

1972

## Review of electronic data processing of records and accounts for Iowa farmers

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Review of electronic data processing of  
records and accounts for Iowa farmers

by

Harlan Lawrence Lemke

A Thesis Submitted to the  
Graduate Faculty in Partial Fulfillment of  
The Requirements for the Degree of  
MASTER OF SCIENCE

Department: Economics  
Major: Agricultural Economics

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Signatures have been redacted for privacy

Iowa State University  
Ames, Iowa

1972

## TABLE OF CONTENTS

	Page
CHAPTER I: INTRODUCTION	1
Objectives of the Study	2
Methods and Procedures	3
Why Keep Farm Records?	5
Record Keeping Practices of Iowa Farmers	7
Classification of Record Keeping Procedures	15
CHAPTER II: ELECTRONIC DATA PROCESSING SERVICES AVAILABLE TO IOWA FARMERS	20
Nature of Electronic Data Processing	20
Types of EDP Packages Available	21
Types of Firms Offering EDP Packages	26
Operational Procedures	30
Output Reports	51
External Services Provided	75
CHAPTER III: GUIDELINES FOR SELECTING AN EDP SYSTEM	81
Information Needs	81
Accounting Method	83
External Services	83
Operational Procedures	84
Advantages and Disadvantages of the EDP Packages	87
Program Cost	90
Personal Background	91
CHAPTER IV: DECISION AREAS ENCOUNTERED IN DEVELOPING AND OFFERING EDP SERVICES	92
Type of Program to Offer	92
Operational Procedures	96
Reporting to Subscribers	99
Stimulating Interest in EDP Programs	102
Educating Subscribers about EDP and Record Keeping	103
Summary	104
BIBLIOGRAPHY	107
ACKNOWLEDGEMENTS	108

	Page
APPENDIX A	109
Summary of Interviews with Firms Offering EDP Services to Iowa Farmers	110
APPENDIX B	117
Summary of Interviews with EDP Subscribers	118
APPENDIX C	131
Summary of University Questionnaires	132



## LIST OF FORMS

	Page
Form 1a. Year-end farm summary input form	31
Form 1b. Year-end farm summary input form	32
Form 2. Three digit code system	34
Form 3. Codec check input form	40
Form 4. Coded deposit slip input form	40
Form 5. Mail-in input form to record receipts	42
Form 6. Mail-in input form to record expenses	43
Form 7. Mail-in input form to record intra-farm transfers	47
Form 8. Depreciation schedule input form	50
Form 9. Inventory input form	53
Form 10. Cash flow report	56
Form 11. Cash flow report	58
Form 12. Depreciation schedule	61
Form 13. Income statement	63
Form 14. Net worth statement	65
Form 15. Farm business analysis report	68
Form 16. Farm business analysis report	70
Form 17. Enterprise analysis report	72
Form 18. Enterprise analysis report	74
Form 19. Historical comparative analysis summary	77
Form 20. Cash flow performance report	79

## LIST OF TABLES

	Page
Table 1. Record items and analysis measures for the overall farm business by number and percent of operators keeping the item or computing the measure in 1965	9
Table 2. Record items and analysis measures for the crops enterprise by number and percent of operators keeping the item or computing the measure in 1965	10
Table 3. Record items and analysis measures for the beef cattle enterprise by number and percent of operators keeping the item or computing the measure in 1965	12
Table 4. Ways in which operators felt their farm records in 1965 could have been improved	13
Table 5. Operators reasons for not keeping better farm business records in 1965	13
Table 6. Number of Iowa farmers subscribing to the EDP programs of the firms surveyed, July, 1971	110
Table 7. Information and services provided by the EDP firms surveyed	114
Table 8. Strong areas and weak areas reported by subscribers to Iowa EDP programs	129
Table 9. Information provided in EDP programs offered by midwest universities	136

## CHAPTER I: INTRODUCTION

The major emphasis of farm record keeping in the past has been for tax purposes. To satisfy this requirement was to reach the objective for keeping records. However the changes occurring in agriculture in recent years have placed new demands on farm record keeping systems. Increasing farm size and the substitution of capital for labor have resulted in rapidly increasing capital requirements. Rising input costs and lagging product prices have encouraged enterprise specialization and larger volumes of business to more efficiently utilize land, labor, and capital. These trends in agriculture necessitate a farm record keeping system which provides for financial planning and enhances the securing of credit. Farm records also must facilitate evaluating the allocation of resources, the efficiency of production, and the performance of management. In some cases because the farm business has grown quite large and complex, the farm operator must rely on his farm records to retain contact with all areas of the farming operation. Farmers are realizing that they need a system that will handle a vast amount of data quickly, efficiently, and accurately. They want, and need, to be able to analyze their business operation through monthly reports rather than just at the end of the year when filling out income tax forms. Forward planning is becoming a necessity rather than an exception. For these reasons electronic data processing (EDP) is making itself known

in farm record keeping.

Through EDP programs, farmers are receiving quarterly and monthly financial reports and are thus able to exert financial control throughout the year rather than just at the end of the year when filling out income tax forms. Today's farmers cannot keep records just for tax purposes; they must use their records to become better managers so they will not be one of the statistical numbers that left farming. Mistakes today are likely to involve 800 acres of crop land rather than 80, or 150 dairy cows rather than 15. The existence of a high degree of risk and uncertainty in agriculture further emphasizes the need for effective farm records (10, p. 142). Through EDP, farmers are computerizing some of the pencil pushing in record keeping. Many are realizing for the first time the value of accurate, current, detailed farm records. The days of farm records in a shoe box are over.

#### Objectives of the Study

This study was funded by the Iowa Agricultural Experiment Station<sup>1</sup> and was undertaken to gather information on farm record keeping through electronic data processing. The specific objectives of this study were:

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<sup>1</sup>Project 1573.



1. To provide information about EDP services available to Iowa farmers
2. To develop guidelines for farmers in selecting an EDP record keeping program
3. To outline decision areas encountered in developing and offering EDP record services

### Methods and Procedures

Literature on farm record keeping, accounting, management information systems, computer usage, and other related topics was reviewed as background material for this research project. Little published material or research work of the nature of this study was available for review. A major portion of the literature reviewed consisted of EDP subscriber manuals, output reports, and other material prepared by firms offering EDP services. Due to the varying nature of the literature reviewed and its relationship to this research study, it can most appropriately be included in this thesis through supporting illustrations, quotations, and footnotes.

### Collection of data

Data and information were gathered through personal interviews with officials of six firms offering EDP services to Iowa farmers, and with 34 subscribers to these EDP programs. The personal interviews with EDP firm officials provided an in-depth survey of the capabilities of EDP record keeping programs, the operational procedures employed, the types of

information and output reports provided, and the major problems encountered in offering EDP services. With the help of officials from EDP firms, a cross section of subscribers, representing varying types of farming operations, was selected for interviewing. These subscriber interviews provided a survey of the record keeping procedures used, their reasons for subscribing to an EDP record keeping program, the problems encountered, their appraisal of the program they were using, and their suggestions of ways to improve it.

Also, questionnaires were mailed to farm management economists at eleven midwestern land grant universities to determine the extent and acceptance of EDP in other midwestern states, to determine the extent of EDP services being offered by other midwestern universities, and to gather ideas on some of the expected trends in farm record keeping.

A more comprehensive discussion of the results of these surveys appears in the appendices.

#### Limitations of the study

The survey results and contents of this thesis are based upon a limited number of personal interviews and mail questionnaires from a selected sample of EDP firms, subscribers, and midwest universities.

The number of firms offering EDP services to Iowa farmers is limited. Although only six EDP firms were surveyed, this represents the major bank offered EDP programs and all other

major firms offering EDP services to Iowa farmers. EDP firms in other states were not surveyed.

The objective of the subscriber survey was simply to interview farmers to gather information on EDP record keeping programs.

The university questionnaires were designed to gather ideas on expected trends in farm record keeping and to gather information on the extent and acceptance of EDP in other midwestern states. Eleven midwestern land grant universities were contacted.

This thesis is based upon a review of published materials and the previously mentioned surveys and not upon personal use of the EDP programs by the author.

#### Why Keep Farm Records?

Considering the previously mentioned trends which are taking place in agriculture today, this may seem a senseless question to ask. The purpose of this elementary beginning is to provide a backdrop for this discussion of electronic data processing of farm records.

As citizens of this country we are subject to legal requirements which demand that we keep basic business and personal records. For many farmers, this is the extent of their desire to keep records. However, the changes that are taking place in agriculture are forcing the development of a



new attitude towards farm record keeping. Hopkins and Heady describe agriculture today as a businessman's industry. They state, "Hard physical work no longer assures success. Machines are available to do the hard work. While farmers still have to guide the machines and herd the animals, it is exercise of their minds which brings business success." (6, p. 3).

In order to make wise farm business decisions, information must be available in an organized form. "The foundation of any successful business is a well organized set of records and accounts...they record the heartbeat of the business." (7, p. 1) In recording the heartbeat of the farm business, farm records actually serve many basic functions. One list of the functions of farm records appears below: (8, pp. 59-60)

#### Functions Served by Farm Accounting Systems for Individual Farmers

- I. Control of Financial Affairs
  - A. Record of bills paid, income received
  - B. Accounts payable, accounts receivable
  - C. Inventory control
  - D. Partnerships, profit-sharing agreements, landlord-tenant settlements, farm corporations
- II. Legal and Institutional Requirements
  - A. Income tax: capital gains, investment credit, and investment credit recapture
  - B. Social Security: self-employed and employee accounts
  - C. Historical records: estate settlement, cost basis of real property, ASCS programs
  - D. Insurance: coverage, damage claims, and evidence of losses
- III. Farm Business Analysis
  - A. Total farm business; trend and comparative analysis, detecting strong and weak points in organization and management performance
  - B. Enterprise analysis
  - C. Lease evaluation
  - D. Financial position of business (balance sheet)



- IV. Basis for Forward Planning and Budgeting
  - A. Information provided by records
    - 1. Basic profit and loss statement on farm unit
    - 2. Selected input-output relationships
    - 3. Inventory of physical and financial resources available
    - 4. Management performance of operator
  - B. Applications of record data in planning
    - 1. Projected production and operating plans
    - 2. Alternative resource and product combinations compared with existing unit
    - 3. Projected financial and cash flow requirements, credit requirements, and debt repayment schedules

To tabulate information by hand in all of these areas requires much time and a good understanding of accounting and record analysis. Farmers often do not possess the necessary training and skills to do this, and as a result are at a loss in knowing what basic data to gather from their records to use in analyzing their business operation. Through EDP, farmers can receive information in all of these areas without knowing a great deal about accounting. Data tabulation is performed by the computer. Since subscribers are freed of these responsibilities, they can concentrate on recording the data, an area of record keeping in which farmers feel much more competent.

#### Record Keeping Practices of Iowa Farmers

This section summarizes the record keeping practices of Iowa farmers using conventional hand calculated records as reported by Hickman (5, p. 85). The data was collected through a random sample survey of 322 Iowa farm operators in 1965.

The purpose of examining the record keeping practices of farmers with conventional record keeping methods is to provide further background information for discussing electronic data processing of farm records. For purposes of this discussion, the information in Tables 1-3 has been arranged according to the percent of farmers keeping the record item or computing the analysis measure.

#### Whole farm

The information in Table 1 indicates that 87.9 percent of the farmers tabulated a net profit statement for their business and 62.1 percent used their records to compute the profits of individual enterprises. However, upon examining the other records kept, it is found that only 48.8 percent tabulated a net worth statement and 45 percent made an inventory. Only 26 percent computed their returns to livestock above the value of feeds fed. This would indicate that the profit and loss statements were probably of a cash flow nature and thus did not include important non-cash items.

#### Crop enterprises

The information in Table 2 indicates the kind of records and analyses completed for crop enterprises. The list is headed by records of fertilizer use and crop yields. This is followed by a number of comparative analyses. Key cost analyses and efficiency measures conclude the list at quite

Table 1. Record items and analysis measures for the overall farm business by number and percent of operators keeping the item or computing the measure in 1965 (5, p. 85)

Record item or analysis measure	Total number of operators <sup>a</sup>	Operators keeping item or computing measure	
		No.	%
Cash income	322	319	99.1
Cash expense	322	319	99.1
Depreciation schedule	320	311	97.2
Net profit (or loss) of overall farm business	322	282	87.9
Used records to compute profit (or loss) made by individual enterprises	322	200	62.1
Used records to help in improving farming practices	322	197	61.2
Physical inventory at the beginning of the year	322	197	61.2
Death loss record	315	191	60.6
Farm products used at home	270	134	49.6
Net worth statement	322	157	48.8
Valuation of the inventory	322	145	45.0
Used records to adjust size and scope of enterprises	322	127	39.4
Family living expenses	322	97	30.1
Returns above value of feed fed to livestock	305	79	25.9
Operator and family labor used	322	30	9.3
Returns per \$100 of feed fed to livestock	305	28	9.2

<sup>a</sup>Includes only those operators for which the item or measure is applicable.



Table 2. Record items and analysis measures for the crops enterprise by number and percent of operators keeping the item or computing the measure in 1965 (5, p. 88)

Record item or analysis measure	Total number of operators <sup>a</sup>	Operators keeping item or computing measure	
		No.	%
Amounts of fertilizer applied per acre for each crop	281	237	84.3
Crop yields per acre	310	251	81.0
History of crops grown on fields each year	308	245	79.5
Amounts and kinds of fertilizer applied on each field each year	298	220	73.8
Comparison of crop yields with those of neighbors	310	223	71.9
Value of crops harvested	310	189	61.0
Comparison of crop yields with average yields in county	310	147	47.4
Yields of crops grown on each field each year	308	133	43.2
Comparison of crop yields with average yields in state	310	114	36.8
Value of crops harvested per crop acre	310	83	26.8
Net profit (or loss) for each crop	310	69	22.3
Yield comparisons between different varieties, fields, etc.	310	56	18.1
Total expenses per crop acre	310	52	16.8
Net profit (or loss) per acre for each crop	310	40	12.9
Machinery costs per crop acre	310	30	9.7
Labor costs per crop acre	310	13	4.2

<sup>a</sup>Includes only those operators for which the item or measure is applicable.

low percentages. Only 16.8 percent of the farmers calculated total expenses per crop acre and even less, 9.7 percent calculated machinery costs per acre. Unsurprisingly, labor cost per acre is at the bottom of the list.

### Livestock enterprises

The beef cattle enterprise in Table 3 illustrates typical survey results of the record keeping practices for livestock enterprises. Physical data that is easy to measure or calculate heads the list. Some of this information is supplied to the farmer at the time of a livestock sale or purchase. Again, important cost analyses and efficiency measures fall at the bottom of the list at low percentage levels.

General observations from the data in Tables 1-3 are that cost analyses and the calculation of production efficiency measures are lacking in the record keeping practices of many farm operators. This is especially true at the enterprise level. It also appears that record analysis is an area in which farmers need major assistance and training, not only in completing the calculations, but also in knowing the value and importance of this information.

A summary of the record keeping practices of Iowa farmers subscribing to EDP programs appears in Appendix B. Although this summary does not present the same information as Tables 1-3, if the EDP programs these farmers subscribe to are examined, it is evident that much of this record information is kept.

Table 3. Record items and analysis measures for the beef cattle enterprise by number and percent of operators keeping the item or computing the measure in 1965 (5, p. 91)

Record item or analysis measure	Total number of operators <sup>a</sup>	Operators keeping item or computing measure	
		No.	%
Weights of fat cattle sold	125	123	98.4
Number of calves kept and fed out on farm	53	51	96.2
Weights of feeder cattle purchased	97	91	93.8
Percentage calf crop	132	110	83.3
Amount of supplement fed	186	126	67.7
Calving records (dates)	132	74	56.1
Breeding records (dates)	132	73	55.3
Net profit (or loss) from beef cattle	212	113	53.8
Average daily rate of gain	125	53	42.4
Amount of grain fed	195	54	27.7
Separate feed record for cow herd and cattle fattened for slaughter	44	12	27.3
Amount of hay and roughage fed	211	56	26.5
Pasture and grazing costs	182	37	20.3
Returns above value of feed fed	212	38	17.9
Weaning weights of calves	132	21	15.9
Average weaning weights of calves	132	18	13.6
Amount of feed fed per 100# of gain	125	11	8.8
Feed costs per 100# of beef produced	211	16	7.6
Returns per \$100 of feed fed	212	14	6.6
Total costs per calf weaned	125	7	5.6
Labor costs per 100# of beef produced	211	3	1.4

<sup>a</sup>Includes only those operators for which the item or measure is applicable.



Adequacy of records

Hickman reported that 54.7 percent of the farm operators surveyed felt that their records were inadequate (5, p. 98). The ways in which these operators felt their farm records could be improved are given in Table 4.

Table 4. Ways in which operators felt their farm records in 1965 could have been improved (5, p. 99)

Method of improving	%
More complete and accurate	43.8
More detailed records on individual enterprises	29.6
Kept a record of feed fed to livestock	13.6
Made use of a record book	4.5
Made a more complete analysis of records kept	4.0
No specific way indicated	4.5
Total	100.0

The reasons given by these operators for not keeping better farm records are outlined in Table 5.

Table 5. Operators reasons for not keeping better farm business records in 1965 (5, p. 100)

Reason	% <sup>a</sup>
Lack of time	58.5
Negligence	29.0
Lack of knowledge	10.2
No scales for weighing feed or livestock	10.2
Other	2.8
No specific reason indicated	13.6

<sup>a</sup>Does not total 100 percent since some operators indicated more than one reason.

In Hickman's survey, only 45.3 percent of the farm operators were of the opinion that their 1965 farm records were adequate. He concludes the following about this group.

"The proportion of these operators completing some of the more important record items and analysis measures was determined. Results indicated that the farm business records of many of these individuals were not, in fact, sufficient. Almost 40 percent of these farmers had not taken a physical inventory at the beginning of the year, 13.7 percent had not computed net profit (or loss) earned by the overall farm business, and 44.5 percent had failed to use their records to determine the net profit of any of their individual enterprises. Only 43.8 percent of these operators had prepared a net worth statement in 1965. It is probable that many of these individuals were simply reluctant to admit to the interviewers that their records were inadequate. However, one might also conclude that some operators, because of a lack of education and training in farm management and decision-making processes, were not aware of the value of detailed farm records and their subsequent analysis." (5, p. 101)

This statement summarizes the need for better record keeping practices by the majority of Iowa farmers. Considering the suggested ways of improving farm records given in Table 4, EDP has the potential to help many farmers improve their farm records. Through EDP farmers are keeping more complete and accurate records. Having confidence in the accuracy and completeness of their records encourages them to analyze their records and evaluate their farm business operation. With the help of EDP, many farmers also are able to keep more detailed records on their crop and livestock enterprises.

EDP also has the potential to help farmers overcome many of the reasons given in Table 5 for not keeping better records.



Through the computerization of data tabulation, much of the time and knowledge required to tabulate data in hand calculated record systems can be eliminated. By requiring monthly or quarterly submittal of input information, EDP programs can act as a stimulus to keep records up-to-date and thus reduce negligent record keeping. In short, EDP has the potential to help many farmers with inadequate record keeping practices to bridge the gap to better farm records.

#### Classification of Record Keeping Procedures

Regardless of whether record data are tabulated by a computer or by hand, certain basic record keeping procedures must be used to record the information. These record keeping procedures are most often classified according to how the data are gathered and recorded. With this in mind, two systems of classification evolve:

- | I   | II   |
|---|--|
| <ol style="list-style-type: none"> <li>1. Cash Basis Accounting               <ol style="list-style-type: none"> <li>a. single-entry accounting</li> </ol> </li> <li>2. Accrual Basis Accounting               <ol style="list-style-type: none"> <li>a. single-entry accounting</li> <li>b. double-entry accounting</li> </ol> </li> </ol> | <ol style="list-style-type: none"> <li>1. Single-Entry Accounting               <ol style="list-style-type: none"> <li>a. cash basis accounting</li> <li>b. accrual basis accounting</li> </ol> </li> <li>2. Double-Entry Accounting               <ol style="list-style-type: none"> <li>a. accrual basis accounting</li> </ol> </li> </ol> |

Both systems classify the same records; they differ only in emphasis. In the first, records are classified according to the nature of the data recorded. In the second, records are

classified according to the detail of the recording procedures. Most farm records are kept on the cash basis of single-entry accrual system. As the size and complexity of the business increases the checks and balances, flexibility, and completeness of the double-entry system becomes more useful. Each system will now be explained in more detail.

#### Cash basis accounting

In cash accounting, revenue is recognized when cash is received, and expenses are recognized when cash is paid. Inventory increases or decreases, accounts payable and receivable, and other balance sheet information are not recorded because cash has not exchanged hands. Due to the fact that production is recognized the year sold and not the year produced and expenses relate to the year purchased and not the year used, income tabulations and business analysis ratios may be distorted. Thus cash record keeping may prevent obtaining information desired for business management purposes. While the cash method has shortcomings in record keeping for management purposes, it does offer flexibilities in tax reporting which are not found in the accrual system. Also, small businesses find it easier to use.

#### Accrual basis accounting

In accrual accounting, revenue is recognized when it is earned or produced, and expenses are recognized when an

obligation to pay is undertaken. Thus, the receipt or payment of cash does not determine when to record a transaction or when to recognize crop or livestock production. Increases and decreases in inventories of farm production and input supplies balance sales and purchases such that production is recognized in the year it is produced and expenses for the year relate only to that production. Transferring receipts, expenses, and production from year to year through timing the receipt or payment of cash is not permitted in measuring income on the accrual basis. True production efficiency can only be measured through accrual accounting. Thus, it may be to the advantage of some to keep records by the accrual system but pay taxes by the cash system.

#### Single-entry accounting

"The principle of the single-entry system is that receipt and expense transactions are recorded in only one place in the accounts." (7, p. 48) Many types of single-entry programs are available. Some are very incomplete while others provide much of the same information as double-entry programs. Some are simple and easy to use while others are complex. If the categories of information to be recorded are sufficiently complete and if complete accuracy is maintained in recording data, then the single-entry system can provide just as much information as the double-entry system. What it lacks is the built-in checks and balances to insure accuracy and



completeness.

### Double-entry accounting

"The double-entry system rests upon the principle that there is both a source and destination to every transaction and thus at least two entries must be made." (7, p. 49) The double-entry system rests upon the basic accounting principle that assets equal liabilities plus owner's equity at all times during the accounting period. Thus the accounting process is both more complex and requires at least twice as many recordings. But, because many of the double-entry accounting responsibilities can be programmed into the computer, one can use a double-entry EDP accounting system without knowing a great deal about accounting procedures and experiencing the tedium of recording masses of data. This is not to imply that the subscriber has no additional responsibilities with a double-entry EDP program. He must still identify the source and destination of each transaction.

For the purposes of this thesis a slightly different classification will be used. In the following chapter, EDP record keeping programs will be classified into package types; emphasis will be placed on the amount of computer involvement, subscriber recording procedures, and the type of information provided. This is not to ignore the previously mentioned systems of classifying farm record keeping programs. The

distinguishing characteristics and features of cash basis, accrual basis, single-entry, and double-entry accounting are as much a part of EDP record keeping programs as conventional programs. These record keeping procedures will be alluded to throughout the discussion of the types of EDP packages available to Iowa farmers.

CHAPTER II: ELECTRONIC DATA PROCESSING  
SERVICES AVAILABLE TO IOWA FARMERS

Nature of Electronic Data Processing

Electronic data processing can be defined as a system of processing accounting records on an electronic computer. The amount of computer involvement varies with each EDP program. In most programs, the farmer subscriber records the transaction information on prepared forms or in a record book and submits these to the servicing organization on a monthly, quarterly or annual basis. The mail is the normal means of transmission. The subscriber usually identifies each transaction according to a predetermined code system. The servicing organization then keypunches this information on to cards or magnetic tapes to be read into the computer.

Computer functions

The computer can be programmed to perform essentially four functions with the input information. First, it sorts the varied transactions into specific categories. Expenses are sorted from receipts and each of these may be further sorted by like transactions, i.e. fuel purchases, labor expenses, livestock receipts, crop receipts, etc. Second, the machine adds, subtracts, multiplies, and divides as necessary to tabulate accounting reports and make management or efficiency analyses. Third, it prints output reports. The reports

are printed out according to the exact report format that has been programmed into the computer. Storing information is the fourth function of the computer. The sorted and calculated information can be stored by the computer on magnetic tapes or disc packages to be used with information received later to calculate and print out reports covering longer periods of time. For example, if transactions were reported by the farmer once a month, the computer could be programmed to prepare both a monthly and year-to-date summary of receipts and expenditures.

#### Types of EDP Packages Available

There are three basic types of EDP record keeping packages available to Iowa farmers. The packages differ in the amount of computer involvement required, the type of external services offered, and the amount of information provided. The amount of computer involvement varies from processing individually recorded transactions on a monthly basis to processing record book summary totals on an annual basis. Some EDP packages offer such external services as income tax preparation, record keeping assistance by area fieldmen, and farm management consultation. The information provided varies from a simple cash flow summary to complete management information systems providing accounting reports, business analysis reports, and forward planning options.



### Year-end farm summary programs

One type of EDP package available is the year-end farm record summary. This type of record keeping program contains the least amount of computer involvement of any type of EDP package. In this type of program, the farmer keeps his records at his farm and posts transactions to them throughout the year. At the end of the year, the receipt and expense totals, asset and liability totals, and production totals are entered into the computer for year-end summarization and analysis. An income statement, net worth statement, and efficiency measures are usually a part of the summarization.

Year-end farm record summary programs lend themselves equally well to cash or accrual accounting procedures. In many cases the record book is designed to accommodate both cash basis and accrual basis record keeping.

Usually farm summary record keeping programs are designed to employ the single-entry system of accounting. This has resulted largely because farmers generally have had very limited training in accounting and as a result find single-entry recording somewhat easier to understand.

### Coded check programs

Coded check EDP packages are also available. These programs require using specially printed checks and deposit slips which allow for entering a code number on the check or deposit slip to identify the purchase or receipt. Since coded



checks are the major source of input information, this type of program also has been labeled a cash-flow program. Generally, only those transactions involving cash payments or receipts are recorded. As a result, most coded check programs cannot accommodate accrual record keeping. However, some coded check packages do make provisions for supplemental reporting of inventories and other non-checkbook type transactions.

#### Mail-in programs

The mail-in system is another type of EDP package available. The subscriber records each farm transaction on a journal form and identifies it with appropriate identification code numbers. The forms normally contain multiple copies. At the end of the month, quarter, or year, depending upon information type and when it is to be processed, the subscriber mails one or more of the carbon copies of his recorded transactions to the servicing organization for keypunching and processing on the computer. The subscriber keeps a carbon copy of his recorded entries for his own records and reference.

Since most farmers use a single-entry cash recording system, most mail-in programs have been designed to employ this type of record keeping. However, most mail-in programs will accommodate accrual record keeping as well. In addition, some mail-in programs are designed for double-entry accounting procedures. To record transactions in a double-entry accounting program, one must enter at least two identification code

numbers for each transaction. The first code number indicates the account to be debited and the second indicates the account to be credited.

#### Computerized depreciation schedule

A computerized depreciation schedule is an EDP program commonly available as part of other EDP packages. Also, depreciation schedules are often maintained and updated by tax accountants and lawyers providing tax services to farmers. Since tabulating depreciation schedules by hand is such a time consuming task, some tax professionals have computerized this part of their tax service. However, lawyers and tax accountants often have not had training in computer programming or do not have access to a computer and thus are limited in providing a computerized depreciation schedule.

#### Family living packages

There are also EDP programs available which summarize family income and expenses. As before, an identification code number must be recorded for each income and expense entry. Family income and expense summaries are often a part of coded check or mail-in EDP packages. The type of forms used to record this information varies with each package. There is also variation in the amount of expense breakdown and information provided. In some programs, only a few broad income and expense categories are provided. The more complete systems

permit itemizing in detail such expenses as food, clothing, household items, utilities, medical, contributions, recreation, and automobile expenses.

One may question how this relates to the farm. The relationship is more direct than it may first appear. Profits generated from the farming operation are allocated basically to three destinations: (1) principal payments on present liabilities, (2) new investments, and (3) family living. It is important to keep track of expenditures in each of these areas. Outstanding liabilities and new investments are part of the farm records in most cases. However, in many conventional record keeping programs, family expenses are often thought of as being rather insignificant. They are sometimes totally ignored. In contrast, many EDP subscribers feel this is one of the more valuable services offered. For the first time, many of these subscribers now know how much of the farm income is being transferred to the family for family living purposes.

#### Specialized programs

A final category of EDP packages could be described as specialized record keeping programs, or in some instances, planning packages. Examples are the Dairy Herd Improvement Association (DHIA) records and beef feedlot performance records. Planning packages include linear programming models to determine least cost feed rations, simulation models projecting expected yields with alternative fertilization and planting



levels, forward budgets, and projected cash flows.

### Types of Firms Offering EDP Packages

There are basically five types of firms that offer EDP services to farmers. They are: farm business associations, state universities, banks, farm service organizations, and private firms.

#### Farm business associations

In many states, farm business associations are formed solely for the purpose of providing assistance in record keeping, tax service, and management consultation through area fieldmen. Farm business associations are non-profit, self-governing organizations. Membership dues are determined by the costs incurred by the organization in providing the farm record keeping program. The associations are governed by an elected board of members who coordinate and direct all activities at the area and state level. At the state level, farm business associations are able to acquire the services of a computer processing center and are thus able to participate in the opportunities available through electronic data processing. In addition to providing each member with record summaries of his farm business, many farm business associations also provide comparative analysis information, thus permitting a member to compare the figures of his own farming operation with the averages of other association members with similar resources

and production activities.

### Universities

Universities have been forerunners in the research and development of EDP programs. In many states, the research has been followed by the implementation of EDP services through the Cooperative Extension Service personnel who work directly with farmers in their record keeping activities. Universities and farm business associations are the only known organizations that offer management consultation as part of their record keeping programs. The amount of electronic data processing varies from year-end computer processed reports in some states to monthly processing of the farm record information in other states.

### Banks

Local banks are also a source of EDP services. Banks offer EDP programs to provide more services to their customers and also as a means of improving and facilitating borrower-lender relationships. Bankers want to know the present financial condition and credit needs of their farm customers and they want this information through accurate, easy to read farm records. Through offering EDP services, banks are trying to encourage farmers to keep more complete and current records.

If the bank has sufficient size, staff, and capital it may be able to develop and market its own EDP program. In

most cases, banks in agricultural areas are too small to undertake this project on their own. Instead, these banks often purchase a franchise in a developed EDP program from a larger bank or company. The local bank then only has the responsibility of selling and servicing the program to its farm customers. Bank employees need to be trained in these areas.

Many bank EDP programs are somewhat limiting in that only cash flow and tax data information are provided. As a result, only a minimum of business analysis information is available in many of these programs.

#### Farm service organizations

Another source of EDP is with farm service organizations such as the Farm Bureau and Production Credit Association. These organizations are interested in providing services to their members and have recognized farm record keeping as an area in which to do this. These organizations have sufficient size and membership to develop their own EDP program and process the record information on their own computers. The Iowa Farm Bureau services its program through group meetings, often in conjunction with a local bank or vocational agriculture department, by a telephone WATS line, and by personal contact as needed. The Production Credit Association (PCA) offers its program through the local PCA office. In some cases, one person at the local level is designated as a farm



records coordinator to work exclusively with the record keeping program. One of PCA's goals is to improve and facilitate the borrower-lender relationship the same as with banks.

#### Private firms

Private firms also have become involved in offering EDP farm record programs. Private firms may work exclusively in computerized farm record keeping services or their EDP services may be one of several areas within, or products of, a large private firm. The profit motive is the major incentive in both situations but in the latter case it may be less direct as a sales promotion program or as an enticement to attract customers to the other products the firm sells. Private firms can be just as efficient and provide their services as economically to farmers as non-private groups. Again, if the firm is relatively small, it may want to purchase an operational program rather than assume the large development costs involved in offering its own program. In other cases, where larger established firms have decided to offer EDP services, the parent company may finance the developmental and implementation costs incurred by a subsidiary firm in getting the program operational.

## Operational Procedures

The operational procedures used vary with each type of EDP package. These were discussed earlier in this chapter and were classified as (1) year-end farm summary programs, (2) coded check programs, and (3) mail-in programs. Emphasis in this section will be upon the last two programs since they require the most computer processing.

### Year-end farm summary programs

With year-end farm summary programs record information is recorded throughout the year in a record book kept at the farm. At the end of the year the farmer, or his area fieldman, totals his record book columns for expenses, receipts, production, assets, and other farm record information. These totals are then entered on input forms, such as the Forms 1a and 1b from the Iowa Farm Business Association, to be submitted to the computer for processing. Each information box on the input form is numbered to correspond with similarly numbered column totals in the record book. This insures that the proper column total is entered in the correct space on the input form. At the processing center the information is key-punched on to cards to be read into the computer. This type of EDP program involves a considerable amount of manual work by the farmer or his fieldman in totaling the record book columns and entering the information on the input forms.



FIELD

ACRES	FIELD	6
5	113	96
20	20	15
48	73	
55	27	
39	3	

Other Row Price

ACRES	Value
Directed	375
Total Acres	275
Total Price	290

LIVESTOCK PRODUCTION

No. of Beef Cows	3	20
No. of Litters	3	50
No. of Milk Cows	3	
No. of Laying Hens	6	
Feed Fed to Hogs	6	7722
Feed Fed to Beef	6	13540
Feed Fed to Dairy	6	
Feed Fed to Poultry	6	

LABOR

Hired Labor	31	1
Operator Labor	31	12
Family Labor	31	

LANDLORD LABOR

MOONING	1
---------	---

FIELD

ACRES	FIELD	6
5	113	96
20	20	15
48	73	
55	27	
39	3	

Other Row Price

ACRES	Value
Directed	375
Total Acres	275
Total Price	290

LANDLORD LABOR

MOONING	1
---------	---

FIELD

ACRES	FIELD	6
5	113	96
20	20	15
48	73	
55	27	
39	3	

Other Row Price

ACRES	Value
Directed	375
Total Acres	275
Total Price	290

DEPRECIATION - Working Assets

OPER. 5	286	286
OPER. 6	353	353
OPER. 5	100	100
OPER. 6	341	341

OTHER ASSETS

OPER. 5	286	286
OPER. 6	353	353

LIABILITIES

OPER. 5	286	286
OPER. 6	353	353

OTHER ASSETS

OPER. 5	286	286
OPER. 6	353	353

LIABILITIES

OPER. 5	286	286
OPER. 6	353	353

LABOR

Hired Labor	31	1
Operator Labor	31	12
Family Labor	31	

LANDLORD LABOR

MOONING	1
---------	---

LABOR

Hired Labor	31	1
Operator Labor	31	12
Family Labor	31	

LANDLORD LABOR

MOONING	1
---------	---

LABOR

Hired Labor	31	1
Operator Labor	31	12
Family Labor	31	

LANDLORD LABOR

MOONING	1
---------	---

LABOR

Hired Labor	31	1
Operator Labor	31	12
Family Labor	31	

LANDLORD LABOR

MOONING	1
---------	---

YEARLY SUMMARY OF FINANCIALS

1. Crop Share	100	3701
2. Cash from Sale of Cattle	200	
3. Cash from Sale of Hogs	200	
4. Cash from Sale of Poultry	200	
5. Cash from Sale of Other Assets	200	
6. Other Income	200	
7. Total Income	1000	3701
8. Total Expenses	1000	3701
9. Net Income	0	0

YEARLY SUMMARY OF FINANCIALS

1. Crop Share	100	3701
2. Cash from Sale of Cattle	200	
3. Cash from Sale of Hogs	200	
4. Cash from Sale of Poultry	200	
5. Cash from Sale of Other Assets	200	
6. Other Income	200	
7. Total Income	1000	3701
8. Total Expenses	1000	3701
9. Net Income	0	0

Form 1a. Year-end farm summary input form (used by permission of the Iowa Farm Business Association, Colo, Iowa)

ASBOC. --- COUNTY 85 FARM NO. 999

YEARLY SUMMARY OF RECEIPTS

Total Accumulation by page or month	Dairy Products		Eggs Sold		Poultry Sold		Corn		Soybeans		Other Feed Crops		Hire Paid		Misc. Receipts	Other Than Farm Income	Money Rec'd From Sales of Equip. & Other	Total
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value				
OPERATOR	2	21	21	73	121	1123	124	4480	125	135	127	168	179	131	132			122
L. LORD	16	16	16	162	16	4354	164	1278	165	167	169	171	171	171				172
FARM																		

Total Accumulation by page or month	HOG RECEIPTS		CATTLE RECEIPTS		OTHER LIVESTOCK RECEIPTS		Selling Price for C.G.	Cost	Selling Price for C.G.	Selling Price for C.G.	Selling Price for C.G.	Selling Price for C.G.	Selling Price for C.G.	Selling Price for C.G.	Selling Price for C.G.	Selling Price for C.G.	Selling Price for C.G.	Selling Price for C.G.	Selling Price for C.G.
	No.	Value	No.	Value	No.	Value													
OPERATOR	13	10860	13	10860	141	47776	142	144	144	144	144	144	144	144	144	144	144	144	144
L. LORD	12	124	12	124	127	5400	127	127	127	127	127	127	127	127	127	127	127	127	127
FARM																			

Total Accumulation by page or month	MACH & EQUIP. BOUGHT		LABOR		COMMERCIAL FEED BOUGHT		FARM FEED BOUGHT		POULTRY BOUGHT		HOGS BOUGHT		CATTLE BOUGHT		OTHER LIVESTOCK BOUGHT	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
OPERATOR	13	2243	13	734	131	5400	131	151	131	131	131	131	131	131	131	131
L. LORD	13	734	13	578	131	306	131	131	131	131	131	131	131	131	131	131
FARM																

Form 1b. Year-end farm summary input form (used by permission of the Iowa Farm Business Association, Colo, Iowa)

### Code systems

In EDP packages utilizing the computer more fully, such as the mail-in and coded check programs, each farm transaction is entered into the computer. This necessitates devising some way to indicate to the computer the nature of the transaction. The most common method of doing this is by a numerical code. It is this aspect of EDP that is most foreign to subscribers. Farmers are accustomed to writing expenses or receipts under the proper column heading in a record book, as in the program previously described, rather than using a code number to indicate the nature of the entry. It is not difficult to use EDP code systems but it does require some "getting used to". The code system must be understood and properly used to receive accurate output reports and information. Assigning the proper code number to each transaction entry is one of the most important responsibilities of an EDP subscriber. Some servicing organizations will, for an additional fee, code the recorded entries and thus relieve a subscriber of this responsibility.

There are many different types of coding systems used. Form 2 illustrates a three digit code system from Rec-Chek as an example of what is used in bank oriented programs.

With this particular coding system only the most common category headings are listed. The unused code numbers are available to the user to identify items as desired for further



item specification. For example, item number 500 labeled "Feeds" could be itemized to the following feed categories:

- 501 Beef Feed
- 502 Dairy Feed
- 503 Hog Feed
- 504 Poultry Feed
- 505 Sheep Feed



CODE	CATEGORIES	CODE	CATEGORIES
000	PERSONAL & FAMILY	391	SHEEP—PURCHASED—BREEDING
001	FAMILY CAR	392	SHEEP—RAISED—BREEDING
005	CLOTHING	393	FEEDER LAMBS PURCHASED
010	CONTRIBUTIONS	394	FEEDER LAMBS—RAISED
015	DIVIDENDS	398	Sheep—Wool
017	DUES	410	POULTRY—BROILERS
018	EDUCATION	420	POULTRY—LAYERS
020	FOOD	422	Layers—Eggs
030	HOME	430	POULTRY—TURKEYS
040	INSURANCE—PERSONAL		<b>FARM EXPENSES AND INCOME</b>
045	INTEREST—PERSONAL	450	ANIMAL DRUG HEALTH SUPPLIES
049	LOAN PRINCIPAL	458	BREEDING FEES
050	MEDICAL	470	CROP CHEMICALS
057	DRUGS	500	FEEDS
065	SECURITIES, SAVINGS, INVEST	540	FERTILIZERS
075	RECREATION & ENTERTAINMENT	580	FARM FUELS, LUBRICANTS
080	TAXES—PERSONAL	590	GOVERNMENT PROGRAMS
085	UTILITIES—NON-FARM	600	FARM INSURANCE
095	WAGES, SALARIES—NON-FARM	610	FARM INTEREST
	<b>CROPS</b>	620	IRRIGATION
100	CORN	625	LIME
105	COTTON	628	LIVESTOCK REGISTRATION
109	GRASSES & LEGUME SEED CROPS	630	MISCELLANEOUS
131	OATS & RYE	660	REFUNDS
132	PASTURE	670	RENT OR LEASE
134	PEANUTS	680	RESEARCH, TESTING
136	POTATOES	690	MANAGEMENT SERVICES
139	RICE	692	Services—Banking
142	HAY	700	REPAIRS, MAINTENANCE
152	SILAGE	730	SEED AND PLANTS
154	STRAW	738	SUPPLIES
162	SOYBEANS	740	FARM TAXES
165	TOBACCO	750	FARM UTILITIES
170	WHEAT	760	VETERINARY
200	FRUITS, BERRIES, NUTS	770	FARM WAGES, SALARIES
250	VEGETABLES	800	WORK—CUSTOM
280	FOREST PRODUCTS		<b>CAPITAL INVESTMENTS, LOANS</b>
290	NURSERY PRODUCTS	901	BUILDINGS—LIVESTOCK
	<b>LIVESTOCK</b>	904	BUILDINGS—MACHINERY & SHOP
301	BEEF FEEDERS—PURCHASED	907	BUILDINGS—CROP STORAGE
302	BEEF FEEDERS—RAISED	911	EQUIPMENT—DAIRY
303	BEEF PURCHASED—BREEDING	915	EQUIPMENT—FERTILIZER
304	BEEF RAISED—BREEDING	920	EQUIPMENT—HARVESTING
331	DAIRY—DAIRY CATTLE—PURCHASE	930	EQUIPMENT—FEED AND GRAIN
332	DAIRY CATTLE—RAISED	940	EQUIPMENT—MANURE HANDLING
355	Dairy—Milk	950	EQUIPMENT—PLANTING
361	HOGS PURCHASED—BREEDING	960	EQUIPMENT—TILLAGE
362	HOGS RAISED—BREEDING	970	EQUIPMENT—TRACTOR, WHEEL
363	MARKET HOGS PURCHASED	975	EQUIPMENT—TRUCKS
364	MARKET HOGS RAISED	975	EQUIPMENT—WATER SYSTEM
385	HORSES, PONIES	980	LOAN PRINCIPAL

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Form 2. Three digit code system (used by permission of Rec-Chek Incorporated, Nevada, Iowa)

Most EDP code systems offer categories for itemizing personal and family expenses as does this system (codes 000 through 099). This is an area of farm record keeping systems which often is totally ignored or treated in a lump sum fashion. Valuable information regarding consumer spending habits can be revealed by even these simple personal and family categories. Again one could itemize categories of particular interest such

006	Clothing--Father	021	Food--Groceries
007	Clothing--Mother	022	Food--Meat
008	Clothing--Child A	023	Food--Restaurant Meals
009	Clothing--Child B	024	Food--School Lunches

Other code systems use four or more digit codes to identify specific items and transactions. The following 5 digit code system from Farm Bureau is illustrative of those systems with more than 3 digits. It is structured to identify the type of transaction and to indicate the type of item involved in the transaction. Here is how it works:

A. The first digit is used for Tax Identification.

The numbers 1 to 9 are used to identify specific kinds of transactions as follows:

- 1 = Ordinary Farm Income (100% taxable) or Ordinary Farm Expense (100% tax-deductible).
- 2 = Item Purchased for Resale (feeder cattle, feeder pigs, etc.) and the gross profit is taxable.
- 3 = Sale or Purchase of Capital Assets (breeding and dairy livestock, machinery, buildings, etc.). Sales are subject to Capital Gains Tax.
- 4 = Money Borrowed or Debt Principle Paid. Not subject to any taxes.

- 5 = Non-Farm Income or Personal Non-Farm Expense.
- 6 = Non-Farm Tax-Deductible Personal Expense (medical, dental, etc.).
- 9 = Non-Cash. This number is used to record intra-farm transactions.
- B. The second digit is used for Major Class Identification. The numbers 1 to 9 are used to identify specific classes of property or activity as follows:
- |                       |                                       |
|-----------------------|---------------------------------------|
| 0 = Labor             | 5 = Crops Related                     |
| 1 = Feed              | 6 = Machinery and Equipment           |
| 2 = Livestock         | 7 = Land, Buildings, and Improvements |
| 3 = Livestock Related | 8 = General Income and Expense        |
| 4 = Crops             | 9 = Personal Income and Expense       |
- C. The third digit is used for Specific Identification. It identifies specifically the type of major class item indicated by the second digit. For example, if the second digit is 2 (Livestock), the third digit would indicate the type of livestock. For the third digit:
- |           |             |                     |
|-----------|-------------|---------------------|
| 1 = Beef  | 4 = Dairy   | 7 = Sheep           |
| 2 = Beef  | 5 = Horses  | 8 = Hogs            |
| 3 = Dairy | 6 = Poultry | 9 = Other Livestock |
- D. The fourth and fifth numbers are used for Individual Identification to allow for recording transactions involving individual lots of livestock or individual machinery items.



An example may make this code system more clear. Suppose a farmer buys some feeder pigs. The first digit of the code number to record this transaction would be 2 since feeder pigs are an item purchased for resale. The second digit would also be 2 to designate the item as livestock, and the third number would be 8, to indicate the livestock are hogs. If the farmer desires to keep a separate record of the income and expenses charged to this group of feeder pigs, he could designate a lot number to this group by using the fourth and fifth digits of the code number. Assuming the feeder pigs are designated as group number 11, the 5 digit code number for this transaction is 22811.

There are many ways in which a coding system can be built or structured. The double-entry code system used by Pioneer Data Systems is designed to emphasize assets, liabilities, and equity accounts. The first digit of the 5 digit Pioneer code indicates the type of the account or the type of transaction. For example:

1 = Assets	3 = Net Worth	5 = Expenses
2 = Liabilities	4 = Income	

The second digit of the code serves two purposes. With asset and liability accounts the following format is used.

1 = Current Assets or Current Liabilities
2 = Intermediate Assets or Intermediate Liabilities
3 = Fixed Assets or Long-Term Liabilities

For income and expense transactions the second digit identifies the transaction in the following way.

Income	Expenses
1 = Livestock Sales	1 = Livestock Expenses
2 = Crop Sales	2 = Crop Expenses
3 = Labor and Services Income	3 = Family Expenses
4 = Investment Income	4 = Operating Expenses
5 = Other Income	5 = Other Overhead Expenses

The third digit carries the identification process still farther. For example, Intermediate Assets are identified as machinery, equipment, and breeding stock while livestock sales are broken down to hog sales, cattle sales, and the sale of other livestock. The fourth and fifth digits continue the breakdown by identifying breeding stock as sows, boars, cows, bulls, etc. Hog sales are broken down to feeder pig sales, gilt sales, sow sales, boar sales, etc.

Other EDP programs use a key work code system to identify the transactions instead of a numerical code system. The following code word examples from Michigan State University's TELFARM program illustrate this type of code system.

CATTLERSL = feeder cattle purchased for resale

GASTAXS = state gas tax refund

BORROWED = money borrowed or charged

SUPPLEMENT = supplement and soybean meal

RPRMACH = repairs for machinery

TAXINCF = Federal Income Tax paid

When evaluating EDP programs the coding system can not be overlooked; it is used on every transaction that is entered into the program. It must be well designed and contain enough flexibility to meet the needs of the farming operation.

### Input forms

The forms used to submit the record data to the EDP processing center vary with the firm offering the EDP service. With bank programs, the usual type of input forms are coded checks and special deposit slips. Form 3 illustrates a check used for this type of input procedure for Rec-Chek. The bank provides a check book size listing of the code categories to be used. An example of this has been previously illustrated in Form 2. Recording of the transaction is done at the time of the purchase. The only additional responsibility, other than writing the check, is to record the code number for the items purchased. Often a check is issued for the purchase of several items at the same store. In this case it is helpful to be able to identify the different items on the same check rather than write several checks.

With bank EDP programs, check size deposit slips also are supplied to record receipts and to identify the source of income by code number. An example of this can be seen in Form 4.



118

**JAMES C. MORRISON**  
 1765 SHERIDAN DRIVE  
 YOUR CITY, U. S. A. 60618

Feb. 23 19 72 00-6789  
2345

DAY TO THE ORDER OF **SAMPLE - VOID**  
*Farm Supply Store* \$ **651 <sup>21</sup>/<sub>100</sub>**

*Six hundred fifty one and <sup>21</sup>/<sub>100</sub>* DOLLARS

**DELUXE** National State Bank  
 YOUR CITY, U. S. A.

REC-CHEK #	AMOUNT	REC-CHEK #	AMOUNT
540	475 14	500	109 62
450	66 45		

*James C. Morrison*

Ⓢ 12345 6789 1234567

DELUXE CHECK PRINTERS - LH

Form 3. Coded check input form (used by permission of Rec-Chek Incorporated, Nevada, Iowa)

**CHECKING ACCOUNT DEPOSIT TICKET**

CODE	ENT	NO.	WT.	AMT.	CASH	CURRENCY	COIN
364	H O G	21	4494	865.10			865 10
355	M L K		8641	343.91			343 91
TOTAL FROM OTHER SIDE							
<b>TOTAL</b>							<b>1209 01</b>
LESS CASH RECEIVED							<b>5 00</b>
<b>NET DEPOSIT</b>							<b>1204 01</b>

DATE *Feb. 25* 19 *72*

*James C. Morrison*

**DELUXE** National State Bank  
 YOUR CITY, U. S. A.

**JAMES C. MORRISON**  
 1765 SHERIDAN DRIVE  
 YOUR CITY, U. S. A. 60618

00-6789  
2345

Checks and other items are received for deposit subject to the terms and conditions of this bank's collection agreement  
 BE SURE EACH ITEM IS PROPERLY ENDORSED

Ⓢ 12345 6789 123456789

Form 4. Coded deposit slip input form (used by permission of Rec-Chek Incorporated, Nevada, Iowa)

With bank offered EDP programs, processing is usually done monthly. The bank sends the coded checks and deposit slips to its processing center. The receipt and expense data recorded on the checks and deposit slips are processed for reporting back to the farmer. The bank usually receives a duplicate copy of the output information received by the farmer.

As mentioned earlier, not all EDP programs use coded checks and deposit slips to record transaction information. Forms 5 and 6 from the Farm Bureau program illustrate input forms used to record receipts and expense payments in mail-in systems. The same basic information is recorded as with check input systems, but one does not have the convenience of simply adding code numbers to a check to identify the purchase. However, with mail-in systems, it is usually possible to record more complete transaction information and submit items for which a check was not written. In coded check systems, non-checkbook type information must be recorded on supplemental input forms and mailed to the processing center to be tabulated with the coded check and deposit slip data. Thus inventories, intra-farm transfers, and other accrual information can be submitted much easier in a mail-in system.

The transactions on Forms 5 and 6 are journal entries. In this case there is not a single journal, but rather, an income journal and an expense journal. Instead of posting these journal entries to the respective ledger accounts, the







subscriber relies on the computer to perform this accounting procedure. When these input forms are mailed to the processing center at the end of the month, a keypunch operator will punch the code numbers and respective amounts onto cards or magnetic tape to be fed into the computer. The computer has been programmed to recognize the specific codes. For example, the code number 13200 for milk sales shown on Form 5 would tell the computer to add \$335.75 to the milk sales ledger account. This same procedure is repeated for every journal entry input into the computer.

#### Intra-farm transfers

If a farmer desires to measure the true contribution of each enterprise to the total farming operation, he needs to record intra-farm transfers. Examples are the transfer of calves from a beef raising enterprise to a beef feeding enterprise and the transfer of corn for feed from the corn growing enterprise to the beef feeding enterprise. The beef raising and corn growing enterprises should be credited for the value of the product transferred and the beef feeding enterprise should be charged (debited) for these same amounts just as if they had been cash transactions.

There are several methods of handling intra-farm transfer information for EDP programs. In most cases, supplemental or intra-farm journal sheets are required to record this information, but as previously illustrated, the Farm Bureau code

system is structured to facilitate coding intra-farm and non-cash transfers. In this system the number nine is used as the first digit in the five digit code as described previously, and no supplemental entry sheets are required. With EDP programs where this feature is not part of the code system, entry forms such as the one from Pioneer Data Systems (Form 7) are required. With bank programs, check size slips are often provided to record these transfer entries.

#### Correcting errors

At the bottom of Form 7 is an area for correcting errors in transactions coded in prior months. In this example, reference number 400 indicated that this entry corrects a previous month's family expense entry numbered 400. Making such errors are not uncommon and there needs to be provisions for correcting them. Errors can originate with the farmer or at the processing center. It is not always easy to detect errors of this sort in coded entries. The computer can be programmed to locate errors such as illegitimate code numbers and non-coded entries; but no matter how complete and comprehensive the EDP program, some error checking remains in the hands of the subscriber. Careful checking of the coded entries cannot be overemphasized. The coded entries should be double checked for correct code, dollar amount, and any other information required to indicate the nature of the transaction before being sent to the processing center. Output reports should be



Form 7. Mail-in input form to record intra-farm transfers (used by permission of Pioneer Data Systems, Des Moines, Iowa)



checked with bank statements, expense vouchers, and any other record information available to insure that incorrect information has not been submitted into the computer. Key punching of the record information at the processing center is also subject to human error. By checking over the output reports carefully possible errors arising in this way can be detected. Once the information gets into the computer free of error, one can be virtually 100 percent certain to get accurate, error free information in return.

#### Depreciable assets

Recording of new capital purchases and changes in depreciable assets requires detailed information, as Form 8 from Agrifax illustrates. In this area computers eliminate much work. Each machinery item, building, and depreciable breeding animal is assigned a code number to maintain its identity in the computer. When an animal is sold or a machine traded, its code number is deleted. New numbers are assigned to the new purchases.

Any of the common methods of depreciation can be used. When a farmer has only a pencil and a scratch pad to work with, human tendencies often guide him to the simpler straight-line depreciation method. For the computer the more complicated faster write-off methods are no more difficult. When programmed, it can calculate declining-balance and sum-of-the-years-digits depreciation just as fast as straight-line



Form 8. Depreciation schedule input form (used by permission of the Federal Intermediate Credit Bank, Omaha, Nebraska)

FORM 7

DEPRECIATION SCHEDULE  
FOR MACHINERY  
IMPROVEMENTS  
AND LIVESTOCK



NAME Robert Sample  
FARM NO. 02-06-01-05432

FISCAL YEAR BEGINNING (MO.-YR.) 10/17/11  
OWNER OR BUSINESS CODE 1/1

IDENTIFICATION INFORMATION			COST INFORMATION				DEPRECIATION INFORMATION							
LINE NO.	ITEM DESCRIPTION USE NO MORE THAN 16 SPACES WRITE WITH BALL-POINT PEN	IDENTIFICATION NUMBER	DATE ACQUIRED		NUMBER OF UNITS	BALANCE FOR DEPRECIATION PLUS SALVAGE (OF ITEMS) TRADED IN	CASH PAID OR PAID TO BOOT	N OR U	YEARS LIFE	INVESTMENT CREDIT	OPTIONAL ADDITIONAL 1ST YEAR DEPRECIATION	EFFECTIVE SALVAGE VALUE	METHOD: 1-5% 2-50% 3-20% 4-20%	DEPRECIATION PRIOR TO JAN. 1, 19__
			MO.	YR.										
1	JD 4020 TRACTOR	70011	1	70	1	4000.00	6000.00	N	10	700.00			2	
2	CORN PICKER	70012	1	64	1		500.00	U	10				1	250.00
3	CATTLE OILER	70013	1	69	1		209.00	N	5	4.88			1	82.20
4	HEREFORD BULL	10015	4	68	1		500.00	U	7			50.00	1	219.20
5	HEREFORD COWS	10016	1	68	20		4200.00	U	7			1000.00	1	1800.80
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														

PUNCHED \_\_\_\_\_ VERIFIED \_\_\_\_\_

depreciation. A completed depreciation schedule is illustrated in the output reports section as Form 12.

### Inventories

Some EDP programs provide net worth statements. This requires the submission of inventory information such as illustrated on Form 9 from Agrifax. The amount of cash on hand will need to be determined from the latest bank statement adjusted for transactions since the date of the statement and in-pocket cash. Crop and livestock inventories are obtained by measuring and valuation techniques. Accounts receivable and payable are obtained from liability accounts kept at the farm or as a part of the EDP package. Depreciable property such as buildings and equipment receive a value as determined in the depreciation schedule. The value of land can be entered into the computer to be recalled as needed with no value change until permanent improvements are made or general land values change significantly.

### Output Reports

The type of output reports provided varies with each firm offering EDP services. Some firms provide only cash flow information. Those offering more complete information packages provide enterprise analysis reports, depreciation schedules, net worth statements, tax summaries, family expense summaries, and farm business analysis reports, as well as cash flow



Form 9. Inventory input form (used by permission of the Federal Intermediate Credit Bank, Omaha, Nebraska)



FORM 6  
ANNUAL INVENTORY OF  
ASSETS and LIABILITIES

NAME Robert Sample  
FARM NO. 02-06-01-5432

**10171**  
FISCAL YEAR BEGINNING  
(MO., DAY)

**111**  
OWNER OR  
BUSINESS CODE

AGRIFAX SYSTEMS

LIVESTOCK		DESCRIPTION	NUMBER	\$/HD.	\$ VALUE	DESCRIPTION	NUMBER	UNIT	\$ VALUE
101	HOLSTEIN COWS		31		8525 00	28 312 MACHINERY			38000 00
102	BRED HEIFERS		14		2800 00	313			
103	OPEN HEIFERS		12		1440 00	314 AUTO			260000
104	HOLSTEIN STEERS		11		1320 00	315			
105	CALVES		25		1000 00	316			
106	LAYING HENS		4900		1372 00	317			
107						REAL ESTATE			
108						401 FARMLAND			102500 00
109						402			
110						403			
111						404			
112									
FEED AND GRAIN ON HAND									
	DESCRIPTION	QUANTITY	UNIT	\$ VALUE		SHORT TERM OBLIGATIONS (NOTES AND UNSECURED DEBTS)			
201	CONCENTRATE	4	TON	240 00		05 501 P C A			64742 12
202	CORN	2800	BU	2800 00		502 C C C			1269 00
203	OATS	1600	BU	1600 00		503			
204	HAY	80	TON	1600 00		504			
205	STRAW	30	TON	300 00		505			
206	HAYLAGE	150	TON	1500 00		ACCOUNTS PAYABLE (FEED, GAS, BILLS, ETC.)			
207	CORN SILAGE	200	TON	1200 00		506 FARMERS C C C P			1200 00
208						507 VETERINARY			300 00
209						508			
210						509			
211						510			
212						511			
212						512			
OTHER ASSETS									
49	FERTILIZER					REAL ESTATE MORTGAGES AND CONTRACTS			
302	A/R DESCRIBE RECEIVABLE			1002 00		01 601 FED LAND BANK			30000 00
303	A/R DESCRIBE RECEIVABLE					04 602 BANK LOCAL BANK			5000 00
304	A/R DESCRIBE RECEIVABLE					03 603 INS. CO.			
305	A/R DESCRIBE RECEIVABLE					08 604 INDIVIDUAL			
01	FARM CHECKBOOK			796 00		605			
71	SAVINGS					606			
308						607			
608						608			
70	P C A & F L B STOCK			3685 00		801 TOTAL ASSETS			176644 00
310	STOCK			2424 00		802 TOTAL DEBTS			102511 12
71	CASH VAL INS. (LIFE)			500 00		803 NET WORTH			74132 88

PUNCHED VERIFIED

reports. Together, all these reports can supply a farmer with a relatively complete physical and financial picture of his farm business operation. In addition these reports provide data useful for business analyses and forward planning.

#### Cash flow reports

Cash receipt and expense reports are usually printed monthly or quarterly in EDP programs. As shown in Form 10 from the Farm Bureau, the amounts for the current month and the year-to-date are usually printed for comparative purposes. This eliminates the need to add up the totals from previous months to determine the year-to-date figure. Form 11 from Pioneer Data Systems illustrates an alternative type of cash flow report. In this case, the report presents information relating only to one month. Each cash journal entry for the month is printed including the date, reference, payee, enterprise, description, and amount to aid in identifying the specific cash flow entry. In this EDP program, the intra-farm transfers for the month are also printed even though having no effect on the cash flow analysis.

#### Tax reports

The nature of reports providing income tax information varies with each EDP program. Most EDP programs provide depreciation schedules which can be attached to the Schedule D income tax form. Many EDP programs provide a tax summary in



Form 10. Cash flow report (used by permission of the Farm  
Bureau Agricultural Business Corporation,  
Des Moines, Iowa)

Farm Bureau Agricultural Business Corp.  
507 10th Street  
Des Moines, Iowa 50309  
Phone (515) 282-8171

### CASH RECEIPTS AND PAYMENTS

Freddie Computer  
Farm Records Service

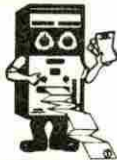
Name **Modern Farmer** Soc. Sec. No. **123-45-6789** Date **12-31-70** Farm No. **1-01-000** Page **I**

CASH FARM RECEIPTS				CASH FARM PAYMENTS			
Kind	Current Period	Year to Date	Items	Current Period	Year to Date		
1 Cattle	665.78	2,919.96	Labor hired	235.50	1,766.65		
2 Beef calves			Repairs, maintenance	316.56	1,688.46		
3 Sheep			Interest	25.40	2,300.28		
4 Swine	832.11	4,691.16	Rent of farm, pasture				
5 Poultry			Feed purchased	583.84	1,763.73		
6 Dairy products	239.15	2,706.05	Seed, plants purchased		323.06		
7 Eggs			Fertilizers, lime		1,746.08		
8 Wool			Machine hire	196.71	757.65		
9 Cotton			Supplies purchased	8.34	205.63		
10 Tobacco			Breeding fees				
11 Vegetables			Veterinary, medicine	306.88	102.86		
12 Grain	893.87	3,789.99	Gasoline, fuel, oil	116.11	517.57		
13 Fruits and nuts			Storage, warehouseing				
14 Other (specify):			Taxes		1,055.92		
15 <i>Bees</i>			Insurance		204.96		
16 <i>Hay</i>			Utilities	494.66	548.67		
17 <i>Hayry</i>			Freight, trucking	234.50	303.76		
18 <i>Wood &amp; Lumber</i>			Conservation expenses				
19 <i>Seeds Sold</i>			Retirement plans, etc.				
20 <i>Other Livestock Sold</i>			Other (specify):				
21 <i>Other Products</i>			Auto (Farm Share)	168.10	304.00		
22 Machine work			Truck	194.80	687.53		
23 Patronage dividends, Refunds & Rebates		89.65	Advertising				
24 Per-unit retains			Poultry & Other Lvstk. Purchased				
25 Agricultural program payments:			Commissions, Yard Fees, etc.				
26 (1) Cash	658.00	658.00	Misc. Livestock Expense		19.84		
27 (2) Materials and services			Office Supplies	152.50	76.80		
28 Commodity Credit loans under election		3,677.89	Mgmt., Records, Tax, Legal		75.00		
29 Federal gasoline tax credit		42.87	Bank Charges, Org. Dues		13.28		
30 State gasoline tax refund		74.62	Meetings, Travel (Reimb.)		65.00		
31 Other (specify):			Other Misc.				
32 Total Ordinary Farm Income	3,288.91	18,649.99	Total Ordinary Farm Expenses	1,637.59	13,526.63		
33 Total Sales—Purchased for Resale	7,063.02	16,690.79	Total Payments—Purchased for Resale	850.00	3,534.00		
34 Breeding & Dairy Lvstk. Sold		853.29	Breeding & Dairy Lvstk. Purchased		753.50		
35 Machinery & Equip. Sold			Machinery & Equip. Purchased		1,243.00		
36 Bldg., Tile, Fence etc. Sold			Bldg., Tile, Fence etc. Purch.				
37 Total Money Borrowed		16,810.15	Total Debt Principal Paid	824.00	5,300.00		
38 Total Personal Income		94.75	Total Personal Expenses		1,337.26		
39			Total Personal Tax Deductible Expenses	383.88	812.61		
40 TOTAL CASH RECEIPTS	10,351.93	53,098.97	TOTAL CASH PAYMENTS	3,349.77	26,507.00		

**FOR PERSONAL USE ONLY**

Farm Checkbook Balance	
Beginning of month \$	1,569.13
Net Cash Income (Expense)	7,001.96
Adjustments	
Farm Checkbook Balance	
End of Month	8,571.09

**FREDDIE COMPUTER**



**FARM RECORDS SERVICE**

**Use this Form to Estimate Income**

<b>For Tax Purposes (Cash Method)</b>	
Ordinary Farm Income (Year-to-date)	18,649.99
Ordinary Farm Exp. (Year-to-date)	13,526.63
Net	5,123.36
Plus Gross Profit on sale of Items Purchased for Resale	6,796.19
Plus Estimated taxable income from Sale of Breeding & Dairy & other Cap. Assets (Schedule D)	426.00
Total estimated gross income	12,345.55
Minus estimated depr. expense	2,248.00
Estimated taxable income year-to-date	10,097.55

Form 11. Cash flow report (used by permission of Pioneer Data Systems, Des Moines, Iowa)



PLEASANT VIEW STOCK FARM  
CASH FLOW ANALYSIS  
FOR THE MONTH ENDED 6-30-70

RECEIPTS

DATE	REFERENCE	PAYOR	ENTERPRISE	ACCOUNT	DESCRIPTION -OR- QUANTITY UNIT	UNIT PRICE	AMOUNT
5-30-70	718	TOM LOURY	BREEDING CATTLE	STOCK RENT RCVD	RULL RENT		\$150.00
6-11-70	715	CO-OP ELEVATOR	COMMERCIAL CORN	CORN SALES	1,450-15 BUSHEL	1.23	\$1,783.64
6-24-70	717	CLINE PACKERS	EAST SIDE	LIVESTOCK SALES	10-00 HEAD	56.40	\$564.00
6-02-70	714	MIDWEST PACKING CO	LOTS	LIVESTOCK SALES	50-00 HEAD	337.98	\$16,899.76
5-14-70	716	MIDWEST PACKING CO	LOTS	LIVESTOCK SALES	A-00 HEAD	351.93	\$2,615.40
6-16-70		MERLE BROWN	MACHINERY	CUSTOM WORK INC	CUSTOM WORK		\$250.00

TOTAL CASH INFLOW - \$22,461.85

EXPENDITURES

DATE	REFERENCE	PAYEE	ENTERPRISE	ACCOUNT	DESCRIPTION -OR- QUANTITY UNIT	UNIT PRICE	AMOUNT
6-17-70	429	FARM CENTER	BREEDING CATTLE	COMMISSIONS	TRANSFER FEE		\$2.50
6-23-70	434	INTERSTATE TRUCKING	BREEDING CATTLE	TRUCKING EX.			\$6.00
6-15-70	424	PIONEER	COMMERCIAL CORN	SEED PURCHASES	6-00 BUSHEL	20.00	\$120.00
6-11-70	420	LEES	FAMILY	CLOTHING	WORK CLOTHES		\$12.12
6-15-70	425	CHURCH	FAMILY	CONTRIBUTIONS			\$20.00
6-17-70	430	DR NELSON	FAMILY	DENTAL EXPENSE			\$35.00
6-02-70	434	SAFEMAY	FAMILY	GROCERIES	GROCERIES		\$18.41
6-30-70	436	DAHLS	FAMILY	GROCERIES			\$20.17
6-03-70	435	SEARS	FAMILY	HOUSEHOLD EX.	SWITCH		\$4.07
6-15-70	426	IOWA MUTUAL	FAMILY	LIFE INSURANCE	LIFE INSURANCE		\$37.00
6-30-70	437	DAHLS	FAMILY	MISC. FAMILY EX	CASH		\$10.00
6-10-70	427	R & T	FAMILY	MISC. FAMILY EX			\$3.00
6-16-70	428	IOWA TELEPHONE	FAMILY	PHONE	PHONE TWINE		\$18.14
6-14-70	431	JONES IMPLEMENT	HAY	MISC. CROP EX.	60-00 TONS	1.50	\$90.00
6-15-70	421	HILL WESLYAN	LOTS	CORN- FEED EX.	DEAD CALF		\$3.00
6-10-70	419	THOMAS RENDERING	LOTS	MISC. LVSK. EX.	150-00 GALLON	.28	\$42.25
6-11-70	421	CO-OP	MACHINERY	FUEL	WRENCH		\$1.03
6-12-70	422	WESTERN AUTO	MACHINERY	HAND TOOLS	GREASE		\$2.60
6-05-70	416	CO-OP	MACHINERY	LUBRICANTS			\$3.09
6-22-70	433	HARRYS WELDING	MACHINERY	MISC. OVERHEAD	SUPPLIES		\$6.44
6-20-70	432	CO-OP	MACHINERY	SUPPLIES	MISCELLANEOUS LABOR		\$12.50*
6-26-70	435	HARRY WALTERS	TOTAL BUSINESS	LABOR	SAFE DEPOSIT BOX		\$4.00
6-08-70	417	HOME STATE BANK	TOTAL BUSINESS	MISC. OVERHEAD	10-00 HEAD	58.72	\$587.18
6-08-70	418	LLOYD BAKER	WEST SIDE	HOGS PURCHASED			\$1,041.49

TOTAL CASH OUTFLOW - \$1,041.49

INTRA-BUSINESS TRANSFERS

DATE	ENTERPRISE	-DEBIT-	ACCOUNT	-CREDIT-	ENTERPRISE	ACCOUNT	DESCRIPTION -OR- QUANTITY UNIT	UNIT PRICE	AMOUNT
5-18-70	FAMILY		53010		FAMILY	53040	CORRECTION		\$1.85
6-01-70	LOTS		51130		FEED CORN	42020	3,000-00 BUSHEL	1.00	\$3,000.00
6-01-70	BOARS		51130		FEED CORN	42020	120-00 BUSHEL	1.00	\$120.00
6-01-70	BREEDING CATTLE		51170		HAY	42050	15-00 BALE	.60	\$9.00
6-02-70	LOTS		41315		TOTAL BUSINESS	11510	50-00 HEAD	228.16	\$11,408.00
6-10-70	LOTS		41315		TOTAL BUSINESS	11510	1-00 HEAD	60.00	\$60.00
6-19-70	LOTS		41315		TOTAL BUSINESS	11510	5-00 HEAD	147.10	\$735.50
6-24-70	EAST SIDE		41315		TOTAL BUSINESS	11520	10-00 HEAD	25.00	\$250.00
6-30-70	FEED CORN		42025		TOTAL BUSINESS	11610	3,420-00 BUSHEL	1.00	\$3,420.00
6-11-70	COMMERCIAL CORN		42025		TOTAL BUSINESS	11610	1,450-15 BUSHEL	1.00	\$1,450.15
6-30-70	HAY		42055		TOTAL BUSINESS	11640	15-00 BALE	.60	\$9.00
6-06-70	TOTAL BUSINESS		11520		WEST SIDE	41315	10-00 HEAD	58.72	\$587.18

NET CASH INFLOW - \$22,340.36

\* UNITS RECORD NOT UPDATED BECAUSE QUANTITY AND UNIT NOT PROPERLY CODED

October or November listing all receipts and expenses for the year-to-date to aid subscribers in planning purchases and sales during the remainder of the year. Also, some income statements are patterned after Internal Revenue Service forms for the convenience of reporting taxes. In other programs, the information needed for tax reporting must be drawn from the various accounting reports provided. Regardless of the format of reporting information, all EDP programs are tax conscious and are designed to facilitate the preparation of income tax returns.

#### Depreciation schedule

Nearly all EDP depreciation schedules are of the type shown in Form 12. Usually the depreciable assets are grouped into such categories as livestock, machinery and equipment, and buildings and improvements. Totals are tabulated for each category and for the total schedule. Note that several depreciation methods have been used in the report shown.

#### Income statement

The Farm Bureau income statement illustrated in Form 13 has been tabulated on the cash basis. Since most farmers pay taxes on the cash basis, most EDP income statements are tabulated using this method. However, accrual income statements also can be tabulated with some single-entry programs. In double-entry programs, only accrual income statements are provided. The format of the statement illustrated parallels

Form 12. Depreciation Schedule (used by permission of the Farm Bureau Agricultural  
Business Corporation, Des Moines, Iowa)





Form 13. Income statement (used by permission of the Farm  
Bureau Agricultural Business Corporation,  
Des Moines, Iowa)

Farm Bureau Farm Records  
507 10th Street  
Des Moines, Iowa 50309  
Phone (515) 282-8171

# FARM INCOME AND EXPENSES

Farm Record - Section  
For Farm Bureau Members

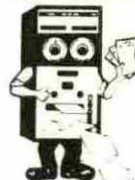
Name **Modern Farmer** Soc. Sec. No. **123-45-6789** Date **12-31-70** Farm No. **1-01-000** Page **1**

**Part I** Farm Income - Cash Receipts and Disbursements Method  
Do not include sale of livestock held for draft, breeding, or show purposes; report such sales on Schedule D.

Sales of Purchased Livestock and Other Items Purchased for Resale

a. Description	b. Amount received	c. Cost (less 1%)	d. Profit (or loss)
Beef Cattle	12487 43	7328 60	5 15883
Sheep	1306 25	1172 00	134 25
Hogs	2897 11	1394 00	1 50311
<b>TOTAL</b>	<b>16690 79</b>	<b>9894 60</b>	<b>6 79619</b>

**FARM BUREAU ATTACH TO  
IRS FORM  
1040F**



Transfer only total profit (or loss) of Sales of Items purchased for resale to line 3d 1040F. Transfer only total on line 26 & line 49 to line 26 & line 49 on 1040F.

**FARM RECORDS**

Sales of Market Livestock and Produce Raised and Held Primarily for Sale and Other Farm Income

Kind	Quantity	Amount
4 Cattle		\$ 2,919 96
5 Beef calves		
6 Sheep		
7 Swine		4 691 16
8 Poultry		
9 Dairy products		2 706 05
10 Eggs		
10a Wool		
12 Cotton		
14 Tobacco		
14 Vegetables		
15 Grain		3 789 99
16 Fruits and nuts		
17 Other (specify)		
Beehives		
Honey		
Honey		
Wood & Lumber		
Sawdust		
Other Livestock sold		
Other Products		
<b>OTHER FARM INCOME</b>		
18 Machine work		
19 Patronage dividends, Refunds & Rebates		89 65
20 Per unit returns		
21 Agri. off-inr. program payments		
(a) Cash		658 00
(b) Materials and services		
22 Commodity Credit loans under election (or forfeited)		3 677 89
23 Federal gasoline tax credit		42 67
24 State gasoline tax refund		74 62
25 Other (specify)		
26 Add lines 4 through 25		<b>18 649 99</b>

**Part II** Farm Deductions **F**

Do not include personal or living expenses not attributable to production of farm income, such as taxes, insurance, repairs, etc., on your dwelling.

Items	Amount
29 Labor hired	\$ 1,766 55
30 Repairs, maintenance	688 46
31 Interest	2,300 28
32 Rent of farm, pasture	
33 Feed purchased	1,763 73
34 Seed, plants purchased	323 06
35 Fertilizers, lime	1,746 08
36 Machine hire	757 65
37 Supplies purchased	205 63
38 Breeding fees	
39 Veterinary, medicine	102 86
40 Gasoline, fuel, oil	517 57
41 Storage, warehousing	
42 Taxes	1,055 92
43 Insurance	204 96
44 Utilities	548 67
45 Freight, trucking	303 76
46 Conservation expenses	
47 Retirement plans, etc. (other than your share - See separate instructions)	
48 Other (specify):	
Auto (Farm Share)	304 00
Truck	687 53
Advertising	
Poultry & Other Livstk. Purchased	
Commissions, Yard Fees, etc	
Misc. Livestock Expense	19 84
Office Supplies	76 80
Mgmt., Records, Tax, Legal	75 00
Bank Charges, Org. Dues	13 28
Meetings, Travel (Reimb.)	65 00
Other Misc.	
49 Add lines 29 through 48	<b>\$ 13,526 63</b>



that of Form 1040F of the Internal Revenue Service. This report is designed to be attached to the income tax forms to support the totals which are entered on Form 1040F.

#### Net worth statement

Form 14 from Agrifax illustrates the format of EDP net worth statements. Not all EDP packages provide this report or information. Some EDP programs provide this information as often as monthly. In addition to the ending net worth information, the Agrifax report also includes a brief listing of assets, liabilities, and net worth at the beginning of the year. Thus, one can identify some of the basic trends which have occurred during the past year. At the bottom of the statement illustrated, there is a place to verify its accuracy with the signature of the subscriber after checking that the information correctly reflects his financial position. This indicates to the subscriber's local Production Credit Association that the information is accurate and permits them to use this report in evaluating his financial position and credit needs for the coming year.

#### Farm business analysis reports

In addition to financial statements, the more complete EDP packages also provide farm business analysis reports. Whole farm analysis reports highlight income, expenses, and production in various ways to call a farmer's attention to key

01-01-  
MODEL 200ROBERT J SAMPL  
R R 1  
ANYTOWN U. S. A. 55551MEMBER NO 02-06-01-05432  
OWNER NO 11  
PAGE NO 1 06/20/

## FINANCIAL STATEMENT

## ASSETS

## LIABILITIES

11 HOL COW	32	8,700.00	05 PCA	58,188.00
11 BRED HFRS	13	2,600.00	51 FEED	331.00
11 OPEN HFRS	17	2,040.00	08	1,500.00
11 CALVES	24	960.00		
12 STEERS	20	2,400.00		
15 LAYING HENS	6,317	1,895.10		
20 CORN	2,400 BU	2,400.00		
20 OAT	3,000 BU	1,800.00		
20 HAY	3,000 BAL	1,200.00		
20 STRAW	1,500 BAL	450.00		
20 HAYLAGE	150 TON	1,500.00		
20 CORN SILAGE	150 TON	900.00		
20 CONCENTRATE	3 TON	200.00		
51 A/REC		150.00		
52 SUPPLIES		480.00		
01 FARM CHECKBOOK		1,437.97		
71 SAV & OTHER CAS		25.00		
70 PCA STOCK		4,060.00		
98 OTHER ST & BOND		1,800.00		
98 CASH VAL INS		600.00		
28 MACH		35,160.00		
28 AUTO		2,340.00		

TOTAL CUR ASSETS

\$73,098.07

TOTAL CUR DEBTS

\$60,019.00

70 REAL ESTATE

100,875.00

08 INDIVIDUAL

34,000.00

TOTAL ASSETS

\$173,973.07

TOTAL DEBTS

\$94,019.00

NET WORTH

\$79,954.07

CHANGE NET WORTH

\$5,821.19

TOTAL CUR ASSETS	74,144.00	73,098.07
TOTAL ASSETS	176,644.00	173,973.07
TOTAL CUR DEBTS	67,511.12	60,019.00
TOTAL DEBTS	102,511.12	94,019.00
NET WORTH	74,132.88	79,954.07

I hereby certify that this statement is true and correct.

Date signed: \_\_\_\_\_

Signature \_\_\_\_\_

Form 14. Net worth statement (used by permission of the  
Federal Intermediate Credit Bank, Omaha, Nebraska)

analysis figures which give some indication of his efficiency and quality of management in the farming operation. Forms 15 and 16 from the Iowa Farm Business Association illustrate whole-farm business analysis reports. Some EDP programs do not supply whole-farm management information of this type. Other EDP programs supply guideline ratios such as livestock returns per \$100 feed fed, power and equipment investment per crop acre, current assets to current liabilities, and total liabilities to total net worth. EDP programs offered by universities and farm business associations often provide comparative analysis figures as contained in Forms 15 and 16. As a result, each subscriber is able to compare each aspect of his own farming operation with average farm figures of other subscribers.

Comparative analysis information is good in that it indicates to a subscriber how his farming operation compares to others and points to strong and weak areas of his business. But average figures can be misleading in that often they contain many varied types of farming operations and thus may be difficult to apply to specific situations. Also, what may be an economic level of production for one farmer may not be for another farmer. It would be more useful to compare common enterprises rather than an aggregate of enterprises of several types.



Form 15. Farm business analysis report (used by permission of the Iowa Farm Business Association, Colo, Iowa)

320 ACRE SIZE GROUP

	YOUR FARM ANALYSIS			320 ACRE SIZE GROUP		
	OPERATOR	LORD	TOTAL FARM	HIGH PROFIT THRD	AVG. PROFIT	LOW PROFIT THRD

MANAGEMENT RETURN

DISTRIBUTION OF NET FARM INCOME	\$ 8340	3558	11898	14711	8012	849	11202
PLUS INTEREST PAID	\$ 3534	0	3534	2033	2150	2971	2701
LESS 7 PERCENT INT. ON WORKING ASSETS	\$ 3947	0	3947	3552	3263	3159	4688
LESS 5 PERCENT INT. ON FIXED ASSETS	\$ 3000	3400	6400	4931	4431	4183	6111
LESS OPERATOR LABOR AT \$400 PER MONTH	\$ 4800	0	4800	4773	4803	4788	5094
LESS FAMILY LABOR AT \$300 PER MONTH	\$ 0	0	0	334	304	265	426
** MANAGEMENT RETURN	\$\$\$ 127	158	285	3154	-2639	-8575	-2416

SIZE OF BUSINESS

FEED AND LIVESTOCK INVENTORY	\$ 47386	0	47386	38742	35689	35482	52235
MACHINERY AND EQUIPMENT INVENTORY	\$ 9004	0	9004	11854	10800	9525	14547
LAND AND IMPROVEMENTS INVENTORY	\$ 60000	68009	128000	98615	88630	83663	122222
TOTAL CAPITAL MANAGED	\$\$\$ 116390	68000	184390	149211	135118	128669	189005
TOTAL FARM ACRES OWNED PLUS RENTED			320	317	310	301	419
TOTAL CROP ACRES			275	249	235	227	316
TOTAL ROTATED ACRES			290	265	255	248	342
MAN-MONTHS OF LABOR			14	15	14	15	18

SOURCES OF INCOME GROSS PROFITS

TOTAL GROSS PROFITS	\$\$\$ 30993		30993	32239	28333	19223	35427
GROSS VALUE OF CROPS PRODUCED	\$ 2307		2307	21374	18304	16314	26207
LIVESTOCK INCREASE OVER FEED	\$ 7174		7174	9119	5953	2419	7821
MISCELLANEOUS	\$ 812		812	1751	1076	430	1399

LAND USE AND CROP PRODUCTION

CORN GRAIN	ACRES	113	138	123	114	168
YIELD BU. PER ACRE		96	96	88	80	90
CORN SILAGE	ACRES	20	5	7	10	16
YIELD TONS PER ACRE		15	12	12	11	13
OAT	ACRES	48	12	14	13	13
YIELD BU. PER ACRE		73	58	54	47	56
SOYBEAN	ACRES	55	46	41	32	54
YIELD BU. PER ACRE		27	33	28	25	28
HAY	ACRES	39	19	25	29	27
YIELD TONS PER ACRE		3	3	3	3	4
OTHER ROW CROPS	ACRES	0	11	6	5	10
DIVERSED ACRES		0	14	18	21	24
TOTAL DIVERSED ACRES PAYMENT	\$	0	923	1128	1365	1572
DIVERSED ACRES PAYMENT PER ACRE	\$	0	66	64	64	64
ROTATED PASTURE ACRES		15	17	20	21	27
PERCENT ROTATED LAND IN ROW CROPS		65	76	69	65	72
FERTILIZER COST PER ROTATED ACRE	\$	7.48	8.63	9.28	10.29	10.86
FERTILIZER COST PER CORN ACRE	\$	16.30	16.00	18.29	20.53	20.23
** GROSS VALUE OF CROPS PER ROTATED ACRE	\$	79.33	79.89	70.97	65.02	75.77

Form 16. Farm business analysis report (used by permission of the Iowa Farm Business Association, Colo, Iowa)



YEAR 1967 COUNTY 00 FARM NO. 999 ASSOCIATION NO. 99

LIVESTOCK PRODUCTION	YOUR FARM ANALYSIS				TOTAL FARM	HIGH PROFIT THIRD	AVG. PROFIT	LOW PROFIT THIRD	AREA AVG.
	OPERATOR	LAND-	LORD	FARM					
NET LIVESTOCK INCREASE	\$			28664	28101	24246	20804	35953	
VALUE OF FEED FED TO LIVESTOCK	\$			21490	18988	18293	18325	28132	
** LIVESTOCK RETURNS PER \$100 FEED FED	\$			133	148	133	114	128	
BEEF INCREASE PER CWT.	\$			22113	2358	2413	2419	2425	
NO. OF CATTLE PURCHASED				149	81	89	92	167	
NO. OF CATTLE SOLD				142	89	94	97	175	
WEIGHT INCREASE	\$			58125	51593	50646	53848	88247	
VALUE INCREASE	\$			12416	11656	11050	11181	19751	
BEF. FEED RETURN	\$			121	129	118	103	121	
NO. OF BEEF COWS				0	14	13	14	14	
HOG INCREASE PER CWT.	\$			17885	1891	1954	1899	1908	
NO. OF HOGS PURCHASED				2	21	31	23	41	
NO. OF HOGS SOLD				414	355	311	240	362	
WEIGHT INCREASE	\$			90790	76729	64634	47083	81464	
VALUE INCREASE	\$			16248	15342	12061	8577	14557	
HOG FEED RETURN	\$			145	162	149	117	147	
PIGS WEANED PER LITTER				6475	792	738	6473	751	
TOTAL NO. OF LITTERS				63	509	427	333	463	
TOTAL PIGS WEANED				425	404	315	225	348	
DAIRY INCREASE PER COW	\$			0	364	331	322	356	
NO. OF DAIRY COWS				0	28	27	26	37	
VALUE INCREASE	\$			0	1023	884	842	1318	
DAIRY FEED RETURN	\$			0	054	006	000	003	
POULTRY INCREASE PER UNIT	\$			0	266	397	355	365	
NO. OF HENS				0	32	58	59	55	
VALUE INCREASE	\$			0	86	230	209	203	
POULTRY FEED RETURN	\$			0	69	112	84	106	
TOTAL OTHER LIVESTOCK INCREASE	\$			0	-6	22	-5	125	
FEED FED TO OTHER LIVESTOCK	\$			0	0	0	0	0	
MACHINERY AND LABOR USE									
** MACHINE AND POWER COST PER ROTATED ACRE	\$			22172	2288	2319	23193	24111	
MACHINE AND POWER INVESTMENT PER ROT. ACRE	\$			31005	4447	4198	3822	4446	
ROTATED ACRES PER MAN				248	216	212	204	228	
LIVESTOCK INCREASE PER MAN	\$			24499	22876	20127	17171	23935	
** GROSS PROFITS PER MAN	\$			28490	26245	21029	15867	23585	
INCOME AND COST RATIOS									
GROSS PROFITS PER ACRE	\$			96485	10156	8184	63182	8460	
TOTAL EXPENSE PER ACRE	\$			59267	5522	5596	6100	5785	
NET FARM INCOME PER ACRE	\$			37118	4634	2588	282	2675	
** GROSS PROFITS PER DOLLAR EXPENSE	\$			1362	184	146	1105	146	
NET FARM INCOME PER DOLLAR EXPENSE	\$			162	84	46	105	46	

### Enterprise analysis reports

EDP programs also have the capability of producing enterprise analysis reports accurately and easily if the required record information has been recorded. This would include recording intra-farm transfers and a detailed itemization of expenses and receipts to the respective enterprises. Form 17 from Pioneer Data Systems analyzes a livestock feeding enterprise. While Form 18 from Agrifax is an analysis of a dairy enterprise. EDP programs permit all kinds of enterprise analysis possibilities. Not only can one analyze the major crop and livestock enterprises, but also individual lots or pens of livestock or fields of crops. For example, a farmer may feed hogs in confinement, in drylot, and on pasture on his farm and desire to know if one method is more profitable than another. Each of the three hog production methods could be enterprised for this analysis. Some EDP subscribers enterprised a large farm machine such as a combine to determine its cost of operation in relation to the amount of work performed. This is especially useful where the machine is used for custom work and thus generates cash income to the farm operation.

A word of caution is needed here in regard to enterprise analysis reports. It may sound simple to get this information from an EDP program. In a way, this is true, in that it only takes the computer a few extra seconds to print out the report. But, the report is only as good as the information recorded on

PLEASANT VIEW STOCK FARM  
 ENTERPRISE ANALYSIS-FEED CORN  
 FOR THE 3 MONTH PERIOD ENDED 06-30-70

	** ** ** ** SECOND QUARTER ** ** ** **		** ** ** ** YEAR-TO-DATE ** ** ** **	
	DOLLARS	UNITS	DOLLARS	UNITS
		UNIT VALUE		UNIT VALUE
REGULAR INCOME	\$ 6,120.00-	6,120.00-	\$ 10,120.00-	10,120.00-
INV. CHANGE	\$ 6,120.00-	1.00	\$ 10,120.00-	1.00
TOTAL	\$ 6,120.00-		\$ 10,120.00-	
INTRA-FARM INCOME	\$ 6,120.00	1.00	\$ 10,120.00	1.00
CORN SALES	\$ 6,120.00		\$ 10,120.00	
TOTAL	\$ 6,120.00		\$ 10,120.00	
TOTAL INCOME	\$ -00		\$ -00	
REGULAR EXPENSE	\$ 40.00	2.00	\$ 160.00	8.00
SEED PURCHASES	\$ 116.00		\$ 534.00	
FERTILIZER EX.	\$ 80.00		\$ 80.00	
INSECTICIDE	\$ 238.00		\$ 774.00	
TOTAL	\$ 238.00		\$ 774.00	
INTRA-FARM EXPENSE	\$ -00		\$ -00	
TOTAL	\$ 238.00		\$ 774.00	
TOTAL PROFIT OR LOSS	\$ 238.00-		\$ 774.00-	
NET WORTH GAIN OR LOSS	\$ 6,358.00-		\$ 10,844.00-	

Form 17. Enterprise analysis report (used by permission of Pioneer Data Systems, Des Moines, Iowa)



Form 18. Enterprise analysis report (used by permission of the Federal Intermediate  
Credit Bank, Omaha, Nebraska)



12-31-  
MONTH ENDING  
MODEL 200

ROBERT J SAMPLE  
R R 1  
ANYTOWN U. S. A. 55551

02-06-01-05432  
OWNER NO 11

* FINAL REPORT *		E N T E R P R I S E   A N A L Y S I S		5110	DAIRY	YEAR TO DATE
AVERAGE NUMBER COWS						34
POUNDS MILK SOLD/COW						15,128
PRICE/CWT MILK						\$4.61
OTHER INCOME/CWT MILK						\$ .60
TOTAL INCOME/CWT MILK						\$5.21
MILK INCOME/COW						\$698.01
OTHER INCOME/COW						\$90.50
TOTAL INCOME/COW						\$788.51
COST PURCHASED FEED/CWT MILK						\$ .24
COST RAISED FEED/CWT MILK						\$1.62
PRODUCTION COSTS/CWT MILK						\$2.32
TOTAL COSTS/CWT MILK						\$2.32
TOTAL COSTS/COW						\$350.98
MARGIN/CWT MILK						\$2.29
HOURS OPERATOR & FAMILY LABOR						* NOT REPORTED

\* HAVE YOU ACCURATELY REPORTED THE INFORMATION REQUESTED

the input forms. To accurately analyze the three hog producing methods, all feed going to each group of hogs should be weighed, valued, and recorded. Veterinary and medicine expenses and other variable expenses must be itemized for each lot. The fixed costs of facilities, including depreciation, needs to be allocated to each lot, and operator labor charges should be specified for each group of hogs. Often EDP subscribers fail to realize the amount of detailed information that is necessary for accurate enterprise analysis reports.

#### Historical summary

Form 19 illustrates another capability of the computer. With proper data storage, reports summarizing key information over a period of years can be produced. In addition to the balance sheet illustrated in Form 18, historical summaries of income statements, financial ratios, and farm production could be produced. Historical summaries such as these present a concise long run picture of the farm business operation. With this type of information one can easily identify trends which have been taking place and better analyze what really has been occurring in the farming operation.

#### External Services Provided

External services most commonly provided as part of EDP packages include farm management consultation, farm tours, farm analysis meetings, tax service, and forward planning.



Form 19. Historical comparative analysis summary (10, p. 68)

John P. Recorder  
R. 1  
Hometown, Indiana

Balance Sheet

	Dec. 1965	Dec. 1966	Dec. 1967	Dec. 1968	Dec. 1969
<b>Assets</b>					
<b>Farm Assets</b>					
<b>Current Assets</b>					
Beef Cattle Inv.	36478	37680	31231	27240	26036
Hogs Inventory	3295	3122	5675	6980	8860
Corn Inventory	5650	7264	2984	9622	7948
Com. Feed Inv.	**	**	2609	**	2400
All Other Cur. Assets*	460	210	77	180	346
<b>Total Current Assets</b>	<b>45883</b>	<b>48276</b>	<b>42576</b>	<b>44022</b>	<b>45589</b>
<b>Fixed Assets</b>					
Land	124354	124354	124354	124354	125054
Buildings + Improv.	10680	9874	15486	15142	16240
Machinery + Equip.	9675	11240	10897	11476	14568
<b>Total Fixed Assets</b>	<b>144709</b>	<b>145468</b>	<b>150737</b>	<b>150972</b>	<b>155862</b>
<b>Total Farm Assets</b>	<b>190592</b>	<b>193744</b>	<b>193313</b>	<b>194994</b>	<b>201451</b>
<b>Non-Farm Assets</b>					
<b>Current Assets</b>					
Cash Val. of Life Ins.	1145	1238	1342	1448	1550
Cash in Bank	480	**	1460	787	650
Bonds	500	500	500	500	500
Accounts Receivable	**	**	**	**	468
All Other Cur. Assets*	28	23	41	52	132
<b>Total Current Assets</b>	<b>2153</b>	<b>1761</b>	<b>3343</b>	<b>2787</b>	<b>3300</b>
<b>Fixed Assets</b>					
Buildings + Improv.	18468	19450	21592	21376	23550
<b>Total Fixed Assets</b>	<b>18468</b>	<b>19450</b>	<b>21592</b>	<b>21376</b>	<b>23550</b>
<b>Total Non-Farm Assets</b>	<b>20621</b>	<b>21211</b>	<b>24935</b>	<b>24163</b>	<b>26850</b>
<b>Total Assets</b>	<b>211213</b>	<b>214955</b>	<b>218248</b>	<b>219157</b>	<b>228301</b>
<b>Liabilities</b>					
<b>Current Liabilities</b>					
Notes Payable	31956	26820	25225	19146	15400
Accounts Payable	**	475	**	769	600
Taxes Payable	**	375	**	501	504
All Other Cur. Liabilities*	160	240	138	342	287
<b>Total Current Liabilities</b>	<b>32116</b>	<b>27910</b>	<b>25363</b>	<b>20758</b>	<b>16893</b>
<b>Fixed Liabilities</b>					
Real Estate Mortgages	95080	93880	92680	91680	88480
Notes Payable	**	**	4240	3270	3020
All Other Fixed Liabil.*	541	274	515	182	460
<b>Total Fixed Liabilities</b>	<b>95621</b>	<b>94154</b>	<b>97435</b>	<b>95132</b>	<b>91960</b>
<b>Total Liabilities</b>	<b>127737</b>	<b>122064</b>	<b>122798</b>	<b>115890</b>	<b>108751</b>
<b>Net Worth</b>	<b>83476</b>	<b>92891</b>	<b>95450</b>	<b>103267</b>	<b>119560</b>
<b>Net Worth + Liabilities</b>	<b>211213</b>	<b>214955</b>	<b>218248</b>	<b>219157</b>	<b>228245</b>

\*Includes items amounting to less than 2 pct. of group total.

\*\*Included in -all other-. Amount is less than 2 pct. of group total

These external services are usually associated with EDP programs offered by farm business associations and universities. This basically is because these organizations frequently provide full-time area farm management fieldmen. Through periodic farm visits, these men provide personal management consultation for each subscriber. Farm analysis group meetings offer the opportunity for the fieldmen and subscribers to analyze trends in farming, market prices, government farm programs, and new developments appearing in agriculture. Farm tours offer the opportunity to see efficient methods and ideas in operation. Forward planning services take a variety of forms including budgeting and linear programming. Projected cash flows as illustrated in Form 20 are common budgets developed with farmers by credit institutions.

#### Cash flow performance report

Not only is it important to trace the movement of cash into and out of the farm business throughout the year, but also it is important to develop a plan for this cash movement. Developing projected cash flow budgets is a first step in exercising closer financial control of the farm business operation. Form 20 from Agrifax illustrates the type of EDP report which can be produced to give a picture of the actual cash flow of the farm operation in relation to the planned cash flow. The actual amount, the budgeted amount, and the difference between the actual and budgeted amounts are shown for both the

## CASH FLOW PERFORMANCE REPORT

	CURRENT MONTH			YEAR-TO-DATE		
	PROJECTED	MARCH ACTUAL	DIFFERENCE	JANUARY PROJECTED	THRU MARCH ACTUAL	DIFFERENCE
<b>INCOME</b>						
CURR FARM REC						
BEEF CATTLE				4,250	4,740	490
CROP	9,000		9,000-	58,000		58,000-
CORN		4,015	4,015		6,534	6,534
HAY					178	178
FLAX		1,081	1,081		7,795	7,795
REFUND					46	46
GAS TAX					553	553
AGR PROG PAY						
CUSTOM					50	50
MACHINE					338	338
OTHER						
MISCEL		80	80		80	80
BEEF CATTLE					203	203
TOTAL	9,000	5,176	3,824-	62,250	20,517	41,733-
<b>MONEY BORROWED</b>						
TOT CASH AVAIL	9,000	5,176	3,824-	62,250	36,113	26,137-
<b>EXPENSES</b>						
WAGES	300	209	91-	900	498	402-
SOCC SECURITY					227	227
REPAIR	500	719	219	1,000	2,012	1,012
INTEREST		2,648	2,648	6,100	9,379	3,279
FEED	100	1,139	1,039	300	1,456	1,156
SEED PLANTS		1,234	1,234		2,991	2,991
FERTLZER-LME						
CUSTOM		18	18		18	18
SUPPLIES		66	66	200	68	132-
BREEDING				50		50-
VET AND MED		49	49		49	49
PETROL					760	760
TAXES				5,000	3,915	1,085-
INSURANCE	300	471	171	600	471	129-
UTILITIES		126	126		379	379
LEASE						
MARKTNG						
AUTO EXPSE					93	93
TRUCK					250	250
OTHER		11	11	100	617	517
BEEF CATTLE					12,280	12,280
TOTAL	1,200	6,690	5,490	14,250	35,463	21,213
FAMILY LIVING	500	500		2,000	3,150	1,150
PUR DEP. CAPTL	500	16,913	16,413	500	16,913	16,413
DEBT PRIN PAY				4,800	4,768	32-
TOTAL	1,000	17,413	16,413	7,300	24,831	17,531
TOT EXPNDITURES	2,200	24,103	21,903	21,550	60,294	38,744
PCA PAYMENTS		2,417	2,417		15,045	15,045
PCA ADVANCES	2,200	7,000	4,800	21,850	36,110	14,260
PCA BALANCE	103,331	151,797	48,466	103,331	151,797	48,466

Form 20. Cash flow performance report (used by permission of Federal Intermediate Credit Bank, Omaha, Nebraska)



current period and the year-to-date. This report can be very useful in analyzing the cash flow position of the farm business operation. With this concise cash flow picture, one can readily locate those areas which are exceeding or falling short of the goals which have been set.

### CHAPTER III. GUIDELINES FOR SELECTING AN EDP SYSTEM

This discussion of electronic data processing has covered several methods of processing farm records and accounts on computers. The types of packages available have been discussed and the basic operational procedures have been described. Input forms and output reports have been illustrated and the more common external services offered have been described. But even with this information, one may still be uncertain about which record keeping program best meets his needs.

#### Information Needs

The first step is to determine your information needs. It is important to realize that your information needs are unique. They depend upon such factors as the size, type, and complexity of your farming operation, your age, your educational background, your training and experience in record keeping, the amount of time available for record keeping, and how the information will be used. The following checklist contains the types of information available in EDP packages. Check the information you need for planning and operating a profitable farm business. Not only is it necessary to know the type of information needed, but also how frequently it is desired.

Information Needed from an EDP System

- \_\_\_ an itemized journal list of receipts, expenses and other input entries in chronological order for checking against the journal entries submitted
- \_\_\_ summaries of receipts, expenses and other input entries categorized into ledger accounts
- \_\_\_ categorized reports of cash flowing into and out of the farm business
- \_\_\_ statements of net income for the month and year-to-date
- \_\_\_ a tax summary listing all receipts and expenses for the year-to-date to aid in planning purchases and sales during the remainder of the year
- \_\_\_ a summary of capital purchases and sales during the year
- \_\_\_ depreciation schedule
- \_\_\_ crop inventory listing
- \_\_\_ a list of firms with whom you have accounts payable
- \_\_\_ a list of accounts which are owed to you
- \_\_\_ a net worth statement of your farm business
- \_\_\_ a summary of principal and interest payments made during the year
- \_\_\_ summaries of wages paid, federal and state withholding, social security payments, and other benefits paid to employees
- \_\_\_ summaries categorizing family living expenses
- \_\_\_ enterprise analysis reports
- \_\_\_ whole farm business analysis reports

## Comparative analysis reports

- \_\_\_ reports comparing actual performance with projected plans
- \_\_\_ reports comparing this year's performance with that of previous years

— reports comparing your farm with other farms of similar resources and production activities

### Accounting Method

One can next evaluate, in terms of the information needed, whether cash or accrual, single-entry or double-entry recording is most desirable. The advantages and disadvantages of each of these accounting methods were discussed in Chapter I. The information you need will very likely indicate which method to use. For example, if you desire enterprise analysis reports which accurately reflect the profit or loss of each enterprise, information will need to be recorded on the accrual basis. If only cash flow information is desired, a single-entry cash accounting system will be adequate. If your farming operation is of such size and complexity that you are unable to maintain close contact with all phases of it, a double-entry accounting system is advisable. Select a system that provides the information you need to plan and operate a profitable business operation.

### External Services

External services are an integral part of some EDP record keeping programs and are not offered in others. Some EDP firms do not have the type or number of personnel needed to offer these services. Select a program which provides the type of external services you need to operate an efficient farm



business. Again, your needs are unique. Some farm operators do not desire external services while others have found them to be very helpful. The following checklist contains some of the more common external services offered. Check the services you need and desire in an EDP program.

- \_\_\_\_\_ management consultation
- \_\_\_\_\_ farm tours
- \_\_\_\_\_ tax service
- \_\_\_\_\_ farm analysis meetings
- \_\_\_\_\_ forward planning assistance

#### Operational Procedures

The operational procedures are the heart of any EDP record keeping program. It is extremely important that the code system, recording procedures, output reports, and the assistance available be carefully evaluated before selecting a program. The code system is used for every transaction that is recorded. It should be simple and easy to use. To receive accurate information, the recording procedures must be followed explicitly. The procedures should be as simple as possible and still permit the type of record keeping you desire. The output reports must be clear and understandable and provide the information needed. Do not select a more elaborate system than you have time to maintain during peak labor periods or one that provides information you do not need. And finally, the type of

assistance available can play an extremely large role in your success with EDP record keeping.

The following checklist contains features and points to consider in evaluating EDP record keeping programs. Check the features which are contained in the EDP program you are considering.

### Operational Procedures

#### Code system

yes      no

- \_\_\_    \_\_\_    Is the code system simple and easy to use?
- \_\_\_    \_\_\_    Does the code system permit recording and expenses to individual livestock groups and crop fields for enterprise analysis?
- \_\_\_    \_\_\_    Does the code system permit both general and detailed levels of record keeping?
- \_\_\_    \_\_\_    Are the code categories appropriate for the record entries of your farming operation?
- \_\_\_    \_\_\_    Can additional code categories be assigned if desired?

#### Recording procedures

- \_\_\_    \_\_\_    Does the subscriber code the record entries?
- \_\_\_    \_\_\_    Does the servicing organization code some record entries?
- \_\_\_    \_\_\_    Are the input forms uniform and concise? (i.e. consistency of column headings, location of code numbers, etc.)
- \_\_\_    \_\_\_    Are common terminology and quantity units used in recording input information?
- \_\_\_    \_\_\_    Are there provisions for itemizing group purchases? (for example, several different items purchased at a farm supply store)

yes      no

- \_\_\_    \_\_\_    Can depreciable assets be recorded?
- \_\_\_    \_\_\_    Can capital purchases and sales be recorded?
- \_\_\_    \_\_\_    Can intra-farm transfers be recorded for enterprise analysis?
- \_\_\_    \_\_\_    Can inventory information be recorded?
- \_\_\_    \_\_\_    Do the recording procedures permit the degree of detail you desire in recording information?
- \_\_\_    \_\_\_    Does the program permit the method of record keeping you desire? (i.e. cash, accrual, single-entry, double-entry)
- \_\_\_    \_\_\_    Is the error correction procedure simple and easy to use?

#### Output reports

- \_\_\_    \_\_\_    Are the output reports as uniform as possible? (location of headings, information, etc.)
- \_\_\_    \_\_\_    Is the terminology used clear and understandable?
- \_\_\_    \_\_\_    Do the output reports provide the degree of detail you desire in the output information?
- \_\_\_    \_\_\_    Do the reports provide the type and amount of information you desire?
- \_\_\_    \_\_\_    Is a report listing all transaction information submitted to the computer provided to aid in locating errors?
- \_\_\_    \_\_\_    Does the program contain built-in accuracy checks on the information submitted to the computer?
- \_\_\_    \_\_\_    Does the journal summary report contain space to write a personal description of each transaction if desired?
- \_\_\_    \_\_\_    Are the cash flow reports correlated with the check-book balance?



yes      no

\_\_\_    \_\_\_    Is the turn-around time acceptable? (i.e. days  
elapsed from the date information is submitted to  
the date output reports are received)

#### Assistance available

\_\_\_    \_\_\_    Is personal assistance available locally?

\_\_\_    \_\_\_    Is assistance available by telephone?

\_\_\_    \_\_\_    Is assistance available through group meetings?

\_\_\_    \_\_\_    Is assistance provided through regularly scheduled  
visits?

\_\_\_    \_\_\_    Is assistance available only when requested?

\_\_\_    \_\_\_    Is assistance available only at an additional fee?

\_\_\_    \_\_\_    Does the program provide the type of assistance and  
external services you desire?

#### Advantages and Disadvantages of the EDP Packages

In Chapter II, the types of EDP packages available were discussed and the basic operation procedures were illustrated. It is also important to recognize the basic advantages and disadvantages of each type of EDP package.

#### Year-end farm summary programs

Year-end farm summary programs differ from other programs in that the information is recorded in a record book kept at the farm throughout the year. The primary advantage of this program is that the farmer has his record book at home at all times for his personal use. Every time he records items he has the opportunity to review his business finances. He can



record any notes, explanations, etc. he sees useful. It may not take much more time to post an entry in his record book than to list it on an input form with the appropriate code number. The major disadvantage of year-end farm summary programs is that output reports are usually produced only at the end of the year. Monthly summaries, cash balances, year-to-date figures, etc. are normally not tabulated. Thus, some of the important control aspects of the business are not available. Another disadvantage is that it is difficult to make accuracy checks such as correlating the record book entries with the bank balance. Also, year-end summary tabulations are time consuming and add another place for errors to occur.

#### Coded check programs

One of the attractive features of coded check programs is that they are simple and easy to use. The only requirement is to add the proper code number to a check or deposit slip. Since this type of program is usually offered by banks, personal assistance is available locally which is an important advantage. Other advantages include providing monthly cash flow reports which are correlated with the bank statement thus providing an accuracy check on the information. It is advisable to select a coded check program which employs multiple entry checks to permit itemizing group purchases. Having to write an individual check for each item purchased at the farm supply store is inconvenient.

The major disadvantage of most coded check programs is that they are limited to basically cash flow record keeping. Often there is no means of recording inventories, intra-farm transfers and other non-cash information. In coded check programs where this information can be recorded, supplemental entry forms are required. Also, depreciation schedules are only sometimes offered. A problem encountered in some coded check programs is that the procedure for recording refunds to specific code categories may be somewhat confusing.

#### Mail-in programs

Mail-in programs offer the most flexibility in the type and amount of information provided. All accounting methods including cash, accrual, single-entry and double-entry, are available and thus the advantages and disadvantages of each of these accounting methods can be found in mail-in programs. Double-entry accounting is available only in mail-in programs. Thus, if your farming operation demands the detail and control of a double-entry system, a mail-in program is advisable. Code numbers for mail-in programs are characteristically of more digits than those of coded check programs. This permits more detailed record keeping and accommodates accrual recording. By requiring monthly or quarterly submittal of input information, mail-in programs can act as a stimulus for keeping farm records up-to-date. However, one should not mistake this as a guarantee of up-to-date farm records.

A disadvantage of some mail-in programs is the lack of personal assistance. Since the servicing organizations may be quite distant, personal assistance may not be available locally. Assistance is more likely to be provided by telephone or by area group meetings. In general, mail-in programs are more complete record keeping programs than coded check programs. However, for some farmers mail-in programs may seem too complex or difficult to use.

#### Program Cost

Costs also are important to consider in evaluating EDP programs. The cost of an EDP program depends upon the size of the farming operation and on the type of EDP program selected. Costs for year-end farm summary programs including fieldman services range between \$100 and \$200 per year. Coded check programs range between \$70 and \$140 per year. Typical costs of single-entry mail-in programs are between \$80 and \$200 per year while double-entry mail-in programs range between \$200 and \$1000 per year. Some EDP programs involve a flat fee for the basic program and additional charges for the optional reports. Other firms base their fees on the level of gross farm income. A third method is to charge on a per transaction basis. Regardless of the method used to assess fees, one should remember that the cost of the program is not always a measure of its quality.



## Personal Background

A final consideration to take into account in selecting an EDP program is your own background in record keeping. If you have had limited training or experience in record keeping, it may be advisable to start with a fairly simple EDP program or one that permits flexibility in the level of participation. Over time, as experience is gained, one may advance to programs offering more detailed information.

In subscribing to an EDP program, one must be willing to learn new record keeping procedures. These can be a source of confusion and errors until they are mastered fully. New terminology will be encountered, both in entering information on the input forms and in receiving the output reports. One must be willing to undertake these new procedures and responsibilities to receive the benefits offered through electronic data processing.

The computer is a machine which can be used to help you keep accurate farm records. Through EDP some of the pencil pushing in record keeping can be computerized. But subscribing to an EDP program is not a guarantee that you will have accurate farm records. No matter how fancy and professional the print-out reports may look, the output information is only as good as the information you put into the machine.



CHAPTER IV: DECISION AREAS ENCOUNTERED IN  
DEVELOPING AND OFFERING EDP SERVICES

To fully discuss electronic data processing of farm records, attention must also be turned to the firm or organization offering these services. The approach to this aspect of EDP will be to outline major decision areas that firms encounter in developing and offering EDP record services. The discussion in this chapter is organized into the following major areas: the type of program to offer, the operational procedures to be employed, reporting information to the subscriber, stimulating interest in the EDP record keeping program, and educating the subscriber about EDP and record keeping.

The background material for this section comes from the surveys of firms and universities offering EDP services. Some of the areas discussed in this section were those identified as problem areas by the survey respondents. These problem areas are often crucial in determining the success of the EDP program. A more complete description of the surveys and information gathered is contained in the Appendices A and C.

Type of Program to Offer

Determining the type of program to offer is a very major decision. The approach to making this decision must be systematic and thorough. The following are some of the areas to be examined and evaluated in determining the type of program to

offer.

### Market potential study

One of the first steps in approaching this decision might be to study the market potential of EDP services. Factors which can have a major influence on the type of program to offer are: the extent, type, cost, and success of record programs and services of competitors, the types and sizes of farming operations in the area to be served, the age of the farmers, their record keeping practices, and the ways in which they use their records. Information in these areas is likely to give an indication of the type of market available for EDP services and should be valuable in deciding whether to develop a program for mass marketing or for a selected subset of the total market. A firm should also get an indication of the price farmers would be willing to pay for EDP services. With some farm families, the cost of a record keeping program competes with family living costs, rather than farm expenses (11, p. 49).

### Objectives in developing an EDP record keeping system

The goals and objectives in developing EDP record services may be quite varied. A firm may desire to earn profits through processing farm records or through increasing the sales of other products. In other cases the predominant goal may be service to customers or to members of the organization. EDP

services may also be offered as a source of data for research, teaching, and educational programs. Certainly combinations of the above and other purposes exist as objectives in developing EDP record services. Whatever the objectives are, they play an important role in determining the type of EDP record keeping program developed.

#### Type of information to offer

Determining the type of information to offer is a key decision in the development of the EDP program. This may best be looked at in terms of the record keeping needs and objectives of the farmers which a firm desires to serve. Some farmers desire only a simple record of the flow of cash into and out of the farm business. Others desire a more complete management information system, one that provides such information as enterprise analysis, whole farm business analysis, a record of capital gains and losses, tax work sheets, net worth statements, income statements, comparative analysis information, and coefficients for forward planning. Thus, if the program is to be mass-marketed, it must be flexible in permitting varying degrees of record detail and levels of subscriber participation.

Another area to consider is how tax oriented the output information will be. If information is provided for tax purposes, constant updating of the computer software will be required to keep the program current with new tax laws. In



providing tax information, what legal liabilities and responsibilities are encountered? Certainly this question must be given consideration in determining the type of information to offer.

The type of information offered in some cases may depend on the purpose of the firm in developing the record service. For example, a university requiring a continuing source of detailed farm record data for research and teaching would likely want to design the program to meet their own information needs as well as those of farm operators.

The type of information provided will likely determine whether cash or accrual, single-entry or double-entry accounting methods should be used.

The advantages and disadvantages of each type of EDP program in terms of the ability to provide certain types of information were discussed in Chapter III. These same flexibilities and limitations need to be considered by firms as well when determining the type of program to offer.

#### Type of assistance and external services to offer

With any EDP program, no matter how simple it may be designed, there will be basic questions and problems that arise from subscribers. Problem solving assistance in some form must be available to provide help. The surveys in this research study revealed that subscribers strongly prefer that problem solving assistance be available locally on an individual basis.



The type of assistance provided may depend to a large extent upon the location of the servicing organization or office in relation to subscribers. Local banks can provide personal assistance to subscribers when needed quite easily. However, this becomes a problem with firms where servicing personnel are located more distantly. In some programs area fieldmen are available to provide this assistance on a personal individual basis. Frequently, these men also provide such external services as management consultation, forward planning assistance, and tax service. However, a field staff, with proper training to administer these services, will add significantly to the cost of providing EDP services.

#### Operational Procedures

As mentioned in Chapter III, the operational procedures are the heart of any EDP record keeping program. They must be carefully planned and designed. One of the first things to realize is that in order to utilize computers efficiently, it is generally not sufficient to simply transfer a manual accounting system directly to a computer (4, p. 1184). The following discussion outlines some of the major operational procedures to be planned.

### Collecting the data

"The value of an EDP farm record system depends in large, upon the accuracy, reliability, and completeness with which the data is reported. The data collection procedures should be designed to facilitate this reporting" (9, p. 1194). The importance of this statement cannot be overemphasized. The input forms must be designed to facilitate recording the required information. There should be as much consistency of data location and column headings as possible on the input forms. Above all, the input forms should be convenient for the subscriber to use. This means that input data is recorded in terminology and quantity units familiar to farmers. Farmers can supply data much more readily if familiar ratios and quantities are used; they have somewhat of an instinct for what is reasonable if a coefficient is expressed in their terms (1, p. 72). Accepting farmer quantity units may involve additional programming of the computer to convert the data to a more useable form for the calculations to be performed. The computer can be programmed to do this efficiently and without error and this route is likely to prevent many problems causing inaccurate input data.

### Code system

In most EDP programs, collecting input data involves the use of a code system. As the operational procedures are the heart of the EDP program, likewise the code system is the heart

of the operational procedures. The code system is used to facilitate collecting the data for processing on the computer. It must be simple and easy to use. There are many ways in which code systems can be designed. Numerical code systems, varying from three to eight digits, are most commonly used; code word systems have also been developed. Much of the flexibility of the entire program depends upon the design of the code system. However, more digits do not necessarily insure more program flexibility. The type of information to be provided should determine the design of the code system. For example, if enterprise analysis information is to be provided, more than three digits may be needed to record the transactions in adequate detail. And if only cash flow information is to be provided; there would be no need to have a five digit code system.

Another decision to be made concerning the code system is whether the subscriber or the servicing organization is to code the input information. The time required to code individual record transactions is sizable. For this reason it may be preferable to have the subscriber code the record information. However, of any of the responsibilities delegated to the farmer, the code system is probably the most foreign to him. As a result, the code system can be a source of subscriber errors and confusion until it is mastered and fully understood.



### Error detection and correction

Regardless of who coded the information, procedures for correcting errors must be developed. Missing code numbers, incorrect code numbers, transposed numbers and the wrong quantity units are examples of common input errors. In addition keypunch errors also occur. Survey replies from firms and universities presently offering EDP services indicate that the biggest bottlenecks in providing EDP services are assuring that the input data is accurate and getting it correctly key-punched for processing on the computer. Many of the program changes being made by these firms involve developing more comprehensive computer editing programs to more thoroughly check for invalid input data.

### Reporting to Subscribers

The output reports are probably the area of EDP which will come under closest scrutiny by subscribers. The output reports play a major role in a farmer's decision to subscribe to an EDP record keeping program. Certainly the type of information to be provided will have a major influence on the format and design of the output reports. An overriding goal in the design of output reports should be to keep each report as simple as possible.



### Terminology used

A vital consideration in reporting to the subscribers is the terminology used on the output reports. It must be clear and understandable and still adequately explain the information contained in the report. To a farmer, "debits" and "credits" may be confusing since either of these terms can indicate an increase or decrease depending on the account affected by the transaction. To avoid this confusion, a firm may consider using such terms as "increase" and "decrease", "plus" and "minus", or "receipts" and "expenses".

### Uniformity of the reports

The uniformity of output reports is another area of importance in reporting to the subscriber. As with input forms, the format of output reports should contain as much uniformity as possible. There should be consistency in information location and column headings; otherwise, the reader must reorient himself for each report. Some variation can not be avoided due to the varying nature of the reports and the information provided. However, it should be an overriding goal to develop as much uniformity between output reports as possible.

### Length of output reports

The length of the output reports is an another important consideration in reporting to the subscriber. Providing

detailed information and still maintaining short concise reports which are easy to read and understand presents a conflict. In order to limit the length of the reports it may be advisable to: (10, p. 93)

1. eliminate printing of zero entry code categories
2. determine a minimum value such that items less than this amount are not printed in detail but rather grouped into "all other" categories

#### Turn-around time

A problem area indicated by EDP firms and universities in reporting to subscribers was slow turn-around time. Invalid input data, inefficient data handling procedures, and programming errors were major contributors to slow turn around time. University representatives stressed the need for extensive testing and debugging and the development of efficient data handling procedures. Slow and erratic turn-around time can be costly to continued participation of subscribers. It reinforces any doubts subscribers may have about EDP and computers.

#### Special features

Color coding of output reports and input forms was a feature appreciated by subscribers. Highlighting receipts, expenses, and other types of input information through color coding output reports and input forms may seem rather insignificant, but to some farmers it was very helpful. It

represented an extra step to help them better understand their output reports.

Subscribers also valued transaction journal reports which contain their written description of the transaction rather than just the code category heading, for example, "Dick Brown--cultivating" rather than "labor hired".

#### Stimulating Interest in EDP Programs

Stimulating interest in EDP record keeping programs was indicated to be a problem area by the firms who presently offer EDP services. In many cases they reported that subscriber enrollments had never reached the levels that they had initially anticipated. Some firms felt that the number of potential EDP subscribers was not as large as they initially projected. Many farmers presently subscribe to other EDP systems or have adequate record keeping systems of their own. Some farmers view EDP as being too complicated or expensive. Other farmers are at an age where they are not interested in engaging in a new record keeping system. The age of the farmer is a significant factor in his willingness to subscribe to EDP and explore the opportunities that it offers. The vast majority of the subscribers interviewed in this research study were young farmers between 30 and 45 years of age. It is also important to realize that farmers are somewhat reluctant to disclose their farm records to outside firms and organizations.



## Educating Subscribers about EDP and Record Keeping

The most difficult problem encountered in offering EDP services may be educating the subscriber about the EDP program and about record keeping in general. If the subscriber is not adequately educated about the EDP program, its capabilities, and the opportunities it offers, the potential usefulness of the information system is severely limited (3, p. 1550).

"Computers can quite rapidly generate a large mass of data but these output figures and analysis measures are useless unless understood and acted upon by the farmer." (5, p. 161)

The survey data presented in Chapter I from Hickman's (5) research study points out the need for educational programs on farm record keeping and the use of farm records in making financial and management decisions. Firms and organizations offering EDP services should recognize, in offering these services to farmers, that they are at the same time undertaking the responsibility for an educational program about farm record keeping. This aspect of EDP services may well be the area that is most neglected even in the most complete management information systems. Farm management economists at midwest land grant universities replied that some EDP programs in their state were in many cases, short lived. They attributed this largely to the lack of an educational program. Without such a program even detailed, accurate, up-to-date EDP output reports are likely to fall considerably short of the functions to be served

by farm record systems.

This chapter has outlined key decision areas encountered in developing and offering EDP services according to surveys conducted in this study. The following advice from officials of EDP firms concludes and summarizes this discussion of key areas to consider:

1. have a good reason for offering EDP services
2. keep the program simple
3. be prepared to handle the program and the input information
4. be able to mass market the program
5. develop a good advertising and promotion program to go along with the EDP program
6. realize that farmers are somewhat reluctant to completely disclose their farm records to outside individuals or organizations
7. realize that the acceptance of the program may be slow
8. have plenty of patience and capital

#### Summary

Changes in agricultural technology in recent years have resulted in such things as larger farming operations, enterprise specialization, and the substitution of capital for labor. As a result, the capital requirements of farming have increased tremendously in recent years. These are only some of the reasons why the need for accurate up-to-date farm records is of growing importance. The need is present, but in some cases

it has gone unrecognized. Many farm record keeping systems have not kept pace with the growth of the farming operation. Many farmers employ few record analysis procedures and fail to use their records in planning and making important decisions. Through EDP, farmers can computerize some of the pencil pushing and handle large amounts of data quickly, efficiently and accurately. EDP offers farmers the opportunity to keep detailed farm records on their farming operations without knowing a great deal about accounting. EDP has made itself known in farm record keeping and is here to stay.

In the future, EDP services will be more varied. Eisgruber predicts there will be less concern with computerized accounting systems and greater emphasis placed upon more sophisticated management technologies (2, p. 37). To this point EDP has been concentrated almost exclusively in the record keeping area of farming. In the future, it is likely that the use of computers will be expanded to what might be termed "special problem areas" in farming. Some possibilities include:

1. market forecasting
2. timing of purchases and sales
3. resource allocation
4. crop and livestock production strategies
5. types of financing arrangements
6. tax planning assistance
7. forward planning assistance

Information banks at computer centers may make it possible to receive information in these areas through a telephone call directly to the computer. Remote terminals are also a



possibility in the future to facilitate inputting information into the computer and receiving output reports and information.

The state of the arts in using electronic data processing in farm management is still in its infancy. Using the computer to summarize farm records is only scratching the surface of the capabilities of present day computer hardware. The area of greatest need in EDP is the development of the related software to explore new ways of using computers in farming. Until the proper software is developed, much of the potential of the computer in farm management will remain untouched.

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## ACKNOWLEDGEMENTS

The guidance of Dr. Sydney C. James throughout this study is gratefully acknowledged. Appreciation is also extended to the EDP firms, university representatives, and farmers who took part in the study for their cooperation and assistance.

A special thank you to my wife, Francine, for her patience, understanding, and encouragement during the period of graduate study and for her assistance in manuscript reading and typing of the thesis.



APPENDIX A

Summary of Interviews with Firms Offering  
EDP Services to Iowa Farmers

This summary is based on personal interviews with officials of the following firms: Iowa Farm Business Association, Rec-Chek Incorporated, Brenton Banks, Farm Bureau Agricultural Business Corporation, Federal Intermediate Credit Bank of Omaha (Production Credit Association), and Pioneer Data Systems. Much of the information gleaned from these interviews has been presented in the text of the thesis in discussing the types of programs available, the types of firms offering these services, the operational procedures employed, and the output reports which are available. This information will not be repeated here.

Table 6 summarizes the number of Iowa farmers subscribing to the EDP programs of the six firms surveyed as of July, 1971.

Table 6. Number of Iowa farmers subscribing to the EDP programs of the firms surveyed, July, 1971

Program	Number subscribing
Iowa Farm Business Association	2700
Rec-Chek Incorporated	50 Iowa banks <sup>a</sup>
Brenton Banks	46
Farm Bureau Agricultural Business Corporation	660
Federal Intermediate Credit Bank of Omaha (Production Credit Association)	479
Pioneer Data Systems	16

<sup>a</sup>Number of farmer subscribers unknown.

Subscribers to these EDP programs were enrolled through: personal calls, dinner meetings, newspapers, magazines, radio, television, billboards, direct mail, adult education meetings, area fieldmen, and tax accountants. In most cases, EDP officials indicated that their programs had not been as well received as initially anticipated. Sales had been slow and the growth rate had been slower than initially projected. However, many of the programs had very good subscriber retention rates.

External services that are available in the EDP programs include: forward budgeting, tax service, and farm management consultation through area fieldmen. Assistance was available for solving record keeping problems through scheduled farm visits, telephone WATS lines, area group meetings, and also through personal visits by the subscriber to the servicing organization. Several firms reported that they could not provide area fieldmen at a price farmers would be willing to pay. Whole farm planning through linear programming was being considered by several firms in the distant future.

Several of the EDP firms use the farm accounting information coming into their program as a data source to tabulate long range comparisons of geographical and enterprise trends in farming. Financial firms offering EDP services use the information to evaluate prospective loans and to assist their farm customers in budgeting and determining their future credit needs.



The computational and processing problems encountered by the firms in offering EDP services included: programming errors, adapting the computer programs for use on differing hardware installations throughout the country, communicating with processing personnel, keypunch errors, slow turn around time, and erroneous input information.

The administrative problems encountered included: deciding what information was to be provided, a lack of communication and support among personnel involved with the program, and communicating to subscribers how the program works and what input information is required.

The changes made by these firms in their programs since they went into operation include:

1. complete rewriting of the programs
2. switching to a multiple-entry coded check
3. adding more digits to the code system
4. producing regular monthly reports instead of periodic reports whenever subscribers indicated they wanted one
5. adding journal and cash flow reports
6. color coding the input forms and output reports
7. improving data collection procedures and methods of reporting enterprise analysis information
8. adding options to increase the flexibility of the program

Continual updating of the programs was also needed to keep them current with changes in tax laws.

Future changes anticipated by these firms could be summarized in one phrase--to provide more financial and management information to subscribers. They also expect to implement more accuracy checks on the information coming into

their programs and in the more distant future, give consideration to farm planning through linear programming and other forward planning devices.

Table 7 on the following pages outlines more specifically the type of information provided by the six firms surveyed. The table lists how frequently the information is provided, special features of the programs, and typical subscriber costs.

Table 7. Information and services provided by the EDP firms surveyed

	Iowa Farm Business Association	Rec-Chek Incorporated	Brenton Banks	Farm Bureau Agricultural Business Corporation	Federal Intermediate Credit Bank (Production Credit Association) Model 100 Model 200	Pioneer Data Systems
	frequency provided to subscribers					
Journal listing of input entries	- <sup>a</sup> monthly	monthly	monthly	monthly	quarterly	monthly
Ledger accounts of specific categories	- <sup>a</sup> monthly	monthly	monthly	monthly	monthly	monthly
Cash flow report		monthly	monthly	monthly	quarterly	monthly
Cash flow correlated with checkbook balance		monthly	monthly	monthly	quarterly	monthly
Income statement	annually			annually	annually	monthly
Tax assistance (tax service)	annually (tax service)		October, December (tax sum- mary) <sup>b</sup>	annually (tax service)	9th mo. of fiscal year of (tax sum- mary) <sup>b</sup>	end of fiscal year (tax summary) <sup>b</sup>

<sup>a</sup>This information is part of the record book kept at the farm during the year.

<sup>b</sup>Summary of receipts, expenses, etc. to aid in planning purchases and sales for the remainder of the year.





Table 7. (continued)

	Iowa Farm Business Association	Rec-Chek Incorporated	Brenton Bank	Farm Bureau Agricultural Business Corporation	Federal Intermediate Credit Bank (Production Credit Association)	Pioneer Data Systems
				Model 100	Model 200	
Summary of wages paid, withholdings, and other benefits paid to employees					monthly (optional)	monthly (optional)
Summary of family living expenses		monthly	monthly	annually (optional)	monthly (optional)	monthly <sup>c</sup> (optional)
Enterprise analysis reports			monthly (optional)	quarterly or annually (optional)	monthly (optional)	monthly (optional)
Whole farm business analysis reports	annually			annually (optional)	annually	
Additional features and services	1.comparative analysis information 2.management consultation through area fieldmen			1."shoe box" option 2.summarize non-farm income and deductible personal expenses	1.cash flow performance report 2.machine cost accounting	1.double-entry accounting system 2.historical summaries
Cost of program to subscribers	\$100-\$200	\$70-\$140	\$120	\$80-\$130	\$120 (average)	\$180 (average) \$200-\$1000

frequency provided to subscribers

APPENDIX B

## Summary of Interviews with EDP Subscribers

This summary is based on personal interviews with 34 Iowa farmers subscribing to year-end farm summary, coded check, and mail-in EDP record keeping programs. The farmers represented a selected cross sample of Iowa farming operations. Farm size varied from 240 acres to 2,300 acres. It was estimated that the majority of the farm operators were between 30 and 45 years of age.

Of the 34 subscribers interviewed, 16 kept their records on the cash basis and 18 kept their records on the accrual basis. Several of those who kept their records on the accrual basis did so for management purposes and paid their income tax on the cash basis.

The amount of time spent in record keeping varied from a few minutes per day for coding items in coded check programs to two months per year. This last figure was for a large grain operation where the person keeping the records was older, did not have the demands of field work upon him, and was able to spend more time in record keeping. The most frequent figures given were two to four hours per month. The majority of the subscribers do not allot a regular time for record keeping; however, a significant number indicated a monthly basis for keeping records. The farmers and their wives shared the recording responsibilities in most cases. In many instances,

the wives did the bulk of the recording. The subscribers usually kept their records in an office or in a desk or filing cabinet in another room of the house.

The 34 farmers interviewed began subscribing to their EDP record keeping program in the following years:

<u>Year</u>	<u>Number</u>	<u>Year</u>	<u>Number</u>
1956	1	1967	6
1958	2	1968	1
1963	1	1969	8
1965	1	1970	4
1966	3	1971	7

Some of the factors which led these farm operators to subscribe to an EDP record keeping program were: a desire to keep better farm records, to improve net farm income, to receive enterprise analysis information, to have more current record information, and to see good management in action through farm tours. Other reasons were for more management advice and to receive good income tax assistance. Some individuals indicated that they did not have sufficient time to keep adequate records with a hand tabulated system. Others wanted to get away from doing all the book work. Many farmers subscribed largely because they belonged to a farm organization or did business at a bank which offered EDP services.

The subscribers were also asked to indicate why they chose their present program over other types of EDP programs. Year-end farm summary subscribers replied: because fieldmen services were offered as part of the program, it was referred



to them by participating subscribers, it offered comparative analysis information, a tax service was provided, and because other EDP programs were not available at the time. The majority of the coded check subscribers chose this type of EDP program because it was so simple and easy to use and also because their local bank offered it. The most frequent reason given by mail-in subscribers was that they desired a more complete information program. Others subscribed to a mail-in program because it cost less than other programs and because they were members of the organization which offered the service.

Several subscribers to coded check or mail-in programs offered by financial institutions indicated that they chose these programs because it seemed logical to subscribe to a record keeping program offered by the firm providing their source of farm credit.

Several of the farmers presently subscribing to coded check and mail-in programs formerly subscribed to a year-end farm summary program. In a couple of cases, these subscribers made the change because they felt they were paying too much for the services of the year-end farm summary program while still having to do the majority of the book work. Others did not like the year-end summary report arriving as late as March or April of the following year. Several younger farmers reported that they felt a year-end farm summary program was adequate for

an established farmer but as young farmers they wanted a cash flow, a monthly profit and loss statement, and enterprise analysis information.

The amount of time now spent with the farm records as compared to time spent before subscribing to the EDP program was more in some cases and less in others. For those spending more time, it was because they were keeping more and better records. A large number replied that they now spend less time recording the information but more time studying the record information. In some cases the farming operation had grown sizably since subscribing to an EDP program and therefore the present amount of time spent in record keeping could not be accurately compared with the amount of time spent prior to subscribing.

The records typically kept in addition to what the EDP program required were: machinery maintenance and repair records, crop and fertilizer records, livestock breeding records, partnership farm records, and DHIA records. Several subscribers indicated that they keep their own depreciation schedule or that their tax attorney keeps this information. One operator was keeping records of feed and production costs by hog lots on his own, as he had encountered many problems in trying to keep these records on his coded check program.

The majority of the subscribers submitted transaction data or input reports to the servicing organization on a

monthly basis. Less frequently, input information was submitted bi-monthly, quarterly, or at the end of the year.

Subscribers generally felt that it was easy to enter the transactions in the record book or on the input forms without making errors. They also reported that the code systems were simple and easy to use. In most cases only minor problems in recording input information had occurred. These were due to first year unfamiliarity with the EDP program and carelessness such as forgetting to enter a code number or entering the wrong code number. Other recording difficulties stemmed from the code headings not being appropriate for the transactions to be recorded. In coded check programs, the procedure for recording refunds to specific code categories was sometimes not understood. A significant number of the EDP subscribers reported difficulties in recording livestock inventories and inventory changes. Also, several subscribers indicated that due to infrequent recording, they sometimes had difficulty remembering the exact nature of the transaction when recording it. The subscribers to the double-entry mail-in program did not feel that the double-entry accounting system and coding procedures were causing them extra recording problems.

The subscribers reported the following output information and reports to be the most helpful: cash-flow summaries for the current month and year to date, tax summaries, accurate tax information, accurate depreciation schedules, farm business



analysis reports, enterprise analysis information, and comparative analysis information. Most of the subscribers felt that the terminology used on the output reports was clear and understandable. However, some first year subscribers were having difficulty understanding the terminology as fully as they desired. The majority of the subscribers indicated that they were able to determine how key figures such as net farm income and management return were calculated. However, they did admit in many cases, that some of the specific points of the calculations escaped them.

To see that incorrect information had not been submitted to the computer, the subscribers checked the output reports with their cancelled checks or with sales receipts and purchase tickets. However, in some cases, no accuracy checks were used. Reliance was placed upon the servicing organization to check the record information before processing it on the computer.

The record information and output reports were generally indicated to be available when needed. However, the year-end farm summary subscribers strongly emphasized that their output information was not available when most needed. It usually arrived in March or April of the following year after crop plans for the coming year had already been made. Spring labor requirements were increasing and subscribers did not have sufficient time to study their summary report when it arrived. For coded check and mail-in programs, there were only a few



instances of monthly output reports arriving late.

The difficulties encountered in using and understanding the output reports were, in most cases, minimal. One person on a coded check program mentioned that in the past he had received output with the check number keypunched instead of the recorded code number.

Subscribers to several of the EDP programs reported that their tax accountant or lawyer was at first very reluctant to use the EDP output reports and information in preparing their income tax return. In several cases the tax professionals refused to use the EDP information. However, after several years of confrontation, many of these tax professionals now view EDP more favorably. Some actually appreciate the detailed, summarized EDP information and feel that they can do a better job in preparing income tax returns with this information.

Many of the subscribers felt that their EDP program provided them with information they would not otherwise have accessible. This information was indicated to be: tax summaries with year-to-date totals of receipts and expenses, personal and family record information, enterprise analysis information, and comparative analysis information. Several subscribers replied that even basic management information on their own farm would not be available since they would not take the time to calculate this themselves.

When asked how they actually used the output information in managing their farming operation, the subscribers indicated it was used in keeping closer account of expenses, to evaluate new machinery and equipment purchases, for making changes in the farm enterprises, for forward purchasing and general farm budgeting, and for income tax purposes. One person was considering the purchase of new "large bale" hay equipment and delayed his decision one year to separately record all expenses incurred in his present hay harvesting system. As a result he hopes to be better able to analyze the price of the new hay equipment and compare it to the present labor expense he could expect to save.

Most of the farmers felt that they had not made major changes in their farming operations which could be attributed to their EDP program. However, approximately 25 percent of the farmers indicated that one or more of the following changes had been made or were being made in their farming operations:

1. changing the relative volumes of the enterprises
2. putting a higher percentage of the farm acres in row crops
3. adopting a continuous corn crop rotation
4. being more selective in land purchases
5. implementing labor saving machinery
6. rearranging farm sales to smooth out the cash flow
7. eliminating the dairy enterprise because of the labor requirement
8. attempting to increase feed returns
9. undertaking fewer farm enterprises than previously

One farmer indicated that as a result of subscribing to an EDP program and realizing the difference in his return on investment between cattle and hogs, he had shifted entirely to a hog feeding operation. However, he now feels that basing the decision entirely on this information was not completely sound; the additional labor requirements for hogs should have been given more consideration.

The areas of the farming operation which subscribers felt had been helped most by their EDP program tended to be the major enterprises of the farm. Many felt that their entire farming operation as a whole had been helped. One subscriber indicated that his EDP records helped him to buy his present farm. He felt that he would not have been able to secure the necessary credit had he not had a good farm record keeping program. In addition, nearly all of the subscribers listed farm record keeping as the area helped the most by subscribing to an EDP program. Many reported that their program had helped them to keep better track of their farm and family expenses. As a result, some subscribers had modified their buying habits.

When asked in what ways they were better farm managers as a result of subscribing to an EDP record keeping program, the subscribers replied that they now are more income and expense conscious, have more confidence in their farm records, and have more time to spend on management decisions. As a result they now make better use of management information, have a better



idea of what enterprises in the farming operation are making money, and are more aware of where their farming operation is headed. However, two subscribers felt that they were not better farm managers having subscribed to an EDP program. They reported that they now spend less time with their records and that their EDP program makes them lazy.

Nearly all of the subscribers interviewed felt that their EDP program was equally oriented towards all farm enterprises. However, one subscriber indicated that he felt that enterprises such as beef cows and pasture land were somewhat neglected in his EDP program. One turkey operator felt that the poultry information in his EDP program was more designed for chickens than turkeys. Another individual suggested that year-end farm summary programs were adapted more to the needs of the grain operator than the livestock man. He reasoned that receiving output information only once per year was sufficient for a grain operator but not for a livestock man. Several subscribers to coded check programs felt that their program was oriented more towards cash record keeping than accrual record keeping.

The subscribers described the amount of personal contact with personnel of the servicing organization as adequate to very good. The very good ratings were most often given to coded check programs where assistance was available at the local bank whenever needed by the subscriber. The lower ratings were given to mail-in programs which use a telephone WATS line and



have area group meetings to provide assistance to subscribers. In general subscribers preferred conferring with a local representative on an individual basis as needed to solve their record keeping problems.

Subscribers were also asked to indicate the strong and weak areas of their EDP program. These replies are summarized in Table 8.

Typical costs of the EDP programs were \$100 to \$200. Subscribers were asked at what point they would discontinue subscribing to their EDP program and present services if the cost were to increase. The replies ranged from a 50 percent increase to a two-fold increase. The majority said that if the price were to increase by 50 percent they would discontinue the service. However, several replied that they valued their EDP program so highly that they could never afford to discontinue the program.

Subscribers were also asked to indicate which of the following external services they desired to receive as part of their EDP program: farm planning through linear programming, cash flow budgeting assistance, income tax service, and management consultation through area fieldmen. Of the 34 subscribers interviewed the following expressed some interest in these services:

Table 8. Strong areas and weak areas reported by subscribers to Iowa EDP programs

Strong areas	Weak areas or problem areas
	<u>Year-end farm summary program</u>
1. whole farm management analysis information	1. lacks enterprise analysis information
2. comparative analysis information	2. slow turn around time
3. farm tours	3. output information provided only once per year
4. fieldman consultation and farm visits	4. experienced difficulty in understanding the output reports as fully as desired
	<u>Coded check program</u>
1. simplicity and ease of recording	1. journal listing does not include who the check was made out to
2. flexibility of code system (new code categories can be assigned)	2. enterprise analysis is too general
3. monthly cash flow reports	3. depreciation schedule is incomplete
4. permits using one checking account for both personal and farm business	4. method of recording refunds to specific code categories is difficult to understand
5. an accurate account of each check transaction	5. procedure for recording items purchased on account is difficult to understand
6. personal and family records	
	<u>Mail-in program</u>
1. code system	1. little personal contact on an individual basis
2. format of the output reports	2. keypunch personnel seem somewhat unfamiliar with agricultural terminology
3. color coded input forms and output reports	3. recording quantities and updating inventory information is a problem area
4. tax orientation of the output reports	4. output reports are shallow in providing whole farm management analysis information
5. ten month tax summary	
6. monthly cash flow reports	
7. enterprise analysis information	

<u>Service</u>	<u>Number of Subscribers Expressing an Interest</u>
linear programming	15
cash flow budgeting assistance	10
income tax service	9
management consultation	11

In addition to the subscribers expressing an interest in the above services, others were presently receiving these services through their EDP program. Ten were receiving cash flow budgeting assistance, 13 were receiving income tax service, and seven were receiving management consultation. Most subscribers had strong feelings about fieldman services. Some subscribers would be very interested in a fieldman for management consultation while others indicated they would want no part of a fieldman to help them manage their farm.

APPENDIX C



### Summary of University Questionnaires

This summary is based on replies to questionnaires mailed to farm management economists at eleven midwestern land grant universities. Nine economists responded to these questionnaires. The questionnaires were designed to gather opinions on expected trends in farm record keeping and to determine the extent and acceptance of EDP services offered by private firms and land grant universities in other midwestern states.

In general these economists felt that a single-entry accounting system with inventory information would meet the needs of 90 to 95 percent of the farmers in their state in the next decade. However, they did feel that some of the more progressive farmers and operators of farming operations having above \$200,000 in gross sales will go to a double-entry accounting system in the future for financial and tax management purposes. They also expected farm operators who desire cost accounting information to use a double-entry system in the future.

Respondents were next asked which of the following farm record functions is most neglected by farmers: farm business analysis, financial control, or forward planning and budgeting. Many rated all three of these areas as generally lacking or insufficient. However, in summarizing the replies, the majority indicated both financial control and forward planning as most neglected.

Financial control was described as most lacking because farmers do a rather poor job of keeping financial records other than what is needed for income tax purposes. It was reported that even subscribers to EDP systems which contain good financial accounting reports fail to use this information in ways that contribute positively to the farm operation.

Factors which make forward planning a very neglected area include: farmer's lack of arithmetic skills in knowing what basic data to gather, the time that is required for planning, and also the lack of available counselors to interpret and analyze the information. It was felt that work is still needed to make farmers realize that in most cases the returns from forward planning are greater than the cost of learning what the best alternative is. One economist felt that a lack of forward planning and budgeting is not always associated with insufficient records or record keeping practices. Many farmers with good records do not utilize forward planning and budgeting techniques which are known and available.

The potential of linear programming to improve farm records as a forward planning tool was reported to depend upon whether or not accurate information can be gathered and whether or not sufficient educational resources are available to help interpret the plans to farmers. One economist felt that linear programming is a good motivator to encourage farmers to keep better records because it shows them how information from

their records can be used for forward planning. The majority of the respondents felt that the use of linear programming in the future by farmers will be limited. Limited manpower and computer facilities were described to be a restriction to the use of linear programming in one state. Another economist felt that farmers will use linear programming more in the future if economists do a better job of identifying appropriate situations for its use.

The extent of private firms offering EDP services and programs to farmers in these midwestern states was generally described as limited and as having decreased in recent years. The short lived nature of many of the EDP programs in these states was attributed to the lack of an educational program accompanying the EDP services.

The private firms most frequently providing EDP services in these states were Farm Bureau, Production Credit Association, Rec-Chek Incorporated and other bank originated programs. Banks and other lending organizations were described as generally having shown interest and some support in EDP. However, in several states it was reported that interest by banks has dropped recently. They have not found the payoff to be sufficient to develop and maintain their own record systems. At the same time, the economists felt that bankers hold the key to the future growth of EDP. If bankers would require detailed cash flows, projected budgets, and net worth



statements, participation in EDP record programs would increase substantially.

The university economists generally felt that the university has three primary roles in providing EDP record keeping services. They are:

1. take the leadership in the research and development of the programs and services
2. provide EDP services to support teaching and extension educational programs
3. provide EDP services to a limited sample of farmers to maintain a data source

Once these three primary roles have been filled, it was generally felt that EDP services should be in the hands of an independent cooperative or private business. Universities should continue to provide the service only if the private sector is unable or unwilling to provide EDP services.

The economists also were asked to indicate the nature of the EDP services which are available through their university and extension programs. Table 9 summarizes the type of information provided by eight EDP programs at seven universities. The replies from two of the universities were too incomplete to summarize and thus have not been included. Fees ranged from no charge to \$250 per year. The number of subscribers participating in the programs varied from 20 farmers selected to provide a data source to 7,000 farmers subscribing to a year-end farm summary program. Of the eight EDP programs



Table 9. Information provided in EDP programs offered by midwest universities

Information provided	Number of programs providing the information
Summary of input entries	7
Ledger account balances	3
Cash flow reports	8
Income Statements	8
Summaries of receipts, expenses etc. for tax planning	5
Capital purchases and sales	7
Depreciation schedule	6
Crop inventory listing	8
Livestock inventory listing	8
Accounts payable	8
Accounts receivable	8
Net worth statements	7
Summary of principal and interest payments	6
Payroll summaries	3
Comparative analysis with projected plans	2
Comparative analysis with previous years	6
Comparative analysis with other firms	4

offered, five were mail-in programs, one was a coded check program, one was a year-end farm summary program, and one was a combination coded check mail-in program.

The respondents listed the following as reasons for their universities developing and offering EDP services:

1. no EDP services were available in the state at the time and the potential for using computers in farm record keeping was not being developed
2. to increase the amount of analysis information supplied to farmers
3. to help farmers improve their management skills and income
4. to help extension agents improve their skills as management advisors
5. as a tool for gathering cost and return information to be used in farm management research and educational programs
6. the farm management associations in the state needed to convert to an electronic system in order to reduce the work load
7. it was felt that other EDP record systems had not reached their initial objectives of becoming complete management information systems
8. with the number of EDP systems moving into the state, it was felt that the university should provide a complete educational program in regard to EDP systems

Approximately one-half of the university representatives felt that their programs had been received as well as they had initially anticipated. This did not necessarily mean that there were a large number of participants in the program. The primary interest of several universities was research and development and to maintain a farm record data source. Thus,

in several states no attempt was made to mass market the program. Those representatives replying that their program had not been as well received as anticipated indicated that they had not achieved the level of enrollment that was thought possible. It was also added that subscriber dropout rates were high until area farm management specialists were provided to service the program.

Universities were also asked whether they offer any of the following services as part of their program: farm planning through linear programming, forward budget analysis, area fieldmen, or a tax service. Linear programming was presently being offered on a very limited basis for educational programs or was being planned in the future at five universities. Three of the universities provide forward budget analysis information through their EDP programs. One university was planning to implement this into its program in the future while another university provided this information through hand calculations. Area fieldmen were provided in three states. In another state the university encouraged financial institutions, such as the Production Credit Association, to continue to work in this area. A tax service was offered by two universities. Another offered this service on a contract basis with a private firm and two indicated that they conduct educational programs in the tax service area.

The amount of personal contact the university staff had with subscribers in most cases was two to three farm visits per year and additional occasions such as farm tours, annual meetings, and year-end analysis work. In other cases, the telephone was used as needed and periodic newsletters were mailed to participants.

The farm accounting information coming into the program was used by the universities for classwork teaching, research, and extension education programs. It was also used for annual publication of analysis summaries, inservice training of area fieldmen, and as data for budgeting and linear programming.

The most frequently listed computational and processing problem encountered with the EDP programs was slow turn around time. Other problems included: keeping the software updated to make maximum utilization of current hardware, getting the programs completely debugged, and the actual handling of input data by processing personnel.

Administrative problems encountered by these universities included: difficulties in getting adequate finances to develop a program, getting accountants in the states to accept what they thought might be competition from the university in their professional field, a lack of priority and enthusiasm by fieldmen, and rising expenses. Other problems have included training farm operators to do the coding of input information and getting the time requirement of professional staff people



down to an acceptable level.

The changes made in these university programs since they went into operation include: changing the code system and format of input forms to permit farmers to code the information, providing additional output information, and providing more detailed output information. Also, it was reported in one case, that the method of allocating overhead costs to enterprises and the method of handling the input data have been changed.

Future changes anticipated by these universities include: (1) offering additional help and educational programs to farmers to enable them to use their records more efficiently for forward planning and short run decisions and (2) adding more program editing procedures to check the accuracy of the input information.

These representatives offered the following advice in regard to developing and offering EDP services:

1. be sure the need is present
2. have adequate resources--including better than average computer programming assistance
3. carefully think out exactly what should be done in the program and how it should be done
4. keep the program simple in the beginning stages
5. do not meet all record keeping needs or research needs the first year
6. the program must have enough flexibility so that each farmer can tailor the program to his own individual needs

7. the code system and input forms must be simple for subscribers to understand and use
8. consider obtaining an operational system from another organization or university rather than developing your own

The representatives also strongly emphasized that an adequate field staff and some form of personal, periodic contact with farmers is a must. These fieldmen must be highly motivated people who are qualified to train subscribers on how to record information for the program, interpret the output, and use the information in management decisions.