$2.00

BUSINESS
MANAGEMENT
IN AGRICULTURE

A joint project of the
Cooperative Extension
Service and Farm Credit

Selecting and implementing a farm record system

EM 8341 / September 1987

OREGON STATE UNIVERSITY EXTENSION SERVICE

Table of contents

Credits

Coordinated by:

Carl O'Connor, Extension Economist,
Agricultural & Resource Economics,
Oregon State University, Corvallis, OR

Thomas Powell, Senior Education Officer,
Human Resources Planning & Development,
Farm Credit Services, St. Paul, MN

Gayle Willett, Extension Economist,
Dept. of Agricultural Economics,
Washington State University, Pullman, WA

Produced by:

Farm Credit Services, St. Paul, MN, and
Oregon State University, Corvallis, OR

Wayne E. Carlson, Extension Specialist,
University of Minnesota, St. Paul, MN
Consultant, Farm Credit Services, St. Paul

- David Parry, Media Producer
- Bruce Fredricksen, Media Producer
- Anne Merydith-Wolf, Editor
- Marla Maeder, Editor
- Bobbi Buffham, Word Processor
- Judy Morris, Word Processor

Funded by:

Extension Service, USDA, Washington, DC
Farm Credit Corporation of America, Denver, CO
Farm Credit Services, St. Paul, MN

Sponsored by:

Cooperative Extension Services of:
Oregon State University
University of Nevada, Reno
Washington State University
University of Minnesota

Presented by:

Freddie Barnard, Extension Economist,
Purdue University, West Lafayette, IN

Thomas Booker, County Extension Agent,
Renville County, Olivia, MN

Bart Eleveld, Extension Farm Management
Specialist, Oregon State University, Corvallis, OR

Paul Gessaman, Extension Agricultural Finance
Economist, University of Nebraska, Lincoln, NE

Gary Hachfeld, County Extension Agent,
Agriculture, Nicollet County, St. Peter, MN

Dick Hawkins, Ext. Specialist, Farm Management,
University of Minnesota, St. Paul, MN

A. Gene Nelson, Head, Agricultural and Resource
Economics, Oregon State University, Corvallis, OR

Dick Wittman, President and Manager, Wittman
Farms, Inc.; Private Consultant, Culdesac, ID

Advised by

Brent Beesley
Farm Credit Corporation of America, Denver, CO

David Bennett
Farm Credit Corporation of Amercia, Denver, CO

Larry Bitney, Department of Agricultural Economics
University of Nebraska, Lincoln, NE

Michael Boehlje, Dept. of Agricultural and Applied
Economics, University of Minnesota, St. Paul, MN

James Cannon
Farm Credit Corporation of America, Denver, CO

Virgil Crowley, Dept. of Agricultural Economics,
Pennsylvania State University, University Park, PA

Gayle Davidson
Farm Credit Services, St. Paul, MN

Mike Davis
Farm Credit Corporation of America, Denver, CO

Clark Garland, Agriculture Extension Service,
University of Tennessee, Knoxville, TN

Richard Johnson
Farm Credit Services, St. Paul, MN

David Kettering
Farm Credit Services, St. Paul, MN

David Lambert, Dept. of Agricultural Economics,
University of Nevada, Reno, NV

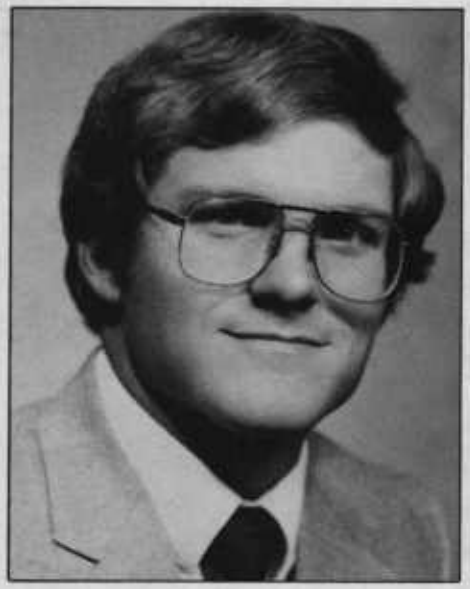
Buel Lanpher, Extension Service,
USDA, Washington, DC

Jim Schurr
Farm Credit Corporation of America, Denver, CO

Roger Shaffer
Farm Credit Corporation of America, Denver, CO

Record system

Selecting and implementing a farm record system



Dick Wittman

R. L. "Dick" Wittman is president and general manager of Wittman Farms, Inc., an 11,000-acre dryland crop and range cattle operation in Culdesac, Idaho, and is a private consultant to lenders, farmers and ranchers. Since 1980, he has conducted workshops for ag lending institutions and farmer groups in the United States and Canada on ag finance and risk management; provided financial analysis and loan structure review for individual farmers and ranchers; developed course materials and case studies for a comprehensive loan officer training program for the Farm Credit System; and taught a University of Idaho class for farmers on farm finance and computers. He has been a director of Twin River National Bank in Lewiston, Idaho, since 1983.

Wittman worked for the Federal Intermediate Credit Bank of Spokane from 1972 to 1977. From 1977 to 1980, he was employed by the Farm Credit Administration in Washington, D.C., where he supervised district Farm Credit banks, covering 17 states in the East, Midwest and South.

He holds a B.S. in agricultural economics from the University of Idaho and an M.B.A., with a specialty in finance, from the University of Utah.

This is one module of the *Business Management in Agriculture* series and is intended to be used with its corresponding videotape. The script may vary from the actual videotape text.

Purpose

The purpose of this module is to help you:

1. identify potential applications of a record system in managing a farm or ranch business,
2. become familiar with the definition, purpose and content of 12 reports that can be generated from the record system,
3. understand the interrelationships that exist among various financial reports,
4. decide how to select a fiscal accounting year that best fits your operation's production and marketing year,
5. know the difference between cash and accrual methods of recording net income and know how each of these approaches will best assist in analyzing your operation's financial performance and reporting taxable income,
6. note the differences between a single and double-entry system and the benefits of each,

7. become acquainted with a sample approach for maintaining physical production records (field records and livestock herd records), and
8. become aware of four different levels of record keeping and the benefits and limitations of each.

Videotape script

By Dick Wittman

The farming scene is faced with some of the toughest economics it has seen in many years. Margins are thinner and thinner, and many people are finding it difficult to remain in business. Being a good producer is no longer good enough. To be successful, a farmer must also be a good financial manager.

The first step in successful financial management is keeping good records. The focus of this module will be on setting up a good record system.

My views on this subject are shaped by three experiences: first, keeping records for our own farm for more than 13 years; second, eight years with the Farm Credit System observing the kind of records farmers use to make business decisions; and finally, for the last six years or more, managing our own farm business and interpreting records to try to run that business.

A common misconception exists that we only keep records so we can report our taxes. But a successful farm business needs records for many other purposes too. Some of the most common uses for good records are:

1. measuring operating and financial performance,
2. supporting loan applications,
3. arranging for insurance coverage,
4. estate planning and valuation,
5. analyzing investments in depreciable assets,
6. measuring the profitability of individual enterprises,
7. monitoring production inventories, and
8. developing sound marketing plans.

Without proper records, business decisions are made on the basis of gut feelings and emotions which can often lead to foregoing more profitable opportunities. If operating losses start accumulating unnoticed, the operator may find himself bankrupt, sold out and looking for new employment.

Beginning a record system

Farm record systems vary in the amount of information collected, the method of recording data and the structure of final reports. Every farm manager must determine how much information is needed for management purposes, what

USES OF GOOD RECORDS

1. **Assessing** performance
2. **Supporting** loan applications
3. **Arranging** insurance
4. Estate **planning**
5. **Analyzing** assets
6. **Measuring** profitability
7. **Monitoring** inventories
8. **Developing** marketing plans

accounting methodology to use and what system will provide the desired information.

What should your records tell?

Earlier I outlined eight common applications of a good record system. Before defining what goes into a good system, you need to decide what you want out of it. The following types of reports are common products of a basic record system: transaction journal, general ledger, balance sheet, income statement, statement of change in financial position, cash flow statement, depreciation schedule, enterprise reports, inventory reports, family living expense records, income tax reports and employee records.

Primary reports

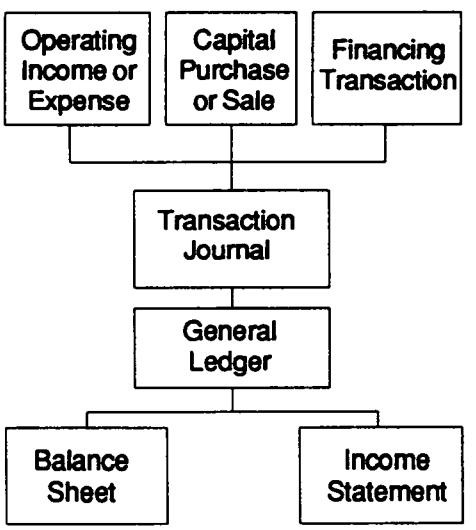
Some are more important than others. I'll give a brief overview of each and the relationships of one to another. We start any record keeping system at the level of the transaction. The first report is a **transaction journal.** This is a detailed recording of financial transactions during the year. Transactions usually fall in one of three categories: operating income and expenses; capital asset purchases and sales; or financing transactions involving borrowing or repayment of debt. The transaction journal provides a detailed audit trail for all financial transactions.

You should be familiar with the basic checkbook register. When you write checks at home, you record the check number, date, who the check was to and for how much. In the farm business, the transaction journal is very similar.

Here we see a sample of a transaction journal (p. 11). Data normally includes date, check or deposit number, classification code, description, payee or income source, and amount. The transaction journal could be kept in a hand record book, checkbook register or computerized system. From the journal come other reports such as the general ledger, or trial balance, balance sheet and income statement. The transaction journal can be maintained on a cash or accrual basis using a single or double-entry accounting system. These accounting systems will be explained in more detail later.

The **general ledger** is a report that reflects accumulated totals for all operating, capital and financial transactions. It allows you to observe at a glance:

1. total dollars (and related quantity) of income generated and expenses incurred in each income and expense category you have defined,
2. total capital sales and purchases,
3. total borrowings, repayments and balances owed to creditors,



4. total accounts receivable and payable (if on the accrual system), and
5. total assets in each asset category.

The general ledger becomes the primary tool for preparing financial reports for the business. For example, asset, liability and net worth balances are used to generate a new balance sheet; income and expense-related totals are extracted to prepare the income statement.

These two statements -- the balance sheet and income statement -- coupled with the cash flow statement, will be covered in depth in other videotape modules in the series. Let's look at each briefly.

The **balance sheet** is also known as a net worth statement and is a financial snapshot of the business on a specific date. It shows all assets, liabilities and owner equity or net worth. Properly constructed, the balance sheet should segregate assets and debts into current, intermediate and long-term (or fixed) categories. Ideally, it should also reflect cost versus market valuations for assets, debts and equity. The balance sheet is critical for measuring two key financial indicators -- liquidity and solvency.

Liquidity is measured in several ways, including in dollar form as current assets minus current liabilities, or in ratio form as current assets divided by current liabilities. **Solvency** is also measured in several ways, including debt-to-equity ratio where you divide total debts by total equity, or by the debt-to-asset ratio which is total debts divided by total assets.

The **income statement** is also known as a profit and loss statement. This report shows the net income for the farm during the accounting period. It includes such elements as income generated from farm production, operating and overhead expenses, depreciation expense, gains or losses on disposal of capital assets, and non-farm income and expense. It can be prepared on either a cash or accrual basis which will be defined later.

The income statement enables the producer to identify various measures of profitability (return on assets and return on equity) and financial efficiency (ratio of operating expenses to value of farm production, and ratio of debt service to value of farm production).

The **statement of change in financial position,** also known as a flow of funds statement, is used to analyze changes in the balance sheet from one year to the next. It shows how combinations of funds from operations, capital transactions and financing decisions account for changes in working capital, assets, liabilities and owner equity. This report is one of the least understood and least used financial reports in agriculture. It will not be discussed in subsequent videotapes. However, as a business becomes more complex

HOW TO MEASURE LIQUIDITY:

Current assets
- Current liabilities = $

$$\frac{\text{Current assets}}{\text{Current liabilities}}$$

HOW TO MEASURE SOLVENCY:

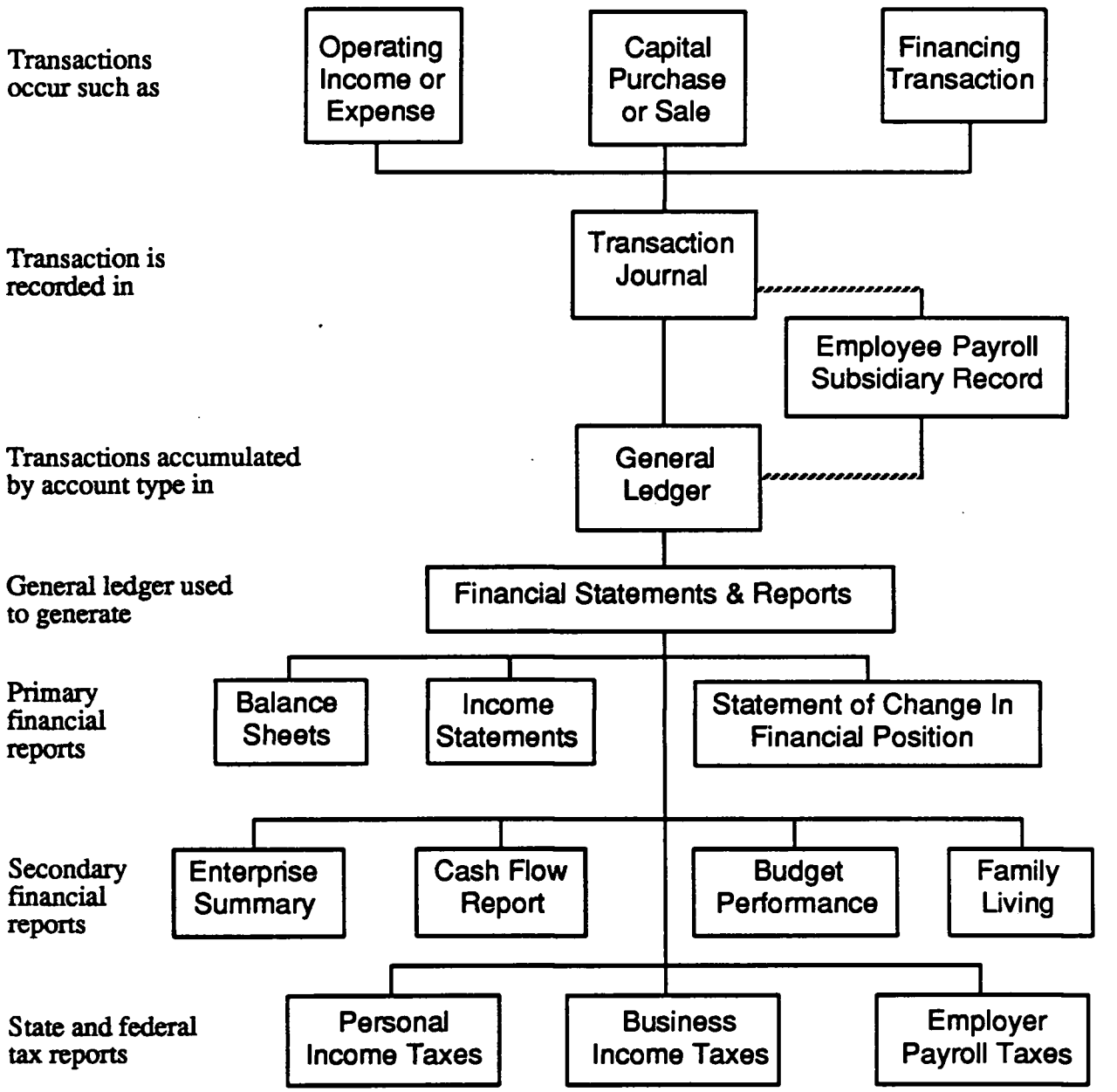
Leverage or debt/equity ratio =

$$\frac{\text{Total debts}}{\text{Total equity}}$$

Debt/asset ratio =

$$\frac{\text{Total debts}}{\text{Total assets}}$$

Record system flow chart



and the record system becomes more sophisticated, it may be an appropriate report to develop.

The **cash flow statement** is a report that can be obtained on a monthly basis. It shows all sources of funds generated from income and capital sales. It also shows all outlays for operating, capital purchases and borrowing activities. It is a very helpful document for preparing the coming year's projected cash flow statement or budget. This is required by most lenders to demonstrate a borrower's ability to repay a loan in a timely manner. The cash flow budget also provides a basis for measuring actual cash flow in relation to the budget and determining how variances from the budget will affect yearly financial performance.

Secondary reports

A secondary set of reports that should be developed are the depreciation schedule, enterprise reports, inventory reports and family living expense records. Let's briefly look at each of these.

The **depreciation schedule** includes details on all depreciable capital assets. It is an integral part of both the balance sheet and the income statement. The depreciation schedule should contain the following items: description of asset, date of purchase, cost, method of depreciation and useful life, investment credit information, accumulated depreciation and book value (original cost minus accumulated depreciation).

The depreciation schedule is used to calculate annual depreciation expense, and gains or losses on capital assets sold, both of which are necessary for completion of the income statement. Capital assets are written off, or depreciated, over the life designated by the tax codes which may or may not correspond to the asset's economic life. The amount charged off each year should reflect wear and tear and obsolescence.

Tax laws concerning depreciation change frequently. These changes impact your records. *The Farmer's Tax Guide*, available at no cost from the IRS and most local Extension offices, is a good reference for current depreciation information.

Enterprise reports are derived from the farm's production and financial records and reflect profitability or performance of specific crop or livestock enterprises within the business. They allow you to determine how much each enterprise is returning to the total farm. Such reports can be prepared on a whole enterprise or on a production unit basis (per acre or per head). Enterprise reports can help you reduce or eliminate unprofitable enterprises and adopt or expand profitable enterprises.

DEPRECIATION SCHEDULE CONTAINS:

1. Description of asset
2. Date of purchase
3. Cost
4. Method of depreciation
5. Investment credit info.
6. Accumulated depreciation
7. Book value

Inventory reports. A listing of inventory is also an integral part of the balance sheet. Systems can range from simple hand-kept records, such as a cattle tally for livestock, to exotic computer-generated inventory programs for feedlots and large grain or fruit and vegetable-shipping operations. These reports can be valuable for planning a marketing program or monitoring collateral pledged to a lender.

Family living expense records. You may want to keep detailed records of family living expenses. Three good categories are: non-deductible living and consumption expenses, such as food, clothing, gifts, entertainment, insurance and household operation; deductible living expenses, such as medical, taxes, interest and contributions; and capital expenditures, investment and borrowing.

State and federal tax reports

Finally, the government requires a set of reports related to state and federal taxes. Income tax reports and employee records are examples.

Income tax reports must be filed for both personal and business income. A record system must provide sufficient detail to prepare these reports. Some computerized record systems actually produce a Schedule 1040F Farm Income and Expenses.

Most farm operations are eligible to file for a credit for federal tax on gasoline, fuel and oil, based on gallons purchased. A record system that tracks quantities, as well as dollars, would be helpful for preparing such a report. *The Farmer's Tax Guide* again is an excellent reference for information you must record to file your returns properly.

The next area is **employer payroll records.** Every business is required to keep detailed records on each employee, such as hours worked, gross pay and withholdings for federal and state income tax and Social Security. These details allow a manager to prepare state and federal payroll reports (Social Security deposits, unemployment tax returns, income tax withholdings), and provide employees with W-2 statements at the end of the year.

To plan record keeping properly, get a copy of IRS Circular A, *Agricultural Employer's Tax Guide*, and Circular E, *Employer's Tax Guide*. These publications are available from IRS forms distribution outlets.

RECORDING TRANSACTIONS:
What's best?

1. Accounting period or fiscal year?
2. Cash or accrual basis?
3. Single or double entry?

Accounting methodology

Now that you know the many kinds of records that are possible, let's focus on some alternatives for recording transactions. Before embarking on the record keeping chore, you must decide what accounting period or fiscal year

to use, whether to record income on a cash or accrual basis, and whether to use a single or double-entry system to record transactions.

First, let's talk about the **accounting period.** Many farmers have the misconception that we must file taxes on a 12-month calendar year beginning January 1 and ending December 31. This is simply not true. Taxable income must be computed for a fixed 12-month accounting period. However, a new taxpayer can adopt either a calendar year (January 1 to December 31) or a fiscal year. A fiscal year is a 12-month period ending on any date other than December 31. Most farmers and ranchers file on a calendar-year basis because their personal returns have historically been filed that way.

The two issues to consider when selecting an accounting period are: What 12-month period will most accurately reflect a "normal" year's operation? And what tax year will be most desirable for tax planning, marketing flexibility and presentation of a meaningful year-end financial report?

Let's use a crop operation to illustrate these two questions. One might agree that in some situations, crop operations could use a fiscal year ending August 31, to match the accounting period with the production and marketing year. Such a choice would make it easy to match most of the expenses for producing a given crop with the income generated.

An August 31 fiscal year would also give you flexibility to market crops closer to harvest and still use forward pricing to plan for sales just before or after the fiscal year end to achieve tax advantages.

Selection of an accounting period will vary depending on the industry, geographic location, season and approach you normally follow to market farm products. You should discuss this with an accountant. If your farm is on a calendar-year basis, a change to a fiscal-year basis is usually not difficult. It may require obtaining consent from the tax commissioner and filing a "short-period" income tax return. Changes in tax laws may limit your options of selecting a fiscal year other than a Jan.-Dec. year depending on your legal structure (partnership, corporation or individual).

Cash vs. accrual

The second issue is: Which **accounting method** should you use? The two common methods of computing income are cash and accrual. At this point, let's take a brief quiz to see how much you know about the two terms.

Under the cash method, income is reported in the year it is actually or constructively received, and expenses are recognized in the year paid. Most farmers and ranchers use the cash approach. It offers considerable flexibility for

WHEN SELECTING AN ACCOUNTING PERIOD:

1. What 12-month period is a "normal" year?
2. What 12-month period is best tax-wise?

UNDER THE CASH METHOD OF COMPUTING INCOME:

Income is reported in the year it is actually or constructively received; expenses in the year actually paid.

UNDER THE ACCRUAL METHOD OF COMPUTING INCOME:

Income is accounted for when the right to receive it comes; expenses in the year actually incurred or obligated.

income tax planning. You can defer or accelerate an expense. Or you can time the sale of crops or livestock to achieve a desired taxable income level at year-end.

The cash method has the potential disadvantage of not showing a true income picture for a particular year's operation. For example, a grain grower could sell the current crop and some of last year's crop, held in storage, in the same tax year. All of the income is reported in the current year even though the stored grain was produced in an earlier year.

Under the accrual method, income is recognized when the right to receive it has been established. Expenses are deductible in the year actually incurred, or obligated, regardless of whether payment has actually occurred. Stated alternatively, income and expenses are allocated to the year in which production occurs, not necessarily when it is sold or when bills are paid. The operator does not need to maintain different sets of books to calculate accrual net income. Adjusting cash-basis income for changes in inventories, accounts receivable, prepaid expenses and accounts payable will accomplish the same thing. Although the accrual method lacks the tax planning flexibility of the cash method, it gives a more accurate picture of profitability from year to year.

An operator who uses the cash accounting method for tax reporting may be well advised to prepare an annual income statement on the accrual basis for management purposes. An important consideration when setting up or selecting a record keeping system is: Will it provide an income statement that can easily be converted to accrual basis for management purposes?

Single or double entry?

The third accounting issue is: Should you use the **single-entry** or **double-entry** system? Historically, most accounting systems on farms and ranches have been single entry, while non-farm businesses generally have used a double-entry system. Simply put, in a single-entry approach, a single entry is made to record each receipt or expenditure. Each entry is treated as if the offsetting entry were to cash. At the end of the accounting period, all asset and liability accounts must be adjusted for net cash generated or used, additions or deletions of capital assets, and borrowings and repayments on loans.

A cash-basis income statement can be prepared from a single-entry system, but a balance sheet or an accrual-basis income statement cannot be generated directly.

In a double-entry system, two equal and offsetting entries are made for each transaction. This follows the traditional accounting models where assets must equal

liabilities plus owner's equity, and debits must equal credits.

A double-entry system requires a sound understanding of accounting principles. It also requires that considerably more entries be made than with single-entry systems. The advantages of a double-entry system are that accuracy of bookkeeping is enhanced. (Since debits are always offset by credits, books are kept in balance more easily.) And financial statements, particularly balance sheets and income statements, can be generated directly.

One way to show the difference between the two methods is to trace the recording of a series of transactions for a simple operation. Assume a rancher starts the year with a cattle inventory (weaner calves) worth $4,000, cash in the bank of $6,000 and no debts, leaving owner's equity or net worth of $10,000. Note that assets of $10,000 equals liabilities of zero plus net worth of $10,000. Now let's review six financial or operational events that could occur during the year and watch the record keeping implications for a single-entry cash method versus a double-entry accrual method.

Our first transaction is on September 5 when $5,000 worth of feed is delivered to the ranch. We did not pay for it. On an accrual basis, our inventory has increased by $5,000 and we now owe the feed store $5,000 for the feed. So the transaction would be to debit the inventory account by $5,000 and credit the liability account for the amount that we now owe. The single-entry system, on the other hand, shows no transactions since no cash changed hands.

During the second transaction on October 10, we paid for the feed by check. On the accrual double-entry system, the first thing we did is to reduce, or credit, our cash balance by $5,000. The accounts payable is also eliminated -- we have paid the bill. So we zero out that account by debiting out $5,000 in liabilities. On the single-entry cash system, we recognize $5,000 as a cash expense.

The third transaction, on November 10, is the sale of the cattle, now fattened and ready to be shipped. We sold the cattle for $9,000 so we would have a $9,000 credit to income. Since we did not receive cash for the cattle, we have to set up an accounts receivable for the $9,000 that's due us. The sale of the cattle would affect the inventory we had on hand at the beginning of the year. That $4,000 is now gone. So we remove it on the balance sheet by crediting our inventory account for $4,000. The offsetting entry is a $4,000 debit to the income account. This represents the cost of the cattle sold. When we sold the cattle for $9,000, it did not generate $9,000 of true income. We already had them on the beginning balance sheet at $4,000. We simply increased their value by a total of $5,000 from their January 1 inventory value. Under

ADVANTAGES OF DOUBLE ENTRY ARE:

1. Accuracy
2. Financial statements can be generated directly

Transaction journal

Double-entry accrual method									Single-entry cash method	
Accrual income statement		Balance sheet							Cash income statement	
		Assets								
Income	Expense	Cash	A/C Rec	Inventory	= Liabilities	+ Owner's equity	No.	Date	Transaction description	Income	Expense
0	0	6,000	0	4,000	0	10,000		Jan 1	Beginning year's balance.	0	0
				5,000 dr	5,000 cr		1	Sep 5	Feed delivered to ranch. Increase inventory; set up accounts payable.		
		(5,000) cr			(5,000) dr		2	Oct 10	Pay for feed by check. Reverse accounts payable; reduce cash balance.		5,000
9,000 cr (4,000) dr			9,000 dr	(4,000) cr			3	Nov 10	Cattle shipped and sold. Set up accounts receivable; record income -- cattle. Adjust income for cost of cattle sold; adjust assets for inventory reduction.		
	3,000 dr			(3,000) cr			4	Dec 1	Feed consumption checked. Charge expense for feed; reduce inventory -- feed.		
		9,000 dr	(9,000) cr				5	Dec 15	Payment received for cattle. Increase cash account; reverse accounts receivable.	9,000	
5,000	3,000						6	Dec 31	Total income and expense.	9,000	5,000
2,000	2,000 dr					2,000 cr			Net income Transfer (close) net income to owner's equity. Record owner's equity increase from income.		4,000
0	0	10,000	0	2,000	0	12,000			End of year balance.		

dr = debit, cr = credit

Transaction journal comparing a double-entry accrual method and a single-entry cash method (all entries in $).

the single-entry cash system, no income is recognized since no cash has been received.

The next transaction is on December 1. We checked the feed bin to see how much feed was left. We found that $3,000 worth of feed was consumed. Looking back at the inventory account for feed, we added $5,000 for feed delivered September 5. We used up $3,000, so we subtract, or credit out, $3,000 from the inventory. The offsetting transaction is a $3,000 debit to expenses. This represents the total feed expense for fattening the livestock. Again, you can see the two offsetting transactions. No entry is made on the single-entry system.

On December 15 we received payment for cattle sold. Under the double-entry system, cash is increased (debited) by $9,000, and the account receivable is eliminated (credited). We have traded one asset for another. Under the single-entry system, the receipt of the cash payment generates a single entry to income of $9,000.

The year is now complete. When we total income on the accrual basis, we have $9,000 total income less a $4,000 adjustment for the cost of cattle sold. This results in total income of $5,000. The only accrued expense we had was $3,000 for feed. The difference between those two numbers is a $2,000 accrual net income. If we have net income at the end of the year that we don't use for other consumption or family living, what happens to the $2,000 income? We add that amount to our net worth. By totaling all our ledger columns, we can now determine our year-end balances. Our cash balance is $10,000, and feed inventory is $2,000. So total assets now equal $12,000. On the right hand side of the balance sheet, our total debts are zero. Owner's equity was $10,000 at the beginning of the year. The net income of $2,000 increases our net worth to $12,000. Liabilities plus net worth equal $12,000. You can see that our accounting equation of assets equals liabilities plus net worth still holds true.

Now what happens on the cash-basis approach? If we take the cash income of $9,000 and cash expenses of $5,000, we have a profit of $4,000.

Why is cash basis net income $4,000 and accrual basis only $2,000? The $2,000 difference in net income arises because: The cash basis wrote off the full $5,000 of feed purchased even though only $3,000 was consumed, overstating true expense by $2,000. The cash basis included the full $9,000 of cattle sales as income in the current year when, in fact, the value added and sold since the first of the year was only $5,000. This overstated income by $4,000.

If income was $4,000 too high and expenses were $2,000 too high, you can see that we have a net of $2,000 too high in relation to accrual net income. This example

CASH-AND-INVENTORY METHOD

Cash sales	$9,000
Cash expense	-5,000
Net cash income	4,000
Inventory change	-2,000
Net accrual income	$2,000

reinforces the fact that the most accurate and meaningful method for calculating net income is the accrual approach.

The cash approach tells you the net cash income for the year. It would be the basis on which a cash-basis taxpayer would report his taxes. But for management purposes and analysis, the $2,000 accrual number is the one you should calculate to see whether or not your business is performing satisfactorily.

This illustrates the two extremes in simplicity and complexity of accounting. In the real agricultural world, many farmers who keep accrual records use what is called a cash-and-inventory method of accounting. Under this approach, books are maintained during the year on a cash basis. At year end, adjustments are made for changes in inventories, accounts receivable and accounts payable to generate an accrual-basis net income statement. Using our earlier example, cash income of $9,000 less cash expenses of $5,000, and adjusted for a $2,000 reduction in total inventory of cattle and feed, leaves a net income of $2,000. This is identical to the income generated by recording all events during the year. This is a workable system, affording the simplicity of cash accounting during the year, yet enabling year-end financial reports to be prepared using accrual concepts.

If you feel a bit overwhelmed with these concepts and want to learn more about them, I recommend that you get a copy of an accounting text oriented to agriculture. A book entitled *Introduction to Agricultural Accounting* is excellent. It is mentioned in your reference list.

FIELD DATA RECORD

1. Field description
2. Acreage -total/tillable
3. Current crop
4. Cultivation data
5. Seeding information
6. Fertilizer information
7. Chemicals applied
8. Soil and tissue test results
9. Special problems
10. Rain/irrigation/soil moisture readings
11. Growing-degree days
12. Harvest information
13. Storage information

Production or field records

Let's shift gears a bit and look at something besides financial records. Another important area of records involves physical, or production, records. This could involve field records for crop operations or herd management records for livestock producers. Farm managers should retain at least some centralized records of key activities in each of these areas.

Items that might be recorded in a **field record book** for each field could include:

1. field location and legal description,
2. total acres and arable or tillable acres,
3. current crop planted,
4. cultivation records--date, type of tillage (plow, disk, harrow, cultivator), hours per application,
5. seeding information, such as amount seeded per acre, drill settings, variety, date, seed source,
6. fertilizer information--amount per acre, time and method of application (starter, aerial, ground, sprinkler system),

7. chemical applications--amount per acre, method (planter, aerial, ground, sprinkler system), weather conditions at application, nozzle sizes, gallons per acre in carrier, pressure settings,
8. soil and tissue test information,
9. notes on special problems--weeds, diseases, hail, etc.,
10. rain, irrigation water applied and soil moisture readings,
11. growing-degree days,
12. harvest information (date, weather, yield, quality) and
13. storage conditions.

Here's a sample (p. 15) of the production record we keep on our farm. A lady came up to me after a recent seminar and said, "My husband was killed in a farm accident about three years ago. If he had only had a little record book like this I could have looked back and seen the decisions he had made. It would have made my life completely different in trying to maintain the farm operation after he died."

A **livestock herd record book** could be used to keep records on:

1. herd tallies by class of livestock,
2. birth records--date of birth, problems experienced,
3. weaning dates and weights,
4. feed records--amounts and rations,
5. herd health records--vaccinations,
6. breeding herd replacement information, and
7. pasture-carrying capacity and annual utilization/ rotation records.

Detailed records could also be maintained for machinery operations, labor use, repairs and a host of other areas.

Record-keeping options

We have considered what you should get out of a record system and the methodology of keeping records. Now let's examine some actual record systems. We will focus on four kinds of systems: shoe box, hand-kept record ledgers, automated or computerized systems, and records associations.

Shoe box system. Under the shoe box system, all receipts, checks, invoices and bank statements are simply collected in a shoe box. At year end, or possibly at selected intervals during the year, the shoe box is delivered to a professional bookkeeper or accountant. The accountant is expected to summarize the data into an income summary for tax reporting purposes. This may be simple and meet the need for tax filing, but it leaves the farmer in the dark during the year as to the financial performance of the business. What are some alternatives to the shoe box system?

LIVESTOCK DATA RECORD

1. Herd tallies by livestock class
2. Birth records
3. Weaning data
4. Feed records
5. Herd health records
6. Breeding herd replacement info.
7. Pasture utilization/ rotation records

Production record

Field record work sheet

Grower: Jerry Cropper
Field # 2 Field Name: Razor Ridge
Total Field Acres: 160 Previous Crop: Alaska peas

Crop Year: 19X1-19X2
Est. Yield 85
Act. Yield 92
Harvest Date 8-1

Seeding Data

Date Seeded:	Oct. 15
Crop Planted:	Stephens Wheat
Acres Planted:	160
Seeding Rate:	60#/Ac.

	Fertilizer	Rate/Acre	Application Method - Notes	Date
F	Nitrogen	90#	Triple shooter	9-10
A	Phosphorus	30#	Triple shooter	9-10
L	Sulphur	15#	Triple shooter	9-10
L	N-Serve			9-10
S				
P	Nitrogen			
R				
I	Sulphur			
N				
G				

Chemicals

	Product	Rate Per Acre	Application Method	Ap. Rate (gal/ac)	Nozzle Tip Size	Pressure Setting	Date
F	Hoelon	2-2/3pt.	Ground Spray	10 gpa	8002	30 psi	Oct. 15
A							
L	(Note test strip - 1 sprayer width by big gate)						
L							
S	Chiptox	1 qt.	Ground	20 gpa	8004	32 psi	4-7
P	Igran	3/4#	Ground	20 gpa	8004	32 psi	4-7
R	Avenge	3-1/2pt.	Plane				5-7
I	Benlate	#1	Plane				5-7
N	Roundup	Spot spray morning glory patch					5-15
G							

Field Notes: 10-15 Dry Hoelon harrowed in behind drills for cheat grass. 1-10 Lots of heaving - no winterkill evidence; watch morning glory patch next year.

Hand-kept record ledgers. Individuals can get pre-formatted record books or ledgers to keep books by hand. For many smaller or less complex businesses, the hand-kept record book may be the most practical and efficient system. The record book is simply updated periodically as checks are written and receipts are deposited. Various types of ledgers are available from office supply stores, state Extension services, lenders and farm supply dealers. These ledgers are usually found in two forms: **pegboard systems,** set up in pegboard or ring binders that permit addition of pages and reports, depending on the size of the business and the number of transactions, and **fixed page booklets,** record books that are bound to a set size and configuration.

Good pegboard record books are available through local office supply stores (for example, *Ideal Farm And Ranch Bookkeeping Ledger*). Farm management firms also publish good systems (for example, Doane's *PROFITAB*).

A record keeping booklet that has been used by many operations is the *Farm Family Record Book,* available from Farmers Home Administration (FmHA). Extension service record books are also published in many states such as this *Farm Record Book* by Washington State University.

Most hand-kept record books have good provisions for tracking cash flow. But many fail to provide work sheets for preparing year-end balance sheets, income statements and budget projections for the coming year. An excellent resource for these purposes is the *Coordinated Financial Statements for Agriculture* system developed by Dr. Thomas Frey and Dr. Danny Klinefelter. The system includes a set of forms, plus a manual of instructions for completing a balance sheet, income statement, cash flow statement and a statement of change in financial position. This system has been adopted nationally by numerous lending institutions as a preferred standardized system for presenting financial statements.

Computerized systems. Hand-kept systems do the job but are cumbersome if you want to manipulate data. What other alternatives are there? More and more farmers are using computerized systems for record keeping. I will focus on two types of systems: computerized service bureau, or mail-in systems, and farmer-owned computer systems.

Computerized service bureau systems have existed on a wide scale since the 1960s. In essence, the farmer records, organizes and codes transaction data on forms on a periodic basis (usually monthly) and forwards it to a service bureau for processing. Output from these systems varies from simple income/expense summaries and check registers to more sophisticated systems that also generate year-end financial statements and tax returns. Fees are usually set at a

BEFORE BUYING A COMPUTER SYSTEM, CONSIDER:

1. What software will provide records I want?
2. What hardware will run it?
3. What dealer service is available?
4. Who has time/skill to enter data and operate the system?

fixed amount per year plus a surcharge tied to the number of transactions.

A system of this kind can be attractive for the farmer who wants the advantage of a computerized system for efficiency but does not own a computer. With the advent of cheaper and more sophisticated computers (both mini- and microcomputers), mail-in or service bureaus will likely become available on a more localized basis.

Do you need a computer?

The other approach to getting computerized records is to buy your own computer. Introduction of microcomputers in the late 1970s paved the way for a revolution that is seeing increasing numbers of computers owned by farmers and ranchers. A computer is only the machinery (or hardware) that operates software (programmed instructions that enable a computer to perform specific tasks). Before purchasing a microcomputer for record keeping purposes, a farmer or rancher needs to answer the following questions:

1. What software will provide the kind of records I want to keep?
2. What hardware will run the desired software more efficiently and economically?
3. What dealer is most likely to provide the service and support I need to become proficient in operating my own system?
4. Who in my operation has the time to enter the information into the computer on a daily, weekly or other periodic basis and get meaningful information from the computer?

While a number of software packages are solidly established and known to be reputable, new packages are continually becoming available. As you review and evaluate software, consider the following characteristics:

1. single versus double-entry flexibility,
2. cash versus accrual income reporting,
3. numeric versus alphabetic coding systems,
4. straight general ledger versus full-line accounting, including payroll, depreciation and inventory tracking,
5. enterprising versus no enterprising capability and
6. automatic check printing versus handwritten checks.

A good source of information for evaluating different ag accounting software is a publication by Colorado State University entitled *Selecting an Accounting Program*. This document is listed in your reference list.

Hardware selection is the next consideration. In recent years there have been approximately 200 computer models that cost less than $5,000. You could not possibly find time to evaluate all the hardware and software options. Many

companies and models have gone, or will go, out of business. When evaluating hardware, look closely at the solvency of the company behind the machine. With costs of micros in the $1,000 to $6,000 range, the real cost of a bad decision is the loss of hours invested in setting up an adequate system, not just the cash outlay for the computer.

It should be re-emphasized that the software decision comes first. Then you should look at the computer hardware that will run that software. To assess the cost of going to a personally owned computer, you should compare costs of the key components usually required to establish the system. These include: central processing unit (CPU), usually 256K minimum storage capacity, disk drives (most record systems require two drives; a hard drive is often desirable for record keeping software), monitor or screen, printer, supplies (paper, diskettes) and software programs.

We have kept records on our own computer the last few years. I write the check on the computer and my accounting is all done automatically. In addition to monthly reports, our system tracks income and expenses for each enterprise. Computers don't reduce the amount of time used in keeping records; they make that time more productive. The time we used to spend entering data and making calculations has been reduced. This leaves more time for examining income and expenses and financial planning.

Farm records associations. Another approach to record keeping is to join a farm records association. These associations can involve hand-kept or computerized record systems. Several states offer a service like this through farm business/farm management programs, farm cooperatives and the Extension service. These associations often provide analysts to help prepare and analyze records. Some also consolidate individual data into composite summaries for analysis of individual operations compared to group averages.

So far I have made no mention of the use of the professional accountant. I'm not suggesting we should all become bookkeepers and fire our accountants. The accountant provides assistance in refining the accounting structure, and preparing and auditing certain types of reports, such as tax returns and year-end statements. An accountant can also provide interpretation and advice concerning financial position and tax management, and can give support if you are audited. I believe that you can and should keep your own transaction journals and bring in professionals in those areas where you feel uncomfortable.

Summary

In summarizing, I would like to recap some of the questions farmers ask most frequently. They include: "Will

my present cropping program provide the cash flow to generate a profit, service debts and pay living expenses?" "What are my costs of production?" "What prices and yields do I need in order to break even?" "Can I improve my cash flow with alternate crops?"

Very few farmers have adequate records to answer these questions. They tend to delegate record keeping to the professionals. Bankers prepare farmers' balance sheets for credit purposes. An accountant provides the minimum requirements farmers need to file taxes. But few farmers understand how to interpret their records to analyze profitability, debt service capacity, working capital, leverage ratios or solvency. You now have an opportunity to evaluate your own situation and design the perfect system for your operation.

I outlined 12 types of output from a record system. You must now decide how many of these reports are essential for operating your business. When deciding whether to report income on a calendar year or a fiscal-year basis, you may be wise to abandon time-honored custom and adopt a fiscal-year approach.

Selection of an accounting method (cash or accrual) should be weighed carefully. Ideally, if you wish to use the cash method for tax reporting, your record system should still generate an accrual set of financial records for management evaluation purposes. Decide whether to go with a single-entry or double-entry accounting method after comparing the simplicity of the first method with the greater accuracy of the latter and capability to generate financial and management reports directly.

In selecting a record keeping system, choose from a simple record book, a computer system (in-house or service bureau) or a farm records association. Selection should be based on the size and complexity of your farm or ranch business. Don't get a cannon to kill a fly when a fly swatter will do. Conversely, don't try to bag an elephant with a pea shooter.

Keeping records is a necessary and important aspect of managing a farm or ranch operation. In the future, those who don't do an effective job of record keeping could find themselves working for a neighbor who does.

---

* This video script is adapted from "J.F. Guenthner, R.L. Wittman, *Selection and Implementation of a Farm Record System*. Western Regional Extension Publication 99, Cooperative Extension Service, University of Idaho.

Explanation of Exercise 3

Let's go back and review the answers to Exercise 3, calculating net farm income on a cash and accrual basis.

First let's compute net cash income. The only cash income is the $75,000 from wheat sales. Cash expenses total $65,000. Net cash income, therefore, equals the difference between $75,000 and $65,000, or $10,000.

Now let's look at the accrual approach. The income information indicates wheat inventory is lower at year's end ($30,000 to $20,000). Part of the year's cash sales of $75,000 came from liquidation of $10,000 of prior year's inventory. To determine the true value of farm production, or accrued gross income, we must adjust cash income ($75,000) for change in inventory ($10,000), giving us the true value of farm production of $65,000.

Next we calculate the accrued expenses. Again we see cash expenses of $65,000. Accounts payable shows a higher amount owed at year's end. In other words, the farmer ran up another $2,000 in bills that weren't paid during the year. To calculate accrued expenses, we adjust the cash expenses of $65,000 by the difference in accounts payable ($2,000), and the result is accrued expenses of $67,000. Net farm accrual income is figured by taking the value of farm production of $65,000 minus accrued expenses of $67,000 for a net figure of a negative $2,000.

Figuring on a cash basis, the farm is profitable, but figuring on an accrual basis, it's losing money. A majority of farmers are looking strictly at cash net income reported on their tax returns. It's no wonder many operators are having difficulty and don't understand why!

References

Farm record-keeping and accounting texts

Armbruster, David B. 1983. *Introduction to Agricultural Accounting*. Red Wing Business Systems, Inc., 610 Main Street., Red Wing, MN, (612) 388-1106. (Estimated price $13.)

Guenthner, J.F. and R.L. Wittman. 1985. *Selection and Implementation of A Farm Record System*. Western Regional Extension Publication 99. College of Agriculture, University of Idaho, Moscow, ID 83843

James, S.C. and E. Stoneberg. 1986. *Farm Accounting and Business Analysis*. Ames, IA: Iowa State University Press.

Financial statement preparation

Frey, Thomas L. and Danny A. Klinefelter. 1980. *Coordinated Financial Statements for Agriculture*. Century Communications, 5520-G Touhy Avenue, Skokie, IL 60077.

Manual farm record-keeping systems

Farm Family Record Book, available from local FmHA outlets.

Farm Record Book, available from many Cooperative Extension outlets, selected land grant universities.

Ideal Farm and Ranch Bookkeeping Ledger, available from many local office supply stores or from Esselte-Pendaflex Corp., Clinton Road, Garden City, NY 11530.

PROFITAB Farm Record System by Doane Publishing, 11701 Borman Drive, St. Louis, MO 63146.

Computer software for farm record keeping

There are many computer software systems that have a national market reputation and vary in scope and complexity. The following are a few samples:

* *Agri-Ledger* by Small Business Computer Systems
* *General Ledger* by Red Wing Business Systems
* *Horizon Accounting* by Harvest Computer Systems
* *Transaction+* by FBS Systems
* *AG/BASE/AGRIFAX* by Farm Credit System

Holman, Karen and Norman Dalsted. *Selecting an Accounting Program*. Colorado State University Extension Bulletin 534A. Critiques of 15 software programs plus other computer references.

Exercise 1

Video questions

Indicate whether each of the following statements is true (T) or false (F).

T F 1. Bookkeeping transactions generally fall into one or a combination of the following two categories:
a. operating income or expense
b. capital purchase or sale

T F 2. A transaction journal gives you a running balance or subtotal for the amounts in each of your farm accounts.

T F 3. A general ledger is a work sheet used to record specific farm accounting transactions.

T F 4. If you don't keep any records, you don't have an audit trail for the IRS to follow if they were to audit you.

T F 5. A balance sheet reflects the profitability of a business in a given year.

T F 6. Enterprise reports are a tool for analyzing the profitability of individual commodities raised.

T F 7. A cash flow statement shows inflows and outlays of dollars but does not indicate farm profitability.

T F 8. Use of a fiscal year is only permissible by a government entity.

T F 9. All farm operations must report income for a 12-month tax year that begins with January 1 and ends December 31.

T F 10. All farmers must report income on a cash basis.

T F 11. Accrual reporting is usually more accurate than cash reporting in reflecting the profit of a farm.

T F 12. Balance sheets and income statements can be generated as a direct by-product of a single-entry accounting system.

T F 13. All double-entry bookkeeping systems are on an accrual basis.

T F 14. Field records are only of value if they contain items measurable in dollars.

T F 15. The shoe box method of keeping records is the cheapest method.

T F 16. Not all farm operations would best be served by a computer record keeping approach.

T F 17. A farm records association is a club specializing in distributing musical selections popular with farmers.

Please place the letter opposite the most correct answer in the space provided.

_____ 18. Which of the following items is used to record capital assets?
a. inventory report
b. enterprise report
c. balance sheet
d. depreciation schedule

_____ 19. Which of the following combinations of accounting methodology is not possible?
a. single entry/cash method
b. single entry/accrual method
c. double entry/cash method
d. double entry/accrual method

_____ 20. Which of the following elements is not part of a computer hardware configuration?
a. central processing unit
b. disk drive
c. monitor (screen)
d. record keeping program diskette

Exercise 2

Categorizing transactions

The purpose of this exercise is to learn how to differentiate various kinds of financial transactions that occur on a farm during the year. This is important since the nature of the transaction affects the manner in which the transaction is accounted for on the books.

A transaction may fall into any one or a combination of the following categories: operating income or expense, capital asset purchase or sale, or financing transaction -- borrowing, repayment of debt.

Indicate with an "X" which category (categories) apply for each of the following transactions.

Description	Operating	Capital	Financing
1. Pay $10,000 for fertilizer	_____	_____	_____
2. Borrow $5,000 from PCA	_____	_____	_____
3. Sell cultivator for $2,000	_____	_____	_____
4. Pay interest of $1,000 on operating loan	_____	_____	_____
5. Charge $500 of feed at co-op	_____	_____	_____
6. Buy groceries for $100	_____	_____	_____
7. Pay $75 contribution to the church	_____	_____	_____
8. Incur depreciation on equipment of $5,000	_____	_____	_____
9. Receive $1,000 co-op refund	_____	_____	_____
10. Sell wheat for $2,000	_____	_____	_____
11. Purchase truck for $5,000 on credit	_____	_____	_____

Exercise 3

Cash vs. accrual

Using the following information, calculate net farm income for the year:

1. on a **cash** basis
2. on an **accrual** basis

Income information

Beginning inventory - wheat	$ 30,000
Wheat sales during year	$ 75,000
Ending inventory - wheat	$ 20,000

Expense information

Accounts payable - beginning of year (fuel)	$ 5,000
Cash expenses paid	$ 65,000
Accounts payable - end of year (fertilizer)	$ 7,000

Exercise 4

Ten criteria for the ideal record system

Assess your current practices by checking the appropriate response.

	I do a good job	Should do better	Need to do this	Date to start
1. Records are updated monthly or at least quarterly.				
2. Balance sheets and income statements are prepared at least annually on a tax or management year-end basis.				
3. Balance sheets reflect cost and market value comparisons.				
4. If reporting taxes on a cash basis, income statements are prepared on an accrual basis to measure true farm profitability.				
5. Records permit analysis of income generated and costs of production for each enterprise in the operation.				
6. A cash flow budget is prepared annually at the beginning of the year.				
7. The record keeping system generates comparisons of actual cash flow to budget projections on a monthly or at least quarterly basis to determine variances and adjustments needed in the annual farm plan.				
8. Detailed records are kept for individual fields for production inputs, yields and applications; or by production unit for livestock operations.				
9. Records are balanced to bank statement balances.				
10. Records are made available periodically to all key owners/operators in the business and primary lenders.				

Exercise 5

Recording transactions

Record these transactions in a transaction journal or bookkeeping ledger of your preference. Use the double-entry accounting system.

1. Purchase and pay for fertilizer totaling $10,000 on October 10.

2. Buy an old truck for $6,000 cash on August 1.

3. On August 20, sell 1,000 bu. wheat at $3.58/bu., $3,580 total.

4. Receive patronage refund of $2,000 on December 1 from a local co-op:

20% cash	$ 400
80% non-cash	$1,600

5. Receive a quantity discount refund of $600 at year end (December 30) from local fertilizer dealer.

6. Purchase a tractor on April 7 with a trade-in of an old tractor plus $20,000 cash. The traded-in tractor cost $32,000 and had total depreciation of $22,000, leaving a book value of $10,000.

7. On September 1, put 5,000 bushels of wheat in home storage under Commodity Credit Corporation (CCC) loan at $3.47 per bushel.Current CCC loan interest rate is 11.3%.

8. On November 15, sell 5,000 bushels of wheat presently under CCC loan for $3.60/bu. (net). Total CCC loan interest accrued is $250.

9. Sell 10,000 bushels (2 contracts) of wheat on January 10, on the Minneapolis soft white wheat futures market at $3.82/bu. for May delivery. Initial margin is $1,000 per 5,000-bushel contract for a total of $2,000.

10. On February 20, send $1,000 to commodity broker for margin call on wheat contracts.

11. On April 30, liquidate hedge on 10,000 bushels of wheat. Original selling (hedge) price was $3.82. Futures price at liquidation is $3.72. Total margin money paid in was $3,000.

12. Sell 10 raised cows (average weight 1,000 lbs.) on September 1 for $500 apiece.

13. Sell 10 cull cows (average weight 1,000 lbs.) on October 1 for $450 a head. Cows were originally purchased as bred heifers five years ago for $350 apiece. Investment credit of $23.33/head was taken in year of purchase but cows were not depreciated (salvage value set equal to purchase price).

14. On November 1, make a Federal Land Bank Association (FLBA) land mortgage payment of $20,000; $15,000 represents interest on the loan and $5,000 represents principal reduction.

15. On August 15, make a $12,000 cash payment on a Production Credit Association (PCA) operating loan ($10,000 principal, $2,000 interest). B stock retired of $870 also results in a loan repayment of $870.

16. Charge $10,000 of feed at the local co-op on December 31.

17. Sell an old combine on December 1 for $12,500. Original cost was $28,000, and accumulated depreciation is $24,000.

18. On July 1, record the value of raised alfalfa hay used for feed (320 tons at $75/ton) as an enterprise cost to the dairy enterprise and as income to the alfalfa enterprise.

19. Record on November 1 the value of raised wheat (soft white) used for fall seed (145 bu. at $3.50/bu. = $507.50) as a seed expense to the 19X2 wheat enterprise and as income to the 19X1 wheat enterprise.

20. On December 31, transfer gas expense from farm expense to personal non-deductible expense for use in personal car (700 gallons at $1.20 = $840).

21. Account for year-end inventory of soft white wheat (1,000 bu. at $3.50/ bu. = $3,500) on the income statement and balance sheet:
    a. based on the cash method of accounting
    b. based on the accrual method of accounting

22. On December 31, record depreciation expense for the year as follows: equipment = $15,000; buildings and improvements = $5,000.

23. On September 30, record repair bills totaling $4,000 for 8430 tractor engine overhaul as equipment repair expense.

24. On December 15, the decision was made that the 8430 repairs represented a major capital improvement warranting depreciation over several years. Capitalize the costs of the 8430 engine overhaul and reverse the expense charges in transaction No. 23.

25. Pay a bill on May 7 to the co-op for the following:

Description	Enterprise/ Overhead (OH)	Cost
Feed - concentrates (1 ton)	Dairy	$100.00
Feed sacks returned (60 sacks at $.25)	Dairy	(15.00) credit
Fuel - diesel (100 gal. at $.83)	Gen. farm overhead	83.00
Supplies - gloves	Gen. farm overhead	15.00
Fertilizer discount (nitro)	Soft white wheat	(100.00) credit
	TOTAL BILL	$ 83.00

Answer key 1

Video questions

Indicate whether each of the following statements is true (T) or false (F).

T **F** 1. Bookkeeping transactions generally fall into one or a combination of the following two categories:
   a. operating income or expense
   b. capital purchase or sale

   Comment: False. There is a third common category called financing transactions that involves borrowings and repayment of debt.

T **F** 2. A transaction journal gives you a running balance or subtotal for the amounts in each of your farm accounts.

   Comment: False. The general ledger is used to do this. The transaction journal is used to record all individual transactions that occur during the business period.

T **F** 3. A general ledger is a work sheet used to record specific farm accounting transactions.

   Comment: False. The transaction journal is used to record specific farm transactions.

T **F** 4. If you don't keep any records, you don't have an audit trail for the IRS to follow if they were to audit you.

   Comment: False. The IRS has ingenious methods of investigating such clues as bank accounts, personal wealth and living standards. They reconstruct their interpretation of your financial activity and income, possibly to your detriment. Farmers with excellent record systems historically fare very well when audited.

T **F** 5. A balance sheet reflects the profitability of a business in a given year.

   Comment: False. The balance sheets reflects assets, liabilities and net worth. The income statement is used to show farm profitability.

T F 6. Enterprise reports are a tool for analyzing profitability of individual commodities raised.

T F 7. A cash flow statement shows inflows and outlays of dollars but does not indicate farm profitability.

T **F** 8. Use of a fiscal year is only permissible by a government entity.

Comment: False. The farm business can select any 12-month period desired to match the business cycle and use this fiscal year for tax purposes.

T **F** 9. All farm operations must report income for a 12-month tax year that begins with January 1 and ends December 31.

Comment: False. A farm business can select any 12-month period desired to match the business cycle and use this fiscal year for tax purposes.

T **F** 10. All farmers must report income on a cash basis.

Comment: False. Farmers are permitted to report either on the cash or accrual basis. Changes in tax law provisions are placing more pressures on farmers to account on an accrual basis.

T F 11. Accrual reporting is usually more accurate than cash reporting in reflecting the profit of a farm.

T **F** 12. Balance sheets and income statements can be generated as a direct by-product of a single-entry accounting system.

Comment: False. A cash-basis income statement can be generated with single entry. However, balance sheets and accrual-basis income statements can only be produced directly through a double-entry accounting system.

T **F** 13. All double-entry bookkeeping systems are on an accrual basis.

Comment: False. A cash-basis set of books can be maintained using double entry. This provides generally a more accurate set of books, and it facilitates the ability to also generate year-end financial statements from the general ledger.

T **F** 14. Field records are only of value if they contain items measurable in dollars.

Comment: False. Many non-dollar related types of information need to be recorded for effective management of a farm business.

T **F** 15. The shoe box method of keeping records is the cheapest method.

Comment: False. This may be the most inefficient and most costly approach. It can also lead to lost opportunities due to untimely record system feedback on one's financial condition.

T F 16. Not all farm operations would best be served by a computer record keeping approach.

T **F** 17. A farm records association is a club specializing in distributing musical selections popular with farmers.

Comment: False. A farm records association is a program used frequently where a group of farmers work together under the direction of a specialist to: keep records, analyze findings and compare individual results against peer group averages.

Please place the letter opposite the most correct answer in the space provided.

D 18. Which of the following items is used to record capital assets?
a. inventory report
b. enterprise report
c. balance sheet
d. depreciation schedule

B 19. Which of the following combinations of accounting methodology is not possible?
a. single entry/cash method
b. single entry/accrual method
c. double entry/cash method
d. double entry/accrual method

D 20. Which of the following elements is not part of a computer hardware configuration?
a. central processing unit
b. disk drive
c. monitor (screen)
d. record keeping program diskette

Answer key 2

Categorizing transactions

The purpose of this exercise is to learn how to differentiate various kinds of financial transactions that occur on a farm during the year. This is important since the nature of the transaction affects the manner in which the transaction is accounted for on the books.

A transaction may fall into any one or a combination of the following categories: operating income or expense, capital asset purchase or sale, or financing transaction -- borrowing, repayment of debt.

Indicate with an "X" which category (categories) apply for each of the following transactions.

Description	Operating	Capital	Financing
1. Pay $10,000 for fertilizer	X		
2. Borrow $5,000 from PCA			X
3. Sell cultivator for $2,000	X*	X	
4. Pay interest of $1,000 on operating loan	X		
5. Charge $500 of feed at co-op	X		X
6. Buy groceries for $100	(PERSONAL NON-DEDUCTIBLE)		
7. Pay $75 contribution to the church	X		
8. Incur depreciation on equipment of $5,000	X		
9. Receive $1,000 co-op refund	X		
10. Sell wheat for $2,000	X		
11. Purchase truck for $5,000 on credit		X	X

* Gain or loss on sale

Answer key 3

Cash vs. accrual

Cash-basis net income

Cash sales - wheat	$75,000
Cash expenses paid	65,000
Net cash income	$10,000

Accrual-basis net income

Cash sales - wheat		$75,000	
Change in inventory:			
+ ending inventory:	$20,000		
- beginning inventory	(30,000)		
Net adjustment		($10,000)	
VALUE OF FARM PRODUCTION			$65,000
Cash expenses paid		$65,000	
+ Expense adjustment:			
Accounts payable - end of year	$ 7,000		
- Accounts payable beginning of year	(5,000)		
Net adjustment		$ 2,000	
TOTAL ACCRUED EXPENSES			$67,000
NET FARM ACCRUAL INCOME			($ 2,000)

Answer key 5

Recording transactions

Transaction	Date	Description	Debit	Credit
1	Oct 10	Purchase fertilizer		
		Fertilizer expense	$ 10,000	
		Cash		$ 10,000
2	Aug 1	Buy old truck		
		Machinery and equipment	6,000	
		Cash		6,000
3	Aug 20	Sell 1,000 bu. wheat at $3.58		
		Cash	3,580	
		Crop income		3,580
4	Dec 1	Receive co-op patronage refund (400 cash; 1,600 non-cash)		
		Cash	400	
		Investment in co-op retains	1,600	
		Income from co-op refunds		2,000
5	Dec 30	Receive quantity discount from fertilizer dealer		
		Cash	600	
		Fertilizer expense (credit)		600
6	Apr 7	Purchase new tractor with trade		
		Machinery and equip. (purchased) *	30,000	
		Accum. depreciation (item sold)	22,000	
		Machinery and equip. (sold)		32,000
		Cash		20,000
		** This is the amount that would be entered on the depreciation schedule (cash outlay plus book value of item traded). No gain or loss is recognized on a trade of like items.*		

Transaction	Date	Description	Debit	Credit
7	Sep 1	Put 5,000 bu. wheat under loan		
		Cash	17,350	
		Crop income - wheat*		17,350 (if CCC loan = income)
		Loan payable - CCC *		17,350 (if CCC loan = loan)
		** Accounting treatment varies depending on normal election to treat loan as income or as loan payable.*		
8	Nov 15	Sell wheat under CCC loan		
		Cash	400	
		Crop income - wheat		400
		(5,000 bu. at $3.60 = $18,000 minus CCC loan of $17,350 and interest of $250 deducted)		
		NOTE: This entry assumes the payoff amount is sent directly from the warehouse to CCC, with amount over loan redemption paid to farmer. If CCC loan is treated as a loan, also credit wheat income for 17,350 and debit loan payable for 17,350.		
9	Jan 10	Sell 10,000 bu. wheat on futures market		
		Commodity futures investment	2,000	
		Cash		2,000
10	Feb 20	Margin call		
		Commodity futures investment	1,000	
		Cash		1,000
11	Apr 30	Liquidate hedge		
		Cash	4,000	
		Commodity futures investment		3,000
		Gain on sales of futures*		1,000
		** Sold at $3.82 and bought at $3.72 -- 10¢ gain/bu. X 10,000 = $1,000 gain.*		
12	Sep 10	Sell 10 raised cows		
		Cash	5,000	
		Cattle income - raised cows		5,000

Transaction	Date	Description	Debit	Credit
13	Oct 10	Sell 10 cull cows purchased at $350 each		
		Cash	4,500	
		Cattle inventory		3,500
		Gain of sale of purchased cows		1,000
14	Nov 1	FLBA land payment		
		Interest expense	15,000	
		Principal - FLB loan	5,000	
		Cash		20,000
15	Aug 15	PCA loan payment		
		Interest expense	2,000	
		Principal - PCA loan	10,870	
		Cash		12,000
		B stock held		870
16	Dec 31	Charge $10,000 for feed at co-op		
		Feed expense *	10,000	
		Accounts payable - co-op *		10,000
		** Only if on accrual basis; no entry if on cash basis.*		
17	Dec 1	Sell old combine		
		Cash	12,500	
		Accumulated depreciation	24,000	
		Machinery and equipment		28,000
		Gain on sale of machinery *		8,500
		** Ordinary income -- depreciation recapture*		
18	Jul 1	Alfalfa hay used for feed		
		Hay expense - dairy (320T at $75/T)	24,000	
		Hay income - alfalfa (320T at $75/T)		24,000
19	Nov 1	Raised wheat used for seed		
		Seed expense - wheat 19X2 (145 bu. at $3.50)	507.50	
		Crop income - SW wheat 19X1 (145 bu. at $3.50)		507.50
		NOTE: While this transaction may occur in the same tax year, it affects two different enterprise years -- 19X1 and 19X2.		

Transaction	Date	Description		Debit	Credit
20	Dec 31	Farm gas used for personal car			
		Misc. non-deductible expense		840	
		Farm gas expense (credit)			840
21	Dec 31	Record inventory of SW wheat			
		On cash method			
		(No transactions)			
		On accrual method			
		Crop inventory - SW wheat		3,500	
		(1,000 bu. at $3.50)			
		Crop income - SW wheat			3,500
		(1,000 bu. at $3.50)			
22	Dec 31	Record depreciation expense			
		Depreciation expense - equip.		15,000	
		Depreciation expense - bldgs.		5,000	
		Accum. depreciation - equip.			15,000
		Accum. depreciation - bldgs			5,000
23	Sep 30	Pay tractor engine repair bill			
		Repairs - machinery and equip.		4,000	
		Cash			4,000
24	Dec 15	Capitalize tractor repair costs			
		Machinery and equip. (asset acct.)		4,000	
		Repairs - machinery and equip.			4,000
25	May 7	Pay co-op bill	Enterprise/Overhead (OH)		
		Feed expense (1 ton)	Dairy	100	
		Feed exp. credit (sacks)	Dairy		15
		Fuel - diesel (100 gal. at 83¢)	Gen. OH	83	
		Supplies	Gen. OH	15	
		Fertilizer	Gen. OH		100
		Cash			83

Extension Service, Oregon State University, Corvallis, O.E. Smith, director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.