churn).....			780.00	
48. Due producers (December pay roll).....			3,720.80	
60. Accrued taxes.....			312.16	
61. Accrued mortgage interest.....			540.00	
50. Accrued labor.....			450.00	
Total current liabilities.....	16.43			6,810.53
<i>Long-term liabilities</i>				
55. Mortgage on plant (see ledger).....	21.69			9,000.00
Total liabilities.....				15,810.53
<i>Net worth</i>				
70. Authorized capital.....		50,000.00		
71. Less unissued stock.....		33,190.00		
Issued stock.....		16,810.00		
72. Less "treasury" stock.....		40.00		
Issued and outstanding.....			16,770.00	
73. Stock subscriptions.....		8,220.00		
15. Less unpaid balance on contracts.....		5,335.83		
15. Paid on contracts (notes).....			2,884.17	
66. Reserve for dividends on stock.....			1,090.00	
67. Reserve for contingencies.....			4,700.00	
74. Operating account Balance Dec. 31, 1933.....		220.72		
75. Current operations—1934 gain.....		80.98	301.70	
Total net worth.....	61.88			25,655.87
Total liabilities and net worth.....	100.00			41,466.40

items which might appear on the books of an operating association. It does, however, show the arrangement of the ordinary assets and liabilities of any cooperative. The bookkeeper of a set of cooperative creamery books may add any other accounts which he may find necessary, and enter them under their proper classification in the ledger and in the balance sheet.

There follows a description of the accounts in the balance sheet and the factors which should be considered in their make-up:

Current Assets

1. *Cash.*—The cash entered in a balance sheet should be by actual count as of the date of entry, and should include only those items which can be deposited in bank. Items such as I O U's, returned checks, and signed cash slips do not belong in the cash account. The source of such items in a cash drawer would determine how they should be eliminated. Usually they should be charged into accounts receivable. All cash received in business transactions should be deposited in the bank.

2. *Petty cash.*—If there is need for small daily or frequent expenditures for supplies, such as brooms or pencils or for extra labor, postage, or express charges, a small amount of cash should be set aside for this purpose. The amount can be determined by the need and by the frequency with which officers come into the plant to sign checks to replenish the petty cash fund.

If a \$10 or \$25 fund, for example, is supplied to the manager, he makes the necessary record of his expenditures and usually takes receipts for all amounts of \$1 and over. When the fund is nearly exhausted, he presents a statement to the officers. A check is written and the several expenditures are charged to the proper accounts. In this method no further entries are made on the petty cash ledger account until it is closed.

Another method is to provide a petty cash column in the journal or cash book and enter expenditures as they are made, charging expenses or other accounts and crediting petty cash. When the replacement check is written it is charged to petty cash. In this method all transactions show in the petty cash column in the journal.

3. *Bank.*—The amount entered should be the association's balance after reconciliation with the bank's statement. If there is more than one bank, each should be entered separately, except when there are several banks and a separate bank register is kept. It is often convenient to use one bank for commercial checks, one for checks to producers for milk and cream, and sometimes another for reserve funds.

4. *Accounts receivable.*—A list of the amounts due to the association from its customers on open account should be prepared. The total of this list should be posted to the accounts receivable control account in the general ledger and the amounts due from the individual customers posted to their respective accounts in the customers' ledger. The customers' ledger should be kept in a separate binder or a separate section of a common binder for all ledgers.

If an association installing a new set of accounts has kept accurate ledger records, it is not necessary to open new ledger accounts for each customer or debtor, but it is advisable to list the amounts due from the association's customers as of the date of transfer to the new system. Such a schedule will supply a valuable aid to any future audit and will help to verify accuracy of the opening entries of the new records.

This list and the ledger should not contain accounts known to be worthless. Worthless accounts should be written off the books by a debit to the reserve for doubtful accounts and kept only in memoranda records sometimes called "Bad accounts receivable." They may be carried in the general ledger at a total of \$1 or \$10. Such an account serves as an active reminder and may lead to subsequent

collection of some of the charged-off accounts. If the ledger contains accounts which are doubtful, a reserve for bad debts, to cover at least the amounts in doubt, should be set up. In any event it is advisable to maintain such a reserve to protect against unforeseen delinquencies and losses. The entry on the balance sheet would then be as follows:

Accounts receivable.....	
Less reserve.....	
Net accounts receivable.....	

If there are accounts whose credits exceed the debits, they belong in "Accounts payable."

5. *Notes receivable.*—This account should not contain stock-subscription notes of producer-members given for capital purposes. Subscription notes to be paid by deductions from credits to producers should be carried in a separate account described below. The notes included here should generally be those arising from the commercial transactions of the business. Those notes falling due in not over 1 year should be entered under "Current assets" in the balance sheet; those notes falling due after 1 year should be entered under "Miscellaneous assets."

If there are only a few notes, they can be entered in one account in the general ledger with their proper descriptions as to date when made, date of maturity, rate of interest, and collateral.

If there are many such notes, it is advisable to use a stock form of "Notes receivable register," such as stationers carry, and the account in the balance sheet and general ledger is a control account, similar to the accounts-receivable control. It is suggested that a reserve for bad notes be set up to protect against any loss through nonpayments, and that the account be entered on the balance sheet as illustrated under "Accounts receivable."

6. *Product inventories.*—An itemized list of all merchandise; that is, dairy products, such as milk, cream, butter, cheese, etc., should be prepared as of the date of starting a new accounting system.

Care should be taken, in pricing inventories, that the amount at which any product is carried on the books should not be greater than the net amount which will be realized from its sale.¹ If butter which will score extras (92) in New York is to be shipped, the price on the inventory should be not greater than the price of 92 score less the expense of loading, shipping, unloading, commissions, exchange, etc. If the market is declining at the time of pricing the inventory, it is well to reduce the inventory price to the net that may be expected.

¹ A pooling association cannot follow the customary accounting procedure of using the lower cost or market price in determining product inventory values. It must use a market price to arrive at its pool price and cannot determine costs of products until it knows what its pool (or paying) price will be.

These inventory prices should not be raised above present prices even if the market is going up.

The treatment of inventories is explained in section VI, pages 80 and 81. Any month's closing inventory is the opening inventory for the next month. If a closing inventory is priced too high, the next month's earnings will appear correspondingly lower. Continually overpricing inventories is simply drawing on next month's account for this month's payments. It is better to underprice and save a little for next month.

Failure to lower paying prices when volume of production increases and terminal market prices decline has been the cause of financial trouble for many creameries. Paying prices or earnings decline faster than terminal market or selling prices, due to the fact that the value of overrun declines also. As an illustration: With a constant overrun of 20 percent and an over-all expense of 5 cents a pound of butter, the value of overrun and the rate of earnings will vary as follows:

Average sale price	Total expense	Value of butter at the plant	Value of 20 percent overrun	Possible paying price
<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
20	5	15	3	18
30	5	25	5	30
40	5	35	7	42

7. *Patrons' supplies.*—Frequently creameries carry cans, strainers, hand separators, disinfectants, milk pails, and other items of dairy supplies and equipment. Such articles are merchandise and will be sold for cash and belong in current assets. A separate inventory should be made and its total should be entered separately from the agricultural products handled.

Some dairy associations handle feed, seed, fertilizer, coal, and farm machinery. The advisability of carrying any merchandise not directly related to dairying is questionable. However, if such merchandise is kept in stock and sold, it should be inventoried separately and entered separately on the balance sheet and in separate accounts in the ledger.

Other current assets.—Such items as interest receivable, trade acceptances, and other assets, which are a part of the merchandising operations and have a ready or early cash value, should be included in current assets under their proper headings.

Total current assets.—This amount should include all items of value, which have resulted from and are to continue in the merchandising operations of the business, and which will in the normal conduct of the business be converted into cash or its equivalent in the near future. It does not cover those quick assets set aside for special

purposes, such as bonds or other marketable securities purchased during the accumulation of funds for future plant expansion.

Miscellaneous Assets

The following miscellaneous items are those assets which may be considered in the zone of convertibility into cash, between current assets and fixed assets. They are not necessarily a result of the dairy operations of the business, though they may be necessary or convenient to the existence of the business.

15. *Members' contracts (notes).*—The obligation of the members to purchase stock in a stock corporation or to contribute to the capital of a nonstock association may be evidenced by subscription notes. It may otherwise be provided in the producers' marketing contract signed by the members, in the organization agreement, or in the by-laws of the association, to which the member has assented. In any case, the obligation of the producers to contribute definite amounts to the capitalization of the association constitutes an asset and should be entered accordingly. Stock subscriptions or obligations to contribute capital are usually paid in installments by deductions from monthly remittances for products delivered to the association. Under these conditions, the association must have a ledger account of each member's obligation to purchase stock or contribute capital, and his payments on that account.

In preparing a schedule of such notes or subscriptions, if a schedule is not already kept, it would be advisable to use a sheet with three vertical money columns. In the left or debit column enter the original amount of each subscription on which payments have not been completed. In the center or credit column enter the amount paid on each subscription, and enter the balance due in the right-hand or balance column.

The entries in the general ledger are the totals of all debits and credits, and they constitute a control account for the contract ledger. The individual accounts are to be kept in a contract register and ledger, forms 3 and 4, pages 34 and 35, both of which will be described in section III under the records of a new association.

When subscriptions (notes or contracts) were received by the association, the entry would have been as follows:

Debit contracts (notes)	\$	
Credit subscriptions		\$

The liability (subscriptions) set up in this entry is contingent upon payment of the contracts. The entry for the payment of contracts is as follows:

Debit cash (or producers)	\$	
Credit contracts		\$

Capital stock is issued for the full amount of contracts when payments are completed, and the entry is:

Debit subscriptions.....	\$.....
Credit unissued common stock.....	\$.....

Partial payments (credits) on account of subscriptions for stock are a part of net worth. In order to show that condition on the balance sheet do not enter the unpaid balance of partially paid contracts as an asset but as a contra entry to subscriptions under net worth, similar to the entry for fully paid stock, as follows:

Subscriptions.....	\$.....
Less unpaid balance on contracts.....	\$.....
Payment on account of stock.....	\$.....

If the members of the association have not subscribed for definite amounts of stock in case of a stock association, or agreed to contribute definite amounts of capital in the case of a nonstock association, it would not be possible to make such an entry. However, the association may be authorized to make deductions from the sales proceeds due each member for the purchase of additional shares of capital stock in the case of a stock association, or the purchase of certificates of interest in the case of a nonstock association. Deductions so made should be carried as credits to members in a contract ledger until either certificates of stock or certificates of interest are issued and charged against them. Such credits also should appear on the liability side of the balance sheet as a part of the net worth. In the event that an association issues certificates with a fixed maturity date, they should be included on the liability side of the balance sheet as long-term liabilities.

16. *Investments*.—Investments might include certificates of interest, or capital stock in a regional marketing agency or a piece of property to be used in a future expansion program, as illustrated by item 19 in the balance sheet, or in bonds or other safe security. Such assets should not be carried in current assets, even if they are readily convertible into cash, unless they are to be used in the payment of current liabilities or for current operating purposes. Each class of investment—that is, each kind of property—should be listed and entered separately.

17. *Special bank accounts*.—It is presumed that each month, as the association has made the necessary stock deductions from remittances to members, the amounts deducted have been set aside in a separate bank account from which to pay maturing installments on the mortgage. Each month a charge has been made against the undistributed balance, as shown on the pooling statement, page 58, for dividends on stock, and these amounts also have been set aside. When the checks are written on the special bank accounts for the payment of these obligations, the operating bank account will remain intact.

Maintaining special bank accounts for special purposes is not an accounting necessity. It is an operating precaution practiced by many associations. In the case of the dividend account, the offsetting credit is in the operating account. For the mortgage fund, credits were given to members in their capital accounts when deductions were made from their milk accounts.

18. *Meter deposits.*—Deposits for gas and electric meters are recoverable when meters are returned to the service companies owning them.

19. *Real estate.*—It is presumed here that the association has purchased property to be used in an expansion program. The value of this property is carried under miscellaneous assets to segregate it from the properties being used in actual operations at the present time.

Fixed Assets

Fixed assets include the operating properties. It is intended to include here only the investments in real estate, buildings, and other properties used in the conduct of the business. Other fixed assets and investments should be carried under an appropriate heading in the list of miscellaneous assets as illustrated.

25. *Land.*—This represents the plant site which should be entered at cost when the cost is known or can be ascertained; otherwise, at a conservative present value.

26. *Plant building.*—If there is more than one building, separate entries should be made for each. A large association having several plants would carry one item of "Buildings" on the balance sheet and general ledger, as a control account, and have a subsidiary ledger in which each building is allotted a separate page or pages. If the cost of a building is known, it should be entered and a reserve for depreciation set up to reduce the carrying price to its present estimated or appraised value. The entry on the balance sheet would be as illustrated for other accounts.

27. *Plant equipment.*—A complete inventory of all plant machinery and equipment should be taken. It will be found convenient to list it according to uses and/or location, such as—

- Intake room.
- Laboratory (test room).
- Workroom.
- Refrigerating equipment.
- Motors.
- Boiler room.
- Ice box (salesroom).
- Garage.

Under each heading list items of fixed equipment, with a long-time value. Glassware, brooms, and other articles of small individual

values, and with a short life of usefulness, should not be carried in inventories of fixed assets. If the cost of the larger pieces of equipment is known, it is sometimes advisable that they be set up and treated similarly to the suggested manner of entering buildings, by creating a reserve for depreciation of equipment to reduce carrying values to present worth.

28. *Trucks*.—If there are a number of trucks, it is advisable to keep a separate inventory record and a depreciation account for each.

29. *Office equipment*.—An inventory of office furniture and fixtures similar to plant equipment should be kept. All other fixed assets should be inventoried and treated in a manner similar to the suggestions above. Although not shown on this balance sheet a reserve for depreciation of office furniture and fixtures should be set up.

The total of the several classes of fixed assets should be entered as one item in the total column of the balance sheet.

Deferred Charges and Prepaid Expenses

36. *Plant supplies*.—A separate inventory should be made of office supplies. Plant supplies, such as cleaning compounds and disinfectants; and manufacturing supplies, such as cartons, wrappers, tubs, liners, acid, and color, can be taken in one inventory, or can be classified in any way convenient to supply the information desired. Generally, such supplies are not readily salable at a price comparable to their cost, and usually cartons bear the association's name, so are not of value to others. In such cases it is advisable to carry supplies as prepaid expenses, rather than as current assets.

37-38. *Insurance, licenses, etc.*—The present unexpired value of insurance, auto licenses, dairy licenses, and other items, should be calculated and each entered here under its proper title. Items such as prepaid interest, if there are any, belong under this heading.

If obsolete pieces of equipment have been charged off the books, they still may be carried at small value, that is, at a total of \$1 or \$10, in order that they will not be entirely forgotten. Such an account may be called "Depreciated equipment account," and would appear below other assets on the balance sheet.

Total assets.—This item should include the association's total property value, at cost less adequate reserves for depreciation, or at a conservative rate of appraisal. It is a mistake to overvalue assets. Sometimes managers or officers wish to show a high value for assets to cover up a deficit or to show a large surplus. Members prefer to have a sound financial institution but this ambition can never be realized if the truth of the financial condition is not clearly shown on the books and on the balance sheet.

Current Liabilities

45. *Accounts payable*.—A complete statement should be made of all amounts due and owing to others on open accounts. Total debits and total credits of all unpaid and partially paid items should be listed just as accounts receivable. If all unpaid invoices have been entered in a creditors' ledger or if invoices are at hand for all amounts owing to others, the task will be easy. If such is not the case, it will be necessary to get invoices and statements from all creditors. In any event, it is advisable to verify the amounts owing, by writing creditors before the balance sheet is prepared in final form.

46. *Notes payable*.—These should be listed just as accounts payable. If there are only a few such notes, they may be described in the general ledger account for notes payable. If there are a number of such notes, a stock form of notes payable register should be purchased to maintain a complete and continuous record.

47. *Contracts payable* are similar to notes payable. They are given in payment for purchases of equipment or other property and titles usually remain in the seller until the contracts are paid in full. They should be recorded on the books similarly to notes payable.

48. *Due producers*.—It is rarely possible to pay patrons for products in the calendar month in which those products are delivered. Some form of producers' pay roll should be used for payment to producers. The net amount due producers at the time of starting a new set of accounts, as shown by a pay roll, or at the beginning of the current pool period should be entered here.

60-61. *Accrued interest and taxes* are only two of a number of items which may be reserved to provide for accruing or accumulating liabilities. In the event that labor is not paid during the month in which the service was rendered, it is sometimes carried as an accrued liability. The unpaid amount may be credited to the employee to whom it is due, and carried in accounts payable. If dividends on stock are guaranteed on the face of the certificates or in the legal forms, dividends may be carried as an accrual.

Accrued items are, in effect, reserves for the specific purposes indicated by the account titles. Credits to them, in a creamery operation, are made month by month in the proportionate amount of the anticipated yearly payments and charged to the proper expense account. Payments on account of these accruals are charged directly to them.

50. *Accrued labor*.—See preceding paragraph.

Total current liabilities should include all amounts due or known to become due within a year, so that plans may be made for their payment.

Long-Term Liabilities

55. *Mortgages payable.*—It is not likely that the average cooperative creamery will have more than one or two mortgages on its plant and equipment. A separate ledger account should be kept for each mortgage, with a full description of date made, date of maturity, date and amounts of payments of interest and principal, interest rates, and property covered or reference to the description of that property. The balances due on each should be entered here. More complete information would be furnished if the original amount of the mortgage is shown, with payments deducted and the balance due entered in the liability column.

Reserves

60-61. *Taxes and interest.*—See discussion on page 21.

62. *Reserve for doubtful accounts.*—Reserves should be set up and maintained to protect ledger values against losses of accounts and notes. It is impossible to state how large these reserves should be or at what percentage of accounts and notes they should be maintained. General business conditions, the marketing situation and conditions for the sale of the product, the type of customers and other debtors, and the average length of time that credit is extended, all have an influence on collections. A reserve for doubtful accounts, though a credit in the ledger, is entered on the debit side of the balance sheet and subtracted from accounts receivable, reducing them to their estimated value, as illustrated under accounts receivable in the balance sheet. Accounts known to be worthless should be charged to this reserve.

63. *Reserve for building depreciation.*—The type of construction, age, and present condition of a building are indications of its probable life of usefulness as a plant. A depreciation reserve should be built up so that the value of the building will be amortized at the expiration of its useful life. If a building gives reasonable promise of being useful for 20 years (240 months), then each month one two-hundred-fortieth ($1/240$) of its value should be charged as an expense in the operating statement and credited to the reserve for depreciation.

64. *Reserve for depreciation of equipment.*—Many types of creamery equipment, such as churns, wood jacketed vats, cans, can washers, etc., have a short life. It is not usually necessary in a small business to carry a depreciation reserve for each piece of equipment. One depreciation account can serve for all equipment. It is easy in a small business to look back in the records for information about dates of purchase and cost of individual pieces of equipment. If the ordinary period of usefulness of the type of equipment owned should average, say 10 years (120 months), then each month one one-hundred-twentieth ($1/120$) of the value of such equipment should be charged as

expense in the operating statement and credited to the reserve. If a reserve for equipment depreciation is set up in this balance sheet, it should be on a basis similar to this. These reserves for depreciation are not carried on the balance sheet as a liability, as they reduce the asset value of equipment on the debit side of the balance sheet.

Frequently inquiries are made regarding the use of funds resulting from charging amounts for depreciation against operating income. Those funds are a part of the general funds of the business and may be used for any legitimate purpose. The most common charges against the depreciation reserve are for obsolete, worn-out, and replaced properties.

In the event that a piece of equipment is discarded, its cost or the value at which it is carried, must be removed from the equipment account. If it has been fully depreciated, its cost or carrying value may be charged to the depreciation reserve. If it has not been fully depreciated, the only amount that may be charged to the depreciation reserve is the amount that has been credited to the reserve for its depreciation. The difference between the cost or carrying value and the amount of depreciation set up for a piece of equipment is usually charged to surplus or earnings. In circumstances in which it has been undesirable or impossible to make such a charge, the difference has sometimes been carried under deferred charges to be amortized over several months.

65. *Maintenance of building and equipment* reserves usually are not necessary in a small association. Some associations make a large enough monthly credit to reserves for depreciation to take care of maintenance, and charge repair expenses to depreciation reserve, but this policy is not recommended. Usually repairs are charged to expense in the month in which they are made. If the amount is large, that is, such as repairs resulting from a boiler explosion or other accident not entirely covered by insurance, it can be charged to surplus or into an account to be carried under "Deferred charges" with prepaid expenses and be written off a little each month. Larger associations with several plants usually will find it advisable to have a reserve for repairs and maintenance. If these reserves are carried, they are included in total reserves.

66. *Reserve for dividends on stock.*—Many associations consider their capital derived from the sale of stock as money borrowed from their members, and they adopt a policy of setting aside funds to pay dividends in the nature of interest. A reserve is built up through the year by monthly charges to the operating account for credit to dividend reserve. Such charges should not be made as expenses, but should be made against the undistributed balance as shown on the pooling statement. In the balance sheet above, a special bank account has been set up to provide funds for dividends when and if their payment

is authorized by the board of directors. Presumably the association felt that the funds would be safer from expenditure for other purposes if moved to a separate account. When the dividends are paid, the checks are charged against the reserve. Of course, before dividends are declared and paid, it is necessary to determine that the financial condition of the association will permit the payment of dividends under the State law.

67. *Reserve for contingencies.*—A portion of the net gains is frequently set aside as a reserve for contingencies to take care of unknown or indirect liabilities which may materialize, such as judgments resulting from damage suits, the payment of notes endorsed for others or notes receivable discounted at the bank, or accidents or losses not covered by insurance. It is wise to maintain such a reserve. On the balance sheet this reserve is entered as one of the net worth accounts.

It usually is advisable to allocate to patrons, both members and nonmembers, surplus accounts and reserves which have been set aside for general purposes. Generally it is believed if an association has complete annual statements of the receipts of each patron's products, in such form that they can be used for allocating earnings or surplus, that this is sufficient.

As many creameries pay patronage dividends, the operation of allocation has been performed for the distribution of at least a part of earnings. Because of the relatively small amount of additional work required, the allocation of general reserves can be made most conveniently at this time. The suggestion is made therefore that a part of earnings be retained as credits on the capital ledger or that certificates be issued for the part retained. By this method, each patron receives a credit on his capital ledger account for his share of the association's earnings. This is a patronage dividend. It is not necessary to pay patronage dividends in cash unless specifically provided in the organization forms or in the law. The funds may be retained and each patron's account will show the amount of his credit, or certificates may be issued. The total of credits for patronage dividends may be carried in the ledger and on the balance sheet under net worth. If credits for cash payments on stock and other forms of capital contributions are carried in the capital ledger, their total should be included in the control account.

Cooperative business should be conducted at all times on such a safe basis that it will be as nearly "wreck-proof" as is possible. Reserves are one means of attaining safety. A financially weak association sometimes is worse than useless to its members.

Net Worth

Net worth includes those accounts which represent the proprietary interest in a business. It is the excess of assets over liabilities, and represents what the business owes its stockholders or members. It cannot be absolutely determined except upon dissolution and sale of all properties and conversion of all assets into cash. After the payment of all debts, the remaining amount is the net worth to be divided among stockholders.

In closing the affairs of a successful business, stockholders will likely receive more than the par value of their stock or certificates of interest. If liabilities and outstanding stock exceed the value of assets, the stockholders will get less than the par value of their stock. If liabilities alone exceed the value of the assets there will be nothing left for stockholders, and the creditors will not be paid for the full amount of their claims.

70. *Capital stock.*²—At the time an association is incorporated the journal entries, together with the proper explanation for authorized capital stock and unissued stock, should be as follows:

Dr. Unissued stock.....	\$50, 000. 00	
Cr. Authorized capital.....		\$50, 000. 00

71. *Issued stock.*—Upon the completion of payment for shares sold and the issuing of certificates, the result of all entries should be as follows:

Dr. Cash.....	\$16, 810. 00	
Cr. Unissued stock.....		\$16, 810. 00

The unissued stock account in the ledger would be as follows:

Debit	Credit	Balance
\$50, 000. 00	\$16, 810. 00	\$33, 190. 00

On the balance sheet the facts regarding authorized, unissued, and issued stock may be summarized as follows:

Authorized capital.....	\$50, 000. 00	
Less unissued.....	33, 190. 00	
		\$16, 810. 00
Issued stock.....		\$16, 810. 00

72. *Treasury stock.*—The cooperative laws of some States restrict an association in buying or dealing in its own stock. Officers and managers should have the advice of their attorneys before repurchasing

² The discussion of the net-worth accounts of an association financed with maturing certificates of indebtedness instead of with capital stock or other nonmaturing forms is presented in appendix B.

stock from members, especially if it is contemplated to buy and sell such stock at more or less than its par value. The following discussion of the accounting for repurchased stock is based on the presumption that stock is bought and/or sold or resold at its par value only. If stock should be bought or sold at other than the par value, an account or accounts for the entering of discounts taken or allowed and/or premiums paid or received should be opened in the general ledger.

When a member dies or retires it is customary in some associations, and advisable in all associations having available funds and authorized to do so, to repurchase his stock. The certificates are canceled and the par value of the repurchased stock is generally carried in an account entitled "Treasury stock." If repurchased stock is charged back to "Unissued stock," the balance sheet will not be altered but the records of the sale and repurchase are balanced on the books, and both transactions are lost. It is advisable to set up the treasury stock account, which will show at all times the transactions in stock.

Unless there is a reason for holding stock in the treasury, such as adoption of a policy to retire certain issues or classes, it is customary to reissue treasury stock until exhausted, before issuing more new stock.

Treasury stock is not carried as an asset in the balance sheet. The repurchase of stock at par is simply a refunding of the amount originally received from its sale. It is a debit item in the ledger, but on the balance sheet it reduces the amount of outstanding stock as shown on page 13. It is a reduction of net worth.

73. *Stock subscriptions.*—See discussion of item No. 15.

74–75. *Operating accounts.*—In the method of taking off a pooling statement and trial balance, described in section VI, under the sub-heading "Closing entries," all operating revenue and expenses are transferred to an operating account each month. A credit balance in this account represents undistributed proceeds of sales which may be used for any proper association purpose including patronage dividends, dividends on stock, as credit on stock purchases, payments on next month's products, or allocation to reserves. A debit balance indicates overpayments to patrons and should be corrected in future settlements for products. In order to improve the financial position and maintain the par value of stock, it will be necessary to accumulate funds (underpay patrons) until the deficit is eliminated, and a satisfactory credit built up.

Total liabilities and net worth.—In preparing the first balance sheet for an operating association which is installing a new system of accounts, it is unlikely that the total of assets will agree with the total

of liabilities. If there is a record of the results of yearly operations, which it is desirable to set up exactly as experienced, and which show a net loss, the footings of the balance sheet will show a larger credit than debit. If the credits from any cause are larger than the debits, the total excess will be a deficit. It is better to enter this item in red under net worth and deduct the amount from net worth.

A deficit account of this sort should be eliminated as rapidly as possible. This can be done by reserving some of the earnings. An amount to be determined by the directors of the association can be charged to the operating account, i. e., accumulated earnings, and credited to the deficit each month until it is eliminated.

A debit balance, resulting from excess values of assets over liabilities, may be set up as a "surplus"³ on the credit side to be added to net worth.

Entering and Posting Balance Sheet Items

When a balance sheet has been prepared it should be entered on the first page or pages of the new general journal, using all the space necessary for full explanations. The items of this balance sheet should then be posted into the general ledger. Each item should have a separate page in the ledger, and the accounts should be arranged by classes, preferably in the order in which they appear on the balance sheet. A few exceptions to the order of accounts are noted below.

The location of reserve accounts in the ledger is often a matter of the bookkeeper's choice. Frequently valuation reserves are entered immediately following the asset accounts which they modify. It is recommended, however, that all reserves be carried in a reserve section of the ledger.

The totals of the several classes of accounts, such as total current assets, total fixed assets, and total current liabilities, do not show in the ledger. Such totals in the ledger would duplicate the values of the separate items of which they are composed. They are shown on the balance sheet for convenience.

All ledger items, in a small business which does not have the detailed subsidiary records of a larger organization, should be fully explained in the ledger. Future entries in these accounts will be described in the following sections.

³ "Surplus" is not a good word to use in cooperative accounting. Surplus, in ordinary accounting terminology, indicates "profits" and theoretically there is no profit or loss in cooperation. However, if an excess total of assets is definitely a result of increased values of properties, the excess can be called "surplus from revaluation of properties." If the excess is due to underpaying for products, it can be credited in the "Operating account."

Section III

Procedure for a New Association⁴

THE minutes of meetings of organizers and the reports of those who solicit memberships in a new association should be complete and well kept. It is not uncommon for patrons of a new association to claim they have signed marketing agreements or for members to claim that they have made payments on shares of stock when the association has no record of such transactions. This situation does not imply dishonesty, but rather carelessness and a lack of appreciation of the necessity for organizers and solicitors to make a written record of all contracts signed, and all business transacted.

Each association should have an appropriate book of a permanent character, preferably of the loose-leaf type, for keeping the minutes of the meetings of members, directors, and the executive committee. The minutes should record the full transactions of all meetings and, after being typed and signed by the secretary, should be filed in the binder according to date. When approved at subsequent meetings, the approval with any corrections or additions should be noted on the original minutes, as well as recorded in the minutes of the current meeting.

Resolutions and discussions should be indexed by topics on a sheet in the front of the minute book, to facilitate reference to rules and declarations of policy.

One of the first procedures in the establishment of an association is to make a survey of the need for an association, the volume of produce available, the attitude of producers toward cooperation, and their willingness to obligate themselves to finance an association. Producers' contracts in which there is an agreement to deliver products and which authorize deductions for expenses and capital purposes, are advisable.

Articles of Incorporation

As soon as it has been determined that the organization of a cooperative creamery association is feasible, articles of incorporation should be prepared and filed. The provisions which should appear in articles of incorporation usually include (1) name of association; (2) purposes and powers; (3) principal place of business; (4) duration of the corporation; (5) number of directors, length of term, and how chosen; (6) capitalization; and (7) other information necessary to a

⁴ Producers interested in the organization of a new cooperative dairy association or the reorganization of an operating association may obtain advice on special problems relating to cooperation by communicating with the Farm Credit Administration, the extension department of their state agricultural college, or the bank for cooperatives which serves their district.

proper description of the structure of the organization. Operating policies are outlined in the bylaws.

The one article, in the articles of incorporation, which has direct bearing upon the opening of a set of accounts is the one referring to capitalization. For the purposes of illustration the capital stock form of organization has been used in this bulletin. Before determining the kind and amount of capital stock, the organizers should consider the needs of the particular operations which they plan to conduct. If a creamery plant is to be built, the size of building and its cost should be estimated, together with the cost of the equipment necessary to handle the estimated volume of product, and the required amount of operating funds.

Amount of Capitalization

Let us assume for purposes of illustration that the survey indicates a prospective membership of 200 producers, each having about 10 cows, which produce, on the average, a half pound of butterfat a day throughout the year. This would be more than 1,000 pounds of fat for each working day of the year.

An acre lot at the edge of town, within reach of city water and sewerage, can be purchased for \$500. A contractor estimates that the cost of a building will be about \$8,500, and the necessary equipment and machinery to start operations has been estimated at about \$11,000. This makes a total of \$20,000, not including extra and incidental expenditures which usually appear. Apparently \$25,000 will provide more than enough capital to acquire the properties but may not be sufficient for working capital and for growth over a 10-year period, so it is decided to capitalize for \$50,000.⁵

It is further assumed that business men in town are willing to subscribe for some of the stock, but under most cooperative laws non-producers cannot own voting stock in a cooperative association, so it will be advisable to have an issue of preferred, nonvoting stock for such nonmembers. It is, therefore, decided to incorporate with 100 shares of preferred stock at a par value of \$50 each, amounting to \$5,000, and 4,500 shares of common stock at par value of \$10 each, \$45,000, making a total of \$50,000.

It would be possible to organize a cooperative creamery with only common stock, and to raise additional capital by selling to non-members notes or other forms of obligation of the association such as certificates of indebtedness. The chief disadvantage of this form of

⁵ The cost of physical assets for handling 300,000 pounds of butterfat a year need not be as high as indicated here. If a plant is built merely to take care of present volume, future expansion may be costly. On the other hand, if the plant is built for future growth, the initial operating costs may be high. Organizers must be governed by local conditions. The figures given are only for the purpose of illustrating accounting methods.

financing is that the notes or certificates, in order to be salable, frequently have to bear definite maturity dates, and their payment at maturity might impose too heavy a burden on the association in the early years of its existence. In some cases it has been found preferable and easier to raise additional capital by the sale of preferred stock, or some other form of nonmaturing certificate, which the association is not obligated to retire, but which it may repurchase at its convenience.

The capital requirements of a nonstock association can be provided for by the sale to nonmembers of notes, certificates of interest, or other obligations in forms that differ from the certificates which are issued to members. In order that these certificates may be readily salable, they should ordinarily carry a fixed rate of interest, should be transferable, and should be entitled to priority over all certificates issued to members. The association should also have the right to retire these certificates issued to nonmembers at any time when funds may be available for that purpose, in order that the association may ultimately be financed entirely by its own members.

As soon as an association is incorporated and authorized to sell stock or other capital obligations, it becomes a business entity and needs books for recording its business. The first book needed is a general journal.

Opening Entries

When the association has been granted its charter, the first entry on the first page of the general journal, exhibit 2, would be as follows:

Dr.	Unissued common stock.....	\$45,000.00
	Unissued preferred stock.....	5,000.00
		50,000.00
Cr.	Authorized capital:	
	Common stock.....	\$45,000.00
	Preferred stock.....	5,000.00

Following this entry in the journal, there should be a description of the capital provisions in the Articles of Incorporation, their date, a reference to the law under which granted, the number and par value of each class of shares, and a statement of the depository in which the original copy of the Articles of Incorporation is kept.

Subscriptions For Common Stock

As soon as an association is incorporated, it becomes necessary for it to enter into marketing contracts with producers, and to obtain stock subscriptions. It is assumed that the association is using a marketing contract or has bylaw provisions which do not require each producer to subscribe for more than one share of stock, but authorizes the association to continue deductions from sales proceeds after the initial subscription is paid, for payments on additional shares of stock, as determined by the board of directors.⁶ However, in the illustration below, the association has required each prospective member to subscribe for one \$10 share of stock for each two cows which he owns, and to pay this amount in cash, in order to take care of its initial financial needs. Thereafter, deductions from sales proceeds will furnish the needed additional capital.

All contracts should be dated and entered in a contract register (Form 3), in the order of their acceptance. It is not necessary for a small association of a few hundred members to have a specially ruled book for this record. Stationers carry many columned forms, and a few pages of these columns can be headed with pen and ink in a short time. The lines of each page should be numbered and each contract should be given the same number as the line on which it is entered. An alphabetical index will furnish easy reference to these contracts and other accounts of members.

Each member should be given a number, the use of which should be discontinued when he ceases to be a member of the association. Numbers should not be transferred from one member to another. It will be found convenient to use the contract number of each member as his "can" number and as his producer-account and merchandise-account numbers. If a member's name and number are used together in all transactions, many mistakes and much confusion in charges may be avoided.

If a member signs an additional contract, or stock subscription, he should be given a new number. A contract register is useless as a record of the number of active members, because of discontinuances and deaths, so it should not be confused further by entering two accounts under one number. The dividend ledger will show the number of members and the producers' pay-roll sheet will show the number of active members.

⁶ There are three distinct advantages in this type of contract in that it allows the accumulation of funds for three necessary purposes: (1) Accumulation of capital and the retirement of debts, (2) repurchase of the investments of retired or deceased members, and (3) to revolve the capital holdings of members and retain ownership in proportion to patronage.

It is very little work to keep a separate record of the number of additions to membership and discontinuances. This can be done by ruling a simple form such as the following:

Membership Balance

Year	Month	New contracts		Discontinued		Net members	
		Number	Number of shares	Number	Number of shares	Number	Number of shares

There are modifications of and additions to the entries of members' contracts and capital accounts which can be made to give additional information. A tabulation of members by locals or geographic districts is useful in arranging country meetings. Arrangements of membership lists by hauling routes or hauling-zone rates, or according to whether they deliver milk or cream, will each afford some specific information.

Collateral Notes

If an association is incorporated without capital stock, the entry on page 30 cannot be made. Unless there is some restriction in the State law or in the articles of incorporation or bylaws, there is no limit to the amount of funds an association may borrow from its members, or others, for capital purposes.

The exercise of this borrowing privilege has led some associations into financial difficulties. It is always advisable for the board of directors to limit capital funds to the minimum requirements for operating efficiency.

Some associations, both stock and nonstock, secure their original financing through members' notes. These notes are sometimes deposited at the bank as collateral to the association's note for funds borrowed to inaugurate the financial operations. The journal entry of members' notes would be similar to the following:

Dr. Members' contracts (or notes) .. \$..
 Cr. Members' subscriptions .. \$..

Member Contracts, Nos. 1 to 200 both inclusive, as recorded in members' contract register and ledger accounts, to be paid by deductions from remittances for products.

If the association gives its note to the bank, entry would be: •

Dr. Bank (checking account) .. \$..
 Cr. Notes payable .. \$..

Followed by a description of the note, its date, maturity date, interest rate, and a reference to the resolution of the directors shown on the minute book, authorizing the officers to borrow the money.

The entry for the deposit of producers' notes with the bank as collateral to the association's note would be in two accounts, separate from all others, as follows:

Dr. Bank (collateral account)-----	\$-----	
Cr. Collateral notes-----		\$-----

These are purely memorandum accounts, opened for the purpose of maintaining a record of valuable property (notes) which has gone out of the association's immediate possession. The balance of these accounts need not be reflected in the balance sheet. Instead, the note payable to the bank may be supported by a footnote on the balance sheet, to the effect that the note payable is secured by collateral notes of members, deposited with the bank, in the amount of \$-----.

The journal explanation of this transaction should include a list with full description of the notes so deposited or, if it is desired not to use so much journal space, reference should be made to the receipt signed by the bank, which would include such a list.

Members' notes are entered in the individual accounts in the contract ledger. Future deductions or other payments are credited to these accounts in the ledger and the amount of monthly total credits is paid to the bank to apply on the association's note. A statement of the members' notes to receive credit and the amounts of each credit are usually given the bank each month or when payments are made. The bank should make both the endorsement of the total payments on the association's note and the individual credits on each member's note when payments are made. When these notes are fully paid they are recovered from the bank and delivered to the signers. The entries in the collateral accounts are reversed in the amounts of such recovered notes. Certificates in the amount of deductions are issued to members, usually at the end of the year.

Contract Register

Form 3, page 34, is a suggested form for a contract register. The sample entries thereon are for an estimated original membership of 200 producers. They show the first four entries on the first page and the last entry on the last page, and a total including all intervening entries which are presumed to have been made.

All information indicated by columnar headings will be found useful. At the time of receiving the original contracts of a new association, only the information in columns which refer to the contracts will be entered. All other columns will record subsequent transactions and the entries will be made later, when payments have been completed or when contracts are cancelled or transferred. It is not necessary to enter each individual contract in the journal but the totals of all contracts taken during the month, as shown on

the contract register, can be journalized before the monthly closing of the books.

In this illustration the 200 members have signed contracts for 983 shares of common stock at the par value of \$10 per share, or a total subscription of \$9,830.

Contract Ledger

FORM 4.

1935		Debits	Credits	Credit balance
Account of John Brown. Hauler's route 4.		Address, R. R. No. 3. No. of cows 18. Contract No. 175.		
Jan. 3	Contract No. 175 for 9 shares of stock	\$90 00		
Jan. 13	Cash (Certificate No. 1 issued Feb. 2, 1935)		\$90 00	
June 30	Deduction—Pay roll sheet No. 1		1 17	\$1 17
July 31	Deduction—Pay roll sheet No. 4		2 29	3 46
Aug. 31	Deduction—Pay roll sheet No. 8		2 87	6 33

Two types of accounts are illustrated here. See explanation under "Contract ledger," p. 37.

Entering Subscriptions

The journal entry or entries would be in amounts totaling as follows:

Dr. Members' contracts..... \$9, 830. 00
 Cr. Common Stock Subscriptions..... \$9, 830. 00

Members' contracts Nos. 1 to 200, inclusive, as entered in contract register.

In the illustration members paid cash for their subscriptions and the following general journal entry is made:

Dr. Cash..... \$9, 830. 00
 Cr. Members' contracts..... \$9, 830. 00
 Dr. Bank..... 9, 830. 00
 Cr. Cash..... 9, 830. 00

Members may want immediate delivery of their certificates, and when they have been written the entry will be as follows:

Dr. Common Stock Subscriptions..... \$9, 830. 00
 Cr. Unissued Common Stock..... \$9, 830. 00

Certificates 1 to 200, inclusive, for 983 shares of common stock.

A small association may not wish to incur the expense of a specially ruled stock or certificate register. If desired, a few sheets of many-columned paper may be headed by hand, as illustrated in form 5. However, if stock certificate blanks are printed with stubs and bound 50 or 100 blanks in a book, the record on the stub will be sufficient. When certificates are repurchased, they should be canceled either with a "canceled" stamp or by cutting out the names of signing officers, and be pasted onto their proper stubs in the certificate book. This completes the record, and vacant stubs can be used to check the ledger account of outstanding certificates.

Stock Register

FORM 5.
[Numbered for left-hand page] 1

Cer- tifi- cate No.	Trans- fer- red from	Name	Address	Con- tract No.	Num- ber of shares	Date of certificate			Cancellation			Remarks	
						Month	Day	Year	Month	Day	Year		Cer- tifi- cate No.
00		Brought for-											
01		ward											
02													
03													
04													
05													
06													
07													
08													
39													
40													
41													
42													
43													
44													
45													
46													
47													
48													
59													

1 Opposite pages of the open book are numbered the same. The first right and left pages are numbered "0," the second 2 pages, 1, etc. This is folio paging. Page numbers indicate hundreds. Line numbers on right hand page are from 50 to 99. Line numbers indicate tens and digits. Contract numbered 1407 would be entered on page 14, line 07.

GENERAL JOURNAL

Association

CREDITS

MONTH OF May 1935

DAY	ACCOUNTS	ITEMS	POSTING		LEDGER CREDITS				FIRST NATIONAL BANK			SALES			
			L.F.	✓	GENERAL	CUSTOMERS	CREDITORS	PRODUCERS	CASH DEPOSITED	CHECKS	CHECK NOS.	DAIRY PRODUCTS	FARM SUPPLIES		
	<i>Brought Forward</i>				88,090	-				12,330	-	2,900	-		
18	Office Furniture and Fixtures	See Invoices and Inventory Book for equip-													
	General Office Company	ment purchased					580	-							
	" " "	Payment by check								580	-	3			
	Office Supplies	Stationery, etc. - see invoices and sup-													
	General Office Company	ply inventory					125	50							
20	Automobiles	One new (make) one ton delivery truck													
	Central Auto Company	Serial - - - Engine - - -					700	-							
	" " "	Settled by check for \$200 and one \$500													
	First National Bank	note dated today, payable \$50 on 20th of								200	-	4			
	Notes Payable	each month beginning June 20 @ 6% - See			500	-									
		Notes Payable Register													
20	Plant Equipment	Purchase - See Invoices and Equipment In-													
	Dairy Supply Company	ventory Book					11,000	-							
	" " "	Settlement by check \$6,000 and ten notes													
	First National Bank	dated today, due Oct. 20, 1935, Apr. 20								6,000	-	5			
	Notes Payable	and Oct. 20, 1936 - 7 - 8 - 9 and Apr. 20,			5,000	-									
		1940 - \$500 each @ 6% - See Notes Payable													
		Register													
20	Plant Supplies	Tubs, cartons, salt, acid, etc. See													
	Dairy Supply Company	Invoice and Supply Inventory					650	-							
	Prepaid Insurance	Fire													
	" " "	Liability													
	" " "	Auto													
	First National Bank	" " "								287	-	6			
	Auto License	Paid Secretary of State for 1935 Truck													
	First National Bank	license								20	-	7			
	Meter Deposits	Paid City Treasurer for meter installa-													
	First National Bank	tion Water \$10 - Elec. \$5								15	-	8			
		83,590.													
		13,055.50													
		12,330.													
		9,982.													
		<u>128,957.50</u>			83,590	-	13,055.50			12,330	-	9,982	-		

Subscriptions for Preferred Stock

When the association has obtained stock subscriptions from the owners of a sufficiently large number of cows to assure a satisfactory volume of products for successful operations, it will be justified in soliciting subscriptions for preferred stock from nonproducers. This preferred stock should not carry any voting rights, but the certificates on their face should provide for the payment in full of principal and accrued dividends in case of liquidation before any payments are made to the holders of common stock, and preferably should entitle the holders to cumulative dividends. In the following illustration, 25 nonproducers each purchase and pay for two shares of preferred stock at a par value of \$50, making a total of \$2,500.

There probably will be no contracts or installment agreements for the purchase of preferred stock. Nonproducers will pay by cash or checks and receive their certificates in one transaction. The total of the several sales made in any one month can be entered on the general journal, as follows:

Dr. Cash.....	\$2, 500. 00	
Cr. Unissued preferred stock.....		\$2, 500. 00

With explanation of certificate numbers, number of shares, etc., the proper records would be made on the certificate stubs and the cash would be deposited. The deposits would be as follows:

Dr. Bank.....	\$2, 500. 00	
Cr. Cash.....		\$2, 500. 00

The explanation of the use of a certificate register or the certificate stubs, given above for common stock, applies also to certificates for preferred stock.

The initial subscription of \$9,830 in common stock and \$2,500 in preferred stock, a total of \$12,330, will not pay for the plant and equipment. Additional deductions from remittances to producers will be necessary after operations have been started. Common stock will be issued once a year for shares which have been fully paid by deductions. It is well to have provisions for repurchasing, at the option of the association, printed on the face of each preferred stock certificate. This repurchase will require additional deductions and the issuance of more common stock. As soon as operations are started, it will be necessary to have a ledger account for each producer in which to credit his deductions.

Contract Ledger

The original subscription of each member should be the first entry in his account in the contract ledger. Form 4, page 35, illustrates such an account after the original subscription has been paid and

after a few monthly deductions, made during subsequent operations, have been posted.

After the original subscriptions of members have been paid, and using the type of membership contract suggested, there will be no more subscriptions for definite numbers of shares, except from new members, which should be entered as explained previously.

If the same contract ledger accounts recording members' original subscriptions are used for deductions made after payments in full of subscriptions for definite numbers of shares, and if new members are being admitted on contracts for definite numbers of shares at the same time, the contract account will be a mixture of assets and liabilities of different classes. The balance of the account will not reflect the true condition of either class.

It is advisable, therefore, that the ledger accounts of contracts of members, subscribing for definite numbers of shares, be kept separate from the deductions of old members who have paid their original subscriptions. The accounts of members paying on subscriptions will then, at any time, show how much they owe on their subscriptions, and will be asset accounts. The accounts of members whose original subscriptions have been paid will show their payments toward additional shares, and will be liability accounts, and will appear on the balance sheet as a part of net worth.

At the end of the year certificates for fully paid shares of stock, in addition to the original subscriptions, will be issued and entered on the journal as follows:

Dr. Members' contracts.....	\$.....	
Cr. Unissued common stock.....		\$.....

Certificate No. — to — for — shares of common stock.

The certificates should be charged against members' accounts in the members' contract ledger. The members' original subscriptions have been paid in full and certificates issued. Additional shares are being issued for deductions credited in the contract accounts after the subscription accounts have been balanced.

Ordinary stock forms of loose-leaf ledger sheets will serve as contract ledger sheets without additional ruling, as illustrated in Form 4.

Dividend Ledger

If an association pays dividends on its capital stock, it is advisable to use a dividend ledger, as illustrated in Form 6. Postings to the dividend ledger are made by transferring the amounts of fully paid shares from members' contract ledger accounts. It is necessary also to indicate on the dividend ledger the date on which the payments for each share were completed in order that dividends may be calculated from that date. After the end of the fiscal year, certificates will

be written. Each member's certificate will be for all shares paid in full during the past year. The numbers of certificates will be recorded in the column provided on the dividend ledger for reference purposes. If a certificate register is used, certificates will be entered there also.

Dividend Ledger

ACCOUNT OF JOHN BROWN

Load, Smith. Address, R. R. No. 2. Contract No. 175.

FORM 6.

Month	Day	Year	Certificate No.	Number of Shares	Paid by	Dividend period	Rate	Items	Totals	Check Nos.
1	2	1936	97	9	Cash.....	1935.....	6	5 40	5 40	2218
1	5	1937	97	9	Deductions.....	1936.....	6	5 40	5 90	
			228	1		Apr. 30, 1936, to Dec. 31, 1936.....	6	40		
			228	1		do.....	Oct. 30, 1936, to Dec. 31, 1936.....	6		10
	2	1938		11	do.....	1937.....	6	6 60	7 30	10656
			490	1	do.....	Apr. 30, 1937, to Dec. 31, 1937.....	6	40		
			490	1	do.....	July 31, 1937, to Dec. 31, 1937.....	6	25		
			490	1	do.....	Nov. 30, 1937, to Dec. 31, 1937.....	6	05		
1	7	1938		14	do.....	1938.....	6	8 40	8 90	16817
			847	1		May 31, 1938, to Dec. 31, 1938.....	6	35		
			847	1		do.....	Sept. 30, 1938, to Dec. 31, 1938.....	6		

Nonstock associations which pay interest on certificates of interest or certificates of indebtedness will find it convenient to use this type of ledger for accumulating the total amount of each member's certificates in order that only one interest check a year need be written.

Ordinary stock forms of ledger sheets can be used. Anyone can draw the few extra lines necessary to make a good dividend record sheet. In the illustration above, dividends were calculated on each fully paid \$10 share of stock from the date its payment was completed, but certificates were not written until after the end of the fiscal year. This method avoids issuing a great number of certificates for one share each.

Deduction Record Sheet

In a large association or a nonstock association, it may be found convenient to do away with a contract ledger of the usual form, having one page for each account. A deduction record sheet similar to the following which requires only one line a year for each producer may be used for recording deductions. Yearly totals are posted to the dividend ledger.

The names of producers would be entered on such a form in the order in which they appear on the pay-roll sheet, which makes it much easier to post the credits from the pay roll to this form. At the end of the year the totals of fully paid shares (multiples of \$10 if the stock has a par value of \$10) are removed and certificates of stock

written for them. The totals of incomplete payments, less than \$10, are carried forward to the next year's sheet. It will be found convenient to enter totals in two amounts, one amount for the fully paid shares, i. e., multiples of \$10 and one for the amount less than \$10. To facilitate this, the deduction record sheet has been drawn with two additional total columns, one for fully paid shares and one for partial payments.

Using the type of dividend ledger suggested, Form 6, and either the contract ledger or the above deduction record sheet, it will be necessary to transfer each fully paid share to the dividend ledger separately, with the date on which payment was completed. Otherwise, dividends cannot be calculated on fully paid shares from date of payment.

This form of record for deductions is convenient for nonstock associations which issue certificates of interest annually for the full amount of all deductions.

Dividends

The common stock of a cooperative association should not carry a fixed dividend rate, and the same is true of preferred stock held by producers. However, when preferred stock, without voting rights is sold to nonmembers, it usually is found necessary that it bear a fixed dividend rate, and that dividends be cumulative.

Dividends are payable only from earnings. They cannot be considered as an expense. Earnings arise from the underpayment to producer patrons for the products they have delivered. They make up the credit balance in the pooling statement on page 58.

Even if the payment of dividends is optional with the association, it is good business to pay them. The reserve for dividends should be set up each month from the credit in the operating account in the amount of one-twelfth of the anticipated yearly total dividend, and it is also a good operating precaution to set the funds aside in a special bank account. Some advantages of paying dividends are as follows:

1. Even though members initially subscribe for stock in proportion to the sizes of their herds, and deductions are made pro rata on deliveries, it is not long before some members buy additional stock or reduce their herds, so have an investment out of proportion to their patronage. This helps the association in financing its ownership of property and should be rewarded by a modest dividend payment. Maladjustments of stock holdings are continually developing. They can be corrected most easily by revolving the capital of the association.

2. It is an indication of successful business to pay dividends on capital. An association that has an unbroken record of annual

dividend payments, stands much higher with its members, creditors, and stockholders, and in the community than one which does not pay dividends.

Because organizers, association officers, and members, at times, have placed too much emphasis on paying dividends or interest on member capital, and because dividends and interest sometimes have been paid when the funds were needed for other purposes, such payments are coming into disfavor in some areas of the middle western dairy sections. Payments of dividends or interest on member capital should be made only when earned and only after other association requirements have been met.

If each member were to have only one certificate of stock or one certificate of interest, there would be no need of an interest or dividend ledger. Interest or dividend checks would be for the same amounts year after year, unless the rate were changed. If it were desirable to keep a record of them, it could be done on the backs of certificate stubs. However, that is rarely, if ever, the situation. As a rule, deductions for capitalization will continue until the members have enough investment in stock or certificates of interest to carry the business without borrowing for capital or operating purposes.

In this case most members will be receiving additional certificates each year or for the first few years. If interest or dividends are to be paid on capitalization, it will be necessary to assemble a record of the certificates held by each member in order to write only one check a year. Assembling can be done best in an ordinary ledger. After a few years of operations the ledger account of interest or dividend payments to a member might appear as shown in Form 6.

The association has been set up; initial stock has been sold, and the cash is in the bank. We have the following record forms:

- Form 1. General Journal.
- Form 2. General Ledger.
- Form 3. Contract Register.
- Form 4. Contract Ledger.
- Form 5. Stock Register.
- Form 6. Dividend Ledger.

Acquiring Property

In time a building site will be purchased; a building will be constructed and equipment, furniture and fixtures, supplies, etc., will be purchased and installed. The totals of entries for each of those several transactions might be as follows, and are journalized in exhibit 2.

Journal Entries

	<i>Debits</i>	<i>Credits</i>
Real estate	\$500. 00	
Bank		\$200. 00
Preferred stock		300. 00
Plant building	8, 500. 00	
Bank		2, 700. 00
Notes payable		5, 000. 00
Preferred stock		800. 00
Furniture and fixtures	580. 00	
General Office Co.		580. 00
General Office Co.	580. 00	
Bank		580. 00
Office supplies	125. 50	
General Office Co.		125. 50
Cars and trucks	700. 00	
Central Auto Co.		700. 00
Central Auto Co.	700. 00	
Bank		200. 00
Notes payable		500. 00
Plant equipment	11, 000. 00	
Dairy Supply Co.		11, 000. 00
Dairy Supply Co.	11, 000. 00	
Bank		6, 000. 00
Notes payable		5, 000. 00
Plant supplies	650. 00	
Dairy Supply Co.		650. 00
Prepaid insurance	172. 50	
Bank		172. 50
Truck license	20. 00	
Bank		20. 00
Meter deposit	15. 00	
Bank		15. 00
Liability insurance—Plant	50. 00	
Liability insurance—Truck	44. 50	
Bank		94. 50

The above entries presume that arrangements can be made with all large creditors to pay accounts and notes over a long term of years. This is rarely possible and associations frequently learn, after operations have started, that they have overestimated their earning capacity. They have trouble in meeting all the installments of a large number of accounts and notes payable. Many creditors, foreseeing this possibility, will demand mortgages on the properties. Titles to equipment usually remain in the sellers until payment is completed, so equipment bought on contracts cannot be mortgaged. This may mean a number of mortgages on the plant.

It is usually advisable, as soon as estimates of total installation costs can be made, to arrange for a loan to cover all the investment not paid for by cash subscriptions of members.

Buying a Plant

Sometimes new associations purchase plants instead of building them. As the type of building construction frequently has a great deal to do with the rate of depreciation when used for creamery purposes, and as the arrangement of space to suit working requirements makes a considerable difference in the manufacturing cost of a pound of butter, such purchased plants may not always be economical in the long run.

If a plant is purchased, any one of several conditions may be encountered. The plant may be one which has been used as a creamery and be admirably fitted for such use without alterations or repairs. In this case the purchase price should be apportioned between the several classes of assets required, such as real estate, buildings, equipment, etc., and entered at the cost price.

If the acquired properties need additions, alterations, and repairs to make them suitable for creamery purposes, such costs at the time of acquisition also should be charged to the costs of the classes of property receiving the additional outlay. It sometimes happens that the total cost of a piece of property may be greater than its replacement value. In such instances it may be presumed that the property was worth its cost to the association and should be carried at the price paid.

If a building is purchased for less than its appraised or depreciated value, it may seem desirable to set up the true value on the books. In such cases, the difference between the true value and the cost may be included in the net worth section of the balance sheet under "Capital Surplus" as a "Reserve for Appreciation." Such a surplus or reserve cannot be used for the payment of dividends. It is permissible, though not advisable, to debit monthly building depreciation charges to a "Reserve for Appreciation" until it is exhausted.

Posting

Postings of items in the ledger columns will be made during the month as they are entered on the journal. At the end of the month when the books are to be closed, the following method of posting journal totals may be used: The debit and credit items in creditors' column, as shown on exhibit 2, will have been posted into the creditors' ledger to the accounts of those from whom purchases were made. The totals of debits and credits in creditors' column as shown on the last page for the month will be posted to creditors' account in the general ledger. This general ledger account is called "Creditors' control account." It contains the totals of all monthly debits and credits in the creditors' ledger. Trial balances of the creditors' ledger must agree with this account.

In future operations items will appear in the customers' and producers' columns. They will be treated similarly; that is, the individual entries will be posted to their proper ledgers either from the general journal or the special journals in which the original entries were made. Control accounts, to which monthly totals of columns are posted, will be maintained in the general ledger for each. These accounts will be known as customers' ledger control and producers' ledger control,⁷ and are the accounts entered on the balance sheets. Separate lists of the individual accounts are drawn off each time a balance is taken. These lists are known as customers' trial balance and creditors' trial balance. The producers' trial balance is taken from the pay-roll sheets.

The items in the general ledger column and the total of each special column such as cash, bank, products, etc., and the total of each expense column will be posted to their respective accounts in the general ledger.

Control Accounts

The totals of all journal columns except the subsidiary ledger columns (that is, customers, creditors, and producers) but including the general ledger column will be posted to an account in the back of the general ledger to be known as general ledger control. All control account totals can be determined without extra work by footing the totals of journal columns on the last journal page of the month as follows:

<i>Control Accounts</i>		
General ledger column.....	\$92, 017. 50	\$93, 590. 00
Cash.....	12, 330. 00	12, 330. 00
Bank.....	12, 330. 00	9, 982. 00
Other general column totals (expenses, etc.).....	X	X
General ledger control.....	116, 677. 50	115, 902. 00
Customers' ledger control.....	X	X
Creditors' ledger control.....	12, 280. 00	13, 055. 50
Producers' ledger control.....	X	X
Journal totals.....	128, 957. 50	128, 957. 50

In most offices, errors in posting are common. Using control accounts helps to locate the ledger in which the error occurs. With four ledgers and four control accounts, an error is located in one ledger. Therefore, error is automatically traced to one-fourth of its possible locations.

⁷ In the illustrations herein, the producers' pay roll serves as the producers' ledger.

EXHIBIT 3, Trial Balance

Name of accounts	Debit balances		Credit balances	
Cash.....		X		
Bank.....	\$2,348	00		
Real estate.....		500		
Building.....	8,500	00		
Equipment.....	11,000	00		
Cars and trucks.....		700		
Furniture and fixtures.....		580		
Office supplies.....		125		
Plant supplies.....		650		
Prepaid insurance.....		172		
Auto license.....		20		
Meter deposits.....		15		
Liability insurance.....		50		
Auto liability.....		44		
Notes payable.....				\$10,500
Members contracts (subscriptions).....		X		
Common-stock subscriptions.....		X		
Unissued common shares.....	35,170	00		
Unissued preferred shares.....		1,400		
Authorized common stock.....		X		45,000
Authorized preferred stock.....				5,000
General ledger control.....	61,275	50	60,500	00
Customers' ledger control.....		X		
Creditors' ledger control.....				775
Producers' ledger control.....				X
Total.....	61,275	50	61,275	50

EXHIBIT 4, Balance Sheet

Current assets			Debits		Credits	
Bank.....		\$2,348	00			
Total current assets.....				\$2,348	00	
<i>Fixed assets</i>						
Real estate.....			500	00		
Building.....			8,500	00		
Equipment.....			11,000	00		
Cars and trucks.....			700	00		
Furniture and fixtures.....			580	00		
Total fixed assets.....					21,280	00
Supplies (office and plant).....					775	50
<i>Prepaid items and miscellaneous</i>						
Fire insurance.....			172	50		
Liability insurance:						
Employees.....			50	00		
Auto.....			44	50		
Auto license.....			20	00		
Total prepaid.....					287	00
Meter deposits.....					15	00
<i>Current liabilities</i>						
Accounts payable.....			775	50		
Notes payable (within 1 year).....			1,600	00		
Total current liabilities.....						\$2,375
<i>Long-term liabilities</i>						
Notes payable.....						8,900
<i>Net worth</i>						
Authorized common stock.....	\$45,000	00				
Less unissued.....	35,170	00	9,830	00		
Authorized preferred stock.....	5,000	00				
Less unissued.....	1,400	00	3,600	00		
Net worth.....						13,430
						00
				24,705	50	24,705
						50

Trial Balance and Balance Sheet

When the accounts have been posted into the general ledger, the trial balance will appear as shown on page 46.

If there are several bank accounts which are kept in a special bank register, the bank account in the general ledger and in the trial balance and balance sheet is a control account. The same is true of the real estate and building accounts. General ledger accounts for equipment, cars and trucks, furniture and fixtures, merchandise, supplies, etc., serve as controls for the inventories of these commodities.

As there are only asset and liability accounts in the trial balance, at this stage of development, before operations have started, the balance sheet would be composed of the same items, but rearranged in some systematic order, possibly as shown on page 46.

Section IV

Producers' and Producer Settlement Records

Scale Sheets

THE first entries of operations will be the records of milk and cream received from patrons. Forms 7 and 8^s are two types of scale sheets. If cream and milk are not graded, or if graded, and separate sheets are used for each grade, Form 7 is satisfactory. Generally, however, Form 8 which provides for entering two grades of milk or cream on the same sheet is more convenient.

If products are to be received from both members and nonmembers, it is advisable to use separate sheets for them, and to keep all member

FORM 7.

<i>Scale Sheet</i>					
..... Load		 19..		
Patron's No.	Patron's name	Number of cans	Weight of cream or milk	Butterfat test	Pounds of butterfat
.....
.....
.....
.....

FORM 8.

<i>Scale Sheet</i>								
..... Load			 19..				
Pa- tron's No.	Patron's name	Num- ber of cans	First grade cream			Second grade cream		
			Pounds	Test	Pounds butterfat	Pounds	Test	Pounds butterfat
.....	
.....	
.....	
.....	

^s The series of form numbers in this bulletin is continuous. In setting up a system of form numbering, it is advisable to use different series of numbers for separate form uses, such as general accounting, product and processing records, and to reserve unused numbers for forms which may be introduced later.

and nonmember records separate even if they are treated alike as to prices, etc. Not only does the Capper-Volstead Act make limitations on the amount of nonmember business which an association may do, and still retain its cooperative status, but the officers will want to have records of the nonmember business. Such information may indicate necessary changes in the association's policies regarding stock sales, or other methods of raising capital funds from members and patrons, or it may supply a record of the amount of earnings on which income taxes must be paid.

Patronage of a creamery can be conveniently divided in other ways by using separate scale sheets for each class or division. Scale sheets for truck loads can be typed in advance with patrons' names and numbers. If patrons have designated delivery days, the sheets for each weekday can be prepared in advance. Divisions can be made for local units. Such classes or divisions if carried through the pay-roll sheets and the entire accounting system will be found convenient, especially by the larger associations.

All scale sheets, statements, and invoices should carry patrons' contract numbers and names for perfect identification. Poor writing of numbers sometimes causes confusion when only numbers are used on scale sheets and test records. A father and son may have the same name and the contract number may be the only means of identification. Sometimes patrons forget their contract numbers, so names are necessary for identification.

Colored Tags

A weighman's hands are usually wet and it is almost impossible for him to work fast and make neat or sometimes even legible records of receipts on a scale sheet. Some creameries have colored shipping tags, similar to Form 9. Each patron fills out and attaches one tag

FORM 9

Colored Shipping Tag

DELIVER TO

----- Assn.

(Address)

----- 5-gal. cans. DELIVER EMPTY CANS TO:

----- 8-gal. cans.

----- 10-gal. cans. -----

(Address)

to each shipment, in addition to any can identification tags used. The weighman removes these tags and writes the weight and grade of cream and any other necessary information on their backs. The scale sheets are made up in the office later. One record is eliminated if, when the samples are tested, the tests are written on the back of tags before they are taken to the office for summarizing. Different colored tags can be used for milk and cream and other colors for "bad order" cans, or to indicate causes for degrading cream, etc.

Butterfat Tests of Cream

Samples of each patron's delivery of cream should be tested, and the pounds of fat calculated for each shipment. This is the only way of accurately arriving at the amount of daily fat receipts for which the association must pay, and the only way of arriving at daily churn overrun from the pounds of fat credited to patrons and paid for. Overrun can also be calculated from vat tests to be used as a check on the accuracy of total daily butterfat calculations. Tests are entered on the scale sheet or tags as described above, unless it should be convenient in the arrangement of the work in a large plant to use separate test sheets in the laboratory.

Composite tests of cream are not generally taken, except in some localities. The reason is that the butterfat content of daily deliveries of each producer sometimes varies enough so that samples, to be accurate, must be taken in exact proportion to the weights delivered. This means weighing each sample that goes into the composite.⁹

If the same size of samples were taken from a 30-pound delivery of 15-percent cream and from a 50-pound delivery of 35-percent cream, as an exaggerated example, the composite sample test would be 25 percent for the 80 pounds of cream, indicating 20 pounds of butterfat. The actual fat would be as follows:

$$\begin{array}{r}
 30 \text{ pounds} \times 15 \text{ percent} = 4.5 \text{ pounds} \\
 50 \text{ pounds} \times 35 \text{ percent} = 17.5 \text{ pounds} \\
 \hline
 80 \qquad \qquad \qquad 22.0 \text{ pounds}
 \end{array}$$

The patron would lose 2 pounds of fat. If the weights or tests were reversed, in the above illustration, the association would pay for 2 pounds of fat it had not received.

After scale sheets have been completed, the tests entered and butterfat calculated, each producer's shipment is posted to his monthly or semimonthly statement, and the total receipts are entered on the butterfat summary, Form 18, illustrated on page 66.

⁹ Combs, W. B., Thurston, L. M., Groth, A. E., and Coulter, S. T., THE ACCURACY OF COMPOSITE CREAM SAMPLES. Univ. of Minn. Agr. Expt. Sta., 38 pp., illus. 1927. See pp. 15, 16, and 17.

Producers' Statement Forms

Producers' statements are of many forms. Some associations have a duplicate statement punched for holding in a loose-leaf binder. Others do not bind them but file the duplicates in packages. Some associations combine statements of cream deliveries with invoices for products sold to patrons, and for other charges. One form combines statement, invoice, and settlement check on one sheet. This is a most convenient form. The one objection to it is that when statements and invoices are written by hand the sheets sometimes become soiled and wrinkled so that they are not as neat as they should be. Copies of such combined statements and invoices form a complete record of producers' accounts. If a pay-roll sheet is used, a producers' ledger is not of much value except as an index to the pay roll at such times as it is necessary to look up some past transaction. Copies of statements are as valuable and almost as accessible if wrapped by months and filed in the storage room.

If unallocated monthly underpayments to producers arising from undistributed balances on pooling statements are allowed to accumulate, it is advisable to maintain a record of producers' deliveries of products, in order that such allocations can be made at the time of closing the books for the year. If a pay-roll sheet is used, it is a permanent and sufficient record of monthly payments to producers, so that copies of statements need not be filed by months but can be distributed in producers' file envelopes and be available for use as a ledger record of patronage when allocations of underpayments are to be made.

It is advisable for a cooperative creamery to pay pooled prices. Cooperative centralizers and some local cooperative creameries pay the prevailing cash price. When pooled prices are paid, a major percentage of the estimated value of cream can be advanced at the time of delivery, if requested, and a final pool check can be written after the end of the pool period. Form 10 illustrates some of the possible entries on a type of combined statement and invoice, but does not include cash advances.

The value of cream need not be calculated on the statement if a check with attached stub, similar to form 11, is used. Using form 11, invoices need not be sent with settlement checks if charge slips are given to patrons at the time of sale. However, total charges for merchandise must be entered on the stub of form 11 and that total must be accumulated. An invoice is a convenient place to do this. An invoice also provides a copy for the patron and one for the association by use of a sheet of carbon paper.

Producers' Statement and Invoice

FORM 10.

----- Association														
Statement of		-----												
Contract No.		From						to		19 ..				
Address		Load												
Statement of product								Invoice						
Day	Number of cans	Weight of cream	Test	First grade butter-fat		Second grade butter-fat		Price	Amount	Day	Quantity	Items	Amount	
2	1-5	36	30	10	8					2	5	Pounds butter.....	\$1	50
5	1-5	39	31	12	1					5	1	5 gal. can.....		75
7	1-5	34	28	9	5							Hauling 2%.....		65
				32	4			30	\$9 72			Stock.....		32
								Charges.....	5 22					
								Check.....	4 50					

Producers' Check, Statement, and Invoice

FORM 11.

----- Association. No.		Date	Check No.
----- 19 ..		Lbs. cream	Test
(Address)		Lbs. B. F.	Price
Pay	Dollars \$	Gross amount	\$
To the order of		Other credits	\$
----- (Address)		Mdse. charges	\$
To the		Haul or express	\$
Bank	Assn.	Shares	\$
By		Total charges	\$
(Address)		Check herewith	\$

Form 12 is a combined statement of product, invoice, and settlement check. This form is printed on the lower half of a sheet of double length. The sheet is perforated at the top of the printed form and the top half folded back of the printed form. The top half is not printed, but a carbon is used so that a copy is made of everything written on the form. The carbon copies are retained as ledger sheets or are filed in packages by months or by producers.

Form 13 is an illustration of another type of combined statement, invoice, and check. If all charges are reduced to a few classes, they can be arranged on one line of the stubs as illustrated and a carbon copy of the stubs will form a pay-roll sheet. This type of check and stub is convenient for a centralizer plant which pays for daily deliveries and writes its checks by machine. The check-writing machine is often a combined calculator and typing machine.

All the statement forms illustrated require special printing. The check to be used with form 10 may be any stock form of commercial check. In printing special forms, any number of accounts and any special arrangement of them can be provided.

FORM 12.

Producers' Check, Statement, and Invoice

----- Association No. -----
 ----- (Address) ----- 19. -----

Pay to the order of ----- \$ -----
 ----- Dollars.

Through the
 ----- Bank ----- Association.

At ----- By ----- Secretary.
 [Perforation]

Detach statement before presenting check for payment. First half } of ----- 19. -----
 Second half }

If incorrect, return at once with check for correction. Patron's number -----

Day	First grade			Second grade			Deductions					
	Pounds Cream	Test	Pounds butter- fat	Pounds Cream	Test	Pounds butter- fat	Butter		Haul- ing	Stock	Sup- plies	Advance check
							Pounds	Amount				
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
Totals												

First grade butterfat, ----- pounds at ----- ¢ per pound ----- \$ -----

Second grade butterfat, ----- pounds at ----- ¢ per pound -----

Total credit -----

Less deductions -----

Check herewith -----

FORM 13.

Producers' Check, Statement, and Invoice

Pounds of cream or milk	Test	Pounds butterfat	Price	Value	Association Check No. _____						
					For deliveries from _____ to _____ 19__						
					Total credit	Charges					
						Butter, etc.	Hauling	Stock	Supplies	Advances	This check
<p><i>Detach this stub before cashing check. If incorrect, return with check for correction.</i></p> <p>_____ 19__ Check No. _____</p> <p>(Address of Association)</p> <p>Pay _____ Dollars \$ _____</p> <p>To _____</p> <p>(Address of Payee)</p> <p>Payable through _____ Bank _____ Association.</p> <p>By _____ Cashier.</p>											

If a creamery receives deliveries of milk from a few patrons, for starter milk, a scale sheet can be used for each. Making a carbon copy will provide a statement for the patron. If whole milk is received from a number of patrons, to be separated for churning or for other purposes, it will be convenient to summarize the daily receipts on a sheet similar to form 14. The date numbering on this form allows it to be used for either half of the month. Estimated total daily weights for milk butterfat are entered on the butterfat summary, form 18, but the daily deliveries of milk do not have to be posted to each patron's statement. When these sheets are cross-footed at the end of the semimonthly pool period, the adding machine ribbons can be marked with patrons' names and mailed with their checks, serving as statements of the quantities of product delivered.

If one composite sample of milk is tested each half month, tests can be entered directly on the pay-roll sheet. If milk is tested oftener than once each pool period, it will be necessary to average the tests and enter the average on the pay roll. Usually a simple arithmetical average of composite or fresh milk tests is satisfactory. The columns for such tests have been added to the milk weight summary, form 14.

Charges to Producers

Merchandise.—In the heavier production areas, it is customary at some plants to have regular cream delivery days, usually on 3 days a week in the winter and 4 in summer. On each of those days from a fourth to a half of the patrons delivering cream will make purchases of butter or other merchandise. Making such sales often causes confusion in a small plant, and interferes with the work of receiving cream. It has become customary at some plants to require that purchases by patrons be made on 1 day a week. Orders are left in advance, or sent in with truck drivers on the previous delivery day, so that merchandise is all wrapped and charged and is ready to send out on the delivery day.

Such orders are usually in the form of a receipt, Form 15, which can be used as an order and receipt, whether a hauler makes the purchase for a patron, or the patron comes into the plant and makes the purchase himself.

Producers' Order and Receipt

FORM 15.

....., 19....., 19..... Association
..... pounds butter	(Address) Please send me pounds of butter and charge to my account. Contract No. Received by Member. Hauler.

Hauling.—Sometimes associations assume all hauling charges from farm to plant. This is done, primarily, to encourage patronage and increase volume. Frequently the product of the distant producer is necessary to help carry the overhead expense and reduce the unit costs of operations. In this practice the nearby patron often feels that he is paying a part of the hauling of the distant producer. That is not always if ever true. Because of increased loads the nearby patron's hauling rates are usually lowered; he receives the benefit of reduced unit costs of plant operations because of the larger volume handled; he is relieved of a part of his investment in facilities and is aided in building a stronger institution.

Unfortunately this method appears to add to the association's expense as it causes a wider spread between sale prices and producers' prices in spite of the fact that returns to producers are never reduced and frequently are increased, because the association can usually contract for the hauling at a lower rate than the individual producers.

Usually when cream is picked up by trucks, and a delivered price is paid for butterfat the association pays the hauling and charges it or a part of it back to patrons. Sometimes a hauler charges each patron the same rate per pound of butterfat or per can of cream and sometimes hauling rates are based on distance from the plant.

In any event an easy way to determine producers' hauling charges is to make a hauler's pay roll for each hauler, and charge each patron with the amount paid the hauler. Such a hauler's pay roll may be a simple form as follows, or it can be made up on a producers' pay-roll form to go into the same loose-leaf binder or on any 3- or 4-column paper:

Haulers' Pay Roll

Contract No.	Name of producer	Number of cans	Pounds of butterfat	Rate		Amount	

If separate producers' pay rolls are made for each hauler's load, as previously suggested, it will not be necessary to make haulers' pay rolls. However, this does not always mean a saving of work, as it usually is necessary to submit a statement to haulers with their checks. Also, the rate paid for hauling may not be the same as the rate charged to producers. Such statements include patrons' names, weights, hauling rates, gross credits, charges for merchandise or advances which the hauler received, and the net amount of his check.

Stock.—Deductions are made on the basis of the pounds of butterfat delivered or as a percentage of the gross value of butterfat. Charges can be calculated and entered originally on either producers' invoices or producers' pay roll depending on the book-keeping routine. They must be shown in both places.

Other charges, such as last month's overdrafts, garnishment fees, assignment charges, etc., can be handled similar to the above charges.

When the producers' statements and invoices are complete records of each month's business with patrons, the producers' pay roll is a summary of such records, whether it is made up from the statements and invoices or is the original record, or, as is usual, is a combination of the two processes.

Pooling Statements

A pooling statement is necessary to arrive at an accurate price to pay for dairy products.

To obtain the desired accuracy in determining producers' prices it is necessary to have all items of the month's business entered on the books. The books then are a guide to the entries on the pooling statement. The pooling statement will be an operating or profit-and-loss statement, agreeing with the ledger balance in the operating account.

Pooling Statement ¹

FORM 16.

Month of _____ 19__

Income			Expenses		
	Amounts	Total	Acct. No.	Amounts	Total
Sales—Butter:			Plant:		
Shipped.....	\$4,665.92		Labor, rent.....	101	\$380.00
Local.....	82.40		Packages and wrappers.....	102	120.00
Patrons.....	665.65		Other supplies.....	103	50.72
	62		Fuel, power, etc.....	104	65.00
	15.65		Miscellaneous.....	105	39
Total.....	5,430.24		Cost of making butter.....		
Plus inventory, end of month.....	1,626.20		Collecting cream.....	110	
Total.....	7,056.44		Freight, drayage, truck.....	111	1.81
Less inventory, beginning.....		\$7,056.44	Total outside costs.....		1.81
Gross value of month's butter.....			General:		
Sales—cream.....			Director and manager.....	112	
Plus inventory, end of month.....	297.00		Clerical.....	113	100.00
Total.....	297.00		Printing and stationery.....	114	30.00
Less inventory, beginning.....		297.00	Postage, telegraph, and telephone.....	115	15.00
Cream balance (debit in red).....			Insurance, licenses.....	116	30.18
Sales—Purchased cheese.....	2.50		Miscellaneous.....	117	20.00
Plus inventory, end of month.....	18.00		Total.....		195.18
Total.....	20.50		Reserves:		
Less inventory, beginning.....			Depreciation:		
Balance.....	20.50		Building.....	118	35.41
Less purchases in month.....	20.00		Equipment.....	119	91.66
Gain on cheese (loss in red).....		.50	Truck.....	120	19.44
			Office.....		
		7,353.94	Bad debts.....	123	35.00
Sales:			Installation, insurance, taxes.....	121-2	64.50
Milk.....			Miscellaneous.....	124	
Skim milk "A".....			Total.....		246.01
Buttermilk.....			Total, all expenses.....		1,059.11
Gross value of products.....	7.10				
Sales—Patron's supplies.....			Gross income.....		\$7,354.75
Plus inventory, end of month.....	353.35		Less total expenses.....		1,059.11
Total.....	360.45		Gross distributable balance "C".....		6,295.64
Less inventory, beginning.....					
Balance.....	360.45		Settlement with patrons		
Less purchases, in month.....	360.00		Gross credit to producers.....		6,000.00
Gain on supplies (loss in red).....		.45	Less advances:		
Grand total, above incomes.....		7,354.39	Checks.....	\$15.00	
Less nonpool milk.....			Butter.....	18.15	
Less nonpool cream.....			Supplies.....	7.10	
			Hauling.....	400.00	
			Stock.....	200.00	
			Last month's overdrafts.....		
			Total.....		640.25
Less total nonpool purchases.....			Total checks issued.....		5,359.75
Gross income—Pool products "B".....	\$7,354.39		Undistributed balance.....		295.64
Plus all other income—Discount.....	36		Reserve for dividends.....		67.15
Month's total income.....	7,354.75		Balance to operating account.....		228.49
Plus last month's underpayment.....					
Less last month's overpayment.....					
Gross income.....	7,354.75				

¹ Figures for this statement were taken from the Summary of sales journal, p. 70; Product inventories p. 80; and from exhibit 6.

Any method of estimating expenses, or using last year's average expenses for price determining figures, though sometimes fairly accurate, does not give consideration to the fluctuating prices of coal, or changing labor in the plant, etc., and cannot be relied upon with

assurance. The pooling plan recommended herein requires the charging of expenses against operations in the months in which they are incurred. Such expenses as management, interest, insurance, depreciation, rent, and taxes are incurred on a time basis, regardless of the volume of product handled. In Farm Credit Administration Bulletin No. 14, entitled "Cooperative Organization of Iowa Farmers' Creameries," by Frank Robotka and Gordon C. Laughlin, the adjustment of "time" expenses to seasonal variations in production is discussed on pages 79, 80, and 81.

When payments are made twice a month, the middle-of-the-month payment should be considered as an advance on the month's business.

Form 16 is a type of cooperative creamery pooling statement which has been used extensively and found to be satisfactory. The arrangement of items allows a determination of the current "Month's total income" before adding last month's underpayment or subtracting last month's overpayment. If there is no whole milk or skim milk to pay for, it is only necessary to divide "Gross distributable balance" by the number of pounds of butterfat to arrive at the pool price.

If milk patrons are to be paid the cream butterfat prices for their milk butterfat and an additional price for their skim milk, it will be necessary to make the following calculation to determine the value of the skim:

1. Divide "Gross distributable balance—C" by "Gross income pool products—B" to get the percentage, "D," of gross income that is to be paid to patrons.

2. If it is assumed that skim milk had the same proportion of expenses and net returns that other products had, then multiply "Sales of skim milk—A" by percentage, "D," to determine the amount, "E," to credit to skim milk.

3. Divide "E" by total weight of skim milk to get the price to pay per 100 pounds of skim milk.

4. Subtract the amount to pay for skim milk, "E," from "Gross distributable balance—C" to get the amount to pay for butterfat, "F."

5. Divide "F" by the total pounds of butterfat to determine the price per pound to pay for butterfat.

If milk butterfat or butterfat in a higher grade of cream receives a higher price per pound than the pooled butterfat, it would be necessary to multiply the pounds of milk or higher grade butterfat by the difference in prices and subtract the amount thus obtained from "F," to get the amount to credit to cream butterfat.

It should be noted that the cream sales section of the pool statement will show a debit (or red) if the inventory at the beginning of the month is greater than the sales plus inventory at the end of the month. The reason for this is that the beginning inventory of cream was churned and the credit shows in butter sales instead of in cream

sales. Such debits on a pooling statement should be subtracted from instead of added to income.

The numbering of expense accounts will be found convenient.

Since a corporation may pay dividends on its capital stock only out of net earnings or accumulated surplus, a reserve for the payment of dividends on capital stock may not be regarded as a cost of doing business and should not be deducted as an expense. Consequently, the reserve for dividends on capital stock is set aside out of the undistributed balance (gain) at the bottom of the sheet.

Any balance remaining in the earnings account after provision has been made for all expenses and all reserves is available for distribution to the stockholders and patrons and may be distributed in the form of patronage dividends or dividends on stock.

Care should be exercised by the directors and officers of an association to see that dividends on capital stock and patronage dividends are paid only in accordance with the applicable provisions of the articles of incorporation, bylaws, and marketing agreement.

The Producers' Pay Roll

A producers' pay roll, as commonly used by cooperative creameries, conforms to one or the other of the two following types:

1. A summary of settlements with patrons when all the items of settlement originate in other records and the net amounts due patrons are extended on statements and invoices, or

2. A summary of merchandise and other charges against patrons, which charges originate in other records, and the original record of gross credits to patrons, and such debits as deductions for stock, and hauling charges if they are calculated on the pay roll.

In either case, the pay roll is the record from which are made the journal entries of all totals of patrons' credits and those charges which originate on the statements and invoices or on pay rolls, such as stock deductions and in some cases, hauling charges.

It is advisable to use a pay roll. If pay rolls are not used, and entries of settlements with patrons are obtained by taking adding machine totals of statements and invoices, there is no permanent record from which journal entries can be easily checked with any assurance of accuracy. The use of a producers' pay roll together with combined producers' statement and invoice forms as suggested makes unnecessary the use of a formal producers' ledger.

There is rarely any occasion to use a formal ledger for producers, except to check for errors and to maintain a record for allocating earnings. If statement and invoice forms, similar to forms 10 and 12, which are described in the preceding text, are used, and if the copies of these forms are filed under producers' names, every requirement of a ledger has been supplied. The pay roll is a permanent record.

The original statement and invoice go to the producer and are his records for making income-tax returns and for other uses. Allocation of earnings and patronage dividends may be calculated from the statement and invoice copies on either a quantity or a value basis.

Form 17 is an illustration of a common type of producers' pay roll. If an association uses a combined statement and invoice, similar to forms 10 or 12, the pay roll may advantageously be used as follows:

1. Pay-roll sheets are prepared at the beginning of the pool period, by writing or typing in patrons' names, addresses, and contract numbers. As previously stated, it will be found convenient in most creamery operations to make separate pay rolls for members and nonmembers and to divide them according to truck routes. Separate pay rolls will naturally be made for milk and cream patrons.

2. Last month's overdrafts and any unsettled credits (if such credits are not settled by a check in time to be included in last month's business) are brought forward to the current pay roll. The pay roll illustrated on page 61 has two overdraft columns. The first one under "Deductions" is for overdrafts from last month. The second is used for recording the total overdrafts at the end of the current month. The second overdraft column makes it possible to arrive at a total of checks issued and still have a balanced sheet. If overdrafts were entered in the check column in red and subtracted, as is sometimes done, the pay-roll sheet would still balance, but the total of the check column would not be the total of checks issued.

3. If it is the policy of the association to issue only one advance check to each patron in each pooling period, such checks are entered on the pay-roll sheet as written throughout the period. Special columns have been provided on Form 17 for entering advance checks. This allows the separate accumulations of advance and settlement checks.

When members are allowed to draw more than one advance check in a pooling period, charging them on the pay roll as written often requires the entry of several checks in the small space of one line. The check numbers and amounts become confused so that addition and reconciliation with the bank are more difficult. In such cases it is advantageous to use separate pay-roll sheets solely for the purpose of listing advance checks. Any columnar paper or a daybook may be used, but they cannot be bound in the pay-roll binder, which is a convenient place to keep them. At the end of the period, the total of each member's advances will be transferred from the advance sheet to the pay-roll sheet. The entries on the advance sheet will be used in reconciling with the bank.

4. After the end of the pool period, each patron's total pounds of butterfat delivered during the period is entered from his statement.

5. Invoices of merchandise and supplies are entered on the pay roll. If it is the policy of a creamery to charge patrons the pooled-cream price for butter which they purchase, it will not be possible to make daily entries on the sales journal of the amounts to be charged to producers, though it will still be advisable to enter the pounds of such sales on the sales journal and on producers' invoices. After the pooled price has been determined, it can be applied to producers' purchases on their invoices and the total amounts transferred to the sales journal and to the pay roll.

6. After the pool price is determined and entered, the patron's gross credits are extended.

7. Deductions for stock are calculated, usually at a definite rate per pound of butterfat delivered or as a percentage of gross credit.

8. Hauling charges are extended on the pay roll, or posted to the pay roll from the hauler's pay roll if one is used.

9. After all debits and credits have been entered on the pay-roll sheets, each sheet is balanced. Total debits must equal the total of gross credits, unless some patron has an overdraft.

10. After sheets have been balanced they should be summarized on a separate pay-roll sheet.

11. Before checks are written, the totals of merchandise charged to producers on the pay rolls should be checked with the total charged to producers on the sales journal. In like manner supply charges and advances should be checked. The total pounds of butterfat on the pay roll should agree with the total of patron's deliveries as shown on the summary of scale sheets.

12. Checks should be written for one pay-roll sheet at a time, and the total of all checks for each sheet should agree with the total net amount to be paid, as shown on each sheet.

13. A small association can conveniently use the pay-roll sheet as a cream-order register or check register. The entry in the journal would be the one grand total of all settlement checks issued. It is always advantageous to use a special form or color of check for cream payments.

It will be noted, if no statement stub is attached to the checks, that all items of the account must appear on the statement and invoice form.

Entering and Posting the Pay Roll

After pay rolls have been completed and checks are written, all items on the pay rolls not journalized from some other source should be entered on the journal.

The trial balance and balance sheet on page 46 do not contain any operating accounts. Accounts for products, producers' supplies, expenses, and for all other items that arise in operations will have to be opened in the general ledger when operations start.

Entries of the pay roll will be in totals, in a manner similar to the following:

Dr. Products	-----	\$-----	
Cr. Producers	-----		\$-----

The amount entered will be the gross credit to producers; that is, the total of amounts resulting from the multiplication of each producer's total pounds of butterfat by the price. Milk and cream pay rolls will be entered separately. The debit in "Products" account in the general ledger will serve as a control account with which summaries of pay rolls may be checked.

Dr. Producers	-----	\$-----	
Cr. Contracts	-----		\$-----

The amount entered will be the total of all deductions to be credited on contracts or applied to purchases of shares of stock or certificates of indebtedness.

Dr. Producers	-----	\$-----	
Cr. Haulers (or hauling)	-----		\$-----

If all hauling costs are charged to producers, the haulers' accounts in the creditors' ledger each can be credited with the amounts due them. If the association absorbs a part of the hauling costs, this credit should be made to "Hauling" in the general ledger. Checks to haulers are then charged to this "Hauling" account. The debit balance of hauling account would be entered on each monthly operating or pooling statement as the expense of "Collecting cream."

Merchandise charges are journalized from the "Sales journal" as illustrated in "Summary of sales journal," page 70, exhibit 5.

Dr. Producers	-----	\$-----	
Cr. Bank	-----		\$-----

The amount will be the total of all settlement checks written. Advance checks will have been entered previously, when they were written.

In bookkeeping practice it is customary to combine entries as much as possible. A combination of the above entries of a pay roll might be made as follows:

Dr. Products	-----	\$-----	
Producers	-----		
Cr. Producers	-----		\$-----
Contracts	-----		
Haulers	-----		
Bank	-----		

Pay-roll sheet No. ___ for last half of ----- 1934.

In pooling associations it is impossible to write final settlement checks to producers in the month in which products were delivered. In many associations these checks are not written until after the middle of the next month, and in some cases a longer time elapses after the close of the pool period before settlement checks are issued.

Regardless of the dates on which settlement checks are issued, it is advisable to enter all the other transactions of a month's business as soon as the figures are available. If a pool price cannot be determined and the pay-roll credits calculated until the 20th of the following month, the books should not be closed until then. The books should show the actual condition at the end of the month, even if the figures were not available until later. The producers' pay roll will show how much the association owes each patron, and the total of these amounts will show as a credit to patrons or producers on the balance sheet. If the checks are written on the 1st of the next month, or at any later date, they should be entered under the date when actually written. In other words, checks written to settle last month's milk and cream accounts should not be dated back or entered in last month's business. It is preferable to have last month's balance sheet show the credit balances of producers, which will be settled by checks entered in the month in which they are written.

Member Overdrafts

It sometimes happens that producers overdraw their accounts or are overpaid through error. In the absence of other arrangements, overdrafts are carried to next month's pay roll. The balance of pay-roll sheets will show the total of overdrafts and must agree with the producers' ledger control account in the general ledger. Such overdrafts should be listed on a separate pay-roll sheet for the next month before posting the items against the individual accounts on next month's pay roll. Such a list will make future checking and auditing much easier.

Daily Churn Record

FORM 19

----- 19..

	Churning No. --	Churning No. --	Churning No. --	Total Today
Grade of fat.....				
Pounds of fat.....				
Pounds butter from churn.....				
Less pounds rerun.....				
Pounds butter from cream.....				
Pounds overrun.....				
Percent overrun.....				
Percent moisture.....				
Percent salt.....				
Buttermaker's score.....				

Remarks:

All milk butterfat should be entered daily on form 18. It will be carried in varying quantities with other butterfat to the Daily Churn Record, form 19. After milk tests have been made for the monthly or semimonthly pool period, and each milk patron's butterfat has been calculated, the total of daily entries on form 18 can be corrected by the addition or subtraction of enough to bring it into agreement with the quantity of milk butterfat for which payment is to be made.

Form 19, Daily Churn Record, is drawn to provide for those few facts which all buttermakers wish to keep. It can be lengthened to record as much additional information of churning practices or butter analyses as may be desired, such as acidity, neutralization, temperatures of cream at the various stages, time of separate operations, etc. This form can also be widened to record any number of churnings. In the procedure herein described, each day's total "make" is carried to the Churn Summary, form 20.

Churn Records

Under the subheading "Butterfat tests of cream," in section IV, the statement is made that the only accurate way of arriving at daily churn overruns from the pounds of butterfat for which payments are made to producers is to take daily butterfat tests of cream and milk. If this is done, the buttermaker can frequently "cut off" the cream churned to the total of yesterday's receipts. He can then calculate all the butterfat paid for and churned, and all the butter made since the last cut-off, and get a check on his overrun. This method may help discover errors in testing or in the composition of butter.

The Churn Summary, form 20, has 31 lines, one for each day of the month, and is intended only to make a record of total production and any additional information the buttermaker may wish for comparisons. This form can be omitted if forms 19 and 21 record sufficient information for the manager and officers.

Churn Summary

FORM 20

Month of _____ 19__

Day	Number of churns	Butterfat churned		Pounds butter made	Pounds overrun	Percent overrun	Percent moisture	
		First grade	Second grade					
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								

The Butter Balance, form 21, is a record of packaged and scrap butter. In this case "scrap" means all trimmings and part packages. The amounts entered under butter made must agree with the butter made on the churn report. The pounds entered under "Sold" are taken from the sales journal. To arrive at the butter on hand at any time, it is necessary to add the butter on hand last night, or when last checked, to butter made today, or since last checked, and subtract sales as shown on the sales journal and unsettled consignments on the record of shipments. The butter on hand must agree with the daily inventory of the cooler room.

If form 20 is not used, it would be necessary to widen form 21 to provide for more than one grade of butter or to use a separate sheet for each grade.

Monthly summaries of these daily summaries will give yearly totals of all products.

It is necessary to keep the most accurate records of product receipts, manufacture, and sales. Daily inventories of all dairy products should be carefully taken, and the causes or sources of all overages and shortages should be searched out. These may be due to errors in butterfat tests, or to a scale which is out of balance or sometimes to a dishonest employee.

FORM 21

Butter Balance

Month of 19.....

Day	Butter made				Sold and shipped				On hand tonight				Short	Over			
	Prints	Tubs	Fridays	Scrap	Total	Prints	Tubs	Fridays	Scrap	Total	Prints	Tubs			Fridays	Scrap	Total
	On hand from last day of last month					X	X	X	X	X						X	X
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	

26																	
27																	
28																	
29																	
30																	
31																	

Total.																	

Sales Journal

Sales to local merchants and to patrons will begin soon after operations are started. It is possible to enter sales on the general journal. However, the journal would have to be enlarged beyond an easily workable size to accommodate the number of columns necessary for recording all the information that it is desirable to keep, or an unnecessarily large amount of posting would be required. Form 22, a sales journal, can be arranged to keep all of the information that officers and managers want, and can be entered monthly in one entry in the general journal.

EXHIBIT 5

Summary of Sales Journal (Form 22)

	Pounds cheese	Tubs	Prints	Pounds butter	Charges	Cash
Local.....		32	400	2,416	\$665.65	\$82.40
Patrons—Dairy.....	10		52	52	18.15	.62
Patrons—Supplies.....					7.10	
Shipments.....		249		15,685	4,665.92	
	10	281	452	18,153	5,356.82	83.02
						5,356.82
						5,439.84

CHARGE		CREDIT	
Patrons.....	\$25.25	Products.....	\$5,432.74
Customers.....	5,331.57	Supplies.....	7.10
Cash.....	83.02		
	<u>5,439.84</u>		<u>5,439.84</u>

Form 22 does not cover all the possibilities. No provision has been made in this illustration for sales of cream either locally or to be shipped. If any creamery, using a form similar to this, sells cream or dairy products other than butter, its sales journal will have to be printed to accommodate such sales. If the association has a large side-line business, it would be advisable to take patron's supplies out of this form and provide for them on a separate supplies sales journal as described hereinafter.

If a cash register is used for all cash sales, the cash column on the sales journal is sometimes eliminated. This leaves the sales journal as a record of charge sales only, and requires the daily entry of cash sales on the general journal, with no place to enter the pounds of butter, or quantities of other products sold for cash. In any event the columns for cash sales should be left in the sales journal. If only totals of cash sales are entered on the sales journal once a day from the cash register ribbon, the cash register should be of a type and size that can record the pounds or quantities sold and indicate whether sold to patrons or others.

FORM 22

Sales Journal

Month of _____

Date	Customers	Local sales—nonpatrons					Patrons—Dairy products					Patrons—Supplies		Shipments sold								
		Number of tubs	Number of 1-pound prints	Weight of butter	Price (cents)	Charges	Amount	Cash	Founds butter	Pounds cheese	Price (cents)	Charges	Amount	Items	Charges	Amount	Date sold	Number of tubs	Number of 1-pound prints	Total pounds	Amount	
9	Brought forward.																					
	North Star Store.....	1	100	63 30		\$18 90																
6	Do.....			100 32		32 00		5		32	\$1 60											
8	John Brown.....																					
	Wm. Black.....																					
12	Do.....			100 31 1/2		31 50																
	Cash and Carry Store.....																					
	Wm. Smith.....																					
15	R. & D. Dairy.....	25		1,575 31		\$488 25																
16	Do.....			63 30		18 90																
	North Star Store.....	1	100	100 32		32 00																
19	XYZ Butter Co.....																					
	A. Nelson.....																					
	Johnson Bros.....																					
22	Ed Olson.....	100		100 32		32 00																
	Geo. Taylor.....																					
	R. & D. Dairy.....																					
	Frank Royce.....	5		315 30		94 50																
26	Do.....																					
	Niel Baker.....																					
	Do.....																					
28	XYZ Butter Co.....																					
30	Do.....																					
	John Brown.....																					
	Wm. Black.....																					
	Total forward.....	32	400	2,416		665 65		52	40	52	18 15	62		7 10			16	119	{Car GN } 7,500 \$2,270 80	1884	15,685	4,665 92

Daily Cash Report

In the operations of most cooperatives, cash is received from a number of sources. The manager should be provided with a petty cash fund from which to make all necessary small cash payments as explained on page 14. All cash received in the conduct of the business should be deposited in the bank. In order to have an accurate daily record of cash to deposit, it is necessary to assemble a record of cash receipts. Form 23 serves this purpose. Such a form can be enlarged to accommodate any additional sources of cash income.

FORM 23.

<i>Daily Cash Report</i>			
----- Operator.			-----, 19..
Cash sales:			
Products—Local	-----	-----	-----
Products—Patrons	-----	-----	-----
Supplies—Patrons	-----	-----	-----
Total cash sales	-----	-----	-----
Collections on Accounts	-----	-----	-----
-----	-----	-----	-----
Total collections	-----	-----	-----
Total cash received today	-----	-----	-----
Add cash carried from yesterday	-----	-----	-----
Total to account for	-----	-----	-----
Less deposits—Duplicate slip or bank book	-----	-----	-----
Balance on hand tonight	-----	-----	-----

Record of Shipments

Form 24 is a type of record which should be kept by all cooperative creameries. It maintains valuable information for which there is no assembled record if only copies of the bills of lading are kept. Bills of lading and copies of notices of shipment, whether in the form of letters or similar to form 25, should be kept in special folders in the letter file. With this type of Record of Shipments, form 24, there is usually no entry made on the sales journal until final settlement is received.

It is intended that if a shipment contains lots or churnings of butter of different grades, each grade will be entered on a separate line in the record of shipments, in order that the return of each grade may be properly credited, or that the butter maker may check on his accuracy of grading cream or to get the comparisons between the lower grades of cream received and the lower grades of butter sold. Even in plants where cream is graded and each grade of cream is churned separately, it is not customary to allocate returns from the lower grades of butter to the patrons who delivered the lower grades of cream. Adjustments of prices paid for lower grades of cream, which usually are a few cents lower for each of the lower grades, are presumed to equalize

these sale differences. However, if this allocation of returns is made, it can be done only by keeping separate shipment and sale returns.

Notice of Shipments

FORM 25.

----- Association.				No.	
----- (Address)				----- 19 ..	
To -----				----- (Address)	
We have shipped you today, via ^(freight) _(express) the following:					
Commodity	Package	No.	Net weight	Total	Remarks
-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----
Bill of lading herewith.					
				By ----- <i>Manager.</i>	

Form 25 saves letter writing. A carbon copy supplies a record of the fact and date of notice of shipment to consignee.

Receipts for Products Delivered

In the average business it is advisable to take receipts for all goods going out of the plant. Form 26 can be used as a duplicate or triplicate receipt for goods taken by draymen or truck drivers. If a triplicate, all orders going onto a truck are listed and the driver signs the receipt, leaving the triplicate at the plant. As deliveries are made the customers or receivers sign opposite their orders. When all deliveries have been made the original is given to the plant and the driver keeps one receipt. If a duplicate form is used the driver does not keep a copy. With this type of receipt the customer receives an invoice but not a copy of the receipt, unless separate receipts are made for each consignee.

Forms 27 and 28 are combined invoices and receipts which are sometimes found convenient. Form 27 is to be used as a sales ticket, either printed and bound in pads of 50 duplicates or in rolls for use in any one of the several types of duplicate sale ticket machines for counter use. Form 15, shown on page 56, is a patron's butter order and receipt.

FORM 26

Receipt

Received from _____, 19__
 _____ Association.

 (Address)

To be delivered as follows:

No.	Items	To	Receipt for delivery

If delivered to express or railway company, driver must obtain their regular receipt and attach it to this report. _____ Driver.

FORM 27

Invoice and Receipt

_____ , 19__
 Mr. _____

 (Address)
 Dr. to _____ Association.

No. of packages	Articles	Total quantity	Price	Amount
	Butter..... lb.			
	Buttermilk..... gal.			
	Milk powder..... lb.			
	Cheese..... lb.			
	Cans.....			
	Strainers.....			
	Totals.....			

Received in good order to be charged to my account:

FORM 28

Invoice and Receipt

_____ , 19__
 Mr. _____

 (Address)
 Dr. to _____ Association.

No.	Size	Articles	Price	Amount	Total amount

Received payment in full: _____ Received in good order: _____
 _____ Driver. _____ Customer.

The total of the column headed "On hand" should agree with the debit balance of the operating supplies account in the general ledger, at the beginning of the month. The totals of the "On hand" and "Received" columns should agree with the debit balance of the operating supplies account at the end of the month, before an entry has been made for supplies used. After the journal entry of the "Used" column has been made, charging items to the proper expense accounts and posting them to the ledger, the debit balance of operating supplies account in the ledger will agree with the total of the inventory column on the operating supplies inventory.

Supplies Purchased for Patrons

Patrons' supplies include such merchandise as separators, cans, strainers, disinfectant, etc., for sale to producers, and unless there are obsolete and unsalable items included, the total belongs in current assets on the balance sheet.

Form 30 illustrates a type of combined sales and inventory record which is convenient for a medium-sized supply business. If the business is small, all supply sales can be entered in the space provided in the Sales Journal, form 22. If form 22 is used for supply sales, there will have to be some provision for inventories of patrons' supplies, probably similar to form 29.

With a large patrons' supply business, or one which includes feed, seed, fertilizer, coal, and other lines of merchandise which are unrelated to the dairy business, but which are part of the creameries' activities not carried on a separate set of books, it is advisable to provide a supply sales journal, expense register section in the general journal, inventory forms, and operating statement. A separate expense column on the general journal for side-line business will furnish a control for expenses not chargeable to the creamery operations, and the journal column for side-line business will serve as a control account for all the side-line merchandising activities.

All salable merchandise of the above-mentioned sorts are carried under current assets on the balance sheet.

Section VI

Closing and Balancing

IT is presumed that the association has operated for a month and is ready to prepare a balance sheet and operating statement.

Exhibit 6, in this section, illustrates a number of journal entries which might occur in cooperative creamery operations. There has been no attempt to make such illustrated entries comprehensive or to use inventory prices or labor scales which might be in line with those prevalent at any definite time. The only purpose of the exhibit is to illustrate the methods of entering different classes of items.

If an association does not have separate cash and bank registers, it will be found convenient to maintain current cash and bank accounts in the journal. It will be noticed that the first entry in this exhibit is the debit to the bank account. The bank balance at the end of last month is entered in the journal for the convenience of daily information. A cash balance may be treated the same way. The page is balanced by a credit entry in the general ledger column of the sum of the cash and bank debits. Other accounts may be entered similarly if desirable. At the end of the month these entries are subtracted from the month's totals to arrive at the net amounts of cash and bank business transacted during the month which are to be posted to the general ledger.

All entries in the bank account except milk and cream checks issued in final settlement are made on the journal as and when transacted. The final-settlement checks, as shown on the producers' pay roll, are entered in the journal in total after all such checks have been written. Except for the detail of these final-settlement checks, the bank account on the journal is complete.

The cash account on the journal is not complete in the illustration. Daily deposits and payments received on customers' accounts are illustrated, but cash receipts on the sales journal have not been journalized until the end of the month. To check the daily cash balance on form 23, it is necessary to add the cash received, as shown on the sales journal, to the debit in the general journal and subtract the cash deposited.

Form 23 should be made out daily. To avoid errors, it is advisable to check frequently the cash balance from general journal and sales journal with the daily cash report. The routine of checking daily cash balances from the general journal and the sales journal can be simplified by carrying daily totals from the sales journal to the general journal, thus making the general journal record complete. This is not necessary in a small business.

Below is given a list of the entries to be made and the operations to be performed in the monthly closing of the books. Such a list is not as imposing as it looks. Many cooperative creameries make most of these entries without a list but as a matter of routine which the bookkeeper has learned. Some of these entries do not have to be made each month, but it is well for a bookkeeper to have a list which includes all his possible closing entries and check each item on the list each month so that nothing will be missed.

Closing Entries

1. Enter in the journal all invoices for supplies and equipment which have been received and for such services as telephone, water, gas, and electricity.

2. Enter all salaries and wages from the time book. Employees should receive ledger credits if checks are not written in the current month.

3. Take inventories:

- Office supplies.
- Plant supplies.
- Butter in cooler.
- Butter in transit.
- Butterfat in cream.
- Other dairy products.
- Patrons' supplies.

In exhibit 6, the inventories are carried as follows:

Product Inventories

Butter:

80 tubs in transit at 63 pounds—total.....	5, 040 at 30 cents=	\$1, 512. 00
5 tubs in cooler at 63 pounds—total.....	315 at 30 cents=	94. 50
50 1-pound prints in cooler—total.....	50 at 31 cents=	15. 50
14-pound scrap, total.....	14 at 30 cents=	4. 20
Total butter (pounds).....	5, 419	= 1, 626. 20
Cream: 3,300 pounds at 30 percent—990 pounds butterfat at 30 cents.....		= 297. 00
Cheese: 18 5-pound boxes—90 pounds at 20 cents.....		= 18. 00
Operating and office supplies (detail not illustrated).....		= 556. 79
Patrons' supplies (detail not illustrated).....		= 353. 35

4. Credit each office and plant supply account with an amount that will leave in each a debit balance of the amount of its corresponding inventory. Debit entries are made in the proper expense accounts.

After the sales journal has been entered, debit or credit patrons' supplies with an amount sufficient to leave a debit balance of the amount of inventory. The entry should always be a debit to patrons' supplies if goods have been sold at a profit, unless inventory prices

have been reduced. The balancing entry is to be made in an operating account which should be opened now.

After the sales journal and producers' pay roll have been entered, debit products with an amount sufficient to leave a debit balance of the amount of all dairy products inventories. If a credit entry is necessary, it means that the business has sustained a loss, probably from paying too much for products. Balancing entries are to be made in the operating account.

This method transfers any gains or losses to the operating account and also avoids the necessity of maintaining a separate inventory account in the general ledger. However, the bookkeeper should make an explanation of each of these entries on the journal, so that an officer of the association, or an auditor will understand what has been done.

If an inventory account is used, the supply and merchandise accounts are each credited with the amounts of their respective inventories, which are charged to the inventory account. The remaining balances of these supply and merchandise accounts are then closed out into the operating account, so that such supply and merchandise accounts are balanced. At the beginning of the next month, the inventory account is credited and each supply and merchandise account is debited with the amount of its inventory. This requires three entries instead of the one entry needed in the former method, which is entirely satisfactory for most cooperative creameries.

Using either of the above methods of entering inventories, only the net gains or losses in merchandise operations will appear in the operating account. The amounts for cost of merchandise, sale of merchandise, and inventories, to be entered on the pooling (operating) statement, form 16, must be picked up from the ledger accounts. This refers to only merchandising items. Expenses and nonmerchandising items all are transferred to the operating account.

It is possible, but unnecessary and laborious, to close all items of each merchandise account into the operating account each month. If this were done, the items in the operating account would be identical with all of the items in a pooling statement. This method is not recommended.

5. Credit reserves:

- 118—Building depreciation.
- 119—Equipment depreciation.
- 120—Truck depreciation.
- 121—Taxes, accrued.
- 122—Interest, accrued.
- 123—Bad debts.
- 124—

Other reserves might be for the depreciation of furniture and fixtures, maintenance and repairs of plant and equipment, and for contingencies.

Debit these items to expenses.

6. It is desirable for cooperative creamery associations to provide either in the producers' marketing agreements or otherwise that the association may make deductions from the sales proceeds due its members, for building up reserves, for debt amortization, and for additional capital funds adequate to meet the needs of the business. Deductions so authorized and retained by the association should be classified as additional contributions to capital and not as an expense of the business. In the illustration of a pooling statement, form 16, as much as possible of the gross distributable balance of \$6,295.64 should be credited to producers. From this amount, total deductions of \$200 have been made for capital purposes. If producers had not subscribed for definite amounts, or authorized definite rates of deduction, the \$200 would not have been deducted for stock and the net distributable balance would have been \$5,855.39 and the amount of issued checks \$5,559.75, leaving the undistributed balance the same, \$295.64. In cases in which subscriptions for definite amounts or authorization for fixed rates of deductions have not been obtained from producers, or in which payments of definite subscriptions have been completed, and the deductions are made on general authority, the credits to producers' capital accounts ordinarily would come out of the undistributed balance of \$295.64. It is presumed herein that all deductions for capital purposes have been authorized by members.

The method of price determination illustrated in the operating statement, form 16, should always leave a credit balance in the operating account. This balance is similar to the balance of a profit and loss account in a private business. It is permissible to credit it, or a part of it, to members' capital accounts in proportion to their deliveries of products and to retain the cash until needed for capital purposes.

In a stock association, these amounts would be credited to members by the following entry:

Dr. Operating account.....	\$.....
Cr. Members' capital (stock payments) accounts....	\$.....

In a nonstock association, the entry would be:

Dr. Operating account.....	\$.....
Cr. Members' payments on certificates of indebted- ness or interest.....	\$.....

Capital stock or other forms of certificates may be issued for these credits in the same manner as previously described for the issuance of capital stock and certificates of interest. Likewise, dividends or interest may be computed and paid on these amounts in the same manner as on other capital payments by members.

Some associations do not issue certificates of stock or interest for their members' capital credits but allow them to stand on the ledger as credits to members or patrons and treat them, in other ways, the same as though certificates had been issued.

7. Journalize totals of—

- Sales journal.
- Producers' pay roll.
- Contract register.
- Stock register.

If a separate cash book, check register, or other subsidiary record of original entry is kept, it will have to be included in the above list.

Totals of monthly transactions on each subsidiary record should be carried to a summary to accumulate an annual total for each.

8. Deduct the opening entries in the cash and bank accounts. The amounts of such deductions can be entered on the journal in red ink to indicate subtraction.

9. Complete postings to all ledgers from journal and subsidiary records listed under item 7 above.

10. Make journal entries balancing all nonoperating income accounts and expense accounts to be shown on pool statements transferring the balances to operating account.

11. Post operating account items.

12. Take a balance of the journal. If totals of the journal columns are added in the order illustrated on page 85 and in exhibit 6, the control accounts for the separate ledgers will result.

13. Post control accounts.

14. Make pooling statements from general ledger, or operating account, if items have been transferred to operating account.

15. Take trial balances of general ledger.

16. Take trial balances of subsidiary ledgers, agreeing with control accounts.

Trial Balance and Balance Sheet

Form 16, in section IV, illustrates a pooling statement containing all operating accounts. After making the balancing entries for transferring operating items to the operating account and posting them, the remaining unbalanced ledger accounts will be drawn off as a trial balance, exhibit 7, and arranged in the order of a balance sheet, as shown in exhibit 8, pages 86 and 87.

It will be noted that the "Members' contracts" account has been split on the balance sheet. The one \$40 unpaid subscription note is carried as an asset, while the deduction for stock, amounting to \$200, made from remittances to members who have paid their initial subscriptions in full, is carried in net worth. This illustrates the point brought out in the discussion on pages 37 and 38 under Contract Ledger.

Control Accounts

If we follow the method of determining ledger controls which is explained on page 45, the controls as of June 30 will appear in the general ledger as follows:

General ledger:	<i>Debits</i>	<i>Credits</i>	<i>Debits</i>	<i>Credits</i>
May 31	\$116, 677. 50	\$115, 902. 00		
June entries.....	17, 740. 32	11, 039. 06		
	<hr/>	<hr/>		
June 30 control.....			\$134, 417. 82	\$126, 941. 06
Customers' ledger:				
May 31				
June entries.....	5, 331. 57	6, 009. 95		
	<hr/>	<hr/>		
June 30 control.....			5, 331. 57	6, 009. 95
Creditors' ledger:				
May 31	12, 280. 00	13, 055. 50		
June entries.....	200. 00	863. 13		
	<hr/>	<hr/>		
June 30 control.....			12, 480. 00	13, 918. 63
Producers' ledger:				
May 31				
June entries.....	640. 25	6, 000. 00		
	<hr/>	<hr/>		
June 30 control.....			640. 25	6, 000. 00
			<hr/>	<hr/>
Total ledger footings.....			152, 869. 64	152, 869. 64

Bank Reconciliation

All bank accounts should be reconciled at least once a month. By the use of a different type of check for milk and cream payments and using the producers' pay roll as a milk and cream register, it is convenient to start the reconciliation with milk and cream checks.

The first operation of a reconciliation is to identify the checks returned by the bank with the bank's statement. It is customary to use a colored pencil to check off the individual checks on the bank statement. All differences between the checks as written and the bank's statement should be listed. The list should indicate corrections to be made on the bank's statement.

After the checks have been checked with the bank's statement they should be arranged in numerical order and identified with the association's records. The list should be continued to indicate differences between the checks as issued and paid by the bank, and the association's books.

GENERAL JOURNAL

DEBITS

EXPENSES											PURCHASES		BANK	CASH	LEDGER DEBITS				POSTING		
LABOR	PACKAGE SUPPLIES	GENERAL SUPPLIES	FUEL, WATER, POWER LIGHT		COLLECTING CREAM	FREIGHT AND DRAYAGE	DIRECTORS FEES AND EXPENSES	SALARIES AND WAGES	MISCELLANEOUS 114-124		FARM SUPPLIES	DAIRY PRODUCTS	DEPOSITS	RECEIPTS	PRODUCERS	CREDITORS	CUSTOMERS	GENERAL	L.F.	✓	
101	102	103	104	105	110	111	112	113	AMOUNTS	ACCT. NOS.											
													2,348	-							
																			30	-	
													82	40							
					39		1 81		15	-	115								141	75	
														200	-						
																			83	13	
																			59	38	
													1,500	-							
														50	90						
															15	-					
																			40		
											180	-									
														770	80						
														288	25						
													1,310	57							
											180	-									
																			180	-	
														2,000	-						
														1,200	-						
					39		1 81		15	-	360	-	8,440	97	1,309	95	15	-	180	-	354 26

GENERAL JOURNAL

Association

CREDITS

MONTH OF June 1935

DAY	ACCOUNTS	ITEMS	POSTING		LEDGER CREDITS				FIRST NATIONAL BANK			SALES		
			L.F.	✓	GENERAL	CUSTOMERS	CREDITORS	PRODUCERS	CASH DEPOSITED	CHECKS	CHECK NOS.	DAIRY PRODUCTS	FARM SUPPLIES	
1	<i>Brought Forward</i>	May 31 Balances			2,348	-								
1	Petty Cash	Check to John Doe, Manager								30	-	9		
12	First National Bank	Deposit of cash receipts							82	40				
	Expenses	Check to John Doe - see statement								17	20	10		
	Prepaid Expense	Check to Smith								72	-	11		
		" Brown								27	80	12		
		" Jones								42	15	13		
		a/c organization expense												
15	R.&D. Dairy Company	Payment acct. purchase today				200	-							
	Plant Supplies - Coal	B&O car #17824 - 47,500# @ \$3.50												
	Local Coal Co.	Per ton at the mine						83	13					
	Plant Supplies - Coal	Check to B&O Ry. frt. car 17824								59	38	14		
	XYZ Butter Co.	Draft on shipment this date - See Record of Shipments				1,500	-							
18	North Star Store	Check on account				50	90							
	Wm. Brown	Advance on cream deliveries								15	-	15		
	Members' Contracts	Ole Olsons contract - 8 cows - to be paid												
	Members' Subscriptions	by monthly deductions			40	-								
	Farm Supplies	Invoice 6/10 - 200 cartons												
	Creamery Supply Co	Strainer pads @ 90¢						180	-					
19	XYZ Butter Co.	Settlement in full for 119 tubs of butter shipped June 18				770	80							
	R.&D. Dairy Co.	Payment of account - June 15				286	25							
	First National Bank	Deposit							1,310	57				
	Creamery Supply Co.	Invoice 6/9 - Farm Supplies - Cans						180	-					
	" " "	Check on account less discount								179	64	16		
	Discount	of 2% - Inv. 6/9			36									
23	XYZ Butter Co.	Draft on shipment of 130 tubs of butter 6/22				2,000	-							
29	Holly Dairy Co.	Draft acct. 80 tubs today				1,200								
					2,388	36	6,009	95	443	13	1,392	97	442	97

GENERAL JOURNAL

DEBITS

EXPENSES											PURCHASES		BANK	CASH	LEDGER DEBITS				POSTING
LABOR	PACKAGE SUPPLIES	GENERAL SUPPLIES	FUEL, WATER, POWER, LIGHT	COLLECTING CREAM	FREIGHT AND DRAYAGE	DIRECTORS FEES AND EXPENSES	SALARIES AND WAGES	MISCELLANEOUS 114-124		FARM SUPPLIES	DAIRY PRODUCTS	DEPOSITS	RECEIPTS	PRODUCERS	CREDITORS	CUSTOMERS	GENERAL	L.F.	✓
101	102	103	104	105	110	111	112	113	AMOUNTS	ACCT. NOS.									
				39		1 81			15 -		380 -		8,440 97	1,309 95	15 -	180 -		254 28	
50 -									100 -										
175 -																			
80 -																			
75 -																			
											8,000 -								
														200 -					
														400 -					
									30 -	114									
	120 -	50 72	65 -																
											45								
											1,353 94								
									35 41	118									
									91 66	119									
									19 44	120									
									20 -	121									
									44 50	122									
									35 -	123									
													83 02			5,331 57			
														25 25					
											20 -								
															20 -				
380 -	120 -	50 72	65 -	39		1 81		100 -	291 01		380 45	7,373 94	8,440 97	1,392 97	640 25	200 -	5,331 57	354 28	

GENERAL JOURNAL

Association

MONTH OF June 1935

CREDITS

DAY	ACCOUNTS	ITEMS	POSTING		LEDGER CREDITS				FIRST NATIONAL BANK		SALES						
			L. F.	✓	GENERAL	CUSTOMERS	CREDITORS	PRODUCERS	CASH DEPOSITED	CHECKS	CHECK NOS.	DAIRY PRODUCTS	FARM SUPPLIES				
30	<i>Brought Forward</i>				2,388	36	6,009	95	443	13	1,392	97	442	97			
	Office Salaries	Check to A. B. White - Manager											150	-	17		
	Plant Labor	▪ C. D. Green - Buttermaker											175	-	18		
	▪	▪ E. T. Black - Helper											80	-	19		
	▪	▪ G. H. Brown - Extra											75	-	20		
	Producers	Cream Payroll for June							6,000	-							
	▪	Stock Deductions 1½ lb. B.F.															
	Members' Contracts	▪			200	-											
	Producers	Hauling Deductions 2¢ lb. B.F.															
	Haulers	▪							400	-							
		20,000 # B.F.															
	Office Supplies	Adjusting entries to leave			30	-											
	Plant	Dr. bal. of amt. of Inventories in			235	72											
		Office Supplies \$95.50 and Plant Sup-															
		plies \$556.79															
	Farm Supplies	Adjustment to leave amount of inventory															
	Operating Account	\$353.35 debit in acct.				45											
	Products	Adjustment entry to leave amt. of in-															
	Operating Account	ventory \$1,941.20 as debit balance in			1,353	94											
		Product Acct.															
	EXPENSES																
	Reserves - Bldg. Deprec.	1/240 of cost - 20 yr. life			35	41											
	▪ Equip. "	1/120 " 10 " "			91	66											
	▪ Truck "	1/36 " 3 " "			19	44											
	▪ Taxes	1/12 estimated annual levy			20	-											
	▪ Mtg. Interest	1/2% of mtg. balance			44	50											
	▪ Bad Debts	1/2% of month's sales			35	-											
	Customers	Entry of Sales Journal													5,432	74	
	Producers	for June														7 10	
	R & D Dairy	Invoice June 14 for 20-5#						20	-								
	▪	bricks of cheese @ 20¢										20	-	21			
					4,454	48	6,009	95	863	13	6,000	-	1,392	97	942	97	
															5,432	74	
																7 10	

GENERAL JOURNAL

Association

CREDITS

MONTH OF June 1936

DAY	ACCOUNTS	ITEMS	POSTING		LEDGER CREDITS				FIRST NATIONAL BANK			SALES			
			L.F.	✓	GENERAL	CUSTOMERS	CREDITORS	PRODUCERS	CASH DEPOSITED	CHECKS	CHECK NOS.	DAIRY PRODUCTS	FARM SUPPLIES		
30	<i>Brought Forward</i>				4,454 48	6,009 95	863 13	6,000 -	1,392 97	942 97		5,432 74	7 10		
	Operating Account	Directors resolution 6/12 to amortize													
	Prepaid Expenses	organization exp. @ 20.00 per month			20 -										
	Bank Debit	Eliminating May balance			2,348 -										
	Discount	Closing Discount earned to													
	Operating Account	Operating Account			36										
	Expenses	1/12 of Prepaid Items													
	Prepaid - Fire Insurance	" " "			14 38										
	" - Liab. "	" " "			10 42										
	" - Auto. "	" " "			3 71										
	" - Auto License	" " "			1 67										
	Operating Account	Closing monthly exp. accounts													
	Expenses				380 -										
					120 -										
					50 72										
					65 -										
					39										
					1 81										
					100 -										
					30 -										
					15 -										
					30 18										
					35 41										
					31 66										
					19 44										
					20 -										
					44 50										
					35 -										
	Operating Account	1/12 of 6% on \$3,600 Pfd. Stock													
	Reserve for Dividends	and \$9,830 Com. Stock Issued			67 15										
					3,263 28	6,009 95	863 13	6,000 -	1,392 97	942 97		5,432 74	7 10		

EXHIBIT 7

Trial Balance—June 30

	<i>Debits</i>	<i>Credits</i>
Bank.....	\$7, 498. 00	
Real estate.....	500. 00	
Building.....	8, 500. 00	
Equipment.....	11, 000. 00	
Cars and trucks.....	700. 00	
Furniture and fixtures.....	580. 00	
Office supplies.....	95. 50	
Plant supplies.....	556. 79	
Prepaid insurance—Fire.....	158. 12	
Auto license.....	18. 33	
Meter deposit.....	15. 00	
Liability insurance.....	39. 58	
Auto liability.....	40. 79	
Notes payable.....		\$10, 500. 00
Members' contracts:		
Subscriptions.....	40. 00	
Deductions after subscriptions paid in full.....		200. 00
Common stock subscriptions.....		40. 00
Unissued common stock.....	35, 170. 00	
Unissued preferred stock.....	1, 400. 00	
Authorized common stock.....		45, 000. 00
Authorized preferred stock.....		5, 000. 00
Petty cash.....	30. 00	
Organization expense.....	121. 75	
Farm supplies.....	353. 35	
Dairy products—Butter.....	1, 941. 20	
Operating account.....		228. 49
Reserves:		
Building.....		35. 41
Equipment.....		91. 66
Truck.....		19. 44
Taxes.....		20. 00
Interest—Notes.....		44. 50
Doubtful accounts.....		35. 00
Reserve for dividends or interest.....		67. 15
General ledger control.....	68, 758. 41	61, 281. 65
Customers' ledger control.....	521. 62	¹ 1, 200. 00
Creditors' ledger control.....		1, 438. 63
Producers' ledger control.....		5, 359. 75
Total control.....	69, 280. 03	69, 280. 03

¹ In exhibit 6 the Holly Dairy Company was credited with the proceeds of a \$1,200 draft made on account of 80 tubs of butter shipped on June 29. At the time of closing the books on June 30, the butter had not been sold and no charge had been made against Holly, leaving a credit balance of \$678.38 in the customers' ledger. To avoid showing this and also to avoid transferring the Holly account to the creditors' ledger, the total debit balances in customers' ledger and the Holly credit balance are carried in this trial balance.

Deposits on the books should be identified with deposits as shown on the bank's statement. Any deposits in transit to the bank and not on the bank's statement should be listed. After making all corrections on the bank's statement and association's books, the uncashed (i. e., outstanding) checks should be listed and a permanent record made of the list. The total of this list added to the bank balance on the association's books should bring it into agreement with the bank's statement.

When the next month's account is reconciled it will not be necessary to go back of the current month to check off returned checks on the books. They should be identified only with the list of outstanding checks at the beginning of the month and those issued currently. This allows each month's records of outstanding checks, as shown on the books, to remain in agreement with the list, so that officers and auditors can verify all past reconciliations.

EXHIBIT 8

Balance Sheet, June 30

ASSETS		
Current assets:		
Cash.....		
Petty cash.....	\$30.00	
First National Bank.....	7,498.00	
		\$7,528.00
Accounts receivable.....	521.62	
Less reserve for bad debts.....	35.00	
		486.62
Product inventories.....		1,941.20
Farm supply inventory.....		353.35
		\$10,309.17
Miscellaneous assets:		
Members' contracts.....	40.00	
Meter deposits.....	15.00	
		55.00
Fixed assets:		
Real estate.....		500.00
Building.....	\$8,500.00	
Less reserve.....	35.41	
		8,464.59
Equipment.....	11,000.00	
Less reserve.....	91.66	
		10,908.34
Trucks.....	700.00	
Less reserve.....	19.44	
		680.56
Office furniture and fixtures.....		580.00
		21,133.49
Prepaid and deferred:		
Office supplies.....		95.50
Plant supplies.....		556.79
Prepaid insurance.....		158.12
Prepaid truck license.....		18.33
Prepaid liability insurance.....		39.58
Prepaid auto liability.....		40.79
Prepaid organization expense.....		121.75
		1,030.86

Balance Sheet, June 30—Continued

LIABILITIES

Current liabilities:

Customers' advances (Holly).....	\$1,200.00	
Creditors.....	1,438.63	
Producers.....	5,359.75	
Accrued taxes.....	20.00	
Accrued interest.....	44.50	
		<u>\$8,062.88</u>
Reserve for dividends.....		67.15
Long term: Contracts payable.....		10,500.00
Net worth:		
Authorized common stock.....	\$45,000.00	
Less unissued.....	35,170.00	
		<u>\$9,830.00</u>
Authorized preferred stock.....	5,000.00	
Less unissued.....	1,400.00	
		<u>3,600.00</u>
Unpaid subscription.....		40.00
Advance on contract.....		200.00
Operating account.....		228.49
		<u>13,898.49</u>
	<u>\$32,528.52</u>	<u>32,528.52</u>

Audits

All associations should employ public accountants to make regular audits of their records. It is desirable that managers and officers have a working knowledge of accounts and familiarize themselves with the balance sheets and operating statements, but an auditing committee of producers cannot hope to make the analysis of accounts and discover errors and discrepancies as well as a trained accountant.

Section VII

Interpretation of Balance Sheets

THE interpretation of a balance sheet is a lengthy and complicated subject, only one phase of which will be discussed here. The amounts of the different items and classes of items on a balance sheet are changing each month. Valuable information is given by tabulations of balance sheets. Such tabulations usually are made on many-columned paper, using 1 column for each month, so that the 12 balance sheets for a year will appear side by side. It is then easy to see what changes are taking place in the different accounts.

Ratios

This type of tabulation, however, does not express the relations of the different accounts to each other or to some base amount. The simplest method of showing the comparative changes in accounts is by ratios or percentages. If each class of items on the above balance sheet at the end of the first month's operations is divided by the total of all assets, the resulting percentages will show what percentage, or part, each is of the total. An illustration of balance sheet percentages is given in Exhibit 9.

EXHIBIT 9

Balance Sheet Percentages

Assets:	<i>Amount</i>	<i>Total</i>	<i>Percentage</i>
Current.....	\$10, 309. 17	÷ 32, 528. 52	= 31. 69
Fixed and miscellaneous....	21, 188. 49	÷ 32, 528. 52	= 65. 14
Deferred and prepaid.....	1, 030. 86	÷ 32, 528. 52	= 3. 17
Total.....	32, 528. 52	÷ 32, 528. 52	= 100. 00
 Liabilities:			
Current.....	8, 062. 88	÷ 32, 528. 52	= 24. 79
Long-term.....	10, 500. 00	÷ 32, 528. 52	= 32. 28
Reserves.....	67. 15	÷ 32, 528. 52	= . 20
Net worth.....	13, 898. 49	÷ 32, 528. 52	= 42. 73
Total.....	32, 528. 52	÷ 32, 528. 52	= 100. 00

These percentages mean that out of each \$100 of total assets there is \$31.69 in current assets; that of each \$100 of total assets \$65.14 is in lot, building, equipment, etc., and \$3.17 in deferred items and prepaid expenses.

It also means that for each \$100 of total assets the association owes \$24.79 in current bills to creditors and members and \$32.28 in long-term notes; that it has 20 cents in reserves and that the proprietors, the holders of the common and preferred stock, own \$42.73 of each \$100 of total assets.

The association has \$31.69 of current assets, which can readily and easily be turned into cash in the ordinary current of business, with which to pay \$24.79 of current liabilities; that is, those bills which must be paid promptly in the current of business. This relationship between current assets and current liabilities may be compared further by dividing the current assets by the current liabilities ($\$10,309.17 \div \$8,062.88$), which shows that the association has just over \$1.27 in current assets with which to pay each \$1 of current liabilities.

That extra 27 cents isn't a very large margin of safety, so that the association will probably want to save something from each monthly pool (underpay for product) to build up its current assets. It is impossible to say what the relationship between current assets and current liabilities of a cooperative creamery should be. Many private and cooperative corporations have ratios of current assets to current liabilities of over 5 to 1. The managers and officers of associations will have to determine the ratio of current assets to current liabilities needed in each cooperative business. Decisions will be based on market conditions, nearness to market, promptness of collections, discounts allowed on purchases, and other factors that may have a bearing. The objective is to maintain a safe financial position.

Other comparisons and deductions may be made from this balance of percentages. If the affairs of the association were to be closed now, and if all assets could be converted into their equivalent in cash, it would take \$32.28 of each \$100 of total assets to pay off the holders of the association's outstanding notes. Under the same conditions the holders of common and preferred stock would receive \$42.73 of each \$100 of the proceeds of sale. They do not now own as much as the fixed assets of \$65.15.

Tabulations

Monthly percentage balances can be tabulated to show an association's financial progress. Following is such a tabulation for a cooperative dairy which was in serious financial trouble a few years ago but which is working out of its difficulties.

Attention should be called to the fact that in 4 years and 1 month this association has improved its current position from \$19.10 of current assets with which to pay each \$82.90 of current liabilities to the present condition of \$37.20 in current assets for each \$18.10 of current liabilities.

At the same time the members' and stockholders' equity in the business has increased from \$15.80 to \$71.90 of each \$100 of total assets.

Tabulation of Ratios

	Apr. 30, 1931	Dec. 31, 1931	Dec. 31, 1932	Dec. 31, 1933	Dec. 31, 1934	May 31, 1935	Change
Assets:							
Current	19.1	17.1	13.7	19.6	31.7	37.2	+18.1
Fixed	69.2	73.5	76.7	72.0	65.1	59.7	-9.5
Deferred charges	10.3	7.1	5.6	5.6	2.5	1.9	-8.4
Investments, etc.	1.4	2.3	4.0	2.8	.7	1.2	-2.2
Total assets	100.0	100.0	100.0	100.0	100.0	100.0	0
Liabilities:							
Current	82.9	72.4	34.7	26.0	19.1	18.1	-64.8
Mortgage			25.2	21.0	12.5	8.4	+8.4
Reserves	1.3	.6	.5	2.9	2.2	1.6	+3
Net worth	15.8	27.0	39.6	50.1	66.2	71.9	+56.1
Total liabilities	100.0	100.0	100.0	100.0	100.0	100.0	0

A tabulation of balance-sheet percentages will show in many cases what policies of financial management to pursue in the future by a study of the historical record of the results of past policies which it presents.

The results of operations may be tabulated in a manner similar to the items of a balance sheet. A tabulation of the monthly receipts of butterfat is valuable, and if a many-column sheet is used, several years may be tabulated to show the progress of the business.

A statement of the labor in the plant or other expenses, or the unit cost (the cost per pound of butter) of labor, coal, supplies, selling expenses, management, office labor, directors' fees, etc., can be made to serve as a guide to the policies of the business and as a record of what has been accomplished.

Such tabulations of unit costs can be compared with the results of other associations, if similar divisions of accounts are kept. For this reason such items as interest on mortgages, dividends on stock, replacement of machinery, etc., should not be counted as operating expenses. Other associations may not have mortgages or may not pay dividends. The hauling of cream from farm to plant is another operation that varies in different associations, and depreciation or maintenance and repairs are not always comparable expenses. This means that in comparing results of operations with other associations it should be known that statements are made in a similar manner.

The results of the several steps common to other associations can be recorded first on the pooling statement, and the variable items—that is, those items which other associations handle differently—can be entered last. The arrangement of expense items on form 16 has been made with the idea that they might be compared with others.

Uniform methods of accounting by all associations would probably help most of them in their operations.

Charts

It is difficult to remember figures. Pictures are more easily remembered. Charts or graphs are pictures of figures. Officers and members of an association can understand a chart and remember what it looks like. Charts afford an easy way of educating the membership in the affairs of the association, and should be used much more generously than at present. Figures 1 to 4 herewith illustrate different types of charts, of which there are almost numberless forms, used for almost numberless purposes.

Figure 1 shows the quantity of butterfat received by a creamery over a series of years. Additional information is given by shading part of each bar in one way to indicate the amount of cream sold and in another way to indicate the amount churned.

Figure 2 is a comparison of the trends of operating expenses with the increase and decrease in the seasonal volume of production. The value of such a chart to an association might be in the illustration of how expenses per pound of butter might be reduced and the expense line straightened out if the association were to receive an evenly high volume of product each month.

Figure 3 illustrates the relation between current assets and current liabilities in the above tabulation of balances of percentages. Some types of charts are better suited to convey certain classes of informa-

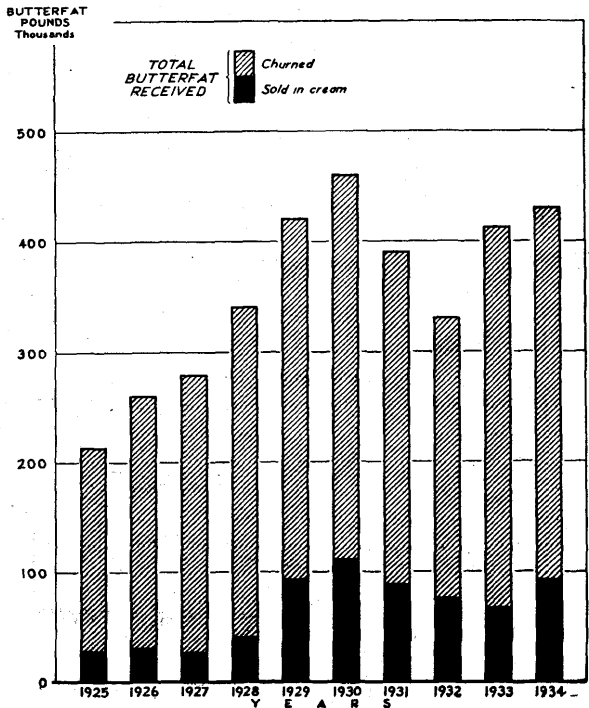


FIGURE 1.—POUNDS OF BUTTERFAT CHURNED AND SOLD.

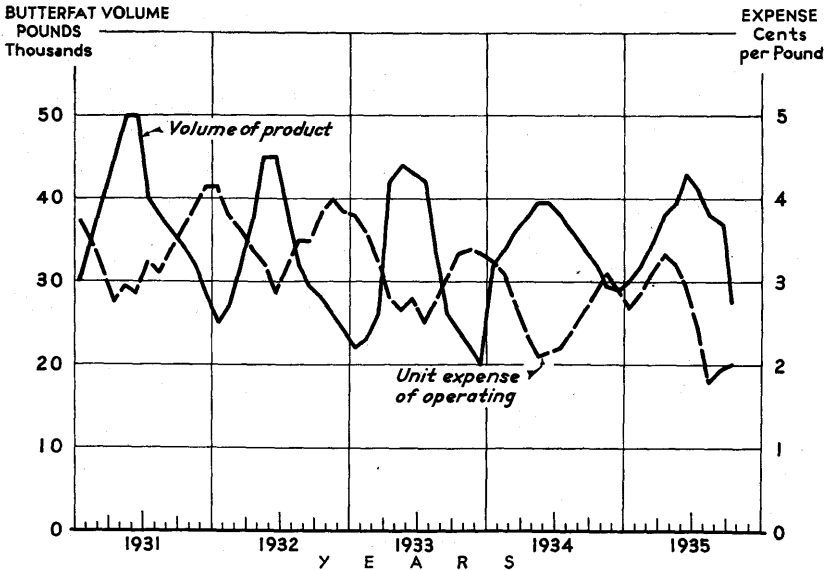


FIGURE 2.—COMPARISON OF VOLUME OF PRODUCT AND UNIT EXPENSE OF OPERATION.

tion than others. A simple chart with a few factors illustrated is generally better than a complicated one.

Figure 4 shows the separate items that might make up a 35-cent retail price for butter in an eastern market. Charts of this type also may be used effectively in illustrating the expenses of an association, or the distribution of the association's income.

A few charts of these or other types, illustrating an association's financial condition and operating results, displayed in the office and used at meetings of members will do much to educate the membership about their association's affairs.

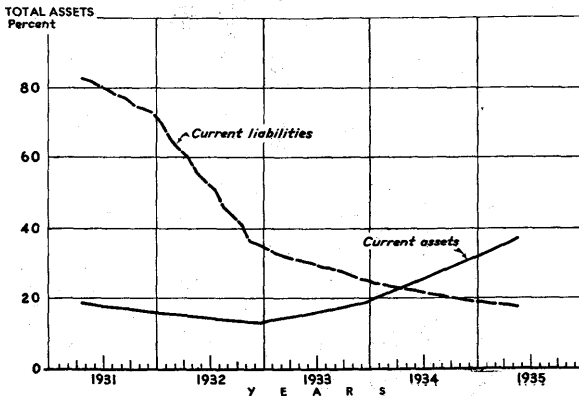
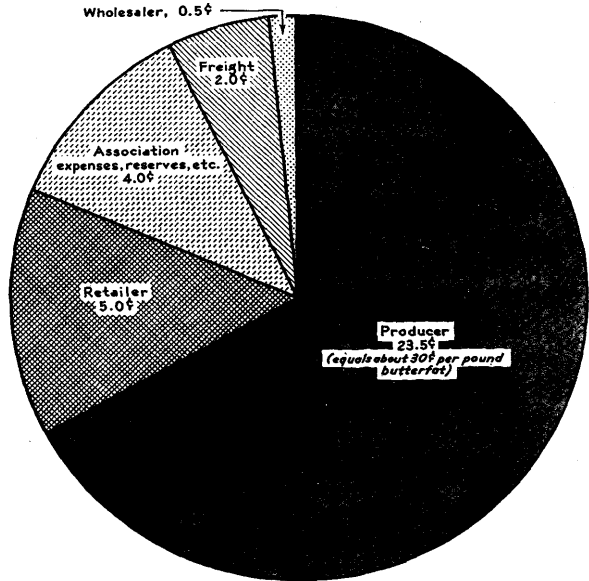


FIGURE 3.—IMPROVEMENT OF CURRENT POSITION OF A SELECTED ASSOCIATION.

FIGURE 4.—DISTRIBUTION OF 35-CENT RETAIL BUTTER PRICE.



Annual Reports

It is customary for cooperative associations to present reports of the year's business at the annual meetings of stockholders or members. Aside from policies, plans for the future, and historical events, such reports include the presentation of a balance sheet as of the end of the year, an operating statement, and a statement of the products received, manufactured, and sold.

Annual reports can be made interesting and instructive. A comparison of the balance sheet at the beginning of the year with the closing balance sheet to show the changes in different accounts is valuable. Similar tabulations and comparisons of annual operating statements, with charts drawn on large sheets of paper or cloth, will present the year's business in a form in which members can remember.

Summaries of pooling statements and producers' pay rolls, as explained in section IV, and of churn reports, sales journal, record of shipments, etc., in section V, will give the annual totals of the several classes of products received, processed, and sold. Annual reports of cooperative creameries frequently show those quantities as follows:

- Pounds of cream received.
- Butterfat test of cream.
- Pounds of butterfat in cream.
- Pounds of milk received.

Butterfat test of milk.
Pounds of butterfat in milk.
Total pounds of butterfat received.
Pounds of butterfat sold in cream.
Pounds of butterfat churned.
Total disposition of butterfat.
Butterfat over or short.
Pounds of butter made.
Pounds of overrun.
Percentage of overrun.
Pounds of butter sold to patrons.
Pounds of butter sold locally.
Pounds of butter sold, shipped.
Total pounds sold.

The continued support of members is necessary to cooperative success. A knowledge of the business by members is essential for that support.

Appendix A

A Common Journal

THE form of journal, illustrated below, is preferred by many bookkeepers to the split journal illustrated and used in the foregoing manuscript. In it the debit and credit columns for each account are placed side by side instead of being separated on the left and right sides.

A feature of this journal is the treatment of expenses. Columns are provided for four classes of expenses and its numerical list of the expense items to be entered in each column is more elaborate than that given on page 6. The total of these columns is entered in the general ledger and can be used without further detail in preparing pooling statements. Each item in the four journal columns is posted to the detailed expense register, which will provide the necessary break-down for study by the manager and officers.

The classes of expense accounts and the items in each class illustrated, are given for purposes of illustration only. Each association will wish to prepare a schedule of expense classification to suit its own needs. It is suggested that a similar method of expense treatment may be used advantageously in the split journal.

Plant expenses:

- 101—Labor.
- 102—Supplies, packages.
- 103—Supplies, general.
- 104—Fuel.
- 105—Power.
- 106—Light and water.
- 107—Depreciation, buildings.
- 108—Depreciation, equipment.
- 109—Miscellaneous.

Gathering and delivery:

- 111—Collecting cream.
- 112—Freight and drayage.
- 113—Trucks, wages.
- 114—Trucks, gas, oil, repairs.
- 115—Trucks, depreciation.
- 116—Miscellaneous.

Office and general:

- 120—Directors, fees and expenses.
- 121—Manager, salary.
- 122—Manager, expenses.
- 123—Clerical.
- 124—Printing and stationery.
- 125—Postage, telephone, and telegraph.
- 126—Depreciation, office equipment.
- 127—
- 128—Miscellaneous.

Other reserves:

- 130—Doubtful accounts.
- 131—Taxes.
- 132—Insurance.
- 133—Interest on loans.
- 134—Interest or dividends on capital.
- 135—
- 136—Miscellaneous.

Appendix B

Maturing Certificates ¹⁰

IF an association organized to finance itself with maturing certificates instead of capital stock, should have had operating results similar to those shown in the balance sheet on pages 12 and 13, most of the items except net worth would be the same. The titles of "Stock subscriptions"—the liability account—and "Members' contracts"—the asset account—would have to be changed to indicate subscriptions for the type of certificates to be issued. In a stock association, issued capital stock and credits on stock subscriptions and general reserves make up the value of members' equity in the business. Certificates, with maturity dates and either with or without guaranteed interest rates, promise to pay definite amounts to the holders on definite dates, and are thus "notes" payable. As such, they can hardly be considered a part of net worth. They belong under the heading of long-term or current liabilities. Usually it is advisable to transfer such part of long-term liabilities as fall due within the year into the current-liability section of the balance sheet. The item "Net worth," shown in the balance sheet of a stock association (p. 13), might appear on the balance sheet of a nonstock association using maturing certificates, under two headings as follows:

1. *Long-term liabilities*.—Maturing certificates:

Issued Dec. 31	Due Dec. 31	Annual interest rate	Total amounts	Interest due Dec. 31, 1934
1930	1935	8	\$4, 884. 17	\$390. 73
1931	1936	8	4, 477. 42	358. 19
1932	1937	8	3, 300. 87	264. 07
1933	1938	6	1, 868. 68	112. 12
1934	1939	6	2, 238. 86	134. 33
Total certificates outstanding..			16, 770. 00	1, 259. 44
1934 credits on certificates.....			2, 884. 17	
Total certificates and credits..			19, 654. 17	

¹⁰ The name "certificates of indebtedness" is not a good term for the capital certificates of a nonstock association. It came into use during the early years of the nonstock type of cooperative corporation, when certificates with maturity dates were issued in those first attempts to create a revolving form of capital. Because of the trouble associations have experienced with certificates having a fixed maturity date, they have come into general disfavor. Certificates without maturity dates are strongly recommended. They may appropriately be called "certificates of interest," "investment certificates," "revolving certificates," or by other fitting titles. It is suggested that they be issued without a fixed rate of interest. Nonmaturing certificates may be entered on the balance sheet as a part of net worth, similarly to capital stock. It may be provided that interest be paid on them when authorized by the board of directors, at rates to be fixed by them, from time to time as the financial condition of the association permits. The term "maturing certificates" is used instead of the more common name "certificates of indebtedness." The term "certificates of interest" as used describes a certificate that does not have a fixed maturity date.

2. *Net worth.*—The net worth of the association, with maturing certificates, would be as follows:

67. Reserve for contingencies.....		\$4, 700. 00
74. Operating balance, Dec. 31, 1933.....	\$220. 72	
75. Operating gain, 1934.....	1, 080. 98	
		1, 301. 70
Net balance.....		6, 001. 70

Nonmaturing certificates may be carried under net worth in the same way as capital stock is entered.

If capital were represented by certificates with a guaranteed interest rate, the “reserve for dividends” in the above balance sheet would become a “reserve for interest” and be included in current liabilities. The amount of credit in the reserve for interest at all times should agree with the interest accrued on outstanding certificates.

Other Publications Available

In addition to this bulletin, the following publications of the Farm Credit Administration may be of interest to dairy cooperatives:

- Cooperative Purchasing of Farm Supplies**
Bulletin No. 1, *Joseph G. Knapp and John H. Lister*
- Accounting Principles for Cooperative Cotton Gin Associations**
Bulletin No. 2, *Otis T. Weaver*
- Cooperative Marketing of Agricultural Products**
Bulletin No. 3, *Ward W. Fetrow*
- Cooperation in Agriculture, a Selected and Annotated Bibliography**, Bulletin No. 4, *Chastina Gardner*
- Statistics of Farmers' Cooperative Business Organizations, 1920-1935**, Bulletin No. 6, *R. H. Elsworth*
- Cooperative Marketing of Range Livestock**
Bulletin No. 7, *L. B. Mann*
- Membership Relations of Cooperative Associations**
Bulletin No. 9, *J. W. Jones*
- Organization and Operating Problems of Nebraska Cooperative Creameries**, Bulletin No. 11, *T. G. Stitts and Gordon C. Laughlin*
- Transportation of Milk in the Philadelphia Milkshed**
Bulletin No. 13, *John J. Scanlan*
- Cooperative Organization of Iowa Farmers' Creameries**
Bulletin No. 14, *Frank Robotka and Gordon C. Laughlin*
- Contract Feeding and Pasturing of Lambs and Cattle**
Bulletin No. 15, *C. G. Randell*
- Milk Cooperatives in Four Ohio Markets**
Bulletin No. 16, *Wm. C. Welden and T. G. Stitts*
- Business Analysis of the Utah Poultry Producers' Cooperative Association**, Bulletin No. 19, *John J. Scanlan*
- Farmers' Purchasing Associations in Wisconsin**
Bulletin No. 20, *Rudolph K. Froker and Joseph G. Knapp*
- Farmers' Mutual Windstorm Insurance Companies**
Bulletin No. 21, *Gordon A. Bubolz*
- Cooperative Purchasing of Farm Supplies in Mississippi**
Bulletin No. 22, *John H. Lister and Gerald M. Francis*
- Problems and Trends in Farmers' Mutual Fire Insurance**
Bulletin No. 23, *V. N. Valgren*
- The Surplus Problem in the Northeastern Milksheds**
Bulletin No. 24, *Leland Spencer*
- Relative Prices to Producers Under Selected Types of Milk Pools**
Bulletin No. 25, *T. G. Stitts, E. W. Gaumnitz, and others*
- A Statistical Handbook of Farmers' Cooperatives**
Bulletin No. 26, *French M. Hyre, Whiton Powell, and others.*
- Cooperative Purchasing Through the Illinois Farm Supply Company and Its Member County Companies**, Bulletin No. 27, *John H. Lister*
- Accounting Procedure for Cooperative Grain Elevators**
Bulletin No. 28, *E. B. Ballow*
- Cooperative Farm Supply Purchasing in the British Isles**
Bulletin, No. 31, *Joseph G. Knapp.*

Continued on page 4 of cover

Other Publications Available

(Continued from page 3 of cover)

- Cooperative Milk Marketing in Louisville and other Nearby Cities**
Bulletin No. 32, *Wm. C. Welden and T. G. Stitts.*
- Cooperative Marketing of Fleece Wool**
Bulletin No. 33, *James M. Coon*
- Cooperative Marketing of Livestock at Cincinnati**
Bulletin No. 34, *H. H. Hulbert*
- Livestock Auction Markets in the United States**
Bulletin No. 35, *C. G. Randell and L. B. Mann*
- Butter Marketing by Midwest Cooperative Creameries**
Bulletin No. 36, *Paul E. Quintus and T. G. Stitts*
- Cooperative Egg and Poultry Auctions**
Bulletin No. 37, *John J. Scanlan and Roy W. Lennartson*
- Cooperative Purchasing by Indiana Farmers**
Bulletin No. 38, *Gerald M. Francis*
- Organization and Operation of Cooperative Irrigation Companies**
Circular No. C-102, *Wells A. Hutchins*
- Western Cattle and Sheep Areas**, Circular No. C-103, *L. B. Mann*
- Economic Analysis of Bargaining Problems of Milk Cooperatives**
Circular No. C-104, *T. G. Stitts and Wm. C. Welden*
- Cooperative Fluid-Milk Associations in Iowa**
Circular No. C-105, *Paul E. Quintus and T. G. Stitts*
- Patronage Problems of Mid-West Producers' Creameries, Inc.**
Circular No. C-106, *Gordon C. Laughlin and T. G. Stitts*
- Refrigerated Food Lockers**
Circular No. C-107, *L. B. Mann*
- Organizing a Farmers' Cooperative**
Circular No. C-108, *S. D. Sanders*
- Organizing a Cooperative Cotton Gin**
Circular No. C-109, *Otis T. Weaver and U. H. Prickett*
- Marketing Fruits and Vegetables Cooperatively**
Circular No. C-110, *M. C. Gay*
- Co-ops in Agriculture**
Circular No. C-111, *French M. Hyre*
- Development of Cooperative Cotton Gins**
Circular No. C-112, *Omer W. Herrmann*
- Farmers' Retail Petroleum Associations**
Circular No. C-113, *French M. Hyre and Joseph G. Knapp*
- Crushing Cottonseed Cooperatively**
Circular No. C-114, *John S. Burgess, Jr.*
- Organization Structure of Farmers' Elevators**
Circular No. C-115, *Harold H. Hedges*
- Cooperative Marketing of Dairy Products**
Circular No. C-116, *Harry C. Trelogan*

*These may be obtained free of charge, as long as a supply is available,
from the*

**Director of Information and Extension
Farm Credit Administration, Washington. D. C.**