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Accounting records for country creameries

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UNITED STATES DEPARTMENT OF AGRICULTURE
BULLETIN No. 559

Contribution from the Office of Markets and Rural Organization
CHARLES J. BRAND, Chief

Washington, D. C.



July 14, 1917

ACCOUNTING RECORDS FOR COUNTRY
CREAMERIES

By

JOHN R. HUMPHREY, Investigator in Market Business
Practice, and G. A. NAHSTOLL, Assistant in Market
Business Practice

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ADVANTAGES OF STANDARDIZING ACCOUNTING SYSTEMS.

In modern business, where numerous operating units are conducted along generally similar lines, a distinct tendency toward standardization has been shown. The country creamery offers a problem both of factory and of commercial organization. It is engaged not alone in the preparation and sale of dairy products but in the processing and manufacturing of raw materials into the several finished commodities—butter, cheese, condensed or evaporated milk, casein, and dry and powdered milk. The methods pursued, though varying in many particulars in different sections of the country, are similar in most of the fundamental details. Standardization of accounting methods and business practices, therefore, as in other lines of business, is both desirable and feasible. To this end the adoption of uniform methods of cost and general accounting is a necessary first step.

NOTE.—This bulletin is intended for all farmers' cooperative and other country creameries throughout the United States. It contains copies of forms and a description of their uses for a system of accounts which is being recommended by the Office of Markets and Rural Organization and by the Dairy Division of the United States Department of Agriculture as a uniform system of accounting for country creameries.

A sound and adequate system of accounts is a prerequisite to good management in every organization, and the adoption of a uniform system applicable to the industry as a whole facilitates the interchange of ideas and affords comparisons and collections of data which make for greater efficiency, saner competition, and sounder methods throughout the entire business. An accounting system to be uniformly applicable to both large and small units must be flexible enough to satisfy the needs of all and yet simple enough to appeal to those organizations which do not employ technical bookkeepers. The system presented in this bulletin offers the results of careful study and practical experiment in creameries operating under widely varying conditions. It is designed to meet the increasing need of country creameries which are demanding an efficient and practical method of accounting.

TYPES OF CREAMERY ORGANIZATION.

The types of organization found among creameries vary as widely as do those of other marketing associations. Various influences have prevailed to bring about these differences, among which may be cited the preferences of individual outside organizers, the desire of farmers for a free expression of cooperative theory, limitations caused by local competitive or trade conditions, and the legal forms of organization prescribed by State laws. None of these factors, however, have operated to determine any form of organization on a broad scale. Rather, they have brought about variations in the types of individual creameries, even where these have been situated in close proximity to one another. Forms of organization to some extent influence the business relations of creameries to their patrons and thus have a bearing upon the methods of keeping creamery accounts.

Among cooperative creameries, namely, those paying limited stock dividends and distributing the balance of their net earnings in the form of patronage dividends, the most favored form of organization is the stock corporation, with by-law stipulations limiting the ownership of shares by any one member to a prescribed number and distributing the voting power on the basis of membership rather than on ownership of stock. In organizations of this type one vote is allotted to each member. A few creameries are nonincorporated associations, and still others, although incorporated, have no capital stock and in some cases have even no stipulated form of membership.

As a general rule the plan of organization of any association whose operations require the ownership of properties should provide that all capital be subscribed in specific, definite amounts, through the purchase either of shares of capital stock or memberships of stipulated value. This defines clearly the relative financial interest of

each member in the association and indicates the amount of capital subscribed and paid by him to the association. Stock or membership shares may be made redeemable at their face value by the creamery at the time the member severs his connection with the association. Such stock or memberships should then be reissuable to active or new members. This plan will in a measure keep the ownership of the stock or memberships in the hands of resident members.

OPERATING METHODS.

The methods employed in operating country creameries vary in certain particulars, necessitating also minor variations in accounting forms. Classified according to the principal types, these different methods of operation or forms of organization are as follows: Farmers' cream stations, shipping to centralizers that are owned by either private or cooperative capital; creameries operated both as butter factories and as cream dispensing stations; and creameries operated exclusively as butter and by-product manufactories.

The system of accounts described herein is not intended for simple cream stations, as these will require a much simpler form of accounting, consisting mainly of a cream receipts form, a cash journal, and payment vouchers for the cream purchases. This system, however, is applicable to the other types, and it is not material whether the creamery manufactures all of its raw material or manufactures part and sells the remainder.

Creameries manufacturing by-products, such as cottage cheese, condensed milk, casein, and milk sugar, on a large scale and located in large centers, are not intended to be covered by the system herein described. The specialized needs and complicated requirements of their business should be made the subject of special study before a system of accounts covering their needs is recommended.

In creameries where cream or milk is purchased outright the methods of bookkeeping are not unlike those in other manufacturing concerns. The cost of the raw material is determined in advance of the sale of the manufactured product. This method is reversed in certain cooperative creameries. When it is the intention of the organization to pay back to the producer the entire monthly net income accrued from the sale of the manufactured product the cost of the raw material is figured from the net amount distributable, this being the difference between the gross income and gross operating expense during a given period. The expenses may be computed upon the basis of overrun, or as a fixed charge per hundred pounds of butter, or according to various other permissible methods. The gross income comprises the returns from all products manufactured or sold during the given period. Under this second arrangement

settlements for a given month are figured from the first to the last day of the month and payments made at a convenient time during the month following.

ACCOUNTING CONDITIONS.

Owing to the lack of specific information in regard to accounting in farmers' creameries, it has been necessary in the past for each secretary, using whatever knowledge of commercial accounting he possessed, to devise a system which in his opinion would best suit the specific requirements of the business, the essential forms being selected from the many which have been placed upon the market by publishing houses catering to the creamery trade. No uniform system was available which could be applied to the needs of practically all country creameries; hence, systems of accounting are practically as numerous as creameries. A few of these are complete double-entry systems, but in most particulars they consist mainly of detached forms, reports, and memoranda designed chiefly to aid the secretary in making up his annual report. The records of the business done by the patrons, including the receipts of milk or cream and of payments made, therefore, are generally satisfactory, as much attention has been paid to this part of the work. But aside from this feature, a large number of accounting systems now in use are inefficient and incomplete; the preparation of an intelligible balance sheet or a statement portraying the results of operation is extremely difficult, if not often impossible, as there is no definite plan for collecting and classifying the items or bringing the totals together.

Local conditions have influenced to a great extent the construction and use of creamery forms. Differences in methods of operation, it was believed, necessitated differences in the manner of keeping records and in the form of records, and no concerted effort was made to bring about uniformity. Such differences were found in the method of deliveries, the frequency of testing, the division of work between the secretary and treasurer, the method of marketing, the frequency of payment, and the form in which the raw material was received. While provision must be made for all these variations, no apparent reason appears why any of them should make necessary any radical change in the accounting system.

ACCOUNTING REQUISITES.

The cause of a large percentage of business failures may be traced, either directly or indirectly, to the lack of a proper accounting system. Keen competition in present-day business requires that the manager shall command accurate and reliable data regarding his business and the cost and results of operation. Proper accounting includes not

alone the determination of financial standing, but also the determination of the results of operation during any specific period. A system of accounting, to fulfill these requirements, should show at any desired time the assets and liabilities of a business, supplies on hand, expenses incurred, receipts and disbursements of cash, payments made to patrons, profits and losses, and the details of the various transactions affecting operating results.

This information, which is essentially necessary to efficient control and sound management, should be compiled periodically, preferably monthly. It should be recorded in condensed and clarified form on monthly statements, giving full details regarding all items of operation, through the use of properly drawn books of original entry.

An accounting system, however, does not consist merely of books and forms, but, in its broader sense, includes the whole working environment of the office. The best results are obtained with any accounting system when the office is properly equipped with modern appliances, approved and used by the great majority of institutions, namely, proper filing devices, an adding machine, a typewriter, and other facilities for the usual routine of office work.

AUDITING.

The importance and desirability of an audit is especially apparent in companies operated on a cooperative basis, since in such companies the patrons are, in a sense, copartners.

The audit should be made by an accountant familiar with creamery accounting and competent to render advisory service to the organization. In some cases creameries employ the services of members to make periodical audits, but as a rule this method is not satisfactory, either to the manager or to the patrons, since audits of this character are at best seldom founded upon any extended knowledge of accounting. Aside from the value of proper accounting itself, probably no other feature in cooperative business enterprise serves to bring about more confidence or create greater business stability than a periodical audit by competent accountants.

DESCRIPTION OF THE FORMS.

The forms comprising this system of accounting have been adopted after exhaustive investigation as to their time-saving quality and adaptability to the needs of country creameries.¹ While differences in creamery requirements may suggest changes in some of the auxiliary forms, such as cream and milk receiving sheets, it is not probable that alterations will be necessary in the main features of the system.

¹ With the close cooperation of the Dairy Division of the Bureau of Animal Industry of this department, this system has been developed in actual operation in creameries selected by that division.

The system is composed of the following forms:¹

- Form No. 1. Cash Journal.
- No. 2. Record of Shipments on Consignment.
- No. 3. Cream Receiving Sheet.
- No. 3a. Daily Cream Receiving Sheet.
- No. 3b. Daily Cream Receiving Sheet (Grade).
- No. 4. Milk Receiving Sheet.
- No. 5. Patron's Voucher (Duplicate).
- No. 6. Monthly Operating Statement.
- No. 7. Patron's Settlement Sheet.
- No. 8. Buttermaker's Daily Record.
- No. 9. Butter Balance.
- No. 10. Patron's Butter Order.
- No. 11. Local Sales Ticket (Duplicate).
- No. 12. Consignment Invoice (Duplicate).
- No. 13. Inventory.

The forms are described in their consecutive order as listed above.

CASH JOURNAL.

The cash journal (Form No. 1, p. 24) provides a systematic, chronological reference of the financial transactions occurring during the month and, through the provision of extra columns, reduces the amount of posting to a minimum by assembling items of a similar character into separate totals for the month. The debit columns of this form bear the following headings:

Date.	General ledger.
Folio.	Labor.
Cash.	Repairs.
Bank deposits.	Freight and drayage.
Accounts receivable.	

The credit columns are as follows:

Folio.	Sales, butter shipped.
Check number.	Butter (local), pounds, amount.
Bank withdrawals.	Buttermilk, pounds, amount.
Accounts receivable.	Cream, pounds, amount.
General ledger.	Milk, pounds, amount.
Invoice or ticket number.	Cottage cheese, pounds, amount.

Two columns in blank are also provided on both the debit and credit sides, which may be used according to the requirements of the individual creamery.

Columns are also provided between the debit and credit sides for items and explanations.

RECORD OF SHIPMENTS ON CONSIGNMENT.

In order that a continuous, concise statement may be had of all shipments of manufactured products on consignment to outside markets, the record of shipments on consignment (Form No. 2, p. 25)

¹ In preparing working sets of this system, two binders should be provided, the first containing forms 1 and 2, and the second, forms 6 and 7.

has been devised, setting forth the desired data under the following columns:

Date.	Returns received, date.
Shipped to.	Net market Weight.
Shipped via.	Price per pound.
Number of packages.	Amount.
Shipment number.	Draft.
Kind and grade.	Balance on consignment.
Shipping weight, Gross, Net.	

This form serves not only as a memorandum of consignment shipments, but as a basis of computing the inventoriable balance of manufactured products in transit. When a shipment is made, the information available at that time, namely, the date of shipment, to whom shipped, shipped via, the number of packages, the shipment number, the kind and grade, and the shipping weight, should be extended in the appropriate columns. As soon as the returns are received on the shipment the record should then be completed, showing the market weight, the unit price, the amount received for the shipment, and the date of receipt. When drafts are drawn at the time shipments are made, these should be entered immediately in the "Draft" column. It frequently will happen that when the operating statement is being made up certain shipments will be outstanding upon which returns have not been received. When this occurs, the estimated value of the goods should be entered in the "amount" column to ascertain the gross inventoriable value of all outstanding consignment shipments. From the gross value however, must be deducted the amount of all drafts drawn against the various shipments in order to obtain a net outstanding consignment value. This latter is carried over in the "Balance on consignment" column, the total of which for the month is transferred to the inventory sheet under "Butter, net consigned."

CREAM RECEIVING SHEET.

Individual preferences of creamery managers for forms for recording the receipt of cream are extremely varied. As the actual design of such forms is not of vital importance, such individual preferences can be exercised freely, so far as these meet the actual requirements of the case. It is not intended that the forms here presented shall be used to the exclusion of all others.

The cream receiving sheet (Form No. 3, p. 25) is so devised that the gross, net, and tare of cans of cream may be shown.

The sections of the form on which are recorded the patron's name and number, either in consecutive order or according to groups by route number, are provided in duplicate, one copy of which is retained in the office and the other used in the receiving department. This latter, with the sheet upon which are recorded the gross, tare,

and net of cream or milk, and the test and pounds of butter fat received, are fastened on a clip board and together form the complete receiving sheet. Each list of names receives a number, which number is assigned also to the corresponding cream receiving sheet. When all receipts of the day have been recorded, the receiving sheet for that date is removed from the clip board and attached to the original list of patrons' names in the office, while a new receiving sheet is placed on the clip board for the following day.

A margin has been provided on the cream receiving sheet, so that they may be pasted together in the order of date to form a complete receiving record for an entire monthly period.

Form No. 3*a*, page 26, is provided for creameries which prefer to keep their receiving record according to date rather than according to list, as suggested under Form No. 3.

A further variation is shown in Form No. 3*b*, page 26, which provides for a daily record of milk receiving sheets according to grade.

MILK RECEIVING SHEET.

In creameries which provide separate facilities for receiving milk the records must provide for recording the pounds of milk, the test, and the butter-fat content. Experience has shown that a sheet devised to accommodate the receipts covering an entire monthly period is not satisfactory. The most valid objection is that the sheet is not easily procurable for the use of the bookkeeper until the first of the following month; also, owing to the very nature of his work, the milk handler often so defaces the sheet as to make the figures upon it illegible. The milk receiving sheet (Form No. 4, p. 27) has been devised to overcome these disadvantages.

It provides for the recording of milk receipts for 10-day rather than monthly periods. Its operation is similar to Form No. 3, the cream receiving sheet. Duplicate lists of patrons, with their numbers are provided, and one copy is retained in the office, the other being sent to the receiving department. The milk sheets, however, are usually fastened on the bulletin board attached to the wall in the milk room, in order that they may be accessible to the milk handler.

On the sheet for the third period a column has been provided for extensions, showing the total pounds and the total amount paid for skim milk during the month. This information will be found of valuable assistance in making up the patron's settlement sheet.

PATRON'S VOUCHER.

The patron's voucher (Form No. 5, p. 28) has been provided to serve the double purpose of a voucher check and a statement of the patron's account. It is furnished in duplicate, the original going to the patron and the duplicate copy remaining in the office to

serve as the patron's ledger account. On the statement are arranged columns for the following information: Date, cream or milk, test, pounds of butter fat, price, amount, and deductions on account of charges to patrons as follows: Pounds and amount of butter, hauling, and sundries.

The form is designed to accommodate 10 entries of deliveries during the month, but in case patrons make a greater number of deliveries, the statement may be extended to any desired length.

This form has the advantage of presenting to the patron in compact arrangement all the facts regarding his account. It facilitates also the detection of possible errors in calculation. In this connection the patron always should be urged to verify the statement of the creamery with his own records before detaching and cashing the attached check.

OPERATING STATEMENT.

The operating statement (Form No. 6, pp. 29-31) is designed for the purpose of facilitating the gathering together of the items of income and expense in order that the amount distributable to patrons may be shown. All items of income, expense, and distribution ordinarily required in country creameries are represented in detail, and columns are provided for the amounts of these items. The different accounts in the books are classified under income, deductions, reserves, and payments to patrons, so that the various steps necessary to the final distribution of the net income of the creamery follow in their proper sequence.

Included with the operating statement is a statement of statistics and formulas for computations. The statistics include data of interest in reference to the conduct of the creamery or of use in computing costs. The computations are designed to explain the method of arriving at the proper distribution of values as recorded on the operating statement.

For the convenience of the creamery a working sheet for trial balances or other general purposes has been provided on the reverse side of the operating statement. All the figures regarding the operation are thus practically consolidated on one sheet.

THE PATRON'S SETTLEMENT SHEET.

The patron's settlement sheet (Form No. 7, p. 32) is one of the more important forms in the accounting system. Upon it is based the distribution of income due patrons for raw material. This sheet provides for the recording of the names of patrons, their numbers, pounds of milk or cream, pounds and value of butterfat, pounds and value of skim milk, and gross amount to be distributed for raw material. Deduction columns are included for such items as butter sold to patrons, hauling expense, sundry expense, amounts paid by check, and the amount of current overdrafts.

The "Sundry" column should be used for miscellaneous deductions, such as the sale of supplies on account to patrons, deductions for previous overdrafts, or other items for which special columns have not been provided. For convenience of posting it will be found advantageous to recap the total of the "Sundry" column so that the totals of all similar items may be shown. The remaining columns on the sheet are self-explanatory and are used for the various purposes indicated by their headings.

DAILY RECORD.

The butter maker's daily record (Form No. 8, p. 33) is a simple form devised for the purpose of furnishing data regarding the daily run of manufacturing operations in the creamery. It will aid in controlling the overrun and in regulating the uniformity of the product. As a reference sheet, giving information of sources of losses and a comprehensive understanding of the activities in the workroom, it should be of considerable value to both the manager and the butter maker.

BUTTER BALANCE.

The butter balance (Form No. 9, p. 33) serves as a perpetual inventory of butter on hand and operates as a check upon the butter-maker's daily record and the record of sales. The butter balance should always check closely with the actual physical inventory at the end of each month.

PATRON'S BUTTER ORDER.

The custom of advancing butter to patrons on account without recording the number of pounds is likely to lead to discrepancies which are difficult to locate and correct at the end of the month. In order to avoid this difficulty the patron's butter order (Form No. 10, p. 34) is recommended. No butter should be advanced to patrons unless a signed order bearing the patron's name and number and setting forth the number of pounds for which the order is given has been received from him. These orders should be filed until the end of the month and then be charged to the patron under "Deductions" on the patron's voucher.

LOCAL SALES TICKET.

The local sales ticket (Form No. 11, p. 34), provides a simple form for recording both cash and credit sales to local parties. The tickets should be made in duplicate and numbered consecutively, the original being given to the customer and the duplicate being retained in the creamery as a memorandum of sale. All local sales are recorded in the cash journal, the amounts being credited in the "Butter sales—local" column with a corresponding debit entry to cash or to accounts receivable, as the case may be.

CONSIGNMENT INVOICE.

The consignment invoice (Form No. 12, p. 35) is used for invoicing consignment shipments and should be made in duplicate and numbered consecutively. The information contained therein should be recorded on Form No. 2, the "Record of shipments on consignment".

INVENTORY REPORT.

In order that the bookkeeper may ascertain the balance on hand of inventoriable supplies, it will be necessary to take actual physical inventories at the end of the month. The inventory report (Form No. 13, pp. 36, 37) will be found convenient for this purpose. The various supplies ordinarily used in the operation of the creamery are noted on the form, while blank spaces are provided for other items not enumerated. The report furnishes information as to supplies on hand at the end of the previous month, giving the amount received, on hand, and used during the current month, together with the distribution of the usage as between butter, by-products, and patrons.

OTHER FORMS.

The forms above described and illustrated in this bulletin are those which are considered practically indispensable in the average creamery. It is apparent, however, that conditions may arise where other forms will be necessary. Among these may be mentioned the following:

1. Duplicate ticket.
2. Hauler's report.
3. Station operator's report.
4. Hauler's or station check sheet.

DUPLICATE TICKET.

There is considerable variation in the practice of giving receipts for deliveries of the raw product at the creamery. Where such a receipt is required, a ticket form greatly facilitates the work of the receiving room in this respect. The ticket should be made in duplicate, either by means of a carbon sheet or by providing a two-piece tag. In the latter case, the two sections of the tag are numbered correspondingly and each bears the same information respecting the weight of the product received. The lower half of the tag should be torn off and given to the patron as his receipt, the upper part remaining as the record of the creamery. The tickets should be employed merely as memoranda of deliveries.

HAULER'S REPORTS.

Creameries operating routes on which the cream is weighed and sampled by the hauler should require standard forms for this purpose. These are obtainable from various publishing houses and need not be described here.

STATION OPERATOR'S REPORT.

Where creameries operate cream stations from which they receive shipments a station operator's report will be found of great assistance. This report should include the weights and tests of the receipts at skimming or receiving stations. It should be forwarded daily by the station operator to the creamery office, so that information regarding the amount of butter fat received at the station may be available to the butter maker.

HAULER'S OR STATION CHECK SHEET.

In the operation of cream-receiving stations and routes, where the weighing and sampling of cream are done by station employees or haulers, a hauler's or station check sheet will be found of value in avoiding losses from dishonesty or carelessness.

METHOD OF OPERATING THE SYSTEM IN COOPERATIVE CREAMERIES.

As the Office of Markets and Rural Organization creamery accounting system is intended for use both in cooperative creameries and in those operated under private or corporation management, the method of operating the system will be discussed with relation to the necessities of each type. Since the majority of farmers' creameries are operated cooperatively, the system has been based fundamentally upon cooperative requirements, and the following discussion has reference to its operation in creameries effecting the distribution of their net income on a raw product delivery basis.

RECEIVING RAW PRODUCTS.

The receiving sheets for cream should be selected according to the custom of receiving made necessary by local conditions. Form No. 3 is recommended because of the check it affords on the incoming cream. In the use of this form it is necessary to weigh the full cans and the empties in order that the gross, tare, and net may be recorded, and this practice may be recommended as a factor in eliminating the possibility of errors. In case the weight of the cans is marked upon them, either Form 3, 3*a*, or 3*b* may be used. When the receipts for the day have been recorded upon the receiving sheet the data should be completed by recording the test and ascertaining the butter-fat content. In the event that composite tests are made the butter-fat content should be computed from the total receipts during the period over which the test extended.

The recording of receipts of milk is similar to that in the case of cream, and the data furnished by these sheets may be obtained in conformity with instructions already given in this bulletin.

CASH JOURNAL.

The cash journal is designed to facilitate the handling of cash and journal entries. No posting should be made to the ledger other than from entries made on this form. By following this rule the liability of error in posting will be greatly reduced and an explanation of all ledger entries will be obtainable without the extra labor of entering such details in the ledger. The form is so arranged that all debits are entered to the left and all credits to the right of the "Items" column. Because of this arrangement the sum of the totals of entries in columns on the one side should equal that on the other, except that in entering the cash balance at the head of the "Bank deposits" column as the first entry of the month the debit will exceed the credit by that amount.

USE OF DEBIT COLUMNS.

CASH.

A "Cash" column is provided for the itemized entry of all cash receipts. At convenient periods the amounts appearing in the column are footed and the total transferred to the "Bank deposits" column. Cash and checks to an equal amount are then deposited in the bank. Footings are not carried forward except when the entries of the day's business extend over to the following page and a subfooting is necessary to secure the full total of the day's receipts. The "Cash" column entries act merely as memoranda of the daily receipts.

BANK DEPOSITS.

As explained under "Cash" the "Bank deposits" column is used for the purpose of recording daily receipts of cash as deposited in the bank. In order that the total may represent the entire debit to cash at the end of the month, the balance of available cash in the bank at the beginning of the month should constitute the first entry of the month in this column.

ACCOUNTS RECEIVABLE.

In the "Accounts receivable" column are entered all items representing charges to personal accounts. The individual items are posted to the respective accounts in the ledger, while the total for the month is carried to the debit of the "Accounts receivable control" account in the general ledger.

GENERAL LEDGER.

All debits to general accounts, not including accounts for which special columns have been provided, should be entered in the "General ledger" column. Such accounts will include capital, income,

expense, and inventory accounts and various other miscellaneous accounts, while the accounts for which special columns are designated include such as labor, repairs, hauling, and drayage. The items in the "General ledger" column are posted individually to their respective accounts, but the totals only of the special columns are carried to the corresponding accounts in the ledger. The "General ledger" column, being in fact a sundry debit column, may be analyzed and the items of similar character recapped, thus affording a reduction in the amount of posting as well as classifying information for use in the monthly operating statement.

USE OF CREDIT COLUMNS.

BANK WITHDRAWALS.

All checks issued, for whatever purpose, should be entered in the "Bank withdrawals" column, the numbers of the checks being recorded consecutively in the "Check number" column. In the case of payments for the purchase of butter fat or for other raw material where the checks are all drawn at a given time during the month, a single entry in the "Bank withdrawals" column, representing the totals of such checks, is sufficient. The numbers of the first and last checks drawn, as from 101 to 120, will be a sufficient record in the "Check number" column.

ACCOUNTS RECEIVABLE AND GENERAL LEDGER COLUMNS.

Items entered in the "Accounts receivable" and "General ledger" columns are of the same nature as those mentioned under the same headings in the discussion of the use of the debit columns. The total of the "Accounts receivable" column should be posted to the credit of the "Accounts receivable control" account in the general ledger.

INVOICE OR TICKET NUMBER.

After sales of butter, buttermilk, cream, or other products or supplies are made, the number of the invoice or ticket recording the sale should be entered in the "Invoice or ticket number" column opposite the entry of the amount of the sale. In so far as practicable, all tickets should be entered consecutively in order that sales may be easily located in the cash journal.

SALES—BUTTER SHIPPED.

Items in this column represent the checks and cash received for butter consigned to and sold in distant markets and the credits for butter shipments sold on account. Where drafts are made against shipments, such drafts should also be recorded as part of the receipts on account for the butter shipped. The total of this

column will then represent the amount of money received in drafts, checks, and cash for butter sold through outside dealers, plus the value of butter sold on account.

OTHER SALES COLUMNS.

The several columns headed "Butter—local," "Buttermilk," "Cream," "Milk," "Cottage cheese," and the two blank columns provided for special use, like the "Sales—butter shipped" column, are used for entry of the sales of the specific product designated. They provide a summary of the income from such sales for each monthly period. The totals of the columns are posted to their respective accounts in the general ledger at the end of the month. The total of the "Butter—local" column, however, is carried, together with the total of the "Sales—butter shipped" column, to the credit of the general "Butter sales" account and not to a separate "Butter—local" account. The sales of butter to patrons should be entered in the "General ledger" column and be posted to the "Butter sales" account.

THE LEDGER.

For convenience in operation it is often found advisable to divide the ledger into two parts, so that a distinct division may be made between the general accounts and personal accounts or accounts receivable. Where this method is followed, an account should be carried in the general ledger under the caption "Accounts receivable control." Postings to this account are made once a month and are derived from the totals of the debit and credit accounts receivable columns in the cash journal. It follows then that since the postings to this account are the totals of all debit and credit entries made to individual accounts, the balance of "Accounts receivable" taken individually should equal the balance of the control account. By dividing the ledger into two parts and carrying control accounts in the general ledger, it is also possible to take a trial balance covering the entire operation of the business by reference to the accounts in the general ledger only.

The correctness of the accounts receivable ledger is ascertained by comparison of its balance with that of the control account. The practice of arbitrarily ruling off accounts in the ledger at the end of each month because of the fact that creamery operation usually is divided into monthly periods is not recommended, since it is intended that the ledger shall represent a continuous, accumulated record of the transactions throughout the year. For convenience in making up the operating statement, pencil notations of the monthly balances of accounts may be set down as marginal notations in the ledger accounts, and all entries to the operating statement, except inven-

tories of manufactured goods, should be derived from the monthly balances of accounts, as shown in the ledger. By means of this arrangement the trial balance will afford a complete check upon the monthly operating statement which could not be attained if the ledger were ruled off each month. At the end of the year when the ledger is closed, the net balance of transactions for the complete year should agree with the undistributed balance for the last month of operation, as shown by that month's operating statement.

CASH AND PETTY CASH.

In order that a complete trial balance may be taken from the ledger it is advisable to carry a "Cash" account, representing the net balance of available cash in the bank at the end of each month. But one entry a month is necessary to this account, this being the difference between the totals of the "Bank deposits" column and the "Bank withdrawals" column as shown in the cash journal. If the total of the "Bank withdrawals" column should exceed that of the "Bank deposits" column, this account will show a credit balance. Because of the fact that the entries to this account represent balances, it is not necessary to accumulate the items in the ledger from month to month.

For convenience in paying out small sums of money in the form of cash for daily expenses and for making change, a petty cash fund should be established in a sufficient amount to take care of these items. In order to establish this fund, a check should be drawn, crediting cash and debiting petty cash. The fund can then be used as needed. Vouchers for payments of petty cash should be kept on file until the end of the month, when an entry can be made in the cash journal debiting the proper expense accounts for which the payments were made and crediting petty cash. In some creameries it is the custom to use shipping tickets for the transportation of certain products, and in such cases it will be found convenient to purchase a supply of these tickets with the petty cash fund and to treat the tickets as petty cash on hand. This will save a considerable amount of posting of small entries to the "Shipping ticket" account, as a summary of the expenditures of this nature can be made at the end of the month and posted as one item.¹

INVENTORY AND EXPENSE ACCOUNTS.

Accounts covering all inventoriable supplies, such as coal, salt, and tubs, should be carried in the general ledger, together with their corresponding expense accounts. As such goods are purchased the "Inventory" account should be charged. The usage, as shown by the physical inventory, should be credited to the "Inventory" ac-

¹ For further discussion of petty cash see U. S. Department of Agriculture Bulletin 178, Cooperative Organization Business Methods.

count and charged to the corresponding "Expense" account. Butter, milk, cream, and cottage cheese, which may be on hand, should not be carried in accounts in the ledger, as it is the intention to make a complete distribution to patrons for goods of this nature which may be on hand at the end of the month. However, if manufactured goods be on hand at the end of the year when the books are closed, they should be inventoried. These accounts should then be closed and the balance carried forward to the "Operating statement" for the first month of the succeeding year. For example, in the case of butter, this may be accomplished by debiting "Butter inventory" and crediting "Butter sales," thus setting up an asset of butter on hand and showing the amount of income derivable from it. Upon opening the books for the following year a reverse entry should be made, crediting "Butter inventory" and charging "Butter sales," thereby replacing the butter upon the "Operating statement" and debiting the sales for the following year, since credit has been taken for the value of this butter in the sales of the year just closed. Other expense accounts may occur aside from those derived from usage of inventoriable material and these will include such as salaries, office expense, depreciation, bad debts, insurance, repairs, and miscellaneous expense, all of which are derived from entries made in the cash journal.

INCOME ACCOUNTS.

Since the income of a creamery is secured from the sale of butter, cream, milk, cottage cheese, and other dairy products, the ledger should carry accounts showing the amount of sales creditable to each of these, and these accounts should be debited with any allowances made to customers.

CAPITAL, PROPERTY, AND RESERVE ACCOUNTS.

An account should be provided showing the capital stock outstanding, or the portion of the capital which is used or is available for the working of the business, as well as accounts showing the value of plant, machinery, and real estate. Since there are certain wastages taking place in the operation of a business which are not directly controllable by the management, it is necessary to set up such accounts as "Reserve for depreciation on buildings," "Reserve for depreciation on machinery and equipment," "Reserve for sinking fund," "Reserve for bad debts," and for such other accounts as may be required.

RESERVE FOR DEPRECIATION.

It is estimated that the depreciation on a brick building is from 2 to 3 per cent per year and upon a frame building about 5 per cent. Creamery managers, therefore, should be careful to deduct a monthly

charge equal to one-twelfth of the yearly amount computed upon the above basis. These amounts should be charged to "Depreciation on buildings" and credited to "Reserve for depreciation on buildings," and, as in the case of all other expense accounts, the monthly amount should be transferred to the monthly operating statement and there deducted from the gross income. Because of the peculiar nature of the business, the average rate of depreciation on machinery and equipment in creameries should be placed at as high a rate as 15 per cent annually. A reserve for one-twelfth of that amount therefore should be set up monthly and charged against the operating statement. It is essential that a "Reserve for depreciation on machinery" should be set up in order that the plant be kept at its highest efficiency. Poorly kept machinery will often affect the value of the product manufactured and the expense of keeping machinery in proper shape is, therefore, more than offset by the possible loss of income through its depreciation. Reserves for depreciation of property, whether buildings, machinery, or equipment, should be charged with replacements, but ordinary repairs should be charged to the repair account.

RESERVE FOR SINKING FUND.

The laws of some States require that cooperative organizations set aside each year a certain percentage of the capital invested to provide a reserve for the retirement of the capital stock. Creameries in those States are obliged to comply with the requirements of the law and to reserve an amount annually in accordance with its provisions. In a large number of creameries, particularly among those located in the State of Minnesota, a reserve is set aside monthly in what is termed a sinking fund. The financial transactions are then divided into a general fund and a sinking fund, the former including all receipts of cash and all disbursements for butter fat, supplies, and operating expense. A sinking fund, as a rule, covers repairs to machinery, taxes, insurance, and dividends on stock, usually termed "Interest on stock." The rate per pound of butterfat for reserve in this way varies from one-fourth of a cent to 1 cent. The purposes for which this fund is established vary greatly, for, while some organizations charge the sinking fund with the items recorded, in others the full amount is applied annually to the interest on and the principal of the indebtedness of the organization, while taxes, insurance, and repairs are prorated over the year and included in operating expenses. In general, it may be recommended that it is better practice to set aside separate reserves for the different forms of depreciation which may occur, since the carrying of many charges in one reserve account may lead to an insufficient amount being set aside to offset the wear and tear on the whole plant. Aside from

the above reserves, it is sometimes desirable to carry the undistributed balance of income, as shown by the operating statement, to the ledger instead of carrying it forward to the head of the next month's operating statement for distribution. Since the undistributed balance is excess income, it can only be considered as an amount of surplus, and therefore can not properly be designated as a reserve, although it may be used as a fund for general purposes not specifically covered by other reserves.

CLOSING THE LEDGER.

At the end of the fiscal year the books of the creamery should be closed. In books operated in conformity with the instructions contained in this bulletin, the totals of the income and expense accounts portrayed in the ledger are the result of accumulated credits and debits for the entire yearly period.

A physical inventory should be taken of all property and supply accounts, the value of which should be credited to the inventory accounts in the ledger and carried forward as the balance on hand at the beginning of the year. Should the inventory accounts show a credit balance, it will indicate that the usage charged to such accounts has not been distributed in the proper amounts during the year. The error in distribution either may be charged entirely against the last month or may be prorated as added expense during the months of the following year.

All income and expense accounts should be closed by debiting them with an amount to balance and such amount should be carried to the profit and loss account. If the entire income has been expended during the year, the profit and loss account should balance and there should be no addition to surplus. However, an undistributed balance in the operating statement of the last month is often shown and, in that event, the profit and loss account should show a credit balance of an equal amount. Where an undistributed balance is shown, it may be added to surplus or profit and loss may be debited, and the amount carried forward to the operating statement for the first month of the following year, there to be distributed, together with other income of the month.

In opening the books for the new year, all accounts shown will then be either assets or liabilities, together with surplus, capital, and reserves, the latter representing the net capital of the company.¹

THE OPERATING STATEMENT.

After all entries covering income and expenses have been made in the ledger, the monthly balances of these accounts should be

¹ For further discussion of this subject, see U. S. Department of Agriculture, Office of Markets and Rural Organization, Document No. 2: Lumber Accounting, and Opening the Books in Primary Grain Elevators.

transferred to the operating statement, which is in effect a statement of the income and expense, together with the distribution of the net income. Aside from these entries, the operating statement should record the inventory of butter at the beginning and end of the month. The inventory of butter will include butter in the refrigerator and the inventori-able balance of butter on consignment, as shown by the footing of the "Balance on consignment" column of Form 2, the "Record of shipments on consignment." When necessary, inventories of cream, milk, and buttermilk may also be shown, but as a rule this is not done. The addition of the several items of income result in a portrayal of the gross amount distributable. It will be noted that prepaid express, which is express on outbound products, is deducted from the income in order that the net value at the creamery may be shown. By deducting the various expense accounts from the gross amount distributable, the balance for distribution is ascertained. The balance for distribution is used as a basis for figuring the price per pound to be paid for butter fat. The figures representing the distribution to patrons are derived from the totals shown by the various columns of the patrons settlement sheet. Should the amount distributed not equal the balance for distribution there will be a sum left over, which is represented by the "Undistributed balance." After the operating statement is completed, a journal entry should be made in conformity with the example shown below. (See also Form 6, pp. 29-31.)

	Dr.	Cr.
Butter fat purchased.....	\$916.15	
Current overdrafts.....	5.10	
To patrons accounts payable.....		\$639.40
Butter, patrons.....		187.60
Cream, patrons.....		3.20
Cottage cheese, patrons.....		1.35
Supplies, etc., patrons.....		4.90
Hauling, patrons.....		75.30
Previous overdrafts.....		3.20
Undistributed balance.....		6.30
(Credit to "Butter fat purchased" account.)		

It will be noted that butter fat purchased has a debit of \$916.15 which is the amount of the balance for distribution, and a credit of \$6.30. The "Undistributed balance" is journalized and carried to the credit of the "Butter fat purchased" account, in order that the account may show all transactions in butter fat which have taken place during the month. The credit item to this account represents the butter fat value which is undistributed and is therefore subject to distribution in the next month's operation. It has been the custom in some creameries to hold the books open until a date in the succeeding month when sufficient cash was on hand to make payments to patrons. This practice has resulted in considerable confusion

through the predating of cash payments for butter-fat purchases. It is recommended therefore that the amount owed to patrons for butter fat be credited to "Accounts payable patrons" as shown in the journal entry just given, in order that the books may be closed at as early a date as possible, thus assuring that the trial balance and the operating statement agree before actual cash payments are made. When the patron's checks are made out, they should be charged to "Patrons accounts payable," thus closing the account.

PATRON'S VOUCHER.

Postings should be made to the patron's voucher for all incoming products, as represented by the amounts entered on the cream and milk receiving sheets. The amounts to be deducted are derived from the patrons' butter orders and from charges on account for hauling and sundries. After the price per pound has been ascertained, the value of butter fat for each patron computed, and the necessary deductions taken therefrom, the check may be made out and the voucher forwarded to the patron. In case the deductions exceed the amount due the patron, the check should be removed from the statement, and the statement should be mailed to the patron showing the amount of his overdraft. Such overdrafts should be noted in all cases on patrons' vouchers under deductions for the next month.

PATRON'S SETTLEMENT SHEET.

The patron's settlement sheet is a summary of all the credits and debits which have been shown upon the patrons' vouchers. It shows the total pounds of skim milk and butter fat as well as the total deductions on account for various supplies and expenses chargeable to patrons. The price per pound which is to be paid for butter fat is ascertained by dividing the "Balance for distribution" by the total pounds of butter fat. Such a division frequently will give a quotient containing a large fraction and in such cases it usually is found convenient to use only the whole number as the price per pound rather than the actual figure as given by the division. Using this, the total payments to patrons necessarily will be less than the actual balance for distribution. The difference between the two represents the undistributed balance previously referred to under the discussion of the operating statement. The balances remaining after deducting the various expenses chargeable to patrons from the amounts to be distributed, represent the payments to be made by check, or in case the patron has overdrawn his account, the amount of his overdraft. Such overdrafts should be carried forward to the next month's distribution sheet as deductions against the individual patrons to whom they are chargeable. As the debits and credits

should balance, it will be well to prove the sheet by summarizing the totals as in the following example. (See also Form No. 7, p. 32.)

Butter fat	\$758.60	Payable by check patrons.....	\$639.40
Skim milk.....	151.25	Butter, patrons.....	187.60
Current overdrafts.....	5.10	Cream, patrons.....	3.20
(Forwarded to next settle- ment sheet.)		Cottage cheese, patrons.....	1.35
		Supplies, etc., patrons.....	4.90
		Hauling, patrons.....	75.30
		Previous overdrafts.....	3.20
Total	914.95	Total	914.95

After completing the summary, all items excepting those for butter fat and skim milk should be transferred to their proper position on the operating statement under "Distribution to patrons."

COMPUTATIONS.

In creameries where both skim-milk and butter fat are purchased and where the skim-milk purchases can be traced to specific patrons, the following computations may be found convenient:

(1) When skim milk is purchased from certain patrons, the bookkeeper should determine what percentage of the gross amount distributable is represented by the skim-milk sales and should then divide the "Balance for distribution" on that basis between butter-fat and skim-milk patrons.

(2) To determine the price to be paid for butter fat, divide the amount distributable to butter-fat patrons by the total pounds of butter fat as shown on the patron's settlement sheet.

(3) To determine the price to be paid for skim milk, divide the amount distributable to skim-milk patrons by the total pounds of skim milk as shown on the patron's settlement sheet.

Formulas covering these computations are shown as an appendix to the operating statement.

CHANGES NECESSARY UNDER PRIVATE MANAGEMENT.

When this system of accounting is used in creameries operating under private management, it will not be necessary to make up the operating statement except as a statement of income and expenses for the information of the management. If the price of incoming products is ascertained in advance of the sale of manufactured products, no computations will be necessary on the patron's settlement sheet, which would be contingent upon figures derivable from the operating statement. Individual preferences and methods of operating under private management may require other minor changes in the method and technique of bookkeeping as set forth for the operation of this system in cooperative creameries.

COST ACCOUNTING.

In computing costs of operation, the figures shown on the operating statement will be found adequate in most creameries. If the operations of a creamery include the manufacture of cottage cheese, casein, condensed milk, and other by-products, a cost sheet may be arranged which will show the income from these products and the expenses chargeable to them, together with the comparative percentage ratio of expenses to income. Whether complete cost records are maintained or not, it is advisable that the management keep itself informed as to the comparative cost of operation in the different months, so that leaks or losses due to bad management may be quickly checked up and corrected before results disastrous to the prosperity of the creamery occur. The extent of cost accounting which may be necessary will always depend largely upon the magnitude and diversity of the operations carried on by the organization.

CONCLUSION.

In this bulletin are outlined briefly the accounting problems of country creameries and a system of accounts which may be adopted uniformly throughout this field of business. Supplementing the information contained herein, the Office of Markets and Rural Organization is prepared to furnish printers' copy of the various forms comprising the system and in so far as practicable to render assistance through its representatives to creameries desiring the installation of the system.

Office of Markets and Rural Organization. Creamery System Form No. 3A.

CREAM SHEET.

Date,191 .

Patron's No.	Grade 1.		Test.	Pounds fat.	Patron's No.	Grade 1.		Test.	Pounds fat.	Patron's No.	Grade 1.		Test.	Pounds fat.
	Pounds cream.	Pounds fat.				Pounds cream.	Pounds fat.				Pounds cream.	Pounds fat.		
1.....					26.....					51.....				
2.....					27.....					52.....				
25.....					50.....					75.....				
Total.....					Total.....					Total.....				Total.....

Office of Markets and Rural Organization. Creamery System Form No. 3B.

CREAM SHEET.

Date,191 .

Patron's No.	Grade 1.		Grade 2.		Patron's No.	Grade 1.		Grade 2.		Patron's No.	Grade 1.		Grade 2.	
	Pounds cream.	Pounds fat.	Pounds cream.	Pounds fat.		Pounds cream.	Pounds fat.	Pounds cream.	Pounds fat.		Pounds cream.	Pounds fat.	Pounds cream.	Pounds fat.
1.....					26.....					51.....				
2.....					27.....					52.....				
25.....					50.....					75.....				
Total.....					Total.....					Total.....				Total.....

Office of Markets and Rural Organization. Creamery System Form No. 8.

BUTTER MAKER'S DAILY RECORD.

MONTH OF, 191..

Date.	Pounds of milk.	Average test.	Pounds fat in milk.	Pounds of cream.	Average test.	Pounds fat in cream.	Total pounds fat.	Pounds fat sold.	Pounds fat made into butter.	Total butter made.	Pounds of over-run.	Per cent of over-run.	Per cent of moisture.	Per cent of salt.	Per cent of fat in buttermilk.
1.....															
2.....															
3.....															
31.....															
Total.....															

Office of Markets and Rural Organization. Creamery System Form No. 9.

BULK AND PRINT BUTTER BALANCE SHEET NO. FOR PERIOD FROM

On hand yesterday.	Made.	Total.	Sold.	Transferred.	On hand to-day.	Total bulk and print.	Shrinkage.	Overage.	Print difference.
Bulk 1.....									
Print.....									
Bulk 2.....									
Print.....									
Bulk 31.....									
Print.....									
Total.....									
Br't Pr'd.....									
Grand total.....									

Notes and other products, etc.:

.....

<p>.....191..</p> <p>.....lbs. butter</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>Line of perforation.</p>	<p style="text-align: center;">Office of Markets and Rural Organization. Creamery System Form No. 10.</p> <p style="text-align: center;">PLACE</p> <p style="text-align: center;">.....CREAMERY Co.</p> <p>Please send me pounds of butter and charge to my account.</p> <p>No. Name</p> <p style="text-align: center;">No butter will be delivered unless accompanied by order properly signed.</p>
---	-----------------------------	---

Office of Markets and Rural Organization. Creamery System Form No. 11.						
						No.
.....CREAMERY Co.						
....., 191 ..						
(Address.)						
Sold to						
.....						
<p>Line of perforation.</p>	Pkgs.	Size.	Description.	Price.	Amount.	Total charges.

Received payment.			Received in good order.			
By			By			

Office of Markets and Rural Organization. Creamery System Form No. 12.

No.

..... CREAMERY Co.

....., 191
(Address.)

In account with.....
(Consignee.)

.....
(Address.)

We have shipped you to-day via express or freight the following:

CONSIGNMENT.

Commodity.	Containers.	Number.	Net wt.	Total.	Remarks.
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

By

Office of Markets and Rural Organization. Creamery System Form No. 13.

INVENTORY REPORT. Period fromto.....

	Previous—on hand.		Received.		On hand....., 19.....			Used—total.		Used—distribution.	
	Quan.	Value.	Quan.	Value.	Quan.	Price.	Value.	Quan.	Value.	Buttier.	By-prod. Fatrons.
Coal.....											
Ice.....											
Salt.....											
Butter tubs.....											
Tub liners.....											
Butter boxes..... lb.											
Butter boxes..... lb.											
Paper boxes..... lb.											
Paper boxes..... lb.											
Print cartons.....											
Print wrappers.....											
Quart B. M. bottles.....											
Quart cream bottles.....											
Parcimentat rolls.....											

Packages—Liners.

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