May 18, 1967

To the Graduate Council:

I am submitting herewith a thesis written by Raymond Andrew Holt entitled "An Evaluation of A Handbook of Agricultural Credit for Vocational Agriculture in Tennessee." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Education.

Major Professor

We have read this thesis and recommend its acceptance:

Dewey H. Stellar

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Vice President for
Graduate Studies and Research

AN EVALUATION OF A HANDBOOK OF AGRICULTURAL CREDIT FOR VOCATIONAL AGRICULTURE IN TENNESSEE

A Thesis

Presented to

the Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

---

by

Raymond Andrew Holt

June 1967

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CHAPTER I

THE PROBLEM OF THE STUDY

I. INTRODUCTION

The nature and scope of agricultural production has been drastically changed in the last few decades due to technological advancements and scientific achievements. Knowledge of such changes and innovations is an essential ingredient of the successful farmer of the present generation and of generations to come. Only through the implementation of such knowledge can the farmer successfully compete in an urban age of agricultural production because of an imperative largeness of farm operations.

More use of agricultural credit is one of the many changes that have occurred in the realm of agricultural production. As farms become larger, the capital needs of farms generally increase. Farm management and financial assistance are mutually interrelated to the extent that the successful producer can no longer ignore the value of credit. Being cognizant of this fact, the majority of the vocational agriculture teachers in Tennessee are including more agricultural credit instruction in the total vocational agriculture program. The importance of the development of adequate instructional materials on the subject of agricultural credit then comes into focus because of the increased attention to this type of vocational instruction.

II. STATEMENT OF THE PROBLEM

The purpose of this investigation was to evaluate A Handbook of Agricultural Credit for Vocational Agriculture in Tennessee in terms of instructional effectiveness in all-day vocational agriculture classes in secondary schools. Also included in the problem of the study were different instructional methods, the ultimate objective being to determine which method or combination of methods would produce the most significant results, as shown by evaluation of student performances.

As a result of preliminary research for the study and conferences held with university staff members, two hypotheses were formulated to be tested.

Hypothesis I. There will be no significant difference between the means of the five methods used to teach agricultural credit at the .05 level.

Hypothesis II. The difference between the means of test one and test two will not be significant at the .05 level.

III. NEED FOR THE STUDY

As a result of his investigation of agricultural credit instructional programs in Tennessee, Gregory concluded that two of the major weaknesses in such programs were the lack of training in credit and the lack of instructional materials that were adequate in the subject

area (6, p. 50).* Without adequate teaching materials on agricultural credit, the instructor cannot effectively present to the students a workable knowledge of credit. Publications and materials previously written on agricultural credit have generally become out-dated on various aspects of the subject.

A Handbook of Agricultural Credit for Vocational Agriculture in Tennessee was developed, along with an instructional supplement, as a result of the realization that more comprehensive materials on credit are needed by vocational agriculture teachers. The results of the study should prove the educational value of the book, which possibly could be distributed to the vocational agriculture teachers in strengthening present programs of instruction.

IV. DELIMITATIONS OF THE STUDY

This study was delimited to selected vocational agriculture departments in public high schools in Tennessee. The study was further delimited to teachers and senior students in those departments. Statistical delimitations included an analysis of variance and a multiple range test.

---

*Numbers in parentheses refer to numbered references in the Bibliography.

V. DEFINITION OF TERMS

Agricultural credit. This term refers to the internal and external financial resources involved in the processes of agricultural production and marketing.

Vocational agriculture teacher. This term refers to all persons currently employed by the state of Tennessee to teach vocational agriculture.

Vocational agriculture student. This term includes all high school students currently enrolled in programs of vocational agriculture in the state of Tennessee.

Instructional supplement. This term refers to a booklet, including teacher and student activities and visual aids, developed by the investigator to supplement the handbook as a combination of methods used in the study.

Teaching assistance. This term refers to the aid given to participating teachers by the investigator as part of one method used in the study. The objective of the teaching assistance was to make clear to the participating teachers all sections of the handbook and/or instructional supplement and what specifically was expected in the duration of instruction for the study.

Curriculum. This term refers to a series of courses designed for instruction in a designated field or to the complete body of courses offered in an educational institution.

Educational program. This term includes the teacher and student activities utilized in the learning process and/or learning situation.

Specific agricultural credit terms as used in the handbook can be located in the instructional supplement (see Appendix B).

VI. PROCEDURE AND SOURCES OF DATA

A very limited number of studies have been conducted concerning agricultural credit instruction in vocational agriculture programs in Tennessee. Such studies have generally agreed that more comprehensive instructional materials are needed in the area of credit instruction because available materials lack the desired degree of comprehensiveness and timeliness. As a result of reviews of such studies and the related literature and of conferences held with staff members of Agricultural Education Department at The University of Tennessee, an agricultural credit handbook and an instructional supplement (see Appendixes A and B) were developed. Thus, after the completion of the handbook and instructional supplement this study was initiated to test the hypotheses set forth previously, the primary objective being to determine the educational value of the materials.

Twenty-five vocational agriculture departments in Tennessee public high schools were selected to participate in the study (see Appendix C) by means of unrestrictive sampling; that is, a table of random numbers (1, pp. 158-161). Letters were written to the vocational agriculture teacher of the selected department to obtain

permission and cooperation in the study (see Appendix G).

The selected departments were divided into five groups by means of random selection; that is, the first five departments selected constituted the first group; the second five, the second group, etc. until all five groups had been filled. The reason for grouping the departments was because each group used a different approach or method of credit instruction as shown in Table I.

The duration of instruction was for two weeks or ten school days. Each teacher followed a standardized outline (see Appendix D), except Group I--the control group, to minimize the differences in instruction. The request was made by the investigator that the credit instruction be limited to only the senior vocational agriculture classes, from which five students would be randomly selected to make the study as uniform as possible.

Immediately after the two-weeks instructional period, a test was given to all students to evaluate their performances (see Appendix E). In order to test for retention of knowledge and therefore determine differences of methods, a second test was conducted approximately one month after the first test. The second test was identical to the first except that the items in the second test were arranged in a different order from the first one. As was shown in Table I both tests were given to all five groups of schools. The reason the second test was given to Group I was that the test should indicate any transfer of learning from the first test to the second test that might adversely affect the results of the study. No pretest was given in the study.

TABLE I

BASIC EXPERIMENTAL DESIGN FOR THE STUDY

High School Group	Method Used	No. Schools	Students Per School	Posttests 1	Posttests 2
I	0[a]	5	5	Yes	Yes
II	R[b]	5	5	Yes	Yes
III	R+TE[c]	5	5	Yes	Yes
IV	R+S[d]	5	5	Yes	Yes
V	R+S+TE[e]	5	5	Yes	Yes

[a]No instructional materials allocated.

[b]Handbook only.

[c]Handbook and teaching assistance.

[d]Handbook and instructional supplement.

[e]Handbook, instructional supplement, and teaching assistance. (Teaching assistance refers to visits made to the departments prior to the instruction in credit to clarify what was expected in the instruction. It could loosely be classified as in-service training.)

A questionnaire (see Appendix F) was mailed to each participating teacher at the end of the instructional period in order to obtain the teachers' reactions, evaluations, and recommendations of the handbook and instructional supplement. Thus, one of the purposes of the questionnaire was to aid in evaluating the educational importance of the materials.

The primary evaluation of the study was conducted by a two-way analysis of variance, a statistical technique used in this study to determine the significance of the methods, the tests, the interaction between tests and methods, and the error involved (see Table II for the method of computing the analysis of variance). The test scores (scored by the investigator) were recorded on IBM cards which were processed by a computer to give the data necessary to apply the analysis of variance technique. A multiple range test was then conducted to determine which method or combination of methods was most significant in the study.

Literature pertaining to the study was reviewed, and the points of emphasis were recorded in Chapter II of the thesis. The results of the statistical analysis were presented in Chapter III, after which the data were summarized. Conclusions of the study were made, and recommendations were extended to implement a stronger agricultural credit instructional program.

TABLE II

METHOD OF COMPUTING ANALYSIS OF VARIANCE--TWO-WAY CLASSIFICATION

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Probability
Method	I-1	SS_M	MS_M	F_M*	(from F table)
Test	J-1	SS_T	MS_T	F_T**	
Method x Test (Interaction)	(I-1)(J-1)	SS_{MT}	MS_{MT}	F_{MT}***	
Error (Within)	IJ(N-1)	SS_E	MS_E		
Total	IJN-1	SS_T			

$$^{*}F_M = \frac{MS_M}{MS_E}$$

$$^{**}F_T = \frac{MS_T}{MS_E}$$

$$^{***}F_{MT} = \frac{MS_{MT}}{MS_E}$$

CHAPTER II

REVIEW OF THE LITERATURE

I. EDUCATION AND ECONOMIC GROWTH

Alfred Marshall, a famous economist, once wrote the following paragraph concerning the role of education in achieving economic growth:

> Ideas, whether those of arts and sciences, or those embodied in practical appliances, are the most 'real' of the gifts that each generation receives from its predecessors. The world's material wealth would quickly be replaced if it were destroyed but the ideas by which it was made were retained. If however the ideas were lost, but not the material wealth, then that would dwindle and the world would go back to poverty. And most of our knowledge of mere facts could quickly be recovered if it were lost, but the constructive ideas of thought remained; while if the ideas perished, the world would again enter on the Dark Ages (9, p. 680).

"Education has always been considered by economists and laymen to be one of the crucial variables in achieving economic growth, economic development, and human progress in all endeavors" (16, p. 1). The universal acceptance of the idea that education contributes, to a large extent, to economic growth and development is not difficult to understand. Wharton presented an oversimplified agrument to prove this point:

> Education provides man with powerful and useful skills which raise the level of his economic performance. Education alters the quality of labor and management. It reduces the restrictions of traditionalism and facilitates innovation. It increases the

> geographic and occupational mobility of people. All of these steps contribute to economic growth and development. Thus education is naturally considered an important means for attaining development (16, p. 2).

The role of education in agricultural economic growth is becoming extremely important, especially in the areas of agricultural finance and credit. As farm operations become larger and more complex, the demand for a continuing increase in capital requirements will call for the utilization of more agricultural credit. ". . . survival in the agricultural economy of the future will depend largely upon the individual farmer's management and ability and whether he has sufficient credit of the right type" (14, p. 4). Certainly, agricultural credit is one of the tools used in obtaining more efficient farm operations and is a necessary, legitimate, and an important element in operating a successful farm business. Like fertilizer, however, the farmer of the future must know when to use it, how much to use, and what kind to use (3, p. 6). The credit approach toward most profitable utilization of farm resources uses all available educational services and technical assistance (8, p. 28). Murray also related the value of education to the use of credit by proposing questions and a solution to them as follows:

> Must farm families throughout their lifetime deny themselves comforts considered essential for urban families in order to amass a small or moderate fortune required to capitalize an efficient farm unit? Burdened with the load of acquiring the minimum of capital needed to start farming, what chance does the beginning farmer have of ever developing an adequate unit if capital requirements keep growing at a faster rate than he can save? One solution to these questions may lie in having the knowledge of how to properly use credit (10, p. 18).

In pointing out the reasons why credit is important for farmers, especially young people considering the occupation of agricultural production, the 1975 predictions indicated that:

1. The nation's farms will have to produce 30 per cent more food to meet the demands of our increasing population.

2. To meet this demand for greater production farmers will use more machines and equipment and better business methods.

3. Farms generally will tend to become 'commercial' in these ways: they will use more money, invest more in equipment, borrow more, and keep better accounts. In fact, farming will be considered as a business, and the farmer will use many of the financial and accounting methods of the businessman.

4. The farmer will obtain the added capital he will need for modern farming by the use of credit. He must manage his finances so that he can make more money by using borrowed money.

5. There will be fewer farmers to produce the increased amount of food; therefore, individual incomes and living standards of farm people will be higher in relation to other occupational groups than they are now.

6. Professional and commercial positions that call for understanding of farming and finance are increasing rapidly.

7. Along with more money and better financial methods, the farmer of the future will enjoy more of the things money will buy--a better home, more conveniences, more contact with business enterprises, and a larger place in the life of his community (5, p. 3).

In summarizing the previously mentioned points concerning education and economic growth, Baum concluded that education plays a vital role in the following ways: (1) in equipping individuals reared on farms to reach a decision as whether to farm or pursue alternate opportunities in their best interests and thereby make a greater contribution to society; (2) in evaluating opportunities to maximize profits

through new enterprises, adjustments, enlargements, or more efficient farm operations; (3) in the desire to seek borrowed capital, use it wisely, and develop sound long-range, as well as short-range, financial plans to present to their farm credit association or bank when they are requesting financing of an expansion, new enterprise, or adjusted operation; and (4) in seeking to continue the learning process which is necessary to meet constantly changing conditions on the farm and in the economy (2, p. 346).

II. EDUCATIONAL TRAINING IN AGRICULTURAL CREDIT

If students and farmers are to make a wiser use of agricultural credit, they will need more information concerning it. In the educational development of students, through learning experiences such as farming programs, attention should be given to sound methods of financing these activities. According to Deyoe the student should consider the problem of how the project can be financed and how credit may be secured, if such is necessary (4, p. 293). Hinton, in his study concerning supervised farming programs, stated that the vocational agriculture teacher should discuss with the parents and the student about financing enterprises for training and experience in borrowing money (5, p. 48). A farm boy should learn early in life how to use credit wisely. Most of the FFA members who have been named State Farmers have already learned to use credit as a means of getting ahead (5, p. 6).

Deyoe stated in his book that sound financing aids the students in several ways, such as (1) enables them to have a kind of farming program they ought to have, (2) permits them to secure credit they need, at reasonable prices or rates and under suitable terms, (3) provides desirable situations for boys to secure knowledge and experience in the wise use of credit to increase farm production and profits, and (4) assists boys in becoming established in farming by enabling them to accumulate livestock and equipment and establish credit relations that they may continue to use after they leave school (4, p. 296). In his study of agricultural credit, Whitlow concluded that the needs of farmers require that teachers of vocational agriculture offer organized instruction which includes the information needed to assist farmers in making decisions (17, p. 1).

Robinson made several points concerning the knowledge that should be helpful to students and farmers in study credit:

1. A better understanding of the services performed by credit, the limitations on its usefulness, and the factors determining its profitableness.

2. The terms of a loan which will fit the particular needs of their individual businesses.

3. The various sources of credit available, their terms, and how to proceed in getting a loan from each.

4. How to compare the terms offered by the different agencies, and particularly how to calculate the comparative costs of the credit.

5. How to judge the financial soundness and dependability of credit institutions.

6. The reasons for and the significance of the different papers which they sign in using credit.

7. How to make sound farm and home financial plans, based on the agricultural outlook and the records they have kept and analyses they have made of their own businesses.

8. The value of a good credit rating and how to establish and maintain one.

9. The income and security advantages of investment in the farm business, and the influence that current and prospective land values should have on a sound investment program (12, p. 519).

Educational institutions and lending agencies have shared the bulk of the task of educating the rural population about credit. The previous neglect of financing, in fact, makes it all the more important that educational institutions and credit agencies provide information that will enable the farmer to make the most profitable use of the credit facilities available to him (12, p. 530). However, Robinson postulated several limitations to cooperative educational programs:

1. The extent to which the lending agencies are under responsibility for educational effort in the field.

2. The extent to which the educational services are justified in setting up joint projects with the lending agencies.

3. The feasibility of offering by one and the practicability of accepting by the other of the facilities of the landing agencies as a laboratory for farm credit teaching.

4. The limitations imposed by budgets and personnel of all agencies on the activities undertaken (12, p. 521).

In recent years more cooperative educational programs have been established, especially in the area of in-service training programs for vocational agriculture teachers. In the summer of 1966, the Tennessee

Federation of Production Credit Associations conducted such a program in Tennessee in the form of a short course.

More vocational agriculture teachers are including agricultural credit instruction in the curriculum. Most vocational agriculture teachers are aware, to some extent, of the need of such instruction in this field (17, p. 4). Gregory found that in the present educational program 80 per cent of the teachers were providing credit instruction to junior and senior students and that 22 per cent had adult classes in credit (6, p. 58). He also found that 90 per cent of the agricultural teachers believed that credit was emphasized too little and that only 10 per cent reported enough credit instruction considering other areas of instruction. The majority of the teachers surveyed believed that from 76 to 100 per cent of the students would benefit from studying agricultural credit. As far as student interest in credit was concerned, 73 per cent of the teachers reported that students have the same interest or more interest in credit than in other units taught (6, p. 43).

III. TYPE OF AGRICULTURAL CREDIT EDUCATIONAL PROGRAM

A credit educational program should give new credit opinions. Roman included four major points in such a program:

1. Knowledge showing the economic effects of various credit actions.

2. Knowledge of the purposes, uses, and functions of credit; the sources, practices, and credit terms available to farmers; the calculation of interest rates; and the ease of credit acquirement.

3. Logical analysis of existing disingenuous attitudes when translated into action, their inconsistencies with knowledge, and why such attitudes are in existence.

4. Information on individual credit situations and problems (13, p. 159).

Whitlow set up the following units of instruction in an agricultural credit educational program:

1. Acquainting students with farm credit.

2. Determining individual credit needs and sound financial practices.

3. Selecting the lending agency.

4. Applying for, obtaining, and repaying the loan (17, pp. i-ii).

Another study by Gregory indicated that vocational agricultural education should be emphasizing credit instruction in the following order of importance:

1. Uses of credit.

2. Cost of credit.

3. General information about credit.

4. Sources of credit (6, p. 54).

IV. NATURE OF INSTRUCTIONAL MATERIALS

One of the basic weaknesses in agricultural credit programs in Tennessee was the lack of instructional materials as concluded by Gregory (6, p. 59). In fact, his survey showed that 38 per cent of the teachers indicated a need for more instructional materials (6, p. 51). Whitlow found that many vocational agriculture teachers expressed a

desire to teach agricultural credit to their classes if the instructional materials were available (17, p. 4). Gregory listed the types of materials the teachers were using at the time he conducted as shown in Table III. He furthermore stated that it was essential that all educational materials which were available on credit be studied and assembled according to the high school student's ability (6, p. 60).

The gap in understanding among farm people about what their credit is costing is great, and the loss is substantial. Further education is needed in the simple calculation of interest charges along with a recognition of important aspects of credit terms for which to look (11, 1. 168). Education on interest rates should emphasize the effects on interest discounting procedures, service charges, installment repayment plans, and cash discounts (13, p. 154).

The Agricultural Committee of the American Bankers Association recently published a handbook similar to the one in this study. Their handbook provided guidelines and techniques of agricultural credit analysis as a basis for sound lending practices. The handbook included sections dealing with: (1) farm and financial records, (2) analysis of the farm business, (3) annual farm and credit planning, including cash flow analysis and budgeting, and (4) use of financial statements, annual farm and credit plans, partial budgets, and other forms (15, pp. 18-21). The techniques were more generally comprehensive than have been used. Baum's recommendations for instructional materials included the case study approach. Actual case studies should be developed, studied

TABLE III

INSTRUCTIONAL MATERIALS AND METHODS IN AGRICULTURAL CREDIT TRAINING USED BY TWENTY-NINE VOCATIONAL AGRICULTURE TEACHERS IN TENNESSEE*

Instructional Materials	Number of Teachers	Per Cent
Chalkboard	29	100
Reference books	29	100
Models or copies of documents	19	66
Movies	16	54
Charts	16	54
Loan agents' visits to class	10	35
Visits to loan offices	9	32
Film strips	5	18
Recordings	2	7
Pictures	2	7
Newspapers and catalogs	2	7

*Harold C. Gregory, "An Agricultural Credit Education Program for Students of Vocational Agriculture in Tennessee" (unpublished Master's thesis, The University of Tennessee, Knoxville, 1965). (6, p. 45).

by students, discussed, and used as a tool to improve decision making abilities and techniques. Such cases would involve resources, financial plans, marketing plans, profitability in relation to other alternatives, new enterprises, adjustments, enlargement, and the like (2, p. 345).

The previous review of the literature served as a basis for developing the instructional materials in the study. The next step was to utilize those materials in credit instruction and determine any educational significance resulting from their use.

CHAPTER III

PRESENTATION AND DISCUSSION OF DATA

The data collected in the investigation were subjected to an analysis of variance and to the multiple range test to determine the significance of the methods, the tests, the interaction between methods and tests, and the error involved in the study. The resulting computations are presented in tabular and graphical form, thereby making it possible to test the hypotheses formulated prior to the investigation. The data from the questionnaire are also presented in tabular form, enabling the investigator to evaluate the usefulness of A Handbook of Agricultural Credit for Vocational Agriculture in Tennessee and the accompanying instructional supplement.

I. DATA SUBJECTED TO ANALYSIS OF VARIANCE

The results of the two-way classification of analysis of variance, with respect to methods and tests used in the study, are listed in Table IV. Since the computer did not calculate the significance (P value) in the analysis of variance program, an F table was consulted to determine the significance level of each F score for the particular source of variation. As Table IV shows, only one source of variation was highly significant, that source being the five different methods used to teach agricultural credit for the two weeks. The significance level ($P < .001$) for methods, consequently, revealed that

TABLE IV

ANALYSIS OF VARIANCE FOR THE SOURCES OF VARIATION IN THE STUDY

Source of Variation	Degrees of Freedom	Sums of Squares	Mean Square	F Value	Probability
Method	4	12975.9199	3243.9800	24.486	$<.001$
Test	1	32.4000	32.4000	0.245	$>.50$
Method x Test (Interaction)	4	541.8400	135.4600	1.022	$>.25$
Error (Within)	240	31796.2396	132.4843		
Total	249	45346.3996			

the probability that an insignificant difference between methods would yield an F value of this magnitude of only one in a thousand.

Although tests were given a significance ($P > .50$), the tests actually were not significant because the 50 per cent level is not a satisfactorily precise level.

The interaction of methods times tests indicated only slight significance ($P > .25$) which, for scientific and practical purposes, is insufficient since the .05 level is usually preferred. Figure 1 illustrates the low significance of the interaction as a source of variation by presenting a pattern of the means. The mean scores for posttest one and posttest two were plotted with the five different methods used in the instruction of credit as the horizontal axis and the test scores as the vertical axis.

The pattern of means is of interest in several respects. First of all, the lines are roughly parallel from method two to method four but are not parallel from method one to method two or from method four to method five. The pattern thus indicated that for method one and method five, the mean score was slightly higher for test two than for test one, while a reversal of the pattern was true for methods two, three, and four. The pattern of means also showed that the interaction mean square was greater than the within or error mean square, indicating a variance that was significant in the methods while tests were not significant as shown previously in Table IV.

Approximately the same data is presented in Table V as was presented in Figure 1 except that Table V gives the means for tests one

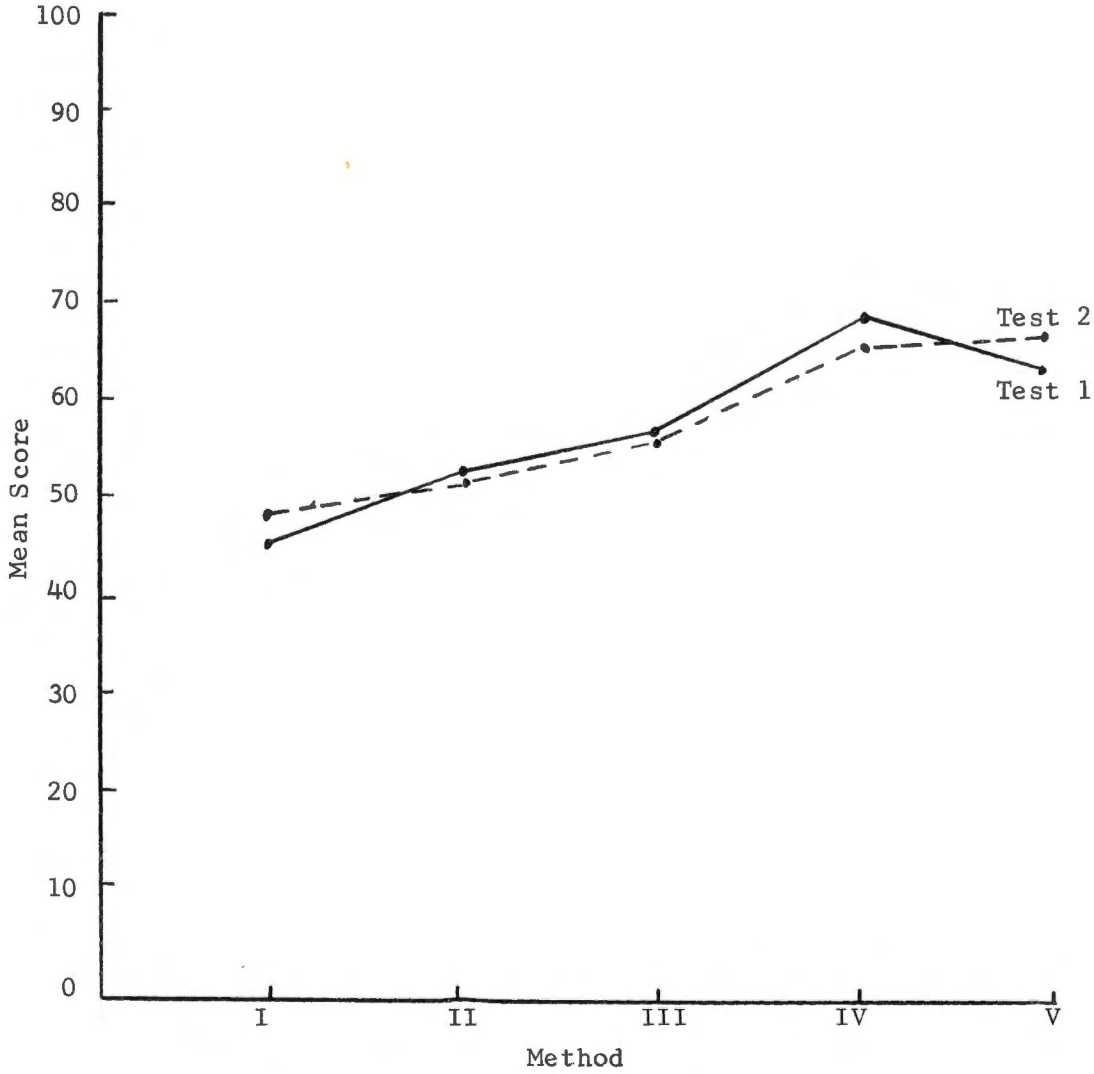

FIGURE 1

PATTERN OF MEANS (INTERACTION)

TABLE V

MEANS FOR METHODS AND TESTS, GROUP MEANS AND DEVIATION FROM GRAND MEAN, AS DETERMINED BY AN ANALYSIS OF VARIANCE

Method	Test One	Test Two	Group Mean	Deviation from Common Mean
I (Group I)	46.840	49.360	48.100	-12.420
II (Group II)	58.440	58.320	58.380	-1.140
III (Group III)	64.640	59.120	61.880	1.360
IV (Group IV)	70.720	68.360	69.540	9.020
V (Group V)	63.760	65.640	64.700	4.180
Grand Mean	60.880	60.160	60.520*	

*Overall group mean.

and two plus an overall mean and the deviation from the common mean for each method. By observation of the table, method four (handbook and instructional supplement) had a higher mean (69.540) than the other four methods with method one (no instructional methods allocated) having the lowest mean (48.100). Method one deviated the greatest from the common mean (a deviation of -12.420), while method four ranked second with a deviation of 9.020. The other methods had only slight deviations and were unpredictable as to the significance of the deviations or differences in the means from the table.

II. DATA SUBJECTED TO MULTIPLE RANGE TEST

Since methods were shown to be the only source of variation to be highly significant by the analysis of variance, the multiple range test was utilized to determine which method or combination of methods was significant at the .05 level.

The means of the methods were ranked by the multiple range test in order of the highest mean to the lowest mean as listed in Table VI. A point of interest shown in the table was that the mean of method four (handbook and instructional supplement) surpassed the mean of method five (handbook, instructional supplement, and teaching assistance) by 4.840.

Each mean score was compared to all other mean scores in Table VII. The information in the table illustrated that there was no significant difference at the .05 level between methods four and five, five and three, and three and two. However, significant differences

TABLE VI

RANKED MEANS ACCORDING TO METHOD AS DETERMINED BY MULTIPLE RANGE TEST

Method	Mean
IV	69.54000
V	64.70000
III	61.88000
II	58.38000
I	48.10000

TABLE VII

DIFFERENCES OF MEANS ACCORDING TO METHOD AS DETERMINED BY MULTIPLE RANGE TEST

Compare Method Number	To Method Number	Difference Between the Two Means
IV	V	4.84000
IV	III	7.66000*
IV	II	11.16000*
IV	I	21.44000*
V	III	2.82000
V	II	6.32000*
V	I	16.60000*
III	II	3.50000
III	I	13.78000*
II	I	10.28000*

*Significant at .05 level.

did exist between methods four and three, four and two, four and one, five and two, five and one, and two and one.

Table VIII presents the grouped means for the five methods to determine the order of significance of the methods. Methods four and five ranked first having the most significant means, with methods five and three ranking second, and methods three and two in third place. Method one, however, occupied the fourth or lowest ranking since its mean score differed significantly from the other mean scores.

Figure 2 further illustrates the position in which the five methods were ranked as to significance. The lines under the methods indicated the relationship existing between the methods. Methods four and five were approximately the same in significance above the other methods, with method four being the superior method. The lines further indicated that methods five and three did not differ significantly, the same being true for methods three and two. Method one, however, differed significantly to the extent that it did not associate with any other method. It should be noted that there was overlap of the methods to some extent. However, the methods differed enough that the order of significance was not affected.

III. ANALYSIS OF QUESTIONNAIRE AS RELATED TO THE HANDBOOK

Methods were previously shown to be the only source of variation in the study to be highly significant. Since the handbook and instructional supplement constituted four of those methods, either alone or in combination with each other, an analysis of the questionnaire was

TABLE VIII

GROUPED MEANS ACCORDING TO METHOD AT .05 PROBABILITY LEVEL AS DETERMINED BY MULTIPLE RANGE TEST

	Grouped Means			
Rank	Method No.	Mean	Method No.	Mean
1	IV	69.54000	V	64.70000
2	V	64.70000	III	61.88000
3	III	61.88000	II	53.38000
4	I	48.10000	--	--

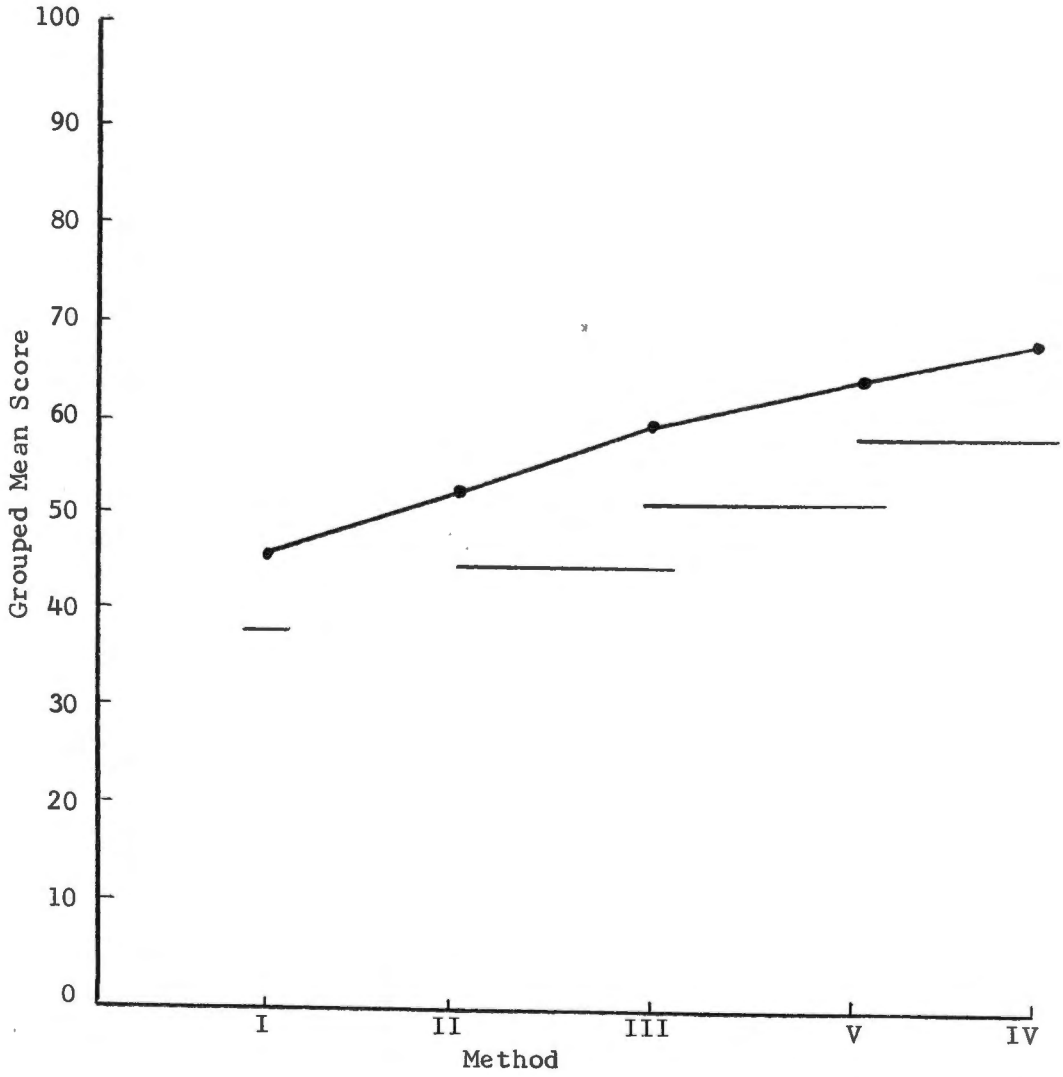

FIGURE 2

METHODS WITH MEANS IN ORDER OF SIGNIFICANCE OF DETERMINED BY MULTIPLE RANGE TEST

imperative to examine more thoroughly the educational usefulness of those instructional materials as evaluated by the participating teachers.

An evaluation of the readibility of the handbook is presented in Table IX. As far as clarity of ideas and information was concerned, 10 per cent of the teachers believed that the handbook was very clear, whereas 90 per cent of the teachers reported that the information was clear. Seventy-five per cent of the teachers reported that the students had relative difficulty in reading and understanding the handbook, while only 15 per cent of the teachers had some difficulty. Only 20 per cent of the teachers reported that the students encountered no problems in interpreting the data, whereas 85 per cent of the teachers reported no difficulty.

Revision of the handbook was questionable. Of the teachers reporting, 55 per cent believed that no revision was necessary. On the other hand, 45 per cent of the teachers reported that the handbook needed revision in terms of better organization, revision of terms, and presentation in outline form with 10 per cent, 25 per cent, and 10 per cent, respectively.

The comprehensiveness of the handbook as evaluated by the participating teachers is shown in Table X. The majority (60 per cent) of the teachers ranked the handbook as being somewhat comprehensive, and 40 per cent of the teachers indicated that the handbook was very comprehensive. None of the teachers reported a lack of comprehensiveness.

TABLE IX

READIBILITY OF A HANDBOOK OF AGRICULTURAL CREDIT FOR VOCATIONAL AGRICULTURE IN TENNESSEE, AS EVALUATED BY PARTICIPATING TEACHERS

Item	Number of Teachers	Per Cent
Clarity of Ideas and Information		
Very clear	2	10
Clear	18	90
Somewhat vague	--	--
Vague	--	--
No idea of what was presented	--	--
Difficulty of Students in Reading and Understanding		
No difficulty	4	20
Somewhat difficult	15	75
Difficult	1	5
Very difficult	--	--
Difficulty of Teacher in Reading and Understanding		
No difficulty	17	85
Somewhat difficult	3	15
Difficult	--	--
Very difficult	--	--
Revision for Better Readibility		
Better organization	2	10
Revision of terms	5	25
Presentation in outline form	2	10
No revision	11	55

TABLE X

COMPREHENSIVENESS OF A HANDBOOK OF AGRICULTURAL CREDIT FOR VOCATIONAL AGRICULTURE IN TENNESSEE, AS EVALUATED BY PARTICIPATING TEACHERS

Item	Number of Teachers	Per Cent
Comprehensiveness in Presenting Information		
Very comprehensive	8	40
Somewhat comprehensive	12	60
Little comprehensiveness	--	--
No comprehensiveness	--	--
Sections Needing Expansion or Greater Depth		
Credit Needs	2	10
Types of Credit	1	5
Cost of Credit	2	10
Selecting the Credit Institution	--	--
Sources of Credit	1	5
Planning Repayment Terms	1	5
Credit Instruments and Documents	3	15
The Proper Use of Credit	--	--
Case Studies	--	--
None	10	50

The sections of the handbook needing revision in terms of greater depth were varied, and none seemed to outrank the other sections to a great extent. Although 50 per cent of the teachers reported a need for revision in terms of depth, an additional 50 per cent of the teachers believed no revision was necessary.

An evaluation of the suitability of the handbook showed that 60 per cent of the teachers indicated that the handbook was the desirable type of material as listed in Table XI. No votes were cast for unsuitability of the handbook.

Eighty per cent of the teachers believed that the handbook should be used only with the senior class; 50 per cent, the junior class; 10 per cent, the sophomore class; and 5 per cent, the freshman class. There seemed to be an overwhelming opinion that only the junior and senior classes were capable of interpreting credit information.

Ninety per cent of the teachers reported that the handbook should be used in the combination of a teacher resource unit and as a reference unit for the student.

Appropriateness of the handbook should not be confused with suitability. The term as used in the questionnaire referred to whether the handbook information was timely. Sixty per cent of the teachers believed that all sections of the handbook were up-to-date, and only a small percentage (20 per cent) of the teachers believed that some of the sections of the handbook needed to be brought up-to-date, contrasting to 80 per cent who believed that none of the sections needed updating. All of the teachers reported that the type of material included

TABLE XI

SUITABILITY OF A HANDBOOK OF AGRICULTURAL CREDIT FOR VOCATIONAL AGRICULTURE IN TENNESSEE, AS EVALUATED BY PARTICIPATING TEACHERS

Item	Number of Teachers	Per Cent
Suitability for Use in Vocational Agriculture Classes		
Very suitable	12	60
Somewhat suitable	8	40
Somewhat unsuitable	--	--
Not suitable	--	--
Vocational Agriculture Class in Which the Handbook Should be Used*		
Freshmen	1	5
Sophomore	2	10
Junior	10	50
Senior	16	80
Recommended Use of the Handbook		
As teacher resource unit only	1	5
As teacher resource unit and student reference unit	18	90
As student reference unit only	1	5
Not recommended for use	--	--

*More than one class could be selected.

in the handbook was the kind needed in agricultural credit instruction as shown in Table XII.

The recommendations made by the participating teachers are listed in Table XIII. The recommendations were varied, but some of them ranked higher than others. Thirty per cent of the teachers indicated that the handbook should be easier to understand. Evidently this recommendation was made from the viewpoint of the student since 85 per cent of the teachers reported no difficulty in understanding the material as previously presented in Table IX, page 33.

Thirty-five per cent of the teachers indicated a need for more problems on computing the costs of credit. Some of these teachers did not receive the instructional supplement, which had interest problems included in it.

A need of more visual aid materials was indicated by 40 per cent of the teachers, making the recommendation one of the most important. A high need for projection transparencies, pictures, charts, films, filmstrips, and slides was very evident.

Difficulty was encountered in evaluating the need for in-service training or some type of short course in agricultural credit because of the small number of teachers in the sample. Although 40 per cent of the teachers indicated a need for such instruction, the data did not permit a sound basis for judgement and/or decision concerning whether in-service training is essential.

TABLE XII

APPROPRIATENESS OF A HANDBOOK OF AGRICULTURAL CREDIT FOR VOCATIONAL AGRICULTURE IN TENNESSEE, AS EVALUATED BY PARTICIPATING TEACHERS

Item	Number of Teachers	Per Cent
Timeliness of Credit Information		
Up-to-date (all sections)	12	60
Generally up-to-date	8	40
Somewhat out-of-date	--	--
Out-of-date	--	--
Sections Needing Revision in Terms of Being Up-to-date		
Credit Needs	--	--
Types of Credit	--	--
Cost of Credit	2	10
Selecting the Credit Institution	--	--
Sources of Credit	--	--
Planning Repayment Terms	--	--
Credit Instruments and Documents	1	5
The Proper Use of Credit	1	5
Case Studies	--	--
None	16	80
Provision of Type of Material Needed in Credit by the Handbook		
Yes	20	100
No	--	--

TABLE XIII

RECOMMENDATIONS MADE BY PARTICIPATING TEACHERS CONCERNING A HANDBOOK OF AGRICULTURAL CREDIT FOR VOCATIONAL AGRICULTURE IN TENNESSEE, AND AGRICULTURAL CREDIT INSTRUCTION IN GENERAL

Recommendation*	Number of Teachers	Per Cent
Needs to be made easier to understand	6	30
Needs to be more readable	3	15
Needs to be more comprehensive	1	5
Needs to be brought up-to-date	1	5
Need more problems on computing interest	7	35
Need clearer examples of credit instruments	4	20
Need more visual aid materials	8	40
Projection transparencies**	7	87.5
Charts, pictures, etc.**	6	75
Films, filmstrips, and slides**	8	100
Others**	--	--
Need in-service training in credit or some type of short course	8	40
Publication and distribution of handbook to vocational agriculture teachers in state	20	100

*More than one recommendation could be selected.

**Percentages were calculated on the basis of only those recommending more visual aid materials.

One hundred per cent of the teachers believed that the handbook should be published and distributed to all vocational agriculture teachers in the state. This recommendation was significant in that it showed the handbook to be useful in credit instruction.

IV. ANALYSIS OF QUESTIONNAIRE AS RELATED TO THE INSTRUCTIONAL SUPPLEMENT

The evaluation of the educational effectiveness of the instructional supplement is presented in Table XIV. The percentages were based only on the ten teachers using the instructional supplement.

There was some discrepancy in the evaluation of the effectiveness of the projection transparencies. Sixty per cent of the teachers indicated that the transparencies were helpful in presenting credit information, while 40 per cent reported that the transparencies were of little help. The latter evaluation was somewhat contradictory to the findings in Table XIII, in which 87.5 per cent of the teachers indicated a need for projection transparencies.

All of the ten teachers reported that the problems of computation of credit costs were beneficial in explaining the concept of credit. This finding was in agreement with Table XIII, in which 35 per cent of all the teachers recommended more credit cost problems.

The teachers rated the suggested class activities as follows: excellent--40 per cent; good--20 per cent; fair--0 per cent; and poor--0 per cent. For some reason which could not be defined, 40 per cent of the teachers did not rate the activities.

TABLE XIV

EVALUATION OF INSTRUCTIONAL SUPPLEMENT AS MEASURED BY PARTICIPATING TEACHERS USING THE SUPPLEMENT*

Item	Number of Teachers	Per Cent
Usefulness of Projection Transparencies in Presentation of Concept of Credit		
Very helpful	2	20
Somewhat helpful	4	40
Little helpful	4	40
Not helpful	--	--
Usefulness of Interest Problems in Illustrating Computation of Credit Costs		
Very beneficial	7	70
Beneficial	3	30
Little benefit	--	--
Not beneficial	--	--
Rating of Suggested Class Activities		
Excellent	4	40
Good	2	20
Fair	--	--
Poor	--	--
No rating given	4	40
Publication and Distribution of Instructional Supplement to Vocational Agriculture Teachers in Tennessee		
Yes	10	100
No	--	--

*Only ten teachers used the instructional supplement.

All of the teachers using the instructional supplement believed that it should be published and distributed to all vocational agriculture teachers in the state. Additional comments on the questionnaire by the teachers supported the finding that the supplement was essential to the handbook in presenting agricultural credit information.

CHAPTER IV

SUMMARY AND CONCLUSIONS

A Handbook of Agricultural Credit For Vocational Agricuture in Tennessee and an accompanying instructional supplement were developed from the realization that more comprehensive and adequate instructional materials are needed in the area of agricultural credit. Therefore, the major purpose of the study was to evaluate the handbook and instructional supplement as instructional materials and/or methods in twenty-five randomly selected departments of vocational agriculture in Tennessee. Out of the selected departments five students were chosen at random to make the study more uniform and eliminate unnecessary sources of variation.

To test the effectiveness of the handbook and the supplement, instruction in agricultural credit was given by participating teachers. The instructional period lasted for two weeks using the handbook and the supplement, alone or in combination, in five different teaching methods. Two posttests were given--one test immediately after the instructional period and the second test one month after the first test. The participating teachers also completed a questionnaire concerning the handbook and the supplement to assist in the evaluation of the instructional material.

Computational and analytical procedures included an analysis of variance and a multiple range test to determine the validity of two

hypotheses formulated prior to the study. The resulting data from these analyses were presented in tabular and graphical form to aid the reader in understanding those analyses.

I. SUMMARY OF SELECTED LITERATURE

Education is one of the most important variables in attaining economic growth. The role of education in agricultural economic growth is highly important since the intelligent use of credit gives a man power to be a success and since the lack of knowledge about credit may cause him to fail in attaining his potential in life. Educational programs for students in vocational agriculture should stress the sound financing of farming activities in order for the student to be capable of competing in an urban age of agricultural production.

More vocational agriculture teachers have included credit instruction in their programs but have been limited in their teaching of the subject due to a lack of adequate materials for instruction. The Whitlow, Gregory, and Romans studies are sources of materials for teaching agricultural credit, but these studies have generally become out-dated and lack comprehensiveness in them.

Authorities in the field of agricultural credit state that comprehensive instructional materials should include areas of interest rate calculations, use of credit instruments, financial statements, repayment plans, budgeting, farm and credit plans, and case studies involving the previously mentioned areas. The literature indicated that such instructional materials should be prepared since the imperative largeness of

agricultural production operations requires a considerable use of credit.

II. SUMMARY OF DATA

Hypothesis I. Hypothesis I was rejected for the most part. After an analysis of variance technique was applied, methods were found to be significantly different at the .001 confidence level. A ranking of the means for the five methods used in credit instruction indicated that method four ranked highest in the group with methods five, three, two, and one occupying the next four ranks, respectively. Approximately the same information was supplied by a pattern of the means or interaction of methods and tests.

To determine which method or combination of methods was most effective in credit instruction, a multiple range test was conducted using the data provided by the analysis of variance of the original data. The multiple range test indicated no significant difference between methods four and five, five and three, and three and two at the .05 level. However, significant differences did exist between all other methods when compared to each other, giving an order of significance of the methods as four, five, three, two, and one. Some overlapping existed in the methods except in method one which differed significantly to the extent that it stood alone.

Hypothesis II. Hypothesis II was fully verified after the analysis of variance technique had been applied to the data. The F

ratio indicated no significant difference between the group means for test one and the group means for test two, even though the tests were scheduled one month apart.

Questionnaire results concerning the handbook. An evaluation of the readibility of the handbook indicated that all participating teachers believed that the handbook was clear or very clear in the presentation of credit information. The majority of the teachers reported that the students had some difficulty in understanding the handbook, whereas the teachers, themselves, encountered no problems in interpreting the data.

All of the teachers ranked the handbook as being comprehensive or very comprehensive, indicating enough detail in the presentation of the information. Fifty per cent of the teachers reported that no revision was necessary in terms of comprehensiveness.

The handbook should be used with senior and junior classes of vocational agriculture, as indicated by the majority of the teachers. Only two teachers believed that credit could be taught to sophomores, and one teacher reported that credit could be taught to freshmen. The data showed that the handbook should be used by both the teacher and the student in studying agricultural credit.

In terms of the handbook needing revision, the evaluation of the teachers were inconsistent. However, the majority of the teachers indicated that the handbook needed no revision, was the type of material needed, and should be distributed to all vocational agriculture teachers

in the state. Forty per cent of the teachers also indicated a need for in-service training in credit to accompany the handbook in their presentation of credit information to classes.

The most outstanding recommendation made by the teachers was that more visual aid materials should be provided, indicating that previous materials have not had an emphasis on visual aids and that more visual aids should be included in future instructional materials.

Questionnaire results concerning the instructional supplement. Sixty per cent of the teachers indicated that the projection transparencies in the supplement were helpful in presenting concepts of credit to their classes. Problems on computation of credit costs were beneficial and appropriate as indicated by 100 per cent of the teachers. Suggested class activities were given good and excellent ratings. All teachers reported that the instructional supplement should be distributed to all vocational agriculture teachers in the state.

III. CONCLUSIONS

The review of the literature served as a foundation upon which the handbook and the instructional supplement were developed. The handbook included sections that were suggested by investigators of other research problems in credit education. The instructional supplement contained visual aid materials, problems, suggested class activities, and surveys designed to assist in presenting credit concepts.

The investigator found that a combination of the handbook and the instructional supplement was superior and more significant than any of the other teaching methods used in the study.

The time factor in the study presented problems in terms of the teacher's being able to effectively cover all sections of the handbook in the two-weeks period. It is reasonable to expect, though, that the results would not have been affected significantly if the instructional period had been extended.

The participating teachers exhibited a keen desire to obtain new materials on any subject matter in vocational agriculture besides agricultural credit. Although this opinion was sensed by the investigator, he believed that several of the participating teachers did not respond adequately to the materials furnished to them in the study. One explanation for this action, as hypothesized by the investigator, was a lack of training in agricultural credit.

All evidences as indicated by the questionnaire pointed to the fact that the handbook and the instructional supplement met the criteria set forth by the investigator in terms of being appropriate, suitable, and effective educational materials for use in junior and/or senior classes of vocational agriculture.

IV. RECOMMENDATIONS

More use of credit in agricultural operations has created a demand for agricultural credit instruction, and such instruction should

be expanded in the future. A credit educational program should be conducted not only in high school classes but also in adult education programs. Only junior and senior classes, preferably senior classes, of vocational agriculture should receive instruction of this nature in high school due to the fact that freshmen and sophomore classes have a relative degree of difficulty in reading and interpreting credit information. A credit educational program of this type should include instruction on credit needs, sources of credit, costs of credit, credit instruments and documents, loan procedures, repayment plans, and case studies with emphasis placed on credit costs and credit instruments. It is also recommended that sufficient time be allocated in the total program, preferably six weeks, in order to effectively present and understand the various concepts involved in credit.

A Handbook of Agricultural Credit For Vocational Agriculture in Tennessee and the accompanying supplement should be published and distributed to all vocational agriculture departments in the state, supplying each department with sufficient copies for student references as well as teacher resource units. The supplement should only be used by the vocational agriculture teacher, and he should be encouraged to utilize all materials and suggestions included in it.

Continuous efforts should be made by the Agricultural Education Department of The University of Tennessee and the Tennessee State Department of Vocational-Technical Education to up-date current credit materials and also provide new instructional materials on the subject.

Emphasis on the development of new materials should be placed on visual and audio-visual aids. The investigator also recommends that a handbook of student exercises in agricultural credit be developed to accompany the existing handbook.

In-service training or short courses in agricultural credit should be expanded from the present situation. Such training should include comprehensive instruction in the areas of credit recommended for high school instruction. This training should be coordinated by the Agricultural Education Department in cooperation with the State Department of Vocational-Technical Education and the various agricultural credit agencies in the state.

Research should be initiated to examine more thoroughly new credit materials and methods of teaching those materials and how responsive teachers are to different types of materials. Research is also needed in determining in-service training needs of vocational agriculture teachers in the area of credit. An evaluation of present short courses or in-service training is desirable.

The final recommendation offered is that all the previous recommendations be implemented in an effective program of instruction. Coordination by and cooperation of the agricultural education staff, state vocational-technical supervisors and administrators, and agricultural credit representatives is desirable in initiating and conducting such a program.

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APPENDIXES

APPENDIX A

A HANDBOOK OF AGRICULTURAL CREDIT FOR VOCATIONAL AGRICULTURE IN TENNESSEE

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January 1967

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ACKNOWLEDGMENTS

This handbook on agricultural credit was developed by the editor in an effort to provide an up-to-date booklet on the subject. The handbook is a compilation of selections from tested publications and also includes new information to make it more comprehensive.

The editor wishes to express his appreciation and to acknowledge those people and institutions for the information that was used in the handbook: The Farm Credit Banks of Louisville, publishers of Financing Farming Activities; The University of Tennessee, publishers of Mr. James Whitlow's resource on agricultural credit; and Douglas C. Towne for the publication Agricultural Credit, and for information needed to develop an instructional supplement to the handbook.

Many teachers, university staff members, and agricultural credit officials have given constructive suggestions in developing the handbook. Appreciation is also extended to those assisting in preparing the publication for distribution.

R. A. H.

FOREWORD

The nature and scope of agricultural production has been drastically changed in the last few decades due to technological advancements and scientific achievements. Knowledge of such changes and innovations is an essential ingredient of the successful farmer of the present generation and of generations to come. Only through the implementation of such knowledge can the farmer successfully compete in an urban age of agricultural production due to an imperative bigness of farm operations.

More use of agricultural credit is one of the many changes that have occurred in the realm of agricultural production. As farms become larger, the capital needs of farms generally increase. Farm management and financial assistance are mutually interrelated to the extent that the successful producerscan no longer ignore the value of credit.

Decisions involving the utilization of credit in a farm business are often as important as those decisions involving resources and tools such as fertilizers and equipment. Much the same business knowledge and management is used in selecting and using credit as is used in making important farming decisions regarding resources or machines. Therefore, credit has become considered as a farming tool in that the proper use of it can greatly benefit the farm business. On the other hand, improper use of credit can have a detrimental effect on the business.

Since credit is an important part of the operation of the modern, successful producer, it becomes imperative that the agricultural student become well acquainted with the subject. The beginning farmer, as well as the established farmer, is particularly in need of instruction in the various aspects of credit.

This handbook was developed with the intent to present the principles involved in the proper use of credit. The handbook was designed so that it could be used as a resource unit of agricultural credit by vocational agriculture instructors in Tennessee and also to serve as a reference unit for the student of vocational agriculture.

R. A. H.

CREDIT NEEDS

The amount of credit to be used in an agricultural business depends upon three items: (1) the amount the borrower needs, (2) the amount the creditor will be able to pay, and (3) the amount the lender will loan.

Borrower Needs

Credit is often needed to put into action decisions the farmer has made regarding the operation of the farm business or the conduct of his family's living. There are many demands on the farmer's capital, whether borrowed or not, which must be weighed one against the other to determine the best use. Very few farmers are faced with a scarcity of alternative ways of spending money for improvement of his farm business or his farm life. The aspect of concern is now how he can invest his money but which of several alternatives is the best.

The decision of which alternative to select is a personal decision that only the farmer and his family has the right to decide. The job of the teacher of agriculture is not to make this decision or impose his judgement on the farmer but rather to help the farmer learn how to effectively analyze and weigh the consequences of the various consequences of the various alternatives. This must be done in as unbiased manner as possible and with no external value judgements imposed.

One of the best means of objectively analyzing a person's credit needs is to list all of the short-term and long-term expected expenditures. From this list of items can be made a priority listing. This assignment of priorities is the important management phase. Differences to be found between successful farmers and less successful farmers can often be explained on the basis of these priorities. High priority rankings should go to those items which will increase the business income (2, p. 24).*

As an aid in deciding priorities, and always before actually borrowing money, a budget should be prepared. A partial budget will often suffice. A partial budget can be used to estimate net changes in income from changes in size of given enterprises. In making estimates of the prices received, conservative figures should be used for

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*The numbers in parentheses refer to numbered references in the bibliography.

safety purposes. The estimates of costs should be a little high. After the process has been completed the net change in farm income results from the change in the enterprise. Credit decisions could be based on these results (4, p. 26).

An example of a partial budget follows.

Example: Partial Budget

Farmer A has a herd of seven (7) milking cows and feels that he can increase his income by the addition of three (3) more cows. He has been selling about ten (10) tons of hay each year. Three cows will cost $650.00 and changes in barn for added cows will cost him $150.00. He will not need to hire additional labor. His estimates are as follows (4, p. 27):

Estimated Annual Change in Net Farm Income from Adding Three Cows and an Addition to the Dairy Barn

A. Benefits:

1. Added Returns	20,000 lbs. milk x 3.50		$700.00
	Calves		20.00
		Total	$720.00
2. Reduced Costs			0
		Sub-Total (1 + 2)	$720.00

B. Detriments:

3. Reduced Returns----Hay	$250.00	
4. Added Costs		
Direct Costs*		
Supplement	$117.50	
Grain	52.00	
Miscellaneous	90.00	
Sub-Total	$259.00	
Indirect Costs*		
Prorated Cost-Int.	48.00	
Building Dep.	15.00	
Cattle Dep.	60.00	
Sub-Total	$123.00	
Total (3 + 4)		$632.00
Net Change in Farm Income (1 + 2) - (3 + 4)		+$ 88.00

It may be noted in the partial budget that direct costs are the costs of the items used up in the time period of the budget. Indirect costs are the costs of items needed, but with a longer life than the time period of the budget, prorated on an annual or budget period basis.

The method used by the farmer in the example is simple and can be applied to many credit planning situations. It consists of adding together the estimated results of transactions which benefit net income; namely, added returns and reduced costs, and subtracting transactions which affect net income adversely; namely, reduced returns and added costs to determine the effect of the change on net income. Costs and returns which do not change are ignored (2, p. 26).

Ability to Repay

In determining the repayment ability of a business, it is important to consider all related factors. An efficient way of looking at all factors is the financial statement of the farm business. The financial statement gives a complete statement of the condition of the business, rather than a specific picture of a single factor (2, p. 28).

The financial statement or balance sheet is simply an inventory record of the business operated by the farmer which includes not only the things he owns (assets) but also the things he owes (liabilities).

There are two characteristics of the financial statement, however, that should be kept firmly in mind. The balance sheet always refers to a specific date or point in time and is divided into three parts: (1) the assets or value of things owned; (2) the liabilities or amounts owed; and (3) the difference between these two, which is the net worth or owner's equity in the business (4, p. 16).

An example of a financial statement follows on the next page.

Example: Financial Statement

Balance Sheet of Farmer A
January 1, 1967

ASSETS				LIABILITIES-NET WORTH		
Current:				Current:		
Cash	$ 300			Note (6 months)	$ 500	
Grain and Feed:				Cattle Note (1 year)	500	
1,000 bu. corn	1,250			Equipment Note (3 years)	4,000	
500 bu. oats	450			Total Current Liabilities		$ 5,000
30 tons hay	750					
Machinery	8,000					
Livestock:				Fixed:		
10 milk cows	2,000			Land Note (20 years)	16,500	
3 calves	120			Total Fixed Liabilities		$16,500
3 heifers	240					
12 sows	600			Total Liabilities		$21,500
5 pigs	60					
Total Current Assets		$13,770		Net Worth or Owner's Equity		21,500
Fixed:						
120 acres land	$23,230			Total Liabilities and Net Worth		$43,000
Buildings	6,000					
Total Fixed Assets		$29,230				
Total Assets		$43,000				

The net worth ratio indicates the relationship between owned and borrowed capital in the business. In the above example, the ratio of total assets to net worth is $\frac{43,000}{21,500}$ or 2:1. In other words, the farmer has 50 per cent equity in the farm business and the lending agency 50 per cent.

A net worth ratio of 4:1 would mean that the farmer owned 25 per cent of the total capital in the farm business and the lender 75 per cent.

Some lending agencies feel that the farmer is becoming heavy in debt at a 2:1 net worth ratio while other lending agencies feel that the farmer is still sound at a 4:1 ratio. The total assets figure could become less during a period of failing prices and values, even though the farmer still owned every item as before. This would change the net worth ratio (4, p. 26).

The lender uses the financial statement to answer a number of questions about the borrower (1, p. 11):

1. How much capital does the applicant control?

2. How much ownership does he have in his assets?

3. Are there debts that may interfere with the prompt payment of the loan being applied for?

4. Does the applicant have property which could be quickly sold for cash to pay current expenses and debts?

5. Has the applicant been going forward or backward financially in recent years?

To further illustrate the use a lender might make of financial statements, two simple statements follow with an analysis of the statements (1, p. 12).

ASSETS:	FARMER A	FARMER B
Cash	$ 500	$ 2,000
Grain, Feed on Hand	2,000	3,500
Livestock	5,000	7,500
Equipment	3,500	5,000
Land	30,000	-----
Total	$41,000	$18,000
LIABILITIES:		
Store Bills	$ 400	$ 100
Unpaid Taxes	300	---
Loan on Cattle	3,500	---
Farm Mortgage Loan	22,000	---
Total	$26,200	$ 100
NET WORTH	$14,800	$17,900

In the preceding illustration, notice that Farmer A has assets worth more than twice as much as Farmer B. But Farmer A is heavily in debt: he has a mortgage loan on his farm; he has a cattle loan; and he owes taxes and store bills of a considerable amount. Actually, his net worth is smaller than that of Farmer B. Farmer A has another problem; he has few on which he could raise money quickly as compared with the amount of his short-term debts; there is some doubt that he will be able to meet both his short-term debts and his operating expenses.

Farmer B has few debts and a larger net worth. In addition to $2,000 in cash, he has grain and livestock to market in the near future; he should have ample funds to meet his operating expenses.

In view of the less favorable debt position, the small amount of assets readily convertible to cash, and the smaller net worth, Farmer A would be considered a less desirable credit risk than Farmer B.

Progress of the applicant as shown by financial statements over several years is important. If a man has inherited considerable property, for example, and has had a declining net worth since that time, it raises a danger signal since it suggests that he is a poor manager. Certainly the lender will want to look into the reasons for his losing ground. On the other hand, if the statements show steadily increasing net worth with no outside help, the applicant is judged to be successful in farming.

The lender will examine how the value of assets has been figured. If prices above reasonable values have been used, the net worth will be too high. Such over-valuation means either poor judgment or an effort to deceive. Failure to list all debts is also a danger signal (1, p. 12).

Amount Lender Will Lend

The amount that a lender will lend may be too little, too much, or somewhere in between. It is important that the person from whom credit is obtained knows the business for which the money is used. Too much money may be more harmful than too little.

Lenders who know farming will be more apt to provide the optimum amount of credit. The factors they consider include: equity in the business, income, managerial ability, and reputation of the borrower. These factors are discussed in other sections of this publication (2, p. 30).

TYPES OF CREDIT

The credit used in agriculture can be classified according to (1) time, (2) purpose, and (3) security. Each of these are briefly described below (2, pp. 8-13).

Classification of Credit According to TIME

The classification of credit according to time provides three divisions: short-term loans, intermediate-term loans, and long-term loans. Selection of the right type depends largely on the purpose and time of return of the money expected from the use of the credit. Farmers quite often will use more than one of these types at the same time.

Short-term loans are usually made for periods up to one year. The uses of this type of loan by farmers include such things as buying feed, seed, fertilizers, spray materials, and other production items from which returns are expected in a short time.

These loans may be unsecured; secured by chattel mortgages on equipment, crops or livestock; or by assignments on sale of produce.

It is wise to use this type of credit only for items which are expected to pay for themselves during the period of the loan--one year or less.

Intermediate loans are made for periods of from one to five years. PCA loans up to and including five years are not too difficult to obtain. Other lending institutions often prefer loans of three years or less to the four and five year loans.

These loans are usually secured by chattel mortgages on equipment, crops, or livestock and may not be accompanied by assignments on sale of produce.

These loans also should be used for items from which the returns are expected to come within the period of the loan. Examples of this type of credit are the purchase of machinery, livestock, land and building improvements, and refinancing short-term credit.

Again, it is best to obtain credit of this type for investment which will be returning money during a like period of time. If an investment will take four or five years to realize a return, it is best to shop until this term is obtained. If a 4-5 year loan cannot be

found, the lender can most likely find one for three years with the privilege of renewal.

Long-term loans are made for extended periods of time--up to 30 or more years. These loans are almost always for, more or less, permanent improvements such as buying a farm, constructing buildings, tiling land, and sometimes for refinancing short-term loans.

These loans are almost always secured by a first mortgage on real estate.

These loans also are made for items expected to return the investment in a like period of time.

Classification of Credit According to PURPOSE

Credit can generally be placed in one of two categories depending on the purpose; it will usually be either consumption or production credit.

Consumption credit loans are made for items which will not be expected to return the investment. These loans are made to purchase commodities or services for the family as opposed to purchases for the business.

Examples of items purchased with consumption loans include TV sets, washing machines, remodeling the kitchen, and buying a pleasure boat. Much of the installment buying going on at this time involves consumption credit.

Consumption credit includes more than formal loans. Many people use credit without really appreciating the fact because there were no formal arrangements made. When a person charges something, whether it be at the grocery store or appliance store, or clothing store, he is using consumption credit. When the doctor or plumber has to wait for payment, he is extending credit.

The desire to use consumption credit is great because it is relatively easy to obtain and at the same time helps to increase personal satisfactions.

Consumption credit is difficult and tricky to use wisely for the costs are often hidden and hard to appraise. Consumption credit charges can range from 0 per cent per year to over 100 per cent per year. This fact alone makes it imperative that wise use must be made of it.

The three common classes of consumption credit are as follows:

1. Open accounts--charge accounts--revolving charge accounts--cycle budget accounts--are very common. One will simply say: "Put it on my account." No notes, written contracts or other written promises to pay are used. Since extending this sort of credit costs money, most merchants recover this cost by increasing their prices to cover it, or they make monthly or other period charges on the balance of the account.

2. For the purchase of more expensive merchandise or services a second class of consumption credit, called installment credit is used. It is sometimes called "pay-as-you-earn" and involves a formal written legal contract, usually a conditional bill of sale or sales contract. A down payment is usually required with specified payments at stated times in the future. It may run from a few months to several years. Interest and bookkeeping costs are added to the cost of the merchandise or its "cash" price. Title to the goods or merchandise is not passed to you until all payments have been made. If a person fails to live up to his part of the contract, the full balance remaining becomes due, and the seller can repossess or take the merchandise back if the remaining amount is not paid.

   Consumer credit makes it possible to use and enjoy things without having to wait until the money is saved to purchase such items. The risks involved are that one might fail to keep his purchases within the limits of his income or that he may find it too easy to take on additional payments for things he would like to have.

3. The third type of consumer credit is loans which provide cash to buy merchandise or services. Repayment can be made either in a lump sum or in several payments. Loans involve legal written contracts. The charges for the use of the money and for making the loan, as well as the lender's risk and length of time of the loan, depend on the kind of lender as well as the borrower's character, reputation, ability to repay, and security, if required.

   Loans to borrowers who have little security to offer usually are at higher rates, frequently more than 10 per cent per year.

The advantages and disadvantages of using consumption credit are as follows:

Advantages	Disadvantages
Things wanted or needed can be bought if cash is not available.	There is the risk of being unable to make payments and having the lender repossess the item.

Advantages	Disadvantages
Expenditures can be timed better, and advantage can be made of opportunities such as bargain prices.	Difficulty may be encountered in meeting payments on other debts if one has overcommitted himself in installment payments.
Available money may be kept for use in the farm business or for an emergency reserve.	One may be encouraged to use installment credit without fully checking his needs and his repayment ability.
It may prevent disturbing permanent investments for temporary needs for cash.	A person will usually pay more by using consumer credit than by paying cash.
It may help get things one cannot save for. If a person's income seems to slip away with little to show for it, he may need the discipline of regular payments.	

Guides for Using Consumer Credit

1. The wise use of credit begins with wise expenditures. When considering a purchase or other expenditure, one should try to evaluate its necessity or benefit. Is it an emergency? Is it a luxury? Is it important to conserve available cash for something else? Are the benefits of buying the item sufficiently important to get it immediately? What would a person lose by waiting until he can pay cash?

2. Future earnings should be estimated to make sure the payments can be handled. Credit is not a substitute for income. The future income must be large enough to pay the interest and other credit costs. One should be wary of monthly installments if his income is irregular or uncertain.

3. Know the terms and conditions of credit. Do not borrow solely on the basis of the monthly payment. Find out the total debt and how long the payments run. Have the total debt itemized to show the cost of the items to be bought and the amount of interest, insurance, fees, and other charges. Figure the true interest rate and compare with rates of other lenders. Ask for both the cash price and the time-payment price.

4. Plan to repay the loan faster than the value of the item bought depreciates in value. Do not be paying for a "dead horse."

5. Use credit from the best single source. If money is already borrowed from the local bank or production credit association, find out whether it will lend money for consumer purposes.

6. Before using consumer credit, it should be talked over with the family. Using credit for personal spending could affect family relationships.

7. A good credit rating should be maintained. If it is not possible to make payments on time, acquaint the lender with the situation as soon as possible.

A second type of credit, according to purpose, is production credit. Production credit involves things purchased for the business from which some type of return, monetary or efficiency, is expected. A production loan is usually more worthwhile due to the fact that the increased income should help to provide the capital needed for other desired items.

Classification of Credit According to SECURITY

Credit may be divided according to security, either by secured or unsecured loans.

An unsecured loan is usually a short-term loan or perhaps an intermediate-term loan. The lender usually requires an excellent financial statement and a good credit rating.

Secured loans include real estate loans requiring a mortgage on property owned by the borrower. Chattel mortgage loans are also secured and are used for production loans where a financing statement and security agreement is taken on crops, livestock, or machinery.

COST OF CREDIT

The charges for use of credit take various forms. The charge usually associated with credit is interest which is expressed as a percentage such as 4, 5, or 6 per cent. This charge is called the interest rate. Often other charges such as commission fees, recording fees, surveys, title certifications, insurance, and closing charges are included in negotiating loans. These charges are often ignored but also add considerably to the cost of using credit. They must be considered when determining the cost of credit (2, pp. 2-7).

A. Interest--The stated interest charges are usually inadequate for the purpose of comparing interest cost. The actual interest rate will vary according to the method of charging interest.

A formula using simple arithmetic will provide an adequate means of comparing directly the financing costs of various loans. The following formula, which can be used for all repayment plans requiring equal and evenly spaced payments, will give a systematic and reliable approach to the calculations:

$$R = \frac{2MC}{P\ (N + 1)}$$

R = annual interest rate (approximate)
C = total finance charges
M = number of payments in one year
P = principal (amount of the loan)
N = total number of payments to discharge debt.

Warning: The term R, annual interest rate, is a very close approximation. In order to compute the actual interest rate, one must use an actuary table. This becomes rather complicated and does not change the resultant by very much. This formula serves very well and approximates the actual interest rate very closely.

The term M, number of payments in one year, must be the number of payments that would be made in one year if the loan were for a year's duration. If a loan is paid in monthly payments, M would equal 12 (even though the loan may be for only 6 or 9 months). If the loan is paid in weekly payments, M would equal 52 (even if paid in 26 weeks).

This formula is very simple to use and involves only the substitution of numbers for the appropriate symbol and then some simple multiplication and division. Below are some hypothetical situations which illustrate the use of the formula.

1. Interest and Principal Paid When Loan Becomes Due

This type of interest payment is the simplest and usually applies only to short-term loans, available for one year or less. An example of this would be a loan of $200 for one year at 6 per cent. At the end of the year, the farmer pays back the $200 principal plus $12 interest. The actual or true interest rate is 6 per cent, calculated as follows: $12 divided by $200 equals 6 per cent. Use of the formula gives the same results:

$$R = \frac{2 \times 1 \times 12}{200 \times (1 + 1)}$$

$$R = \frac{24}{200 \times 2}$$

$$R = \frac{24}{400} = 6.0\% \quad .$$

2. Interest Paid in Advance

This is called a discounted loan. The lender subtracts the interest at the time the loan is made, and the borrower does not get the total amount of the loan. In the first example cited above, the borrower had use of the $200 for a full year. However, in this case the $12 interest charge would be deducted in advance and the borrower would get only $188. Since he would pay $12 for the use of $188, the interest would be more than 6 per cent. He could figure the true interest charge in this case by simply dividing $12 by $188, or by using the formula. The true interest rate would be:

$$R = \frac{2 \times 1 \times 12}{188 \times (1 + 1)}$$

$$R = \frac{24}{188 \times 2}$$

$$R = \frac{24}{376} = 6.4\% \quad .$$

The true rate of interest on a discounted loan will increase as the discount period increases. If the $200 loan was discounted for two years, he would have only $176 available and would pay $24 interest in advance. The actual interest rate in this case would be 6.8 per cent.

3. Loans for Less Than a Year

Another characteristic of discounted loans is shown in this example: if the loan were discounted for 6 months with a $12 interest

charge, the annual rate of 6.4 per cent would be doubled and the true rate would be 12.8 per cent. If the discount period was only 4 months (1/3 of a year), the actual interest rate would be 19.2 per cent.

4. Installment Loan with Annual Interest on Original Amount

Under this method of figuring interest, a person pays a true interest rate as much as double the stated rate. Suppose the lender tells him that he can have $600 for 12 months at 6 per cent interest. He agrees to pay $50 on principal and $3 interest each month for 12 months. How much would this type of loan cost him in interest charges?

Going back to the first example, he could figure that if he had the full $600 for 12 months and paid $36 interest at the end of the period, the true rate of interest would be 6 per cent. However, in this example, he would be paying back $50 each month, so the original amount of $600 would not be available for the entire period. To determine the true rate of interest, he must first figure the average amount of the loan available to him during the period. He can make a quick estimate by adding the amount available in the first month ($600) to the amount available in the 12th month ($50) and divide the total by two. The result will be $325, the average amount available during the period. The next step is to divide the $36 interest charge by $325. This gives an annual interest rate of 11.1 per cent. The same answer can be obtained from the formula:

$$R = \frac{2 \times 12 \times 36}{600 \times (12 + 1)}$$

$$R = \frac{24 \times 36}{600 \times 13}$$

$$R = \frac{864}{7800} = 11.1\% .$$

5. Installment or Amortized Loan with Annual Interest Figured on Unpaid Balance

This method of charging interest, along with the one illustrated in example 1, will give a true rate of interest equal to the stated rate. These are good methods. Under this plan the $600 loan would be repaid with a $50 payment on principal in 12 installments plus an interest payment (6%) on the unpaid or outstanding balance each month. When one figures this out, he will see that the results are very much different from paying 6 per cent on the original amount.

Instead of $36 (example 4) the total amount of interest in this case would be $19.50 ($3 the first month plus 25¢ the last month divided by 2 equals 1.63 times 12 months which yields $19.50).

The formula gives the following results:

$$R = \frac{2 \times 12 \times 19.50}{600 \times (12 + 1)}$$

$$R = \frac{24 \times 19.50}{600 \times 13}$$

$$R = \frac{468}{7800} = 6.0\% \quad .$$

6. Installment Buying

Dealers, retailers, and merchants offer credit in various forms, and it is difficult sometimes to figure the actual cost of this credit. If a fertilizer dealer sells a person 10 tons of fertilizer in the spring at $45 per ton, and allows him to pay the bill by giving him $50 a month for 9 months, it might appear that he is not charging any interest. However, the person would probably find that the cost of this credit has been added to the price of the fertilizer. So the important thing is to find out what the cash price of the fertilizer would be and compare this with what is actually paid. In this case, suppose $2 per ton had been added to cover the interest, risk, and other carrying charges incurred by the dealer, this would mean that the person would be pay $20 for a loan of $430 for 9 months. The number of payments is 9. Substituting this data in the formula gives:

$$R = \frac{2 \times 12 \times 20}{430 \times (9 + 1)}$$

$$R = \frac{24 \times 20}{430 \times 10}$$

$$R = \frac{480}{4300} = 11.2\% \quad .$$

It may have been possible for the person to borrow $430 (the cash price of the fertilizer) on an amortized (installment) basis at an annual interest rate of 6 per cent on the unpaid balance. This credit would cost about $9 less than the dealer credit. Some merchants charge the same price for cash and time (or open account) purchases. In this case, it is usually impossible to figure the cost of the credit, since its cost is included in the prices charged to all customers.

B. Related Facts and Procedures

1. A method for computing the amount of simple interest paid on a loan. $i = prt$ when

   i is the amount of simple interest

   p is the principal or amount of the loan

   r is the annual rate of interest

   t is the number of years or fraction of a year the money is borrowed.

Illustration--What is the interest on $400 borrowed for 6 months at 6 per cent interest?

$$i = prt$$

$$i = 400 \times .06 \times 6/12$$

$$i = \$12$$

2. Businesses often quote discount rates such as 2/10, N/30. This means that they will give a 2 per cent discount if the bill is paid in 10 days and that the account must be balanced at the end of 30 days.

   Illustration--On a $300 feed bill, the discount would be $6 if the bill is paid within 10 days. The 2 per cent discount for one month is equal to 24 per cent interest for one year.

3. Installment plans often add other costs to interest charges in arriving at the amount to be repaid by the borrower. These additional charges must be considered as credit costs the same as interest charges.

Illustration--List price of a TV set		$250.00
	6% interest for 1 year	15.00
	Loan service	5.00
	Insurance*	10.00
		$280.00

The total cost of $280 includes $30 as carrying charges. If the TV set can be purchased for cash for $220, then the total charge for credit is $60 ($280 - $220 = $60).

(*Insurance may be considered as not being a credit cost. Insurance represents a cost for a value received. If the TV were purchased for cash, however, there would be no need for purchasing this insurance.)

4. Average amount borrowed--Installment buying has become a very common and frequently used type of borrowing. It is important to realize that when a loan is repaid in installments, a person does not have full use of the original amount borrowed for the full period. To illustrate this use the following formula and problem:

Problem--A farmer has borrowed $600 to buy a washer-dryer combination for his wife. He is to pay this amount back in 12 equal installments of $50 each. The full $600 is owed only for the first month. The beginning of the last month finds the farmer owing only $50. To find the average amount borrowed:

$$A = \frac{p + a}{2}$$

$$A = \frac{600 + 50}{2}$$

$$A = \frac{650}{2}$$

$$A = \$325$$

A = average amount borrowed

p = principal

a = amount owed during last period.

SELECTING THE CREDIT INSTITUTION

As a borrower, one should study carefully the sources from which credit may be obtained. One should find out about the services offered by each lender; on the basis of the fact, he should then decide which one can give the credit best fitted to the person's needs. After the lender has been selected, a credit rating should be established, building up a working relationship over a period of years that will be profitable.

There are five general aspects of the lender that should be investigated when considering a loan: character, lending policies, permanence and dependability, experience and knowledge of farming, and cost of the loan (1, pp. 13-14).

Character

The borrower will want a lender who has established a reputation for fairness and honesty in dealing with his borrowers. It is important that the lender have a good understanding of farming. If he is to work out financing programs that take account of the full needs of a farmer, he must recognize the possibility of unfavorable weather and price conditions and other factors over which the farmer has no control.

Lending Policies

One should look into the past policies of the lender. Has he adapted his credit terms to the needs of farmers? For example, have the lender's loans called for repayment schedules that are fitted to the earnings of the farm and capacity of the farmer to pay? Is the period of time for which loans are adjusted to the length of time required to complete the operating being financed? Do the capital loans call for large amounts coming due at any one time, or are the payments spread over a reasonable income period?

The policy toward borrowers during hard times also is important. Has the lender been interested enough in the welfare of the deserving borrower to carry loans during temporary periods of low income? Did he extend further credit when unusual conditions made it difficult for the farmer to repay on schedule?

Permanence and Dependability

Once a credit rating has been established and a satisfactory working relationship has been built up with the lender, the borrower

may wish to continue on a permanent basis. One should be sure that the lender will be able to finance him year after year as his business requires loans.

Will the lender be able to serve him in times of trouble? This is particularly important. In the past, some sources of credit have dried up during periods of drought or financial depressions, just when farmers needed credit most. Where the lender obtains his funds may determine how dependable his credit service is.

Experience and Knowledge of Farming

There is an advantage in having a lender who has a broad, up-to-date knowledge of agriculture and who has had long experience in making loans to farmers. As a result of such knowledge and experience, the lender is in an excellent position to counsel with farmers regarding not only their financial affairs, but also their farming operations. A trained, experienced lender, who has had an opportunity to observe success and failure among his borrowers, can be a valuable adviser. He can be especially helpful to a young man who is just starting out to build up a farming business.

Cost of Loan

The cost of credit varies widely. Take, for example, a man whose ability to pay is not known and who has little to offer as security. He will have to pay a high rate of interest; he may not be able to get credit at all. On the other hand, the man with a strong financial position and plenty of collateral can get credit at low cost. Such men are often able to borrow money for operating expenses without giving even a chattel mortgage (that is, a mortgage on a chattel--movable property like livestock or equipment).

It often pays a farmer to shop around for his credit; in that way he will find his best source of credit. Usually he will find that the lender who specializes in the type of credit he needs will charge the lowest rate and allow him the most favorable terms. Suppose a farmer needs a loan to finance his farming operations. He will look up a lender--like the Production Credit Association--which specializes in short-term and intermediate-term loans. If he needs a long-term loan to buy farm land, he will go to a lender, like the Federal Land Bank, which specializes in long-term loans.

If one should buy on credit from a feed and implement dealer or a hardware merchant, he would probably find that he paid a high cost for his credit. The reason is that such merchants specialize in feed, implements and other farm supplies--not in credit. When they sell "on time" or "on credit," they are tying up capital they need in

their farm supply business. Their costs of collecting on such sales are usually high, so they have to charge more to cover these costs and have a fair return on their capital (1, p. 6).

The various methods for determining the cost of credit are discussed in the section "Cost of Credit," and the various credit institutions are compared in the section "Sources of Credit" (additional reference should be made to these sections when considering the selection of the lending agency).

SOURCES OF CREDIT

A great many sources of credit are available to rural residents at the present time. Knowledge and understanding of these sources will greatly enhance the borrower's ability to use credit wisely. The eight sources most directly concerned with agriculture include: (1) Commercial Banks; (2) Life Insurance Companies; (3) Federal Land Banks, (4) Production Credit Associations, (5) Farmers Home Administration, (6) Individuals, (7) Merchants and Dealers, and (8) Finance Companies (2, pp. 14-17).

Commercial Banks

Banks provide mostly short-term loans. Long-term loans are available but usually for a shorter period of time and a smaller amount of principal than Federal Land Banks and insurance companies. The interest rates on long-term loans are also usually higher than for FLB but comparable with insurance companies.

Commercial banks, however, have the advantage of convenience. They are located nearby and offer other services such as savings accounts, checking and safe deposit boxes. A local commercial bank can also make both consumption and production loans.

If the bank has an agricultural representative, as is the trend in many places, it can serve as a valuable asset both for the services provided and the financial advice available. It is wise to become acquainted with and known by the local banker.

Life Insurance Companies

Some life insurance companies may provide long-term real estate loans. The interest rates charged are usually competitive and repayment plans are often of the amortized type.

The term of a loan is usually about 20 years and requires sound security. They are highly selective in who they loan to but will often loan a larger percentage of the appraised value.

Federal Land Banks

The Federal Land Bank is a farmer-owned cooperative handled by county Federal Land Bank Associations. Borrowers must purchase stock in this association equal to 5 per cent of their loan.

The FLB handles only long-term loans to farmers or people in agriculture. The repayment plan is an amortized type and payments are

usually made annually or semi-annually. The borrower may repay the principal without penalty and will also receive interest on deposits made to be used for future payments.

The terms range from five to forty years and the amount loaned depends on the farmer's experience and the quality of the farm. The FLB often lends up to one-half the market value of the farm.

The interest rates are reasonable and this type of credit is well suited to farmers.

Production Credit Associations

The PCA is also a farmer-owned county cooperative. They are organized under the Farm Credit System and borrowers must own or purchase stock equal to 5 per cent of the loan. Their sole purpose is to loan money to farmers.

They are involved primarily in short-term loans of from 6 months to 3 years and sometimes up to 5 years. They provide amortized repayment plans and budgeted loans (money advanced to farmers as needed and repaid as sales are made).

The terms, interest rates, and security on loans offered by the PCA are similar to commercial banks.

Farmers Home Administration

The FHA is a federal agency lending money to farmers and rural residents who find it impossible to borrow elsewhere at reasonable terms. Loans are made for many purposes but primarily to help farmers get started and others to adjust their operations.

Loans made to buy farms are made to sufficiently experienced and able people expected to be successful in farming. The farm must be a family-sized farm.

These loans are not of a permanent nature but rather are only provided until another credit institution will assume the remainder at reasonable rates.

The loans may be made for up to forty years and may also be for 100 per cent of the appraised value. The interest rates are low but supervisors of the FHA provide advice and assistance in managing the farms.

Individuals

Individuals and the type of loans they make exhibit a great degree of variability. The individual may be a personal friend, a relative, an owner of the purchased farm or any other of a great number of sources. The variability in the cost, terms, repayment plans, and desirability of loans is also great.

The individual may provide short-term, intermediate-term, or long-term loans. Perhaps the most important of these is the long-term second mortgage the seller of the farm may take on his farm. This often provides advantages to both the seller and buyer, but the buyer must be careful to analyze the costs and terms of the arrangement.

There are both advantages and disadvantages involved in individual loans. It is wise, in all cases, to have a written agreement specifying all pertinent factors.

Merchants and Dealers

This type of credit is relatively easy and simple to obtain. Machinery dealers, feed dealers, grocers, and other commercial suppliers of farm and personal goods are quite ready to offer credit.

This type of credit is usually short-term credit, easy to get, but also may be quite costly. It is best to compare the costs of these materials obtained with credit against the cost of paying cash. Often a sizeable cash discount will be available which will more than offset the cost of borrowing elsewhere the amount needed for the cash purchase.

Finance Companies

Finance companies in New York State may loan a maximum of $800 for a period of two years. The interest rate schedule is:

2½% per month on 1st $100
2% per month on next $200 and
3/4% per month on remainder.

The true annual interest rate varies, according to the amount borrowed, from 21 per cent to 30 per cent. The fact that only $800 may be obtained, and that the interest rates are high, make this type of borrowing of little use to farmers or any other agricultural business.

Agencies Making Loans (4, p. 34)

A. Short-term and intermediate-term

1. Commercial banks
2. Equipment companies
3. Small loan and finance companies
4. Production Credit Associations
5. Farmers Home Administration
6. Fertilizer and supply stores
7. Merchants and dealers
8. Credit Unions
9. Commodity Credit Corporation

B. Long-term loans

1. Commercial banks
2. Insurance companies
3. Federal Land Bank Associations
4. Farmers Home Administration
5. Mortgage and investment companies
6. Bank for cooperatives
7. Rural Electrification Administration

CLASSIFICATION OF LENDING AGENCIES AVAILABLE TO FARMERS*

AGENCY	LENGTH OF LOAN	COST OF CREDIT	SECURITY REQUIREMENTS
Commercial Banks	Usually under 10 years (average of 5 years)	5-7% (may go as high as 12% for small installment loans)	Chattel Mortgages and Deeds of Trust or Unsecured Notes
Life Insurance Companies	Usually 20 years or less	6% (approximately)	Deeds of Trust on land
Farmers Home Administration	Up to 33 years	6% (approximately)	Chattel Mortgages and Deeds of Trust
Production Credit Association	Short-term up to 5 years	5-7% loan service fee in some cases	Chattel Mortgages, Deeds of Trust and Unsecured Notes
Federal Land Bank Association	Usually long 5-40 years	5-3/4% (may be slightly higher)	First Deed of Trust on Land
Individuals	Varies with each case but likely to average 5 years	4-6% (approximately)	Chattel Mortgages, Deeds of Trust and Unsecured Notes
Merchants and Dealers	Mostly short-term or under 3 years	Varies but is usually higher than the above credit institutions	Usually items sold or Unsecured Notes
Finance companies	Short-terms up to 3 years	21-30% (approximately)	Varies

CLASSIFICATION OF LENDING AGENCIES AVAILABLE TO FARMERS (continued)

AGENCY	ADVANTAGES	DISADVANTAGES	IMPORTANCE AS A FARM CREDIT SOURCE
Commercial Banks	Convenient for farmers. Can provide other services.	Short terms. Sometimes high rates. May not know farmer needs.	Can be very good if they have a farm loan department.
Life insurance companies	Amortized repayment plans.	Highly selective.	Can be good in areas that they operate.
Farmers Home Administration	Reasonable rates. Loans made for various purposes. Long-term.	Loans not of permanent nature.	Cheap source of short- and long-term credit.
Production Credit Association	Well-suited terms. Budgeted loans based on ability to pay.	Red tape involved. Must buy 5% of amount of loan in PCA stock.	Good for short-term credit.
Federal Land Bank Association	Reasonable rates. Long terms. Credit suitable to farmers.	Conservative in lending policies. Must buy 5% of amount of loan in FLB stock.	Very good for long-term credit.
Individuals	Terms usually flexible. Little supervision cost.	Short terms. High cost in some cases. Dependent on life length of lender.	Very important.
Merchants and Dealers	Convenient and easy to obtain loans.	High interest rates. Short terms.	Poor--too expensive credit.
Finance companies	Convenient. Liberal lending policies.	Small loans. High cost of credit. Terms not suited to farmers needs.	Not suitable as a source of farm credit.

*Towne, Agricultural Credit (2, pp. 15-16); Whitlow, A Source Unit for Teaching Farm Credit in Vocational Agriculture (4, p. 35).

PLANNING REPAYMENT TERMS

The income that will be available to use for payments and the length of the loan must be considered in repaying the loan. It is very poor business to agree to repay too rapidly. If the lending agency knows at the beginning that the loan is too large to be paid back within the required time, other arrangements should be made such as using another agency with a longer repayment plan for disposition of the loan. This is done frequently by the Production Credit Association and the Federal Land Bank.

If a farmer agrees to a repayment plan and then is unable to meet the schedule, the lender should be immediately consulted to make necessary adjustments. If the loan is allowed to become delinquent in payments without contacting the lender, the borrower's credit rating will be damaged (4, p. 59).

Selection of the appropriate repayment terms requires wise management just as the other aspects of using credit. A loan may meet the criteria of cost, source and type and yet have repayment terms that are ill-fitting to the purpose.

The repayment terms should be tailored to the nature of the income from the investment if it is a production loan and to the personal income if it is a consumption loan.

Loans on a cash crop, for example, should be arranged so that they come due at the time of sale. Loans for feeder cattle also should be arranged in this manner. Loans on machinery, equipment, and building improvements should be paid for over a period of years due to the fact that those items produce returns slowly.

Loans for dairy farmers usually can be repaid in monthly installments to coincide with the monthly milk check.

As was pointed out in the section on "Cost of Credit," amortized or installment-type loan, with interest on the unpaid balance, is the most desirable and should be used for all long-term loans.

Basically, there are two common types of amortization plans used figuring a repayment plan--the standard plan and the Springfield plan. Examples of each plan are shown on the following page. These examples are based on a loan of $1,000 at 5 per cent interest maturing in 20 years (2, p. 18).

Under the standard plan, the examples show that both interest and principal payments vary each year. The total payment remains the same throughout the period of the loan. Payments on principal increase each year while interest payments decrease. This plan results in paying slightly more total interest during the period of the loan than under the Springfield plan (2, p. 19).

Standard Plan (Even Payments)

	Annual Payments			Unpaid Principal
	Interest	Principal	Total	End of Year
1st year	$ 50.00	$ 30.24	$ 80.24	$969.76
2nd year	48.49	31.75	80.24	938.01
3rd year	46.90	33.34	80.24	904.67
4th to 17th year*	---	---	---	---
18th year	10.93	69.31	80.24	149.28
19th year	7.46	72.78	80.24	76.50
20th year	3.82	76.50	80.24	---
	$604.80	$1000.00	$1604.80	---

Springfield Plan (Reducing Payments)

	Annual Payments			Unpaid Principal
	Interest	Principal	Total	End of Year
1st year	$ 50.00	$ 50.00	$ 100.00	$950.00
2nd year	47.50	50.00	97.50	900.00
3rd year	45.00	50.00	95.00	850.00
4th to 17th year*	---	---	---	---
18th year	7.50	50.00	57.50	100.00
19th year	5.00	50.00	55.00	50.00
20th year	2.50	50.00	52.50	---
	$525.00	$1000.00	$1525.00	---

*Note--In both the foregoing tables, the 4th to 17th years are omitted to save space. They are included in the totals.

Principal payments under the Springfield plan are the same each year, while interest payments decrease, resulting in a larger total payment during the first part of the loan and smaller payments near the end of the loan period. An advantage of this plan is that the larger total payments at the beginning of the loan reduce the total amount of interest below that required for the standard plan. A possible disadvantage, however, might be that total annual payments are large during the early years of the loan when the borrower may be less able to meet them.

A repayment plan should be obtained which best fits the conditions.

CREDIT INSTRUMENTS AND DOCUMENTS

Every farmer, during the course of his farming career, will take part in a large number of credit transactions. Some of these will be on an informal basis, but the majority of them will be accompanied by a legal document of some type. These documents range from the simple, well-known Federal Reserve notes and United States notes to the complex deeds and contracts which are not so well known. Since farmers are quite likely to make frequent use of some or all of these instruments, they should be familiar with their use and contents (2, pp. 20-21).

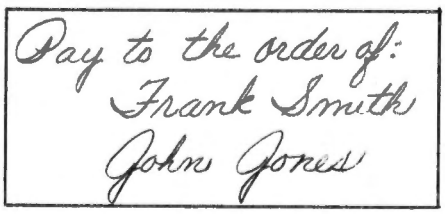
Negotiable Credit Instruments

1. A negotiable instrument is one which may be transferred from one person to another like money. Examples of these would include checks, drafts, notes, and trade acceptances. To be negotiable, an instrument must meet the following requirements:

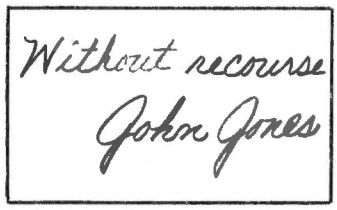
   (a) It must be in writing and signed by the maker.
   (b) It must contain a promise to pay a certain sum in money.
   (c) It must be payable on demand or at a fixed date.
   (d) It must be payable to order or bearer.
   (e) If payable to someone, he must be named with reasonable certainty.

2. The instrument is negotiated when it is transferred from one person to another so that the receiver of the instrument becomes its holder. Any instrument which was made payable to order must be endorsed by the holder to be negotiated. There are four forms of endorsement which are used:

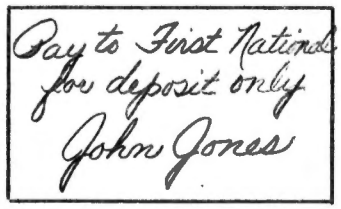
1. Blank endorsement--the most common form. It is accomplished by the signature of the holder on the instrument.



2. Special endorsement--in this form a limiting clause, "Pay to the order of," is added to protect against loss or theft of the instrument. Further negotiation by Frank Smith can be accomplished only by endorsement of the person named in the clause (Frank Smith).



3. Qualified endorsement--this form of of endorsement limits the liability of the person endorsing. It is often used when the endorser is acting as an agent and when the buyer of the instrument is making good the default of the maker to the endorser.



4. Restrictive endorsement--this form gives the holder of the instrument only limited control. It is used when the receiver is to act as agent for the endorser.

Checks

The most common negotiable instrument which a farmer might use is the check. This is a signed written order on a bank to pay on demand to the bearer or the order of a named person a certain sum of money. Some of the advantages of using checks instead of cash are:

(a) Less danger of loss or theft.
(b) More convenient than money, except for small amounts.
(c) They serve as evidence of payment.
(d) They provide an easy way to keep records.

A person presenting a check to a bank may receive cash or a credit to his own account for the value of the check. The amount involved is charged to the account of the person who signed the check. The signer may stop payment of the check by notifying the bank before they have made payment.

All checks contain the same information on its face. This includes:

(1) The name and location of the bank.
(2) The name of the person to be paid.
(3) The amount to be paid (both in figures and written).
(4) The signature of the maker.

When a check is written, the following instructions should be followed:

(1) Always write checks in ink.
(2) Always write plainly.
(3) Do not leave any space between the dollar sign and the amount of the check.

(4) Be sure the line giving the amount in writing is filled completely.
(5) Do not make checks payable to cash.
(6) Never sign a check in blank.
(7) Show for what the check is given.

SAMPLE CHECK

Utopia, Tenn. Jan. 14 1967 No. 876

FIRST NATIONAL BANK OF UTOPIA

Pay To The Order of Raymond A. Holt $175 00/100

One Hundred Seventy Five and 00/100 DOLLARS

For 3 bred gilts

John Jones

Drafts

A draft is like a check except that the order when paid by the bank is not charged to the signer but to a third person named on the face of the draft.

A production credit association member who obtains a loan to finance the purchase of livestock or other property may be authorized to use a draft--sometimes called a bill-of-sale draft or a cattle draft. The member completes and gives a draft to the seller of the property for the amount of the purchase price. The draft transfers title to the property purchased to the member and gives the seller the right to collect the stated amount from the production credit association through the bank which is named on the draft (1, p. 16). The draft shown on page 100 shows how Mr. Jones used a draft to buy some livestock.

Promissory Note

A note is an unconditional written promise, signed by the maker to pay at a certain or determinable future time, a certain sum in money to the bearer or the designated payee or this order.

This form of written contract is usually signed by a person borrowing money, but also is given frequently in return for goods or services. A note may be signed by one or more makers. It tells how much is to be paid and should state the interest rate although this is not always done. It states where and when the payment is to be made and normally it names the party to receive the money (1, p. 18).

In connection with notes it is well to remember that:

1. A person who signs a note as maker establishes his liability for payment. Failure to understand the provisions in the note does not prevent collection.

2. The maker of a note is liable for payment of any balance not covered by the proceeds from the collateral.

3. A person should never sign a note unless he stands ready to pay the obligation. This includes signing to accommodate someone else.

4. A statement that the note will not be transferred should not be accepted. Such promises do not protect the signer against a holder in due course.

5. The endorser frequently must pay notes made by persons who are financially unsound.

6. A note that is overdue should not be bought. The maker may have defenses against collection (4, p. 47).

An example of a promissory note is shown on page 96.

Real Estate Mortgage or Deed of Trust

A real estage mortgage or deed of trust is a legal instrument creating a lien on land. This instrument gives the mortgagee (the lender) the right to take certain legal steps if the note or other contract is not met according to its terms. The proceedings usually result in the public sale of the land with the proceeds being applied to pay off the debt. The borrower retains any proceeds from the property sold in excess of the debt. The lender usually has the right to ask for a judgement for any unsatisfied balance on the debt after the proceeds of the sale of the mortgaged property has been paid on it (4, p. 47). An example is shown on pages 97-99.

Financing Statement and Security Agreement

Formerly known as a chattel mortgage, the financing statement and security agreement (the financing statement and the security agreement combined to replace the chattel mortgage) is a legal instrument creating a lien on chattels such livestock, crops, furniture, farm equipment, and trucks. This instrument gives the lender the same rights to sell the property and apply proceeds on the debt as the real estate mortgage or deed of trust.

The following points should be considered about a financing statement and security agreement or deed of trust:

1. Read instrument and understand before signing.
2. Be sure of amount of insurance required.
3. Make sure the instrument covers only property intended to be given as security.
4. Do not sell mortgaged property without permission of lender.
5. Do not sign in blank.
6. Have instrument released when loan is paid (4, p. 57).

An example of a financing statement and security is shown on page 37.

Other Important Papers in Connection with Loans

The loan application is a form used to record information about an applicant for a loan. Most lending agencies use a different kind of form but usually collect similar information. Most loan applications have a place to record the following:

1. Personal data about the man and his family.
2. Financial statement.
3. Farm program.
4. Purpose for which loan will be used.
5. Repayment plan.
6. Income and expenses.

In connection with a loan application it is well to remember that: (1) the loan application calls for detailed information and the farmer who knows the answers creates a good impression; (2) giving false information on the application to get a loan might constitute fraud and the borrower might be liable (4, p. 46).

An example of a loan application is shown on page 93.

The field report contains credit information which has been developed by the person who has taken the application. The representative records important credit information about the applicant and his

family. He describes the farm and enters the values of property to be used as security for the loan. The field report also has a statement of estimated income and expense which represents the combined thinking of both the applicant and the PCA representative (1, p. 25).

An example of the field report is shown on page 94.

Other Commonly Used Credit Instruments

1. Financial Statement--a summary of a person's assets and liabilities. This instrument is discussed fully and illustrated in another section.

2. Operating Statement--a summary of a person's receipts and expenses during a certain year.

3. Warehouse Receipts--a receipt given by a warehouseman for goods received by him for storage in his warehouse.

4. Stocks--the interest or right which the owner has in the net earnings of a corporation, and sometimes in its general management.

5. Deed--a written instrument properly signed, sealed, and delivered, by which the owner or real estate transfers the title to someone else.

   (a) Warranty Deed--passes title and warrants that the seller will defend it against any claims against the property.

   (b) Quitclaim Deed--passes title which buyer may possess, but does not defend against possible claims.

6. Abstract of Title--a condensed history of the title to a piece of land, giving a summary of all the facts related to the ownership of the property.

7. Assignment of Income--a convenient means of making regular debt collections by instructing the handler to make a described percentage of the payments to the creditor instead of to the seller.

8. Land Contract--a means of transferring the title to a piece of land which allows the buyer to make regular payments to the seller who retains the title until a predetermined amount has been paid on the land (2, pp. 22-23).

CREDIT FORM PCA-202A (REV. 10-64)

LOAN APPLICATION
PRODUCTION CREDIT ASSOCIATION

PCA CODE	LOAN NO.	SOCIAL SECURITY NO.
63-4		409-70-6963

1. Name(s) John Doe and wife, Jane
2. P. O. Knoxville Rt. 8 In Knox County, State of Tennessee Tel. No. ----

My Int.	FINANCIAL STATEMENT — ALL ASSETS	Value
All	Dairy: 15 Cows ___ Heifers ___ Calves ___ Bulls	3000
	Beef: ___ Cows ___ Heifers ___ Calves ___ Bulls	
	Steers ___ Steers ___ Steers	
All	Gilts 6 Sows 1 Boars	400
All	45 Pigs ___ Shoats 50 Mkt. Hogs	2000
	Hens ___ Pullets ___ Turkeys	
All	1000 Bu. Corn ___ Bu. Oats	1200
All	T. Silage 1300 RB Hay	800
	Bu. Wheat ___ Bu. Soybeans	
	Lbs. Tobacco ___ B. Cotton	
All	Tractor No. 2 $ 3500 Implements $ 5000	8500
All	Truck No. 1 $ 1500 Auto No. 1 $ 1000	2500
	Notes and Accts. Receivable F.L.B. Stock	750
	Stock Owned in PCA "A" Shares ___ "B" Shares ___	
	Outside Business (Except Real Estate)	
	Stocks and Bonds (Market Value)	
	Cash on hand or in Bank	800
	TOTAL QUICK ASSETS	19,950
Tract I	Title in John and Jane Doe; Survivorship (Yes-No) Acres 150	25,000
Tract II	Title in; Survivorship (Yes-No) Acres	
Tract III	Title in; Survivorship (Yes-No) Acres	
Tract IV	Title in; Survivorship Clause (Yes-No)	
	(Indicate Life Estates, Real Estate Purchased under contract, kind property in Tract IV) Total Value Real Estate	25,000
	TOTAL ALL ASSETS	44,950

FINANCIAL STATEMENT — ALL LIABILITIES	Amount
Chattel Liens	
P.C.A. ___ Due ___ Orig. $ ___ AA $	-0-
To ___ Covers ___ Orig. $ ___ Made ___ Due ___	
To ___ Covers ___ Orig. $ ___ Made ___ Due ___	
Unsecured Note(s)	
To ___ Due ___ Orig. $ ___ Made	-0-
To ___ Due ___ Orig. $ ___ Made	
Open Accts., Taxes, Etc.	-0-
Current Liabilities of Outside Business	-0-
Other Debts:	-0-
TOTAL CURRENT LIABILITIES	
Real Estate Mortgages	
To Federal Land Bank Yr. Due ___ Rate 4 Tract 1 Orig. Amt. $ 15,000 Contr'd 1954	10,000
To ___ Yr. Due ___ Rate ___ Tract ___ Orig. Amt. $ ___ Contr'd ___	
To ___ Yr. Due ___ Rate ___ Tract ___ Orig. Amt. $ ___ Contr'd ___	
Tract IV—Other Real Estate	
Total Real Estate Indebtedness	10,000
TOTAL ALL LIABILITIES	10,000
NET WORTH	34,950

3. (a) Insurance: Life $ 15,000 Beneficiary son, James Hospitalization $ ___ Other C. L. I. $ ___
Buildings $ ___ Auto Liability $ 10,000 Farm Liability $ ___ Chattels $ ___
(b) Notes endorsed or guaranteed for others $ -0- Ever in Bankruptcy? NO
(c) Do you want Credit Life Ins.? ___ Amt. $ ___ Birthdate ___ 2nd Beneficiary ___

4.

X	Share	Acres	Kind of Crop	Year	Est. Per A.	Name of Farm	X	Share	Acres	Kind of Crop	Year	Est. Per A.	Name of Farm
	all	.6	Burley Tob.	62	2000	John Doe							
	all	12	Silage	"	8 T	"							
	all	30	Corn	"	70	"							
		Bal. of farm in hay & pasture											

5. Dates	Purposes of Loan and Sources of Repayment	Amount of Advance	Estimated Receipts	Outstanding Balance
	To Pay PCA Bal. Prin. $ Int. $			
	LSF $ 145 CBS $ 515 CLI $ 75 Legal Fees $	735		
now	10 cows	2000		
budget	Operation--Seeding pasture and fencing	1500		
now	Purchase 40 acres	6000		
	Attorneys opinion and legal fee	20		
now	$100 per mo.--milk; Sale of hogs $851; plus int. yearly		2051 plus int.	
1968	" " " " " " " " "	"	2051 " "	
1969	" " " " " " " " "	"	2051 " "	
1970	" " " " " " " " "	"	2051 " "	
1971	" " " " " " " " "	"	2051 " "	
	TOTAL AMOUNT APPLIED FOR $	10,255		

The above statements are true and were made for the purpose of procuring the credit requested and will be used for the purposes indicated. We authorize self to exercise our voting rights and the association to record our stock in our names with right of survivorship, if husband and wife.

Date 1-14 1967 Signed ___ Signed John Doe

Farm Visited and Security Inspected on 1-14 1967 Mat. Date 1-14 1972 A/A clause $ 10,000

Application approved 1-18 1967, for $ 10,255 subject to the following requirements:

L C	Closing Authority
B	

Ex-Comm. Ex-Comm. Sec'y-Treas.

CREDIT FORM PCA-203A (REV. 10-64)

FIELDMAN'S REPORT

East Tennessee PCA

THE MAN AND FARM FAMILY

1. Name John Doe Age 29 Wife Jane Age 28 Dependents 1
yrs. farming 5 present farm 4 this county life formerly resided Dickson County
State of Tennessee Lives on farm (Yes ☒ No ☐) Farm Help - Family: Hired: X
2. Name Age Wife Age Dependents
yrs. farming present farm this county formerly resided County
State of Lives on farm (Yes ☐ No ☐) Farm Help - Family: Hired:
3. (Management, experience, credit record, cooperation, health, etc.) Good health--Hard worker
Recommended by Farmers Coop for credit record

4. Reasonable value of Farm(s) owned 150 A. $ 25,000.00 A. $ A. $
Crops, Fixtures, and other Chattels will be located on Farm Land(s):
(1) Owned by - Rented from Located on Rd. Mi. From
State of Basis of Rental
(2) Owned by - Rented from Located on Rd. Mi. From
State of Basis of Rental
(3) Owned by - Rented from Located on Rd. Mi. From
State of Basis of Rental
Productivity and type of land; condition of buildings: Decatur and Fullerton -- good drainage -- medium to high fertility. Buildings in good state of repair.

5. Have courthouse real estate records been checked? When? By Whom? If records indicate information given in financial statement relative to title(s), survivorship clause(s) or debt(s) to be incorrect, explain:

6. **PROPERTY TO BE GIVEN AS SECURITY TO THIS LOAN**

ON HAND: All Beef Cattle $ All Dairy Cattle $ 3,000 All Hogs $ 2,400 All $
EXCEPT: Total $5,400
TO BE PURCH. Feeder Cattle $ Feeder Hogs $ Breeder Cattle $ Breeder Hogs $
Other Total $
FARM EQUIP. On Hand $ 8500 To Be Purchased $ Car - Truck: On Hand or To Be Purchased $ 2500
EXCEPT: Total $ 11,000
STORED CROPS To Feed: (Itemize) 1000 bu. corn; 1300 bales hay; Total $ 2,000
To Sell : (Itemize) Total $ 2,000
OTHER SEC.: Total $
R E : A 40 $ 6000 P Lien $ -0- A $ P Lien $ Ins. $ Agt.
Property and Crops Covered by: FS and SA Dated 19 C. Mtg. Dated 19 R. E. Mtg. Dated 19

7. **STATEMENT OF INCOME AND EXPENSE—APPLICANTS SHARE ONLY**

Income From	Income Previous 12 Months	Estimated Income Next 12 Months
Dairy Prod.	3400	5000
Cattle	225	350
Hogs	3500	3500
Lambs, Wool		
Poultry		
Corn		
Wheat		
Soybeans		
Cotton		
Tobacco	750	1200
Outside Inc.		3,000
Total Inc.	7,475	12,850

ESTIMATED COST OF OPERATION NEXT 12 MONTHS	
Family Expenses: (Food, clothing, education, household, medical services, etc.)	2000
Feed $ Seed $ Fertilizer $ Lime $	1000
Labor $ Tractor oil and fuel $ Repairs on equipment $	2000
Custom Work $ Veterinary $ Auto-Trk. $	
Other farm supplies	
Livestock to be purchased, fed, and sold	
Repairs on buildings and fences	
(A) TOTAL OPERATING EXPENSES $	xxx
R. E. Pay'ts Due Amt. $ Due Amt. $	
Int. and pay'ts on other debts (except PCA)	
Int. and pay'ts on other PCA loans	800
Taxes: R. E. $ 80 Pers. Prop. $ Income $ Other $	80
Cash Rent: Due Amt. Due Amt.	
Insurance: Fire, lightning, cyclone $ 65 Auto $ 100	240
Life $ 75 Hospitalization $ Liability $	
(B) TOTAL FIXED OVERHEAD EXPENSES $	xxx
TOTAL EXPENSES (A plus B)	6,620

Source of outside income: Wife will be teaching school next year. Years of seniority:

8. Analysis of credit extended during term of previous loan:
Renewal $ Capital $ Feeders $ Operating $ Total $
Repayments Expected $ Repayments Made $ Renewal Expected $ Actual Renewal $
Has the member complied with your Assn's full proceeds policy? **If not, explain under remarks and indicate action taken**

9. REMARKS: This is a good farmer expanding his business. This added 40 acres joins his present farm and the added dairy cows and tobacco acreage will help pay this additional loan.

If a prior lien(s) is found on any chattels securing this loan an abstract will be submitted to the PCA Loan Comm. and FICB

Date 1-14 19 67 Signature Raymond A. Holt (Field Representative)

This Financing Statement and Security Agreement is Presented to the Filing Officer for filing pursuant to the UCC:

1 Debtor(s) (Last Name First) and Address(es)	2 Secured Party and Address	For Filing Officer (Date, Time, Number and Filing Office)
John Doe Hill Road Route 8 Knoxville, Tennessee	East Tenn. PRODUCTION CREDIT ASSOCIATION	

This Statement and Agreement covers all of the Debtor(s) interest in the following described property located on the hereinafter described farm land (and additional property and/or farms described on _____ Extension Sheets):

3 CROPS:	4 EQUIPMENT:
All Tobacco	All farm machinery and equipment, including but not limited to tractors, tanks, &tilling & harvest. tools.
5 FIXTURES:	**6 LIVESTOCK, FARM PRODUCTS AND PERSONAL PROPERTY:**
	All beef cattle or all dairy cattle or both

7 All property similiar to that listed above, which at any time may hereafter be acquired by the Debtor(s) including, but not limited to, all offspring of livestock, additions and replacements of livestock and poultry, and replacements of and additions to equipment and other personal property above described; and all products of livestock and poultry, and all feed to be used in fattening or maintaining said livestock and poultry.

8 All proceeds of the sale or other disposition of any of the property described or referred to under Items 3 to 7, inclusive above, and of any offspring, wool, milk and poultry products derived from said property, together with all accounts receivable resulting from such sales.

9 Until this financing statement is terminated, it also applies to debtors' interest in crops described above planted or growing on the hereinafter described farms(s) more than 1 year from date hereof and on which crops a separate security agreement is taken.

10 All of the above described crops and property are or will become located on the farm land owned ~~(rented)~~ by John Doe located on the Hill Road 6 miles from Knoxville.

This statement and agreement has been executed by parties this 14 day of January, 19 67, and IS SUBJECT TO THE TERMS AND PROVISIONS SET FORTH ON THE REVERSE SIDE HEREOF, the same being incorporated herein by reference.

John Doe

Signature(s) of Debtor(s)

East Tennessee PRODUCTION CREDIT ASSOCIATION

By Raymond A. Holt

Signature of Secured Party - Lender

(Form PCA 401-1 (3-66)

SAMPLE FINANCING STATEMENT AND SECURITY AGREEMENT

TENNESSEE I-T
Form PCA-400-I (Rev. 6-65)

Co-Fo _____ Member No. & Loan Type _____

Tennessee

(TYPE MAKERS' NAMES AND POSTOFFICE ADDRESSES IN THIS BLOCK)

$ 10,255.00 Knoxville Tennessee 1-14 19 67.

On or before 1-14 1972, for value received, I promise to pay to the order of East Tennessee Production Credit Association, , negotiable and payable at the office of the payee, Ten thousand Two Hundred Fifty Five and no/100 ---------- Dollars, with interest payable annually from date of disbursement until paid. For the 1st year the maker agrees to pay interest at the rate of 6 % per annum and in succeeding years at such rates as the payee may have adopted for those years respectively. Said principal sum shall be payable in installments on the dates and in the amounts as follows:

$ 2,051.00	$ 2,051.00	$ 2,051.00	$ 2,051.00	$ Balance in full	$
1/14/68	1/14/69	1/14/70	1/14/71	1/14/72	/ /

In case of failure to perform any of the terms and conditions of this Note, of any Financing Statement and/or Security Agreement, of any mortgage or of any Deed of Trust, securing said indebtedness, or in case the holder hereof deems itself insecure, the entire balance of principal and interest shall at the option of the holder be immediately due and payable. If any payment, or payments herein provided for, is (are) not paid when due, such defaulted payment, or payments, shall bear simple interest from the date of such default until paid at the rate of six per cent (6%) per annum. If there is a default in the terms of this Note or any security instrument, or in case the holder hereof deems itself insecure and this Note is placed in the hands of an attorney for collection, I agree to pay 10% attorney's fees and all costs of collection. The makers and endorsers severally waive demand, presentment for payment, protest, notice of protest, dishonor, notice of dishonor, notice of nonpayment of this Note and consent to any partial release of collateral and extensions of time. The funds evidenced by this Note may be disbursed to any one or more of the undersigned makers and/or endorsers.

This Note is secured by a Financing Statement and Security Agreement (and a Real Estate Deed of Trust(s) dated 1-14-67), and evidences the original indebtedness, renewal indebtedness and/or an additional advance thereunder.

Jane Doe

John Doe

SAMPLE PROMISSORY NOTE

Form PCA 458
(Revised 10/65)

DEED OF TRUST
(TENNESSEE)

THIS DEED OF TRUST, made and entered into, this 14 day of January 1967, by and between John Doe and wife, Jane Doe

(hereinafter called the Grantor) of Knoxville, Tennessee and East Tennessee Production Credit Association, a corporation duly incorporated under an Act of Congress (hereinafter called the Lender) of Knoxville, Tennessee and John Jones Secretary-Treasurer of the Lender, or his successor in office, as Trustee (hereinafter called the Trustee).

WITNESSETH: That the Grantor, in consideration of ONE DOLLAR ($1.00), and other good and valuable considerations, receipt of which is hereby acknowledged, does hereby convey and mortgage unto the Trustee the following described real estate, together with its rents, issues and profits, and together with all buildings and improvements thereon or hereafter erected thereon and all rights and appurtenances thereto belonging situated in the 15 Civil District of Knox County, State of Tennessee, more particularly described as follows:

Beginning at a metal stake in the East side of Hill Road, the corner of Smiths property, thence west 6 degrees North 75 poles to a metal stake; thence North 9 degrees East 95 poles to a metal stake; thence South 15 degrees West 95 poles to the place of beginning, containing 40 acres more or less. Being all that tract of land from Jack Jones to John Doe and wife Jane dated January 14,1967 and the same being of record in the Register's office of Knox County, Tennessee in Deed Book 47 page 165.

This instrument was prepared by East Tennessee Production Credit Association, Knoxville Tennessee.

This conveyance is made to secure the payment; first, of the indebtedness due from John Doe and wife, Jane Doe

to the Lender in the principal sum of Ten thousand Two Hundred Fifty Five ---------- Dollars ($ 10,255.00), which the Lender has advanced, or has obligated itself to advance to the aforenamed person(s) for crop production and/or other agricultural purposes, evidenced by the following-described promissory note(s) executed by the aforenamed person(s) and bearing interest from the interest beginning date of said note(s) as therein specified, said note(s) being more particularly described as follows:

Principal Amount	Date of Note	When Due	Principal Amount	Date of Note	When Due
10,255.00	1-14-67	1-14-72			

together with any and/or all renewals and/or extensions, partial or otherwise, thereof, and second, to secure the payment of any and all additional or other advances, not to exceed Ten thousand and no/100 ---------- Dollars ($ 10,000.00), which the Lender may make to the aforenamed person(s) within seven (7) years from the date of this instrument, no matter how the same may be evidenced. Said secondary advances shall be subordinate in every respect to the primary advances. If other security has heretofore been taken for the indebtedness herein secured or any part thereof, then this Deed of Trust is taken as additional security and not in lieu of any other security for said indebtedness or any part thereof or other indebtedness to the lender.

TO HAVE AND TO HOLD the same to the Trustee, forever and the Grantor, covenants that he is well seized and possessed of said land, has the right to sell and convey the same, and he hereby binds himself, his heirs, assigns and personal representatives to warrant and defend the title thereto and every part thereof against the lawful claims of all persons whomsoever.

The Grantor further covenants and agrees with the Lender, as follows:

1. To pay the Lender, when due, the debt secured hereby, in accordance with the terms thereof.

2. To pay when due all taxes, liens, judgments, or assessments which now incumber or which may be lawfully assessed or levied against the property described herein.

3. To insure and keep insured the buildings and improvements on said premises against damage by fire and/or windstorm in companies and amounts satisfactory to Lender. All policies evidencing such insurance shall have attached thereto standard riders making such insurance payable to the Lender, as its interest may appear. Said policies at the demand of the Lender shall be deposited with it.

4. To pay all expenses incurred by the Lender in securing supplemental abstracts of title and to pay all court costs, and expenses incurred by the Lender in defending and enforcing the lien of the within Deed of Trust.

5. Upon commencement of any action involving the security herein or to foreclose this Deed of Trust or at any time during the pendency thereof, the court in which suit is pending, upon application of the Lender, its successors or assigns, shall appoint a receiver for said premises to take possession thereof, to collect the rents, issues and profits of said premises.

In the event the borrower fails to pay when due any taxes, liens, judgments or assessments lawfully assessed against the property herein mortgaged, fails to maintain insurance, or fails to pay for supplemental abstracts of title, attorney's fees, all court costs and expenses as hereinbefore provided, the lender may make such payment or provide such insurance, and the amount(s) paid therefor shall become a part of the indebtedness secured hereby and bear interest from date of payment.

If the Grantor fails to comply with any of the conditions and/or covenants of this deed of trust, then, or at any time thereafter during the continuance of any such default, the whole amount of the unpaid principal sum, together with all interest due and accrued upon the same, together with all other payments herein agreed to be made, shall at the option of the Lender become due and payable immediately, without demand or notice, notice of such default or of the exercise of such option being hereby expressly waived, and such entire indebtedness shall forthwith become due and payable, may be immediately collected by suit to enforce the same and the Lender shall have the right to immediately foreclose this deed of trust by judicial proceedings or by the Trustee as hereinafter provided. Should there be such a default then the Trustee is hereby authorized and empowered to take possession of the above described property and before or after entry, to advertise for sale and sell the same at the Court House door of the county within which any part of said real estate is situated. Said notice of sale shall be published once a week for four (4) consecutive weeks in some newspaper published in said county or for thirty days by written or printed handbills, one posted at the Court House door in said county and three in the general vicinity of said land. Said published notice of sale shall give the place, time and terms of sale, and said sale shall be at the time and place named in said notice, at public auction to the highest bidder for cash or upon such terms as may be directed by the Lender, free from the equity of redemption, homestead, dower and courtesy, all of which are hereby expressly waived. The Borrower of himself, his heirs, and assigns expressly covenants and agrees that the land shall, at the option of the Trustee, be sold as a whole and not in parcels and any right or privilege conferred upon the Grantor or owner of the incumbered land by any statute to have a sale in parcels is hereby expressly waived. In the event of sale as herein provided, the Trustee is hereby empowered to convey said land to the purchaser and if said land is sold upon terms other than cash, then in the event, there shall be retained in the deed executed by the Trustee, a lien securing the payment of such part of the purchase price not paid in cash at the time of the sale.

The Grantor further agrees that in case of sale hereunder he will at once, become and be the tenant at will of the purchaser and will surrender possession thereof on demand. If such possession is not given, then the Grantor may be removed by a forcible and unlawful detainer action to which defense will not be made, but from and after any such default the rents, issues and profits shall be due and payable to the Trustee or beneficiary, if either make demand for same.

Should the Trustee herein named, or his successor in office, or any Substitute Trustee, die, refuse, fail or be unable or incapacitated to act when action under this deed of trust is deemed necessary by the Lender for his protection, then in that event the Lender is hereby authorized to name and appoint a Substitute Trustee by written instrument acknowledged and filed for record in the Register's office of the county where any part of the land herein described is situated, and said Substitute Trustee shall be vested with all of the right, title and power, and be charged with all of the duties and obligations of the Trustee herein named.

The Lender may bid and become the purchaser at any sale under this deed of trust.

The proceeds of any sale under this deed of trust shall be applied as follows:

FIRST: To pay the expenses of making, maintaining and executing this trust, and protecting this property, including reasonable attorneys' fees and a commission of five (5%) per centum to the Trustee for compensation.

SECOND: To pay the debts and obligations herein secured or intended to be.

THIRD: To pay the surplus, if any, to the person or persons legally entitled thereto.

Until default shall be made in the payment of any of the sums herein secured, or intended so to be, or in the performance of the agreements or covenants herein contained, the Grantor shall have the right to retain possession of the above described land and to enjoy the rents and profits therefrom.

If it becomes necessary for this deed of trust to be foreclosed and the property hereinabove sold by the Trustee, then in that event, such Trustee shall have the right to make and conduct such sale by an agent, attorney, auctioneer or other representative, and the Trustee will not be required to attend such sale in person, such act being waived.

The omission of the Lender to exercise said option upon any default as aforesaid, or to exercise any other option or right hereunder, shall not preclude it from the exercise thereof at any subsequent time or for any subsequent default.

When this deed of trust and the note secured thereby shall have been fully paid in accordance with its terms, the deed of trust shall be released by the Lender.

In Testimony Whereof, the Grantor has signed his name upon the day and date first above written.

Notary Public

DEED OF TRUST

From

To

Production Credit Association

STATE OF TENNESSEE

County of _____

Received For Record on The _____

day of _____ 19 ____

At _____ O'clock _____M.

Recorded _____ 19 ____

in Mortgage Book _____ At Page _____

County Register

Recording Fee $_____

FORM PCA 453
(REV. 9-61)

CO—FO—MEMBER NUMBER—TYPE
66-7 12763 -1

87-182
641

DRAFT No. 5

Greeneville, Tennessee January 31 1967

PAY TO THE ORDER OF John Jones $ 480 00/100

Four Hundred Eighty and 00/100 DOLLARS

LIVESTOCK OR ITEMS PURCHASED MUST BE DESCRIBED—BEFORE SELLER ACCEPTS THIS DRAFT

Number	Breed	Age	Average Wt.	Sex	Description of Items or Livestock Purchased	Purchase Price	
40	Duroc	10 wks	48 lbs	Mixed	Duroc weaning pigs	$480	00

EAST TENNESSEE PRODUCTION CREDIT ASSOCIATION
Greeneville, Tennessee
Through The
First National Bank of Greeneville
GREENEVILLE, TENNESSEE

John Doe
(BUYER SIGN HERE)

SAMPLE BILL OF SALE SIGHT DRAFT

THE PROPER USE OF CREDIT

Just as a prospective borrower must check to determine the best source of credit, so the creditor checks to determine the best people to loan money to. There are many factors the lender must know about a person or business before he will risk loaning money. Knowing what these things are, and attempting to present a desirable financial picture of oneself and business, is an important phase of wise credit use.

A. Establishing a Good Credit Rating

A good credit rating means that a person has the reputation of being honest and using credit wisely. The right use of credit is sound business procedure, and it should serve to increase the net income from the farm. A good credit rating is a valuable asset; it should be established with the proper lending agencies as a matter of sound business policy. It may provide the means by which one can take advantage of immediate business opportunities when they arise.

There are eight important points which should be followed in establishing a good credit rating:

1. The first step in developing a credit rating should be a reputation for honesty and fair dealing. This reputation, for good or bad, is always building around a person. It is wise, if only from a financial point of view, to always be honest. This phase of a credit rating is developing as students attend school, work at their first job, and participate at school activities.

2. Take care of credit obligations on time. Promptness in meeting debt obligations is important.

3. File an annual financial and operating statements with local lending agencies. A financial statement shows the financial condition and net worth. An operating statement shows the receipts and expenses.

4. Take an annual inventory and keep records of cash receipts and expenses.

5. Keep a farm account book. One may be obtained from the State Cooperative Extension Service.

6. Utilize accounts in preparing a financial statement as well as in improving farm practices. An operating statement is a summary of receipts, expenses, and income for the year.

7. Prepare a budget of probable expenses and income in advance of each year's operations to serve as a guide.

8. Have a repayment plan for every loan (4, p. 28).

B. Ten Basic Rules for Using Credit

1. Use credit first for things that will increase income--needed and necessary machinery, livestock, feed and fertilizer, etc., factors that will earn income. They are productive investments.

2. Use only the amount of credit needed to operate the farm efficiently. Select the things to spend borrowed money on which will bring the largest dollar return in the shortest time.

3. Study and estimate future price trends. Be conservative in estimating future income and expense relationships.

4. Keep debts in line with the net worth. Net worth is the excess of assets over liabilities. A decrease in the value of assets does not change the debt value.

5. Always estimate the probable income. Gross cash farm income minus cash farm expenses minus cash for family living leaves the amount available for payments on principal and interest on debt. Under modern conditions, family living costs may not be subject to much reduction if the going gets rough.

6. Have a definite repayment schedule. If the credit is used for operating expenses, then plan to pay from the proceeds of crops or livestock for which the loan is used. Credit of funds borrowed for items with a longer life should be repaid before the items purchased with these become unproductive or are replaced.

7. Be fair, frank, and businesslike at all times with the lender. He can be of most service if he understands the farm operation and the results expected. Do not over-estimate assets on the balance sheet. List all debts. Never attempt to conceal pertinent facts about the business or operation. The lender has the right to expect the borrower to present the facts honestly.

8. Select the lender carefully. He should be willing and able to go along if bad economic conditions develop. If the future size of the business is likely to require substantial amounts of credit, make sure he is not limited by legal restrictions in the amount he can provide the borrower.

9. DO NOT BORROW for an enterprise which is not fully familiar. If such an investment is desired, one should use his own funds for a trial run. This will be far wiser than plunging into an unfamiliar deal.

10. Since borrowing money or using credit increases risks, do not forget that insurance can afford some protection by transferring some or all of the risk. Be sure the property and liability insurance coverage is adequate. Borrowing frequently increases debts without increasing assets. Life insurance may be needed to protect the family when debts are heavy and risks are high (2, pp. 31-32).

CASE STUDIES

Some of the uses of credit by a farmer can be illustrated by relating the experiences of typical farm families. While reading the following case studies, the reader should be aware of how the farmers in these studies expanded their farming operations, increased their earning power, and improved their standard of living through the wise use of credit.

Case Study 1

As a young man, just married, Mr. Worth began operating a good 160-acre farm belonging to a relative. Through hard work and intelligent management Mr. Worth gradually accumulated and paid for enough farm machinery and equipment to operate the 160 acres efficiently. By frugality and with the cooperation of his wife he also managed to lay aside some savings in the form of cash, Government bonds, and shares in a local savings association. After some years the relative who owned the farm died. His will provided that the farm should be inherited equally by Mr. Worth and four other relatives. The other relatives were not farmers and each wanted his portion of the estate in cash. It thus became necessary to sell the farm to settle the estate. Mr. Worth then had to decide whether he should try to buy the farm he had been farming with good success, or take his part of the estate in cash and find another farm to buy, or operate as a tenant.

Mr. and Mrs. Worth set down on paper just what their situation was at that time. By working out a balance sheet, they established the information needed to make the best decision. The farm they had been operating was generally considered to be worth $200 an acre, a total of $32,000. The heirs and the executor of the estate agreed to sell for that amount. His inheritance of one-fifth of that amount gave Mr. Worth an equity of $6,400. This left $25,600 for him to pay in order to buy the farm. His savings, including his checking account, amounted to approximately $11,000. The present value (cost less depreciation) of his farming equipment was approximately $7,500. The fair market value of his livestock was estimated at $6,000. He consulted representatives of several companies in the long-term farm lending business and found he could get a long-term mortgage loan of $16,000. He and Mrs. Worth decided to take the $16,000 loan on the farm on a 25-year repayment period and to borrow $4,000 on their livestock and equipment for a shorter term of three years. Their total debts then were $20,000. The remainder of the purchase price ($5,600) came from their savings. They still had about half of their savings as a reserve fund for emergencies. After buying the farm they made up a new balance sheet. They now owned a farm worth $32,000, equipment worth $7,500, livestock worth $6,000 and had approximately $5,000 left in their checking account and savings, making total assets of $50,500. On the other hand, they

now owed a long-term mortgage of $16,000 and a financing and security agreement on the livestock and equipment of $4,000, making a total indebtedness of $20,000. This left them a substantial net worth of $30,500, approximately 60 per cent of their total assets.

After about five years the Worths found themselves in this situation. They had paid off the short-term debt and had reduced their long-term loan from $16,000 to approximately $14,000. Because of a rising trend in farm values and because of some improvements to the farm which they had made, they now considered their farm to be worth $36,000. Additional equipment purchased and paid for brought their inventory to $10,00 and they had about $9,000 worth of livestock on hand. Paying off the short-term debt, increasing their inventory and the expense of an operation for one of the children had prevented them from adding to their savings. Their balance sheet now showed assets of $59,000 and debts of $14,000. Their net worth had increased to $45,000, nearly 75 per cent of their total assets.

The Worths now faced a new decision. A fairly good adjoining 80 acres could be bought for $250 an acre, a total of $20,000. This seemed a little high. But having ample equipment to operate more land, they believed their total net earnings could be increased materially by adding the 80 acres to their 160. All members of the family agreed.

The oldest boy in the family was a senior in high school. He planned to go to college to study agriculture with the hope that he could return home to go in business with his father.

This time the family worked out their balance sheet together. They tried to estimate their prospects for future earnings as well as the outlook for family expenses. They now had their home farm worth $36,000, plus the farm they intended to buy worth $20,000, plus $19,000 worth of equipment and livestock and $4,000 cash and savings--a total of $73,000. Their only indebtedness was the $14,000 still due on their long-term mortgage plus the $20,000 they proposed to invest in the 80 acres. This would make a total debt of $34,000. They found they could borrow on the combined farms of 240 acres a total of $27,000. This left them $7,000 short of the amount needed to buy the additional land. Because of expected expenses in sending the boy to college, they felt they should not dip into their savings any more but they did feel safe in borrowing the $7,000 on a five-year contract, secured by a lien on their livestock, equipment and crops. In negotiating their long-term loan they felt that repayment of the $7,000 short-term debt, plus the education of the son, would make it difficult to pay any portion of the principal on their long-term indebtedness for the first five years. They therefore arranged with the lender for a 30-year contract, with no principal payments required these first five years when they would be paying on their short-term loan and college expenses for the oldest boy. Repayment of the long-term loan would then be completed over a 25-year period.

After buying the additional 80 acres the Worths had assets worth approximately $79,000 and debts of $34,000. Their net worth of $45,000 was now down to about 57 per cent of their total assets. The Worths and their creditors agreed that stepping up their earnings capacity at the time they were educating their children more than offset their weaker net worth position (1, pp. 33-35).

Case Study 2

John Jones had saved $10,000 and decided that he wanted to buy a dairy farm. John and his wife spent some time looking over farms for sale and finally decided upon one that could be purchased with livestock and equipment for $28,000. The livestock included 22 good cows and 12 heifers of various ages. The machinery included about what would be needed for working the farm. The land area and barn capacity were enough for carrying the amount of livestock included in the purchase. The seller demanded a cash payment of $21,000 and would take a second mortgage on the real estate at about $7,000. He apparently valued the real estate at $17,000; the livestock at $6,000; the machinery at $5,000.

John contacted the local national farm loan association; applied for a loan; had the farm appraised; and found that he could obtain a $10,000 Federal Land Bank loan on first-mortgage security. This, with the second mortgage loan of $7,000 would finance the purchase of the farm but John would have to use $500 of his own money (5% of $10,000) to purchase capital stock in the National Farm Loan Association from which he was to receive the first mortgage loan. John also realized that he would have to keep $500 of his own money in reserve to pay bills until he received his first milk check. This meant that he would have only $9,000 to apply toward the balance of $11,000 needed to pay for the livestock and equipment.

His equity of $9,000 in the livestock and machinery would give him plenty of security, so John's next step was to negotiate with the local production credit association for a $2,000 short-term loan secured by a financing statement and security agreement on part of his livestock. To get this loan he would also have to buy capital stock in the amount of $100 (5% of $2,000) in the local production credit association. He was now financed but had only $400 instead of $500 with which to meet current bills.

Before closing the deal John listed his probable debt obligations for his first three years of farming about as follows:

	1st Year	2nd Year	3rd Year
Long-term Loans			
1st Mortgage			
Principal ($10,000 ÷ 33 years)	$ 303.00	$ 303.00	$ 303.00
Interest	450.00	436.36	421.72
2nd Mortgage--$7000			
Principal and Interest in 20 equal payments	561.70	561.70	561.70
Short-term Loan:			
PCA--Principal ($2000 ÷ 2½ years)	800.00	800.00	400.00
Interest (6% of unpaid balance)	98.00	50.00	7.00
Total Payments	$2212.70	$2151.06	$1693.42

The first and second year debt obligations were staggering amounts to John so he made careful estimates of probable income from his farming operations. On the basis of the seller's records and the dairy outlook for the years ahead, it appeared that gross receipts from the farm would approximate $12,000 and farm expenses $7,900. This should leave $4,100 for family living and debt payments. John and his wife decided that, with produce from their farm, their cash living expenses could be kept within $1,800. This would leave $2,300 for debt payments which John thought safely exceeded the amount required for the first two years so they decided to proceed with purchase negotiations (3, pp. 16-17).

Case Study 3

Another young man, Tom Brown, and his wife had saved $9000 with the idea of owning and operating a dairy farm. After looking for some time they found one, stocked and equipped, that suited them with a price tag of $23,500. They estimated the value of the farm at about $12,000; the milking herd of 21 cows and a few head of young cattle at $6000; and the machinery at $5500.

Tom found that a local savings bank, where his reputation for honesty and hard work were known, would loan him $7500 on first mortgage security. The interest rate on this was 5 per cent and the loan could be amortized over a 15 year period.

Tom was also fortunate in having a friend who would loan him up to $3000 on a personal note at 5 per cent interest. To protect the friend's interest, Tom proposed giving him a financing statement and security agreement on 15 of the younger cows in the herd. With $9000 in cash and the friend's loan of $3000, Tom figured that he could pay for the livestock and equipment and have $500 left for current bills until he received his first payment for milk.

Reasoning that he could pay for the livestock and machinery and $7500 toward real estate, Tom again approached the seller and was able

to convince him to take a second mortgage on real estate for the remaining amount of $4500. The seller agreed to accept the same terms as the Savings Bank; that is, 5 per cent interest and a 15-year amortization loan.

The other thing that Tom did was to convince both the Savings Bank and the seller of the farm that it would be both to his and their advantage to accept the standard (even payment) plan of amortization. This meant slightly greater total payment during the entire 15 years of amortization but slightly lower payments for Tom, during the early years, when he would be less able to meet the obligation.

Before closing the deal Tom also listed his necessary annual debt payments which appeared about as follows:

	1st Year	2nd Year	3rd Year
Long-term Loans:			
1st Mortgage--$7500			
Principal and Interest at 5% in 15 equal payments	$ 722.57	$ 722.57	$ 722.57
2nd Mortgage--$4500			
Principal and Interest at 5% in 15 equal payments	433.54	433.54	433.54
Intermediate Loan:			
Friend's loan for 6 years at 5%			
Principal ($3000 ÷ 6 years)	500.00	500.00	500.00
Interest--5% on unpaid balance	150.00	125.00	100.00
Total Payments	$1806.11	$1781.11	$1756.11

Tom had already made an estimate of probable income (annual) from his farming operations. He figured that he could do most of the work himself and the gross receipts should approximate $10,500 and gross expenses $6850. This would leave $3650 for living and debt payments. He and his wife decided that they could live within the $1850 to $1900 that should be available after making debt payments so they proceeded with the purchase (3, pp. 17-18).

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3. "Use of Credit in Farming." A Northeast Regional Publication. University of Massachusetts, 1954.

4. Whitlow, James R. A Source Unit for Teaching Farm Credit in Vocational Agriculture. Knoxville: The University of Tennessee, Department of Agricultural Education, 1962.

APPENDIX B

INSTRUCTIONAL SUPPLEMENT

to

A HANDBOOK OF AGRICULTURAL CREDIT FOR VOCATIONAL AGRICULTURE IN TENNESSEE

Part I: Terms, Practice Problems, Surveys, and Other Suggested Activities

Part II: Visualizing Agricultural Credit

By

Raymond A. Holt

PART I: GENERAL INSTRUCTIONAL MATERIAL

DEFINITION OF IMPORTANT TERMS

It is suggested that the following terms be mimeographed and distributed to the class members at the beginning of the study of agricultural credit. This suggestion is made in order that the students will be familiar with the necessary terms.

Abstract of Title	A brief summary of all the transactions or events that affect the land in question.
Amortization	The gradual payment of a debt. The installments usually include both interest and principal payments.
Assets	Anything a person owns which has value.
Bond	An interest-bearing certificate issued by a government or business promising to pay a holder a specific sum on a specific date.
Capital	A farmer's total investment in his business.
Collateral	Property given as security on a loan.
Consumer Credit	Credit used to purchase consumer items such as household furniture, refrigerators, cars, et cetera.
Co-signer	A second person to sign a note who will bear full responsibility for the payment of it.
Credit	The ability to command the goods or services of another in return for a promise to pay for them at a specified time in the future.
Creditor	One who extends credit.
Endorser	A person responsible for payment in order of his signature.
Equity	Capital owned by a person.
Financial Statement	A written statement of what is owned (assets) and what is owed (liabilities) at a given time.

Financing Statement and Security Agreement	A legal investment by which a farmer gives a creditor the right to sell the farmer's machinery, farm animals or crops--if the debt is not paid as agreed.
Interest	Charge made for the use of money or credit.
Liabilities	Amounts owed to others--"debts."
Lien	A claim on the property of another as security against the payment of a debt.
Loan	A sum of money lent for a specified period of time and repayable with interest.
Mortgage Real Estate	A legal instrument by which a farmer gives a creditor the right to sell the farm if the debt is not paid as agreed.
Mortgagee	A creditor who holds a mortgage as security.
Mortgagor	One who has given a mortgage to a creditor as security.
Net Worth	Equity; it is the value of assets minus liabilities.
Note	A written promise, signed by the borrower, to pay a fixed amount at a specific time.
Operating Income	Gross sales of farm products.
Principal	The amount of a debt on which interest is computed.
Production Credit	Credit used to purchase items for the business from which some type of return, monetary or efficiency, is expected.
Release	The act of the creditor officially noting in the courthouse records that a note has been paid and the property securing the note released.
Risk	The chance that the loan will not be repaid and will result in financial loss to the lender.
Security	Property signed to a creditor as a guarantee for a debt.

Split Credit	A debtor having debts of the same term with different creditors.
Stock	Certificates representing an investment by persons in a business.
Total Credit	All of the credit available to a borrower from all sources.
FHA	Farmers Home Administration.
FLBA	Federal Land Bank Association.
PCA	Production Credit Association.

PROBLEMS ON COST OF CREDIT

The following set of problems is representative of those found in everyday living. It is suggested that the teacher use the problems in class when studying the section on credit costs in the handbook.

1. Compute the interest rate when $2,400 is borrowed for one year and $144 is paid at the end of the year.

$$R = \frac{2 \times 1 \times 144}{2400\ (1 + 1)} = 6\%$$

2. Compute the interest rate when $2,400 is borrowed for one year. $144 is added as interest to make the total note read $2,544. The $2,544 is divided into twelve equal payments.

$$R = \frac{2 \times 12 \times 144}{2400\ (12 + 1)} = 11.1\%$$

3. Farmer A borrowed $300 at 6 per cent interest for one year to buy a milking machine. This loan is to be paid back in 12 equal monthly payments from the sale of the milk. Find the true annual interest rate.

$$R = \frac{2 \times 12 \times 18}{300\ (12 + 1)} = 11.1\%$$

4. What is the simple interest on $800 borrowed for 9 months at 5 per cent interest?

$$i = 800 \times .05 \times 9/12 = \$30$$

5. A sewing machine costs $188.50. Upon purchase of the machine, Mrs. X pays $10 down and charges the balance on her open account. Carrying charges amount to $15. Find the interest rate if the account is to be paid in one year in equal monthly payments.

$$R = \frac{2 \times 12 \times 15}{178.50\ (12 + 1)} = 15.5\%$$

6. Farmer Brown borrows $500 from a bank whose discount rate is 5 per cent. At the end of the year he is to pay the loan in full. Find the true interest rate.

$$R = \frac{2 \times 1 \times 25}{475\ (1 + 1)} = 10.5\%$$

7. Joe Smith has borrowed $1200 to buy some equipment for his farm, He is to pay this amount in 12 equal installments of $100 each. Find the average amount borrowed.

$$A = \frac{1200 + 100}{2} = \$650$$

8. Mr. X obtains a $1200 amortized loan to be repaid with a $100 payment on the principal in 12 installment plus an interest payment on the outstanding balance each month. He agrees to pay interest each month on the balance of the 6 per cent loan. Find the true interest rate.

(Hint: Find average interest paid each month--see example 5 in handbook.)

$$R = \frac{2 \times 12 \times 39}{1200\ (12 + 1)} = 6\%$$

9. Farmer B borrows $200 from a bank whose discount rate is 6 per cent. If the loan is to be paid in full in 6 months, what is the true annual interest rate?

$$R = \frac{2 \times 1 \times 12}{188\ (1 + 1)} = 6.4\% \times 2 = 12.8\%$$

10. $600 is borrowed at 6 per cent interest, and then a 5 per cent carrying charge is added. The loan is to be paid at the end of the year. Find the true interest rate.

$$R = \frac{2 \times 1 \times 66}{600\ (1 + 1)} = 11\%$$

PRACTICE PROBLEMS ON CREDIT INSTRUMENTS

The teacher should have the students to indicate the credit instruments which would normally be used to facilitate the transaction for each of the following situations, based upon the section "Credit Instruments and Documents" in the handbook.

1. A farmer borrows money to buy a new combine.

2. A farmer borrows money to buy some additional land.

3. The monthly car payment must be mailed.

4. A prospective buyer wants to know whether he will have a clear title to a piece of land being sold to him.

5. The loan officer at the bank wants information about a farm business before making a loan.

6. A farmer buys some shares in his local cooperative.

7. A farmer stores some grain in a local elevator.

8. A farmer buys a new TV on the installment plan.

9. A man pays $20,000 cash for a farm.

10. An agreement in writing is made by a farmer to perform some crop dusting for other farmers.

11. The seller of some property passes the title to the buyer and will defend it against any claim.

12. A long-term loan is obtained from the Federal Land Bank.

13. One-third of a farmer's milk check is being sent direct from the plant to one of his creditors.

14. A farmer offers his machinery as security for a short-term loan at the bank.

15. A title is passed to a buyer of some land but the buyer will not defend it against any claims.

16. A father is selling his farm to his son by allowing him to make regular payments over a period of years and will give him the title after 50 per cent of the real estate value has been paid.

Other Practice on Credit Instruments

The following activities are suggested in order for the student to be able to properly fill out credit instruments with a reasonable amount of correctness.

1. Mimeograph sample checks, similar to the sample check in the handbook, and have the class members write checks so that they will know how to properly write one. Be sure to take up all sample checks to prevent any possible complications.

2. Prepare bill of sale sight drafts and have the students complete them similar to that of the checks.

3. Obtain copies or prepare facsimiles of the following credit instruments: loan application, financing statement and security agreement, real estate mortgage, deed of trust, field report, and promissory note.

   a. As the first step, have each student plan a farming program, preferably based on his supervised farming program. A partial budget should be utilized in planning future expansions.

   b. Have each student prepare a balance sheet of his farm business.

   c. Then have each student fill out a loan application for the capital needed to meet his requirements.

   d. Have each student complete the following credit instruments: promissory note, financial statement and security agreement, and real estate mortgage.

   e. Individualized instruction will be needed.

4. Divide the class into small groups. Two of these groups will have to work together--one group serving as the lending agency and the other group serving as the loan applicant. Using an improvised scene, have the group needing a loan approach the group serving as the lending agency, using the farm business of one of the members of the loan applicant group. The lending agency should then interview the applicant group, etc. until the entire borrowing process is completed (this should include the completion of all necessary documents for which the chalkboard could be used). Rotate the process to other groups until all groups have participated.

COMPARING LENDING AGENCIES

The following activities are suggested in comparing the various lending agencies in the community.

1. Mimeograph credit survey forms 1-3 and have class members collect information about the various lending agencies.

2. Invite individuals from each lending agency to present the characteristics of their respective agency called for on the survey forms.

3. Role playing could be utilized in that class members could act as representatives of the lending agencies, thereby discussing the characteristics of the agency.

4. Using Plate IX in the visual aid section of the supplement, summarize the information.

OTHER ACTIVITIES

1. Plate IX in the instructional supplement should be duplicated and distributed to the students to use in conjunction with the section "Cost of Credit" in the handbook.

2. Plate X should also be duplicated and given to the class members for use.

3. Field trips to the various lending agencies should be undertaken so that the class members can actually see what is involved in applying for credit.

4. Assist students in determining credit needs and applying for the actual loan.

5. Use as many visual aids as needed to clearly explain agricultural credit.

CREDIT SURVEY FORM NO. 1

AMOUNT AND TREND OF AGRICULTURAL CREDIT

LOCAL COUNTY DATA, DATE_____

Source	Outstanding Balance to Farmers	Trend in Amount--Last Five Years		
		Down	Up	Same
1. Banks				
2.				
3.				
4.				
5.				
6.				
7. Production Credit Association				
8. Federal Land Bank Association				
9. Farmers Home Administration				
10. Savings and Loan Association				
11.				
12.				
13. Insurance Companies				
14.				
15.				
16. Small Loan Companies				
17.				
18.				
19. Credit Unions				
20. All Others				
Total All Agricultural Credit				

CREDIT SURVEY FORM NO. 2

(Comparing Lending Agencies)

Name of Lender	For What Purpose Do You Make Loans?	What is the Length of Your Loan?	Do You Like to Make Consumer Loans?	What Interest Rate Do You Charge?

CREDIT SURVEY FORM NO. 3

(A Comparison of Lending Agencies From Contracts and Loan Papers)

Total Money Used	Interest Costs As Listed	Other Loan Costs	Total Costs to be Figured as Interest	True Annual Interest Rate

PART II: VISUALIZING AGRICULTURAL CREDIT*

1. Introduction

A classroom instructional period may be described as ranging from the one extreme of mere presentation of facts, resulting in little or no learning, to the other extreme of a "live" student involved, "optimum learning" situation. For effective teaching to take place, the teacher must direct his efforts toward the end of the continuum where "optimum learning" takes place.

The Cone of Experience as it appears in Figure 1 represents another continuum--from abstract to concrete.

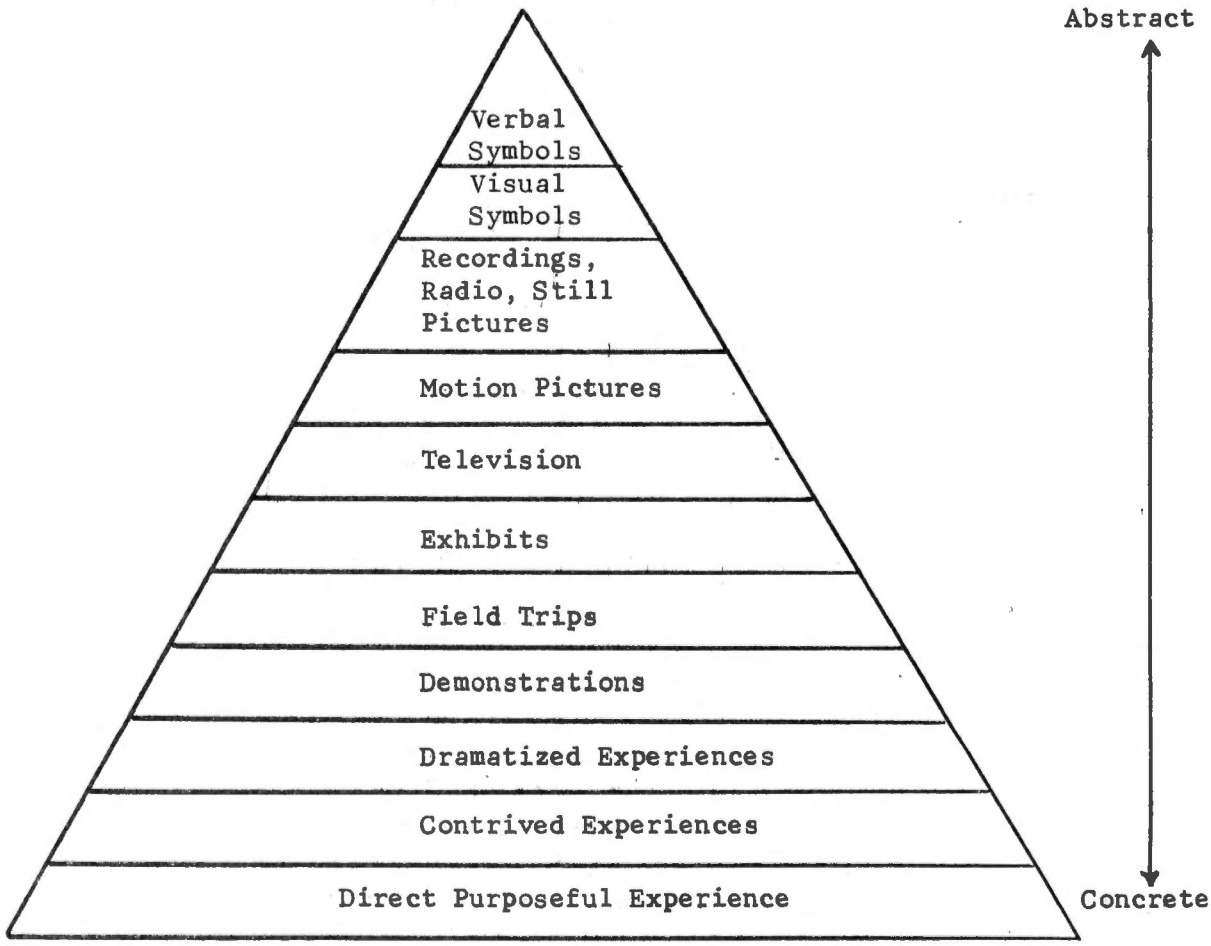

Figure 1. Cone of Experience

It is clear that teaching in the area of agricultural credit will rely heavily upon the use of verbal and numerical symbols. These

*Most of this section was prepared by Dr. Douglas Towne.

symbols are located at the extreme end of the abstract-concrete continuum. This fact presents problems which must be overcome in order to assure the optimum learning situation.

Since verbal symbols will be relied upon to a considerable extent in teaching agricultural credit, this supplement is designed to make these symbols as meaningful as possible by presenting the material in an orderly, concise and simple manner. (These plates should also prove helpful to the teacher by reducing the time and effort required in the preparation of teaching aids for the units in credit.)

Even though credit relies heavily upon the use of verbal symbols, this does not indicate that more concrete means cannot be employed in the learning situation. Four of the five most concrete experiences as shown in the Cone of Experience lend themselves very well to instruction in credit. Field trips, dramatized experiences, contrived experiences and direct purposeful experiences will all find a definite place in the instructional process. Any attempt to teach credit should include one or more of these procedures.

However, since verbal symbols will be relied upon to a considerable extent in teaching agricultural credit, the following plates are designed to enhance the possibility of a successful and meaningful learning experience.

2. Overhead Projection Transparencies

A. Producing Transparencies

The first eight plates are intended to be used as "masters" for the production of overhead projection transparencies. (They may also be used as they are with the opaque projector but will not be as effective.)

Most, if not all, of the present photocopy machines will make transparent copies of materials such as these. Most of our schools presently have photocopy machines and even if they do not, it is a simple matter to take the "masters" to an office equipment dealer and have them made there. (The cost of producing a transparency by the photocopy method is about 10¢ per copy.)

The photocopy method of transparency production, briefly stated, is:

1. Insert "master"* and negative paper.

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*Note: The plate number should be cut off first so as not to appear on the transparency.

2. Expose negative paper.
3. Place negative and transparent material together.
4. Develop and allow to dry.

The operator's manual for the particular photocopy machine involved will give explicit directions. If help is needed, the office equipment dealer serving the school will be glad to provide assistance.

To insure a more lasting transparency, it is recommended that they be mounted in commercial or homemade cardboard mounts.

B. Using the Transparencies

Plate I may be used as it is. Plate II is designed to be filled in as instruction progresses, and if used in conjunction with the information in the Handbook, will be filled in and erased several times. Plates III, IV, V, VII, and VIII are also designed to be filled in during instruction. Plate VI may be used as it is.

Due to the fact that an orderly, step-by-step presentation will be more effective, and that these transparencies will be used for several years, it is important that a washable ink or grease pencil be used in filling in the information on Plates II, III, IV, V, VII, and VIII. This will allow maximum use of the transparencies in an orderly manner each time.

Recommendations for the presentation of the specific transparencies appears below.

Plate I--This Plate is to be used for the purpose of explaining the formula for computing the annual interest rate. It would be best used in the discovery method--that is, allow students to see only the formula appearing at the top (this is done by masking out the rest of the transparency with an opaque material). Then move the mask down so as to "discover" R, explain this term fully, ask questions, allow questions, then move down to C and continue in a similar manner until the complete formula is explained.

An explanation of the formula and its use appears in the handbook.

Plate II--This Plate repeats the annual interest rate formula and allows for solving of the formula directly on the transparency. The recommended procedure would be:

1. State problem (may be in mimeographed form accompanied by a blank formula similar to Plate II).
2. In the first blank formula, substitute the appropriate numbers for the four symbols (M, C, P and N).

3. Solve for M x C and N + 1 and place in appropriate space in second blank formula.
4. Solve for P x (N + 1) and 2 x (MC) and place results in third blank formula.
5. Divide and place answer (stated as per cent) in blank to the right of the last blank formula.

As each problem is solved, it is recommended that a summary chart (chalkboard and mimeograph as appears in Plate IX), be developed with the information and results.

Plate III--This Plate would be used in a manner similar to Plate I and Plate II. Related information appears in the handbook.

Plate IV--This Plate would also be used in a manner similar to Plate I and Plate II. Related information appears in the handbook.

Plate V--The partial budget, as appears on this Plate, will have use in other farm management instruction also. It would be used in a manner similar to Plate II. The preliminary computations necessary in determining the single entries such as added returns, reduced costs, etc., should be done on the chalkboard or on scratch paper by the students.

The information related to the partial budget is found in the handbook.

Plate VI--This Plate is to be used to illustrate the four types of endorsements.

Plate VII--Sample check: This Plate is to be used to illustrate how to write a check.

Plate VIII--Financial Statement: This Plate is to be used to show how to properly prepare a financial statement.

3. Charts and Other Visual Methods

The remaining plates will be more appropriate if used as charts than they would be if used as transparencies. These charts may be in the form of chalkboard presentations, handouts, opaque projections or flannel-magnet board presentations.

Plate IX--The summary chart may be used as a model for a chalkboard or other more permanent chart and/or a mimeographed hand-out. (It is recommended that the student be involved by filling in the data in the body of the chart.)

Plate X--This chart summarizes the data regarding classification of lending institutions.

Plate XI--This graph illustrates the growth of "set-asides" in a savings account. It is recommended that a blank chart (mimeograph, ditto or graph paper) be handed to the student which he fills out along with the instructor.

The common rate of interest in the community should be used.

The important relationship this graph illustrates is the fact that the line formed from the plotted data is curved. To more forcefully illustrate this, it is recommended that the students first plot the growth of saving a set amount without drawing any interest. (This will be plotted as a straight line.) Then have the students plot the same amount with interest and point out the fact that the line is now a curve.

4. Summary

These Plates and recommendations are only a few of the possible ways and means which may be used in an effort to increase teaching effectiveness. The teacher should use his imagination and ingenuity to develop other methods as well. He should always keep in mind the goal of making the learning experience more concrete, orderly, concise and simple.

$$R = \frac{2\ M\ C}{P\ (N + 1)}$$

R	Annual interest rate (approximate)
C	Total finance charges
M	Number of payments per year
P	Principal (amount of loan)
N	Total number of payments

PLATE I

$$R = \frac{2\ M\ C}{P\ (N + 1)}$$

$$R = \frac{2}{(\qquad + 1)}$$

$$R = \underline{\qquad\qquad\qquad}$$

$$R = \underline{\qquad\qquad\qquad} = \underline{\qquad\qquad}\%$$

PLATE II

$$i = p\ r\ t$$

i	Amount of simple interest
p	Principal
r	Annual rate of interest
t	Number of years borrowed

i = _____ _____ _____ = $_____

PLATE III

$$A = \frac{p + a}{2}$$

A	Average amount
p	Principal
a	Size of last principal payment

$$A = \frac{\quad + \quad}{2}$$

$$A = \frac{\quad + \quad}{2} = \$_____$$

PLATE IV

ESTIMATED CHANGE IN ANNUAL NET FARM INCOME

FROM _____

A. BENEFITS

1. Added Returns	$_____	
2. Reduced Costs	$_____	
Subtotal A		$_____

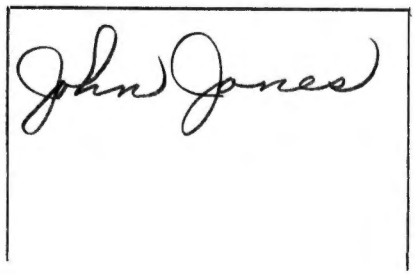
B. DETRIMENTS

3. Added Costs		
Direct	$_____	
Indirect	$_____	
4. Reduced Returns	$_____	
Subtotal B		$_____

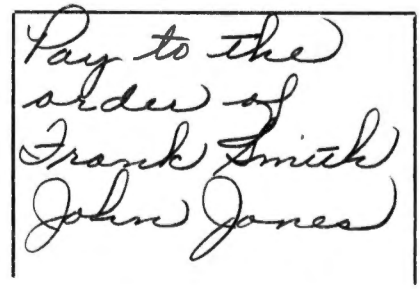
NET CHANGE IN INCOME (A-B) $_____

PLATE V

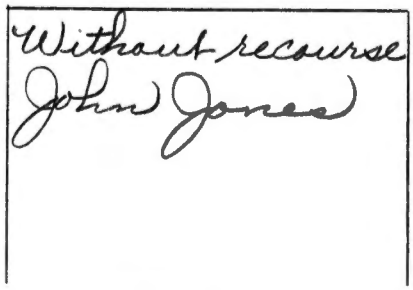
CHECK ENDORSEMENTS



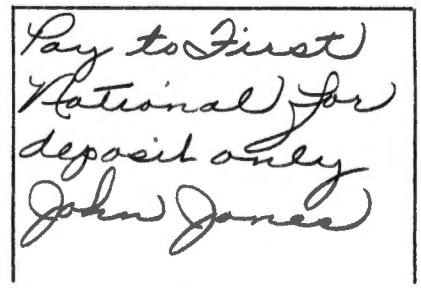
BLANK



SPECIAL



QUALIFIED



RESTRICTED

PLATE VI

SAMPLE CHECK

Utopia, Tenn._____

FIRST NATIONAL BANK OF UTOPIA

Pay to The
Order of_____ $_____

_____Dollars

For_____

_____

PLATE VII

BALANCE SHEET

ASSETS			LIABILITIES		
CURRENT:			CURRENT:		
_____	$_____		_____	$_____	
_____	_____		_____	_____	
_____	_____		_____	_____	
TOTAL CURRENT		$_____	TOTAL CURRENT		$_____
FIXED:			FIXED:		
_____	_____		_____	_____	
_____	_____		_____	_____	
_____	_____		TOTAL FIXED		$_____
TOTAL FIXED		$_____	TOTAL LIABILITIES		$_____
TOTAL ASSETS		$_____	NET WORTH (EQUITY)		$_____
			TOTAL		$_____

PLATE VIII

SUMMARY CHART

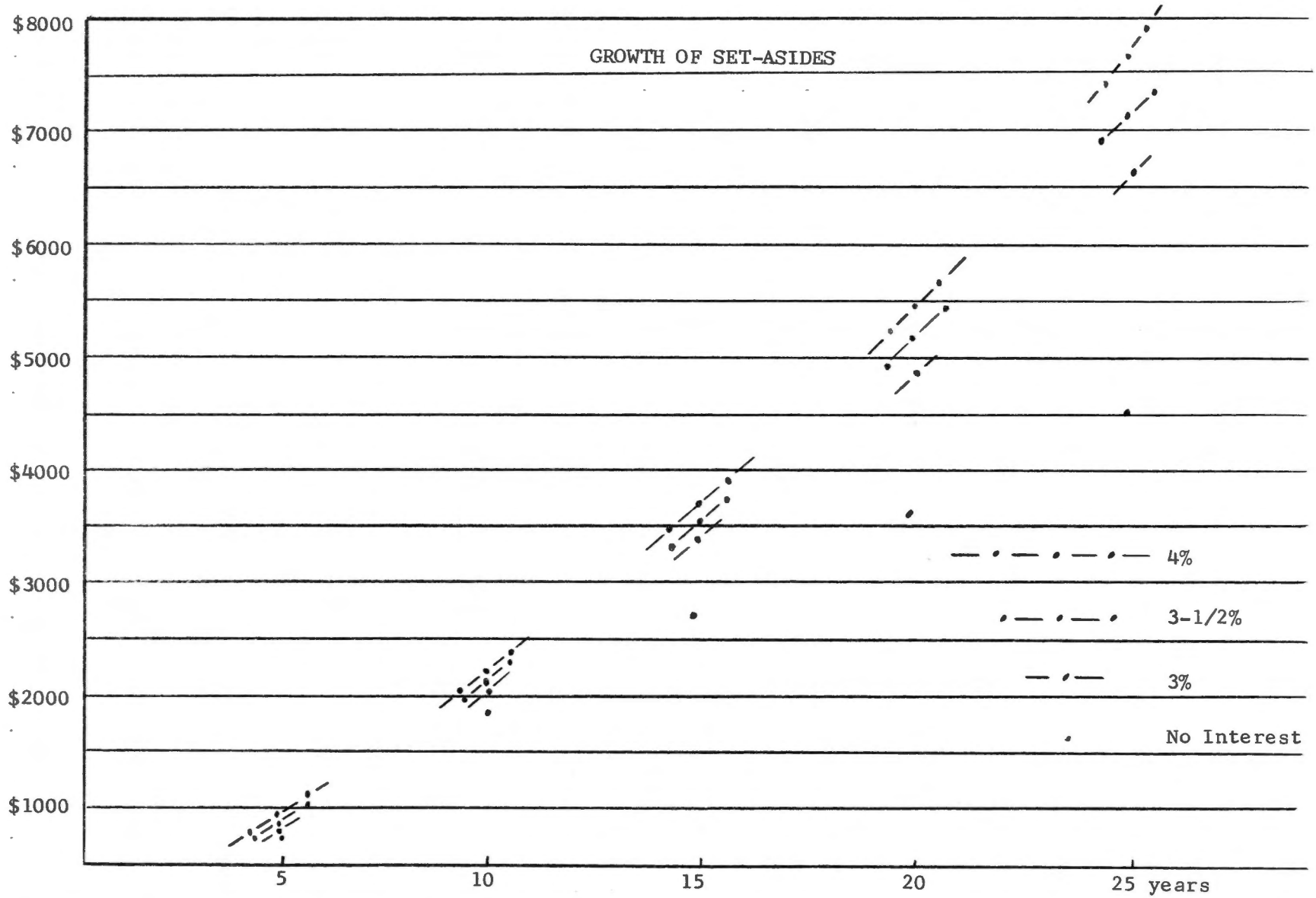
	Money to Use	Period	Amount Repaid	Interest Cost	Quoted Rate	Annual Interest Rate
1. Interest and principal paid when loan became due:	$200	1 year	$212	$12	6%	6%
2. Interest paid in advance:	$188	1 year	$200	$12	6%	6.4%
	$176	2 years	$200	$24	6%	6.8%
3. Loans for less than a year--interest in advance:	$188	6 mos.	$200	$12	6%	12.8%
4. Installment loan with annual interest on original amount:	$600	1 year	$636	$36	6%	11.1%
5. Installment or amortized loan with annual interest on unpaid balance:	$600	1 year	$619.50	$19.50	6%	6%
6. Installment buying:						
Dealer:	$430	9 mos.	$450	$20	--	11.2%
Bank	$430	9 mos.	$441	$11	6%	6.0%

PLATE IX

I. CLASSIFICATION OF LENDING INSTITUTIONS

Type	Terms Offered	Cost of Credit	Advantages	Disadvantages
Individuals	Likely to be short. Average 5 years	About 4-6%	Terms usually flexible. Little supervision cost. Lender is influenced by competition.	Short terms. High cost in some cases. Dependent on length of life of lender.
Commercial Banks	Usually short. Average 5 years (trend toward longer terms in future).	5-7% (may go as high as 12% for small installment loans).	Convenient for farmers. Can provide other services.	Short terms. Sometimes high rates. May not be familiar with needs of farmers.
Federal Land Banks	Usually long--5 to 40 years	5-3/4%	Reasonable interest rates. Long terms. Credit suitable to farmers.	Borrower must buy 5% of amount of loan in FLB stock. Have been rather conservative in lending policies.
Production Credit Association	Short terms up to 5 years.	5-7% plus loan service fee in some cases.	Well-suited terms. Budgeted loans. Based on farmer's ability to pay.	Red tape involved. Farmers may be way of having neighbors know their business. Borrower must buy 5% of amount of loan in PCA stock.
Life Insurance Company	5 to 25 years determined by quality of security	6%	Amortized repayment plans.	Highly selective.
Finance Companies	Short terms--up to 3 years	21-30%	Convenient. Liberal lending policy.	Small loans (maximum ($800). High cost of credit. Terms not suited to farmers needs.

PLATE X



Notes: Amount of fund if $15 is deposited each month, with interest compounded semi-annually.

PLATE XI

APPENDIX C

THE TWENTY-FIVE VOCATIONAL AGRICULTURE DEPARTMENTS PARTICIPATING IN THE STUDY

Group I

County:	School:
Gibson	Medina High School Medina, Tennessee
Grainger	Washburn High School Washburn, Tennessee
Greene	South Greene High School Greeneville, Tennessee
Lawrence	Lawrence County High School Lawrenceburg, Tennessee
Montgomery	Clarksville High School Clarksville, Tennessee

Group II

County:	School:
Carroll	Trezevant High School Trezevant, Tennessee
Gibson	Gibson High School Gibson, Tennessee
Madison	North Side High School Jackson, Tennessee
Montgomery	Central High School Cunningham, Tennessee
Rhea	Rhea Central High School Dayton, Tennessee

Group III

County:	School:
Carter	Cloudland High School Roan Mountain, Tennessee
Cumberland	Cumberland County High School Crossville, Tennessee
Hardin	South Side High School Counce, Tennessee
Hawkins	Church Hill High School Church Hill, Tennessee
Warren	Irving College High School McMinnville, Tennessee

Group IV

County:	School:
Bledsoe	Bledsoe County High School Pikeville, Tennessee
Carter	Unaka High School Elizabethton, Tennessee
Clay	Celina High School Celina, Tennessee
Warren	Centertown High School McMinnville, Tennessee
White	White County High School Sparta, Tennessee

Group V

County:	School:
Claiborne	Powell Valley High School Speedwell, Tennessee
Greene	West Greene High School Greeneville, Tennessee
Stewart	W. T. Thomas High School Cumberland City, Tennessee
Sumner	Westmoreland High School Westmoreland, Tennessee
Washington	Fall Branch High School Fall Branch, Tennessee

APPENDIX D

TEACHING OUTLINE

It is important to the study that the teacher stay within the time limitations prescribed and use no other references or materials except those included in the handbook. The following outline will give the teacher an idea of what is to be taught. It is important that the teacher adhere to the outline as closely as possible. The teacher should use any method to meet the outline.

I. Credit Needs--1 day

A. Discuss general nature of needs, including the three items determining the amount of credit.

B. Discuss partial budgets and their use. Show how the partial budget is derived, using the example in the handbook.

C. Discuss the balance sheet and its use in credit. Explain how the financial statement is derived.

II. Types of Credit--1 day

A. Discuss the classification of credit according to time. Include characteristics of such loans, where obtained, and give examples. Discuss the advantages and disadvantages.

B. Discuss classifications of credit according to purpose and security in a similar manner to Item A.

III. Cost of Credit--2 days

A. First day--

1. Discuss the importance of knowing what interest rates a person is paying.

2. Illustrate the simple interest formula on page 74 of the handbook. Explain its limitations in computing the true rate of interest.

3. Introduce the formula used in the handbook for computing the cost of credit, explaining what the symbols stand for.

4. Begin working the various types of problems in the handbook with the class.

B. Second day--

1. Conclude working the various types of problems in the handbook with the class.

2. Illustrate how service charges and similar charges increase the cost of the loan (p. 74).

3. Introduce and illustrate the formula for the average amount borrowed.

IV. Selecting the Credit Institution--1 day

A. Discuss the five general aspects of the lender that should be investigated when considering a loan.

B. Since this section is short, the teacher may use the rest of the period to start the next topic (No. V).

V. Sources of Credit--1 day

A. If this topic was started the previous day, it should be concluded in this period.

B. Discuss the various characteristics of the lending agencies, including terms, rates of interest, advantages and disadvantages, length of loan, collateral, etc. This information is found on pp. 83-84 and preceding pages.

C. Have the class make a list of the agencies in the community making short-term, intermediate-loan, and long-term loans.

VI. Planning Repayment Terms--1 day

A. Point out the importance of planning repayment terms to coincide with farm income.

B. Discuss the two types of repayment plans and show the differences of the payments in the plans.

C. If the section is too short for the period, start on the next section.

VII. Credit Instruments and Documents--2 days

A. First day--

1. The teacher should emphasize the importance of credit instruments and their correct use.

2. Discuss what is meant by negotiable credit instruments and the types of endorsements on negotiable instruments.

3. Discuss the general nature of checks, including advantages, information, and instructions for writing.

4. Illustrate the proper way in which to write a check.

5. Discuss the bill-of-sale-sight draft and the conditions when it should be used.

B. Second day--

1. Discuss the note, deed of trust, financing statement and security agreement, and other papers in connection with loans. These credit instruments should be discussed, while referring to the samples presented in the handbook.

2. Define and give examples of other commonly used credit instruments as given on p. 92 of the handbook.

3. Point out the legality of credit instruments once the person signs his name and also the provisions in these instruments.

VIII. The Proper Use of Credit--1 day

A. Discuss the steps and their importance in establishing a sound credit rating.

B. Point out and stress the basic rules for using credit.

C. If time permits, have students read the case studies and discuss and/or analyze them.

USE OF THE SUPPLEMENT

It is important that the teacher use this outline in conjunction with the teaching outline of the handbook.

I. Definition of Terms--The terms should be duplicated and distributed to the class the first day of the study to give the student a greater knowledge of the necessary terms.

II. Problems on Cost of Credit--

A. When the teacher has introduced the formulas for computing the cost of credit, he should use the problems in the supplement to further illustrate the formulas. It may be better to do this on the second day.

B. Use the projection transparencies on the overhead projector to illustrate the computations and the formulas.

III. Practice Problems on Credit Instruments--

A. The teacher should use these problems on the second day when studying the whole section on credit instruments. The class as a whole should discuss what instruments are needed to facilitate the transactions.

IV. Sample Checks--

A. Use the projection of the sample check on the overhead projector when discussing them.

B. It is suggested to mimeograph a sample check blank and let the students practice writing checks. This could be an assigned home work assignment.

V. Other Credit Instruments--Obtain copies of a loan application, a financing statement and security agreement, a real estate mortgage or deed of trust, a field report, and a note from a local credit agency. These instruments should be displayed or passed around to class members so that they will become familiar with them.

VI. Partial Budgets--

A. Use the projection transparency to illustrate the concept of partial budgets on the overhead projector.

B. As a homework assignment, have students prepare a partial budget for additions to a certain enterprise.

VII. Financial Statement (Balance Sheet)

A. Use the projection transparency to illustrate the concept of the balance sheet when it is discussed.

B. It is suggested that students prepare a balance sheet of their farming program as of the present date as a homework assignment.

APPENDIX E

EXAMINATION ON CREDIT

Read each question carefully and select the best answer. Place your answers on the special answer sheet that is provided for you. If you have difficulty with any question, move on to the next one. You will have one period to complete the test.

1. The amount of interest on $500 borrowed for 6 months at 6 per cent interest would be:

   A. $1.50
   *B. $15.00
   C. $150.00
   D. None of these

2. An increasing equity in a farm business means that operator:

   A. Follows improved practices
   *B. Has an increasing net worth in the business
   C. Knows how to plan a credit budget
   D. Has increasingly higher crop yields

3. To purchase land a farmer would apply for:

   A. A short-term loan
   B. An intermediate-term loan
   *C. A long-term loan
   D. A homestead loan

4. The balance sheet shows:

   A. Operating income available to the farmer
   B. Only the obligations
   *C. An inventory record of the farming operation at a specific date
   D. All of the above

5. An unconditional promise to pay a sum of money at a future date is a:

   A. Draft
   B. Loan
   *C. Promissory Note
   D. Deed of Trust

---

*Refers to correct answer.

6. The formula for computing interest rates on loans of evenly spaced payments is:

A. $R = \frac{2MC}{N(1 - P)}$

*C. $R = \frac{2MC}{P(N + 1)}$

B. $M = \frac{2RC}{P(N + 1)}$

D. None of these

7. When a farmer purchases a new tractor on credit, the instrument involved is the:

A. Bill of sale
B. Promissory note
C. Loan application
*D. All of these

8. Intermediate-term loans are made for periods of:

*A. 1-5 years
B. Less than 1 year
C. 5-10 years
D. 10 years or longer

9. Security offered for repayment of a debt is known as:

A. A co-signer
*B. Collateral
C. A second mortgage
D. None of these

10. One of the best recommendations an applicant can have for a loan is his:

A. Self-confidence
*B. Past record of honesty
C. Financial position
D. Managerial record

11. Short-term loans are usually made to individuals by:

A. Insurance companies
B. Federal Land Bank Associations
C. Building and loan associations
*D. Commercial banks and PCA's

12. In deciding which lending agency to choose, a farmer should:

*A. Select an agency with loans to fit his conditions
B. Borrow wherever he can
C. Inquire of his neighbors for their opinions
D. Always select an agency with the lowest interest rates

13. "Benefits" and "Detriments" are included in which instrument?

*A. Partial budget
B. Financing statement and security agreement
C. Assignment of income
D. None of the above

14. When considering a loan application, the lender also considers such factors as:

    A. Equity in the business
    B. Borrower's managerial ability
    C. Borrower's reputation
    *D. All of these

15. A plan of repayment is necessary at the time money is borrowed because:

    A. A farm business should repay the loan
    B. A maturity date should coincide with the loan purpose
    *C. The borrower should show from what source the loan repayment will be made
    D. Those furnishing credit do not assume any risk

16. The act of signing an instrument is:

    A. Negotiation
    *B. Endorsement
    C. Contraction
    D. Drafting

17. The two general types of repayment plans for installment loans that are amortized are:

    *A. Even and reducing
    B. Principal and interest
    C. Systematic and penalty
    D. Contract and non-contract

18. It is important for the borrower to understand the provisions in the note since:

    A. An overdue note should not be bought
    B. The lender will enforce the co-signer to pay
    *C. The borrower is not dismissed from liability for misunderstanding
    D. None of the above

19. The loan should be arranged so that it is repaid:

    *A. At the time of the sale of a commodity for which the loan is made
    B. As quickly as possible
    C. Whenever the person has any money
    D. None of the above

20. A good guide in using consumer credit is to:

    A. Make wise expenditures
    B. Use credit from the best single source
    C. Maintain a good credit rating
    *D. All of the above

21. Checks should never be:

A. Restrictive endorsed
B. Negotiable
*C. Made payable to cash
D. Held as receipts

22. The true rate of interest on a $600 note at 6 per cent interest for one year and to be paid in twelve equal payments is:

A. 6.4%
B. 1.11%
*C. 11%
D. 3%

23. The major disadvantage of finance companies is:

A. Convenience
*B. High interest
C. Liberal policies
D. None of these

24. The Production Credit Association will extend money to purchase:

A. Land
*B. Farm building improvements
C. A home
D. An education

25. A good policy is to borrow money to:

A. Buy a new car
*B. Make money
C. Pay for a vacation
D. Relieve pressure on other debts

26. Long-term loans are usually made to individuals by:

A. PCA
B. Auto finance companies
C. Commodity Credit Corp.
*D. Federal Land Bank

27. If a farmer needs capital to purchase livestock, he should apply for:

*A. An intermediate-term loan
B. A restocking loan
C. A short-term loan
D. A long-term loan

28. An open account is a type of:

A. Installment credit
B. Production credit
*C. Consumption credit
D. Banking credit

29. A statement of estimated income and expenses can be found in the:

A. Assignment of income
B. Contract
*C. Field report
D. None of these

30. Collateral is specified in the:

*A. Financing statement and security agreement
B. Promissory note
C. Draft
D. Assignment of income

31. In order for an instrument to be negotiable:

A. It must be in writing and signed by the maker
B. It must be payable on demand or at a fixed date
C. It must be payable to order or bearer
*D. All of the above

32. The cost of a loan should include:

A. Interest
B. Service charges and fees
C. Insurance
*D. All of these

33. If 5% interest and 5% carrying charge was the cost of borrowing, the total charges on a $100 loan would be:

A. $5.00
B. $25.00
*C. $10.00
D. $105.00

34. The average amount borrowed on a $1200 loan to be paid in twelve equal payments is:

*A. $650.00
B. $100.00
C. $1200.00
D. $108.00

35. Which of the following is not a common type of endorsement?

A. Blank
B. Qualified
*C. Contractual
D. Special

36. Estimates of net changes in income from changes in size of an enterprise can easily be accomplished by a:

A. Operating statement
B. Financial statement
*C. Partial budget
D. Actuary table

37. If Joe's financial statement shows that he has a 50 per cent equity in his business, the lender would:

A. Require added collateral
*B. Be favorable toward making him a loan
C. Not grant the loan
D. Probably ask for a co-signer

38. An instrument creating a lien or legal claim on property is known as:

A. Promissory note
*B. Mortgage
C. Release
D. Penalty

39. The charge made for the use of credit is:

A. Principal
B. Equity
C. Time
*D. Interest

40. Some lenders feel safe in making a loan if the ratio of total assets to net worth is low as:

A. 2:1
B. 6:1
C. 3:1
*D. 4:1

APPENDIX F

INFORMATION SHEET

I. Readibility (check appropriate space)

A. Was the handbook clear in presenting ideas and information?

1. _____ Very clear
2. _____ Clear
3. _____ Somewhat vague
4. _____ Vague
5. _____ No idea of what was presented

B. Did students have any difficulty in reading and understanding the handbook?

1. _____ No difficulty
2. _____ Somewhat difficult
3. _____ Difficult
4. _____ Very difficult

C. Did you have difficulty in reading and understanding the handbook?

1. _____ No difficulty
2. _____ Somewhat difficult
3. _____ Difficult
4. _____ Very difficult

D. Indicate in the columns below which sections of the handbook should be revised in terms of readibility.

Sections (List)	How to be revised:
1. _____	1. ___ Needs better organization
2. _____	2. ___ Terms need revision
3. _____	3. ___ Should be presented in outline form
4. _____	
Etc._____	4. ___ Needs no revision
_____	Others:_____
_____	_____

II. Comprehensiveness (check appropriate space)

A. How comprehensive was the handbook in presenting the information?

1. _____ Very comprehensive
2. _____ Somewhat comprehensive
3. _____ Little comprehensiveness
4. _____ No comprehensiveness

B. Indicate sections of the handbook that need to be expanded or presented in greater detail.

1. _____
2. _____
3. _____
4. _____
Etc. _____

III. Suitability (check appropriate space)

A. Is the handbook suitable for use in vocational agriculture classes?

1. _____ Very suitable
2. _____ Somewhat suitable
3. _____ Somewhat unsuitable
4. _____ Not suitable

B. In which class of vo-ag should the handbook be used?

1. _____ Freshman
2. _____ Sophomore
3. _____ Junior
4. _____ Senior
5. _____ None

C. How should the handbook be used?

1. _____ As teacher resource unit only
2. _____ As teacher resource unit and student reference
3. _____ As student reference unit only (textbook)

IV. Appropriateness (check appropriate spaces)

A. Does the handbook provide up-to-date credit information?

1. _____ Up-to-date (all sections)
2. _____ Generally up-to-date
3. _____ Somewhat out-of-date
4. _____ Not up-to-date

B. Indicate sections of the handbook which need to be revised in terms of being up-to-date.

1. _____
2. _____
3. _____
4. _____
Etc. _____

C. Does the handbook contain the type of material needed in agricultural credit classes as well as in other subject matter areas?

1. _____ Yes
2. _____ No
3. Remarks: _____

V. Recommendations: (check appropriate spaces)

1. _____ Needs to be made easier to understand
2. _____ Needs to be more readable
3. _____ Needs to be more comprehensive
4. _____ Needs to be brought up-to-date
5. _____ Need more problems on computing interest
6. _____ Need clearer examples of credit instruments
7. _____ Need more visual aid materials

   a. _____ Projection transparencies
   b. _____ Charts, pictures, etc.
   c. _____ Films, filmstrips, and slides
   d. Others: (list) _____

8. _____ Need in-service training in credit or some type of short course
9. Would you recommend that the handbook be published and distributed to Tennessee vo-ag teachers?

_____ Yes
_____ No

Remarks about handbook or study:

VI. Instructional Supplement (check appropriate space)

A. Were the projection transparencies helpful in presenting the concept of credit instruments to your class?

1. _____ Very helpful
2. _____ Somewhat helpful
3. _____ Little help
4. _____ Not helpful

B. Were the problems on cost of credit of benefit in illustrating how to compute interest costs?

1. _____ Very beneficial
2. _____ Beneficial
3. _____ Little benefit
4. _____ Not beneficial

C. What is your opinion of the suggested class activities concerning credit?

D. What remarks and/or recommendations would you offer to make the instructional supplement more beneficial to vo-ag teachers?

E. Would you recommend that the supplement be published and distributed to Tennessee vo-ag teachers?

_____ Yes
_____ No

APPENDIX G

LETTER TO SELECTED TEACHERS OF VOCATIONAL AGRICULTURE

THE UNIVERSITY OF TENNESSEE
KNOXVILLE
COLLEGE OF EDUCATION

Department of
Agricultural Education

Date: February 1, 1967

To: Selected Teachers of Vocational Agriculture

From: Raymond A. Holt, Graduate Student

Re: Agricultural Credit Study

I am engaged in a research study in the field of agricultural credit, and I am in need of your cooperation and assistance.

As a part of my thesis, I am developing a resource unit on agricultural credit to be tested across the state in randomly selected vocational agriculture departments. Your department has been selected to participate in the study. The time necessary for testing the resource unit will be approximately two weeks, preferably in the latter part of February. Your actual participation in the study will be teaching the resource unit to your classes according to a standard procedure. I am hoping, as a result of the study, to prepare a workable resource unit that will be helpful to all vocational agriculture teachers in the state.

Would you please fill out the enclosed information sheet and return it in the self-addressed, stamped envelope soon. It is important that I receive the reply as soon as possible in order to make additional plans for the study. I hope to be corresponding with you concerning the study in the very near future.

Sincerely yours,

RAH/el
Enc.

Raymond A. Holt, Graduate Student