



**ESTIMATING THE COMPARATIVE COST OF  
CUSTOM HIRING, RENTING, LEASING, OR  
OWNING OF SELECTED FARM MACHINES**

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Late-Stage Shifts in Baby Tobacco Allotments

1950-51

By Milton J. Holt, Robert E. Brown and Curtis M. Henderson

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by

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### INTRODUCTION

#### Problem and Justification

Capital needs for Kentucky's agriculture increase as farm size increases and larger mechanized units supplement or substitute for labor. With an increase in capital investment for machinery, a fixed input, the shorter run income-stimulating uses of capital for fertilizer, improved livestock, etc., may be neglected more than is economically advisable. Custom use, renting, and/or leasing of farm machinery lower the long-run capital investment in machinery and expand the net income of farmers with limited capital by releasing capital for other profitable operational uses.

The extent of possible increased income is controlled by the amount of capital averted by renting or leasing and the rate of return of the additional dollars invested. By saving a relatively large amount of capital, a complete reallocation of resources and reorganization of farm enterprises may be warranted.

The labor requirement of the farm may change both in quantity and skill according to the availability of labor and the current operation of the farm. If the capital is shifted from machinery to other productive enterprises, the productive enterprises increase, causing an increase in the labor

requirement, assuming that the rented or leased equipment requires as much time to operate as does owned equipment. Rented or leased equipment may not necessarily replace other farm machinery. When the rented or leased machinery is in addition to other machinery, the labor requirement may reduce because of more efficient use of labor through machinery. Therefore, the labor changes caused by renting and leasing will be determined by the changes in organization and operation as influenced by the machinery program on the farm.

In custom operation, labor is furnished to operate the machines. Thus, with the use of custom-operated machines, the "on farm" labor force is reduced if the farmer has no alternative use for his labor displaced by the operator of a machine.

Renting and leasing of farm machinery are not widespread in Kentucky. A few dealers have offered the service. Dealers in the Lexington area were the first to offer the service. The practice, therefore, is more developed in this area than in other parts of the state. Most of the leasing in Kentucky is done in Bowling Green, Hopkinsville, Paducah, Henderson, Louisville, and Lexington areas.

Leasing requires additional managerial and accounting ability on the part of the dealer. This fact suggests a reason for leasing being more concentrated in the larger dealerships. The leasing arrangements have progressed to the point of being acceptable

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legal agreements, excluding possible federal income tax laws (the legality of purchase options is questionable in some of the agreements). National and state farm machinery-dealers' associations and the machinery manufacturing companies contribute in providing legal guidelines for renting and leasing.

The dealer's charge for rented or leased machinery substitutes for the annual fixed cost of ownership. The rental charge versus annual fixed cost is the main cost comparison in operating owned and nonowned machines because in both cases the farm operator bears the variable costs.

The Internal Revenue Service allows the fees of leasing, renting, and custom hiring to be completely deducted as annual operating expenses. A possible tax advantage exists in leasing by deducting the fixed cost of the machine more quickly than with direct ownership.

#### Definitions

Renting and leasing agreements in Kentucky form two categories based on the length of run and options. The meaning and use of these terms are not synonymous throughout the literature or in the machinery jargon.

Machinery renting refers to the paying of a specified fee for the temporary possession of a machine and the rights to income accruing from the use during the specified time. The fee is a cash payment determined by the length of time used—normally less than one year—or by the amount of service obtained or by the number of acres on which the machine is used. Rental agreements do not carry an option to purchase and are automatically cancelled when the machine is returned to the renter. A common example is the renting of a hay conditioner for one day or a week.

Leasing is the paying of a specified fee for the temporary possession of a machine for

the length of time indicated in the agreement. The fee is determined by the length of time used, normally one to five years. The lease agreement often carries the right of renewal or purchase.

Custom hiring is the paying of a fee for the services provided by a machine and operator. The fee is usually determined by the number of units of products handled, i.e., tons of hay, etc. Variable costs in operating the machine, such as gasoline or baler twine, are also furnished by the custom operator.

#### Procedure and Objectives

Farm machinery dealers in central and western Kentucky were interviewed by personal survey to determine policies and practices in use for rented and leased farm machinery. Thirty-four dealers reported leasing and/or renting eight brands of farm machinery. Ten dealers used leasing arrangements and 33 dealers rented machines.

Thirty-two farmers who had either rented or leased farm equipment were interviewed to obtain their evaluation of reduction in capital investment and change in management practices that occur by non-ownership of farm machinery.

The study had four major objectives:

1. To determine whether renting or leasing of farm machinery reduces the capital requirements for farm machinery and allows a reallocation of resources, thereby resulting in higher net income to a farm? This is presented theoretically by a budget that illustrates the economic criteria involved in making rational decisions.
2. To determine the arguments for and against renting and leasing arrangements, the empirical problems of participating farmers and dealers, the timeliness of operation effects and the influence upon earnings and labor requirements by induced changes in the organization of

- farm resources and management practices.
- To determine for leasing versus ownership of farm machinery the theoretical and actual effects upon machinery costs caused by taxation and shifts in capital

- use.
- To determine the short-run, break-even point for selected custom hired and rented machines versus owned farm machines.

### CAPITAL TRANSFER, CUSTOM MACHINERY CONSIDERATIONS, AGREEMENTS, AND TAX CONSIDERATIONS

#### Capital Transfer

Four ways of obtaining the use of farm machinery—custom hiring, renting, leasing, and owning—are most often used in Kentucky. Each way varies in capital outlay, labor requirements, and timeliness.

Capital expenditure to purchase and labor to operate the machinery are avoided by custom hiring. Labor is furnished by the custom contractor to operate the specific machine and to do the associated operations. The influence of capital and labor savings upon the earning capacity of the farm is dependent upon the opportunity for their use elsewhere in the farming enterprises than on machinery operations. Timeliness of operation is a factor in custom hiring because the custom operator may not be able to perform the service when the farmer would have maximum returns. The scale of custom operation varies from an operator with a single machine to a fleet of machines such as mowers, conditioners, rakes, balers, wagons, and elevators.

By renting machines the direct outlay of capital for purchase is avoided but the farmer must provide labor to operate the machine. Timeliness is affected by the ability to obtain the machine from the dealer at the opportune time. Whether the timeliness problem of renting is greater than, equal to, or less than custom hiring depends upon many factors unique to each farmer.

Capital outlay is lessened in the short run by leasing machinery but, as with renting, the lessee is responsible for supplying the labor to operate the machine. Leasing

provides the farmer with a year-round use of the machine; therefore, the timeliness problem is dependent upon the managerial ability of the farmer to use the machine at the proper time, the same as for an owned machine.

With ownership the farmer must supply capital to purchase and labor to operate the machine. The timeliness problem, as in leasing, is reduced since the farmer has constant access to the use of the machine.

The following is a condensed tabulation of the ways to obtain the use of farm machines and their associated influence upon capital outlay, labor, and timeliness:

	<u>Farm operator avoids</u>		<u>Farmer Control of timeliness</u>
	<u>Capital outlay</u>	<u>Labor</u>	
Custom hire	Yes	Yes	No
Rent	Yes	No	No
Lease	Yes	No	Yes
Own	No	No	Yes

#### Custom Machinery Considerations

Custom rates normally are based on the amount of accomplishment. Although the base is not consistent throughout Kentucky, over time the rates have tended to become more equal from area to area. The following are typical rates [3]:

- Corn pickings \$ 8.00 per acre
- Corn combining 9.60 per acre
- Combining small grain 7.30 per acre



4. Silage chopping and blowing into silo: 2 men, 2 wagons; 2 tractors	\$17.90 per hour
5. Silo filling	2.60 per ton
6. Pick up baling-twine	0.15 per bale
7. Mowing hay, raking hay, conditioning hay	2.60 per acre 1.60 per acre 2.60 per acre
8. Plowing—moldboard disking—tandem	4.40 per acre 2.80 per acre
9. Corn planting with fertilizer soybean planting cultivating—sweep cultivator	2.90 per acre 2.45 per acre 2.10 per acre
10. Bulldozing	15.50 per hour

The providing of trained custom-machine operator is an important consideration if extra labor is needed to operate the owned machine or if the machine requires a high degree of skill to operate. For the more complicated machines the custom operator may be more skilled in operation than the hired laborer of the farmer and may provide a newer, more efficient machine than the farm owner has or can justify.

Disadvantages exist in custom-hiring machines. The machine may not be available at the opportune time. Weather or breakage might detain the custom operator from performing the task when the farm operator would have received maximum benefits. The extra labor furnished by the custom operator may not be needed, depending upon the alternatives of the farm operator. In addition to the extra labor and the specialized machine, the farm operator may be hiring an extra tractor and/or other machinery while his own machines remain idle.

#### Rental Agreements

Dealers who rented machines to farmers in 1965 were distributed throughout central and western Kentucky. Of the 33 dealers

renting farm machinery in 1965, four had a printed rental contract. One other dealer wrote the contract at the time of rental, and the remainder used oral agreements. Two dealers had printed rental rates for several machines, but the majority established rates on the per-day or unit-of-accomplishment basis at the time the rental agreement was initiated.

The length of run of the rental agreement was dependent upon the work the machine was to accomplish. In the survey 22 dealers reported renting farm machines in 1965 for one particular job, with only 7 dealers reporting most of their rentals for a week or more. The machines or units evidently were more specialized for one job and not for a season or multiple of jobs.

Tractors were the machines offered most by dealers for renting. Some dealers offered for rent hay conditioners, hay balers, cultivating equipment, rotary mowers, manure spreaders, combines, corn pickers, wagons, post-hold diggers, and grader blades.

A relatively high percentage of the farmers who rented tractors also rented other machines since many of these machines were in a unit with a tractor. Only four of the dealers rented tractors exclusive of any other machines. Often the machinery dealers rented machines to non-farmers, particularly rotary mowers. These mowers were usually as a unit with a tractor. Twenty-seven of the dealers offered used machinery only for rental; three had both new and used; and three, only new.<sup>1</sup> Of the three who had new machines for rental, only one offered tractors. The machines available for renting would be dependent upon the stock of used machines on hand as a result of "trade-ins" on new machine sales at any given time.

Typically, the renter is responsible for all costs except normal wear and tear and the expense covered by the manufacturer's

<sup>1</sup>The term "new" refers to machines not previously owned by someone other than the dealer. Used machinery was, generally, machines that had been obtained on a trade for some other machine.

warranty. The renter with the above-mentioned rental agreement is exposed to a risk of repair cost above those of normal wear and tear and warranty because the chance exists of a major breakage caused by misuse during the rental agreement. The title to the machine definitely remains with the dealer. The renter cannot subrent the machine but can do custom operations.

The dealer is responsible for having the machines in a good working condition when they left his place of business. However, the renter normally accepts the machine on good faith while the dealer accepts the machine back on good faith. When the renter accepts a machine on good faith, he is exposed to repair and breakage risk that may have been caused by prior users.

Most rental charges, according to the survey, were made on a per-day, per-week, or per-month basis although some were on a per-unit-of-accomplishment basis. With both of the methods just indicated, the time of payment was the termination of agreement. Only six of the dealers required the rental payment in advance at the beginning of the contract. Significantly, the per-day charge was usually made for the entire time the machine was away from the place of business, regardless of weather. The possibility, then, existed for a charge with no use some days.

As does custom hiring, renting avoids capital outlay for machinery and fixed cost of owning machinery. No operator is furnished when the machine is rented. Some problems of insufficiency of skilled labor with the more complex machines may occur even though none were noted in the study [7]. The farmer has full control of the machine to operate at the speed and time he desires. A disadvantage is that machines are not normally rented for less than one day. If a farm operator had only  $\frac{1}{4}$ - or  $\frac{1}{2}$ -day's work to do, he would still have to pay for a full day. In this respect, it is a disadvantage compared with custom hiring. Again, timeliness may be a disadvantage in renting. The farm operator's ability to obtain a machine depends upon the dealer having

one available at the time needed. The dealer sometimes retains the right to sell the machine before the farm operator rents or while it is being operated at the renter's farm.

### Lease Agreements

Most leasing agreements were 3- or 5-year contracts, with many modifications practiced to the basic form. Of the 34 dealers surveyed in 1965, nine already had a leasing program, and one was just formulating a plan. Seven dealers offered the machinery for lease on a 3-year lease; 2, on a 5-year lease; and 1, on a 6-month lease. To insure a reasonable return, the dealers were compelled to initiate an agreement that would insure enough length of run to merit the purchase of machinery for lease. Since the lease charge was expressed as some percentage of retail FOB price, the annual lease charge decreased as the length of the lease increased.

All leases were preprinted agreements that became legal signed documents. Contrary to renting, no oral agreements were used in leasing. Only four of the dealers had a preconsidered lease charge. The remaining six bargained for the amount of the lease payment with the potential lessee.

### Options

Lease arrangements included two types of options to obtain the use of machines. The lessee could extend the lease beyond the original time or purchase the machine by paying the difference in the total lease payment and the retail price. The former was offered by one dealer in Kentucky. This plan was to extend the lease for the nominal amount of 2 percent of the retail price per year with a maximum extension of 2 years. The latter option was more acceptable to the lessee.

The purchase option can normally be utilized only at a specific time in the lease. The usual purchase option time with seven of the dealers was at the termination of the

lease. Two dealers allowed a purchase option at any time during the lease. When the option to purchase was utilized, all or part of the previous lease payments applied to the purchase price. For the 10 dealers leasing farm machines, an average of 91 percent of the previous lease payments was accepted as payment on the purchase price of the leased machine.

A major problem for the dealer in leasing machinery was the taking of ownership of the machine at the initiating of a lease. The machinery dealer either financed the machine himself, which required added capital investment, or arranged for other financing. Only three of the dealers used their own financing, with two of these being in conjunction with other sources. Local banks accepted the lease agreements on discounts from six of the dealers, and one financed through the national machinery company. All major machinery companies offered their dealers aid in financing and in turn retained the right of denial to lease. Prerequisites of \$25,000 to \$50,000 net worth for the potential lessees have been established by the machinery companies. A national leasing agency had arrangements with five of the dealers to supply funds for leased machinery. With this agreement the leasing agency took title to the machine, and the local dealer was paid in full. The lessee made the lease payment to the agency. The agency also had net-worth standards that the lessee had to meet.

#### Machines Leased

Tractors represented the largest number of single machines leased in terms of the dealers' offering. Nine of the ten dealers who leased farm machinery had tractors on lease. Tractor leasing in connection with other machines (multiuse) represents a high capital requirement. This high capital requirement is significant because leasing the machine will release more capital for other productive uses. Three dealers offered land-preparation

equipment, planting equipment, and cultivating equipment. Normally, this equipment was leased on a unit basis with a tractor. Hay conditioners, hay balers, forage harvesters, and PTO combines were also offered for lease. The dealers had a tendency to offer only tractors and tillage equipment or tractors and crop harvesting equipment. Five dealers had tractor-tillage equipment. The remaining three had some combination, and two of these three dealers had only the hay conditioner as the crop-harvesting equipment.

Seven dealers leased only new machinery; two dealers had new and used machines; and one dealer leased used machines only. The dealer leasing used machines only had no new machinery and dealt (sold, traded and leased) only in used equipment.

#### Responsibilities of Lessee and Lessor

The lessee with a typical lease furnishes at his own cost all fuels, lubricants, and operating supplies, including labor for the operation of the equipment. The lessee is required to keep the machine well maintained and repaired. Broken parts during the lease are the lessee's expense except repairs covered by the manufacturer's warranty. The lessee indemnified the lessor against all loss or damage to the machinery during the lease period. If the machinery is destroyed or stolen, the lessee replaces the machine at his expense. The lessor has the right to inspect the machine at his will. The lessee is responsible for delivery to and from the lessor's establishment. Usually, the lessee is not permitted to sublease the equipment but can use it for custom operations. Normal wear and tear to the machine is not the responsibility of the lessee. This cost or depreciation of the machine is a part of the lease charge and was incurred by the lessor.

Machine titles remained with the dealers who were responsible for the cost of normal wear and tear and property tax on the machine. The warranty, which normally was

in force for a purchased machine, could be transferred to the lessee for his use. All leases, however, did not allow this transfer. The lessor retained the right to assign the lease for the lessee's debts.

#### Example of Reallocation

Reallocation of Capital is possible when a machine is rented instead of purchased. Assuming a farmer has the capital to purchase a machine but decides to rent instead of purchase the machine, the difference between the purchase price and the rental charge may be allocated to other productive uses. For example, a farmer can lease, with option to purchase, a \$6,000 tractor at an annual charge of \$2,000 for 3 years. This tractor might have been purchased on a cash basis for \$5,750. At the end of 3 years the purchase option is used at a nominal option price. At this point in the text the legality of the option for tax purposes will be disregarded. The operator will have \$3,750 for the next year to invest elsewhere in his farm business. If the net return on his investments is 10 percent, then his net income will be increased by \$375 (less the income tax that must be paid). Therefore, in 1 year, the farm operator will have increased his net income by \$375 plus \$358.87 net reduction on income tax deductible due to leasing the machine or \$733.87 (Appendix Table 14, Col. 7, 8, and 9). In the second year, the operator has \$2,483.87 ( $\$3,750.00 + \$733.87 - \$2,000.00$ ) as extra inputs. Again with the 10 percent return at the margin, \$248.39 will be the increase to net income plus net tax reduction of \$383.01 or \$631.40. The third year, \$1,115.27 is available to purchase inputs. In the three years, the full list price of the machine is paid and the delay of payment has increased the farmer's absolute income by \$1,340.99 through the earnings of the released capital. This absolute income is dependent upon the income tax bracket to which the farmer belongs.

#### Tax Considerations

##### Tax Advantage

From a tax standpoint, the tax advantage of leasing a machine allows the farmer to charge off the cost of the equipment earlier for taxes than for a purchased machine. Using the option in a 3-year lease, which is typical in Kentucky, the full list price of the machine was deducted in the first 3 years, instead of deducting depreciation over the lifetime of the machine. From an economic standpoint, this was significant because the larger, earlier deduction saves on taxes now.

A dollar saved currently has more value than a dollar saved in some future time period. Also, if the machine were not retained by the farmer for its full useful life, he obtains the equivalent of full depreciation by the lease agreement; whereas, using the straight-line depreciation on a purchase, full depreciation would not have been attained during the period of the lease. Realizing that the excess of the sale price over depreciation of the machine would be subject to income tax, it still would be economically advantageous to have received full depreciation.

The degree of the advantage of leasing over ownership of a machine is dependent upon the depreciation method used and at what point of time in the life of the machine it is replaced. With an accelerated method of depreciation and sale in the latter part of the machine's useful life, the advantage would be relatively small. A definite advantage in the lease could be obtained when the excessive wear and tear of the machine reduced the normal life to 2 or 3 years. For example, a custom-operated hay baler that is worn out in 3 years and if the tax laws pertaining to leasing allow the complete write-off as a deductible expense, there could be an advantage in leasing the baler. With declining balance and first-year additional depreciation, only 59 percent of the list price would be

charged as depreciation in the first 3 years. Therefore, a 100 percent write-off of the machine would occur with lease compared to 59 percent with depreciation. The former is the tax advantage.

The following is a year-by-year comparison of the deductions allowed under the most common interpretation of the federal income tax laws (Table 1). The following assumptions form the basis of the calculations:

Retail cost of machine	\$6,000
Salvage	0
Life of machine	10 years
Length of lease	3 years
Lease charge	(A) 33 1/3 percent of list price per year, or;
	(B) 25 percent per year with 25 percent option price
Marginal return to invested capital	4 percent

Depreciation included additional first-year depreciation.  
Machine bought December 31.  
Farmer's tax bracket does not change over the future time period.

The methods of depreciation were computed, and yearly depreciation was discounted by the value in Column 1 at 4 percent to arrive at the present value. The sum of the discounted value of the declining balance, sum-of-the-years digit, and straight-line depreciation are less than the discounted rental expense. By early write-off through leasing, \$284.69 more of discounted capital is accumulated by the leasing method than by the sum-of-the-years digit method on the ownership depreciation.

The tax advantage decreases if the lessee does not pay the full-list price in the three-year lease payments. In Table 1, the lessee pays 25 percent of the retail price for 3 years and purchased the machine for the remaining 25 percent of list price. The option price was depreciated by the straight-line method. When compared with the

sum-of-the-years digits method of depreciating a purchased machine, the total discounted gross taxable income over ten years is increased \$31.37 (\$5,400.68 - \$5,369.31) because of lower depreciation for the sum-of-the-years digits method of depreciation.

The size of the tax advantage described in Table 2 will vary with the percent of return in Column 1. If instead of using 4 percent return, 8 percent had been used, the tax advantage would have increased considerably.

#### Tax Consequences

Purchase options in the renting and leasing of machinery raise the complex legal issues of whether the conditional trade agreement was a purchase or a lease. Inherent in both is diversification of tax consequences. Each transaction must be classified as a lease or purchase to determine correctly the tax consequences.

#### Determining the Lease Validity

In determining whether the agreement was a valid lease or conditional sale, the Internal Revenue Service and the courts have often relied primarily upon the intent of the parties. Intent, coupled with equity and reasonableness of rental payment and other economic factors, provides the basis for separation of lease and conditional sale [1]. With intent, the courts have attempted to establish the specific purpose of the action of the parties involved. An analysis of the terms of the lease is necessary to identify clearly the ideas of the lessee and lessor when they initiate the agreement. No single idea or point is used as a guide by the courts but rather several in combination.

The concept of equity appears in the conditional sale. The lessee establishes equity in his payment, by the purchase option, when a portion of all of the lease payment is applicable to the purchase price. The equity concept here is related to more than the

TABLE 1

COMPARISON OF DEPRECIATION AND LEASE WRITE-OFF OF MACHINERY

Year I	Methods of depreciation						Lease write-off						
	Declining balance		Sum-of-years digit		Straight line		Lease price of 25 percent per year		Lease price of 33-1/3 percent per year		Dis-counted <sup>b</sup>		
	Annual depr. <sup>a</sup>	Cumulative <sup>a</sup>	Annual depr. <sup>a</sup>	Cumulative <sup>a</sup>	Annual depr. <sup>a</sup>	Cumulative <sup>a</sup>	Annual depr.	Cumulative <sup>a</sup>	Annual depr.	Cumulative <sup>a</sup>			
1st year additional	\$1,200		\$1,200		\$1,200								
1	960	\$2,160	\$2,117.45	878	\$2,078	\$2,082.16	480	\$1,680	\$1,646.90	\$1,500	\$1,470.45	\$2,000	\$1,960.60
2	941.8	2,928	723.30	786	2,859	740.25	480	2,160	452.06	1,500	3,000	2,000	4,000
3	904.9	3,542	555.61	698	3,557	631.62	480	2,640	434.35	1,500	4,500	2,000	6,000
4	869.4	4,034	427.74	611	4,168	531.20	480	3,120	417.31	214	4,714	186.05	
5	835.3	4,427	328.27	523	4,691	436.86	480	3,600	400.94	214	4,928	178.75	
6	802.6	4,742	252.82	436	5,127	349.93	480	4,080	385.25	214	5,142	171.76	
7	771.1	4,994	194.32	349	5,476	269.11	480	4,560	370.13	214	5,356	165.02	
8	740.9	5,195	148.92	262	5,738	194.12	480	5,040	355.63	214	5,570	158.55	
9	711.8	5,356	114.60	175	5,913	124.56	480	5,520	341.66	214	5,784	152.33	
10	683.9	5,485	88.22	87	6,000	59.50	480	6,000	328.27	216	6,000	147.72	
Total discounted depreciation			\$4,951.25			\$5,369.31			\$5,132.50		\$5,400.68		\$5,654.00

<sup>a</sup>The cumulative of the depreciation allowed.

<sup>b</sup>The discounted annual depreciation.

absence or presence of title. The title may still be clearly in the hands of the lessor; yet for the court, the equity may have been transferred to the lessee.

No set rule for the reasonableness of payment exists except the judgment of man. Judgment of the compensation for the equipment is difficult; but lease payments in excess of the rental value may be a factor in differentiating between a lease and a conditional sale for tax purposes.

Although intent, equity, and reasonableness of payment combine to form the basis for differentiation, other conditions exist from which these factors are realized. Several economic results of the agreement aid in reaching a conclusion.

The transaction may be considered a purchase, when all lease payments are made and the lessee is entitled to the machinery or at one point in the lease when the lease payments to date are applicable. The relationship of rent, life expectancy, and purchase price offers some further evidence. It is considered a sale sometimes if the sum of the rental payments equals the purchase price long before the useful life of the equipment was exhausted. This was applicable to some empirical instances in Kentucky where the lessee was allowed to continue the lease for some period of time for a nominal payment. The option price at the termination of the lease should nearly approximate the true purchase price of the new machine to avoid any difficulties. The typical example of Kentucky leases carrying the right to purchase for the nominal option price may be ruled as conditional sales by the Internal Revenue Service.

Changing conditions of machinery prices after the agreement is initiated are not relevant, just the conditions at the initiation of the agreement. The title of ownership must remain with the lessor during the time the lease agreement is in effect. Neither can the title be placed in escrow for this is considered an indication of transfer of title and a sale. When any portion of the lease payment is

designated as interest, the Internal Revenue Service construes this to be a sale or intent to sell. The legal criteria obviously must indicate the proper lessee-lessor relationship. If the lessor is in the sole business of leasing, the Internal Revenue Service has more difficulty in proving that a sale was intended. The making of major repairs by the lessee, i.e., overhauling a tractor which extends the use longer than the lease will be in effect, may influence the decision of the Internal Revenue Service. The lessee's insuring of the leased property has not been considered evidence of an intent to purchase since a lessee can have an insurable interest in leased and rented property without ownership.

The following condensed checklist will aid in determining the possibility of a lease being interpreted as a sale [1,6]. If the answer is affirmative to one or more of the following, then professional advice should be sought.

1. Is any part of the rent designated as interest or apportioned to the lessee's equity in the equipment?
2. Is title acquired upon payment of a stated amount of rental required under the terms of the agreement?
3. Is the title to be placed in escrow?
4. Is the option price a nominal amount or less than the market value?
5. Does the agreed rental payment materially exceed the currently established fair market value?
6. Is the lessor a nonprofessional leasing company?
7. Are anticipated income tax advantages spelled out in the agreement?
8. Is the lessee required to make excessive repairs to the leased machinery?
9. Does the lease have the legal status of a lease correctly listed?

Machinery leases in Kentucky, thus, have been subjected to some doubt as to their validity as leases. Presently, there has been little questioning of agricultural leases because

of their relative size to industrial leases. The industrial leases are and have been subject to review. The criteria used for distinguishing between lease and conditional sale were derived from industrial situations and court cases, but the laws will be applicable to farm machinery.

#### Tax Consequences to Lessee

The lessee enters the lease payment in the year as deductible expense comparable to fuel or hired labor expenditures. If the lessee is on the accrual basis, he may also deduct any accrued rent that he has not yet paid. The lessee is not entitled to any depreciation on the leased equipment.

The advance rental, frequently required and deducted from the payment of the lease, is deducted in the year paid. However, if the advance rental is for the purpose of obtaining the lease, then the payment is considered a capital expenditure and deducted ratably over the lease term. Any other maintenance and repair cost, extra charges for excessive use, fuel, and labor are also deductible as general expenses to the lessee.

A lease agreement with a purchase option may be considered a purchase. The content of a lease determines whether the

lease is considered a purchase by the courts and the Internal Revenue Service. In some cases with industrial equipment, the payment on the lease with an option is divided into two segments. One segment is the contribution toward equity which is nondeductible but is considered a valid lease until the option is utilized. The basis for the lessee-purchaser's depreciation on the equipment is the amount of money paid at the time the option is utilized. All prior rental payments, regardless of whether they are added to or excluded from the option price are deducted at their respective time of payment and cannot be capitalized.

The lease agreement, at the beginning, is recognized as a conditional sale when the lessee-purchaser takes the sum of all periodic payments and the option price as his purchase price. The equipment is then entered for depreciation at the sum of these payments on the depreciation schedule.

The short-term rental of machinery, which carries no option, is beyond question as to the method of tax treatment. In the tax language, it is a true lease and all payments for rent are deductible in the year paid. All tax criteria of leasing applies to rental agreements.

#### AMOUNT OF USE FOR OWNERSHIP COST OF FARM MACHINES TO BREAK-EVEN WITH THE COST FOR CUSTOM HIRED OR RENTED MACHINES

Annual cost of renting, custom hiring, or leasing may be greater or less than the annual cost of owning machinery. Fixed ownership costs are involved in operating owned machinery. With renting, leasing, or custom hiring machines, the fixed costs of ownership are included with the custom, rental, or leasing charge and constitute a large portion of these charges. The variable cost of machinery operation such as fuel, oil, lubricant, and operator time is a separate item of cost incurred when owning, renting, or

leasing machinery but is included as one part of the custom charges. Repairs to machinery in renting and leasing are normally the responsibility of the lessor and lessee combined. Since repairs are a highly irregular cost, the wear and tear costs are included in the rental charge made by the lessors and, thus, cannot be eliminated from the cost comparison of owning, renting, and custom hiring machines. Obsolescence, too, is a partial determinant of depreciation that is dependent upon future technology and



cannot be accurately predicted. Obsolescence, therefore, cannot be considered although its importance to the farm operator is not to be minimized.

The fixed cost elements in the use of farm machinery cause the unit cost of production to decrease as use increases. Custom hired, rented and owned farm machines have varying proportions of the total cost made up of fixed costs. The total cost per unit varies differently for each of these methods of obtaining machinery use.

#### Custom Hire, Rental Charge and Ownership Cost Comparison

Cost comparisons are made for selected farm machines on a break-even basis (rental or custom charge equal to ownership cost per day accounting for labor and other variable costs) for custom and rental charges versus ownership costs for selected machines. The break-even cost is the amount of use where custom hired, rented and/or owned machinery has the same cost per unit of work accomplished. A comparison of the unit cost and use provides information helpful in selecting the method of obtaining the use of farm machinery.

Depreciation, property tax, housing, interest on investment, repairs, and insurance, fixed costs, comprise the basis for establishing the annual rental or lease charge (Appendix Table 1). Depreciation is calculated on the straight-line basis. In the long run, the average depreciation for the individual year is reasonably well accounted for by using the straight-line method. The total amount to be depreciated is the local retail price less salvage value. The retail price is assumed to be the retail FOB price [5]<sup>2</sup> plus the transportation charges<sup>3</sup> to derive the amount to be

<sup>2</sup>Mower and hay conditioner from survey of four machinery dealers in Lexington, Kentucky.

<sup>3</sup>Transportation charges were derived from four machinery dealers in Lexington, Kentucky.

depreciated. The assumed life of the machinery was divided into the depreciation amount to arrive at the annual depreciation. Interest was calculated at 6 percent and insurance at \$0.0038 per dollar of average value, housing \$0.07 per square foot of storage space required [8], and state property tax at \$0.15 per \$100 of assessed value [2]. The average value of the machine is derived by dividing retail cost plus salvage by 2. Repairs are expressed as a percentage of list price [4]. Repairs are included because the farm machinery dealer and custom operator are responsible for wear and tear which are covered in the rental fee. Custom charges were taken from a survey of the southern United States [3].

Fixed cost per acre generally decreases as the annual use of machinery increased. The rental custom charge, on the other hand, is on a time or acre basis and, therefore, usually varies little per unit of use, if any, with increase in use. Amount of use per renter is recognized by having a lower rate by the week than by the day. The lower charge per day for a machine when rented on a weekly basis recognizes the more complete use of the machine over time, i.e., less loss of income time in shifting the machine from farm to farm.

The break-even point for custom charges generally occurred at fewer days of use than for rented machines on either daily or weekly rates (Fig. 1—Table 2). To the left of the break-even cost point, on Fig. 1, the rental or custom use will be less costly than owning the machines, and to the right of the break-even, cost-point ownership will be less costly than custom hire or rental of machinery. For other selected machines see Appendix Tables 2-12 and Appendix Figs. 1-11.

Cost per day of work (including labor at \$1.00 per hour and other variable costs) for rented machines, generally, is less than for custom-hired machine work, when sufficient use is made of the machine. Planning, management and moving time to work involves costs that tend to increase custom

TABLE 2  
 CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS FOR TWO-PLOW TRACTOR  
 AND TWO-BOTTOM PLOW OR DISK

	Tractor—Plowing or disking cost—daily					Two-bottom plows or disks—daily costs	Two-plow tractor, two-bottom plow or disk and labor—total cost
	Fixed	Labor	Oper- ating	Deliv- ery	Total		
<b>Custom</b>							
Plowing	\$ 42.00	—	—	—	\$ 42.00	—	\$ 42.00
Disking	57.00	—	—	—	57.00	—	57.00
<b>Rental charge</b>							
1% of purchase price—daily	29.62	\$4.40	\$10.00	\$13.00	47.02	\$ 3.00	50.02
5% of purchase price—weekly	24.26	4.40	10.00	.50	39.16	2.50	41.66
<b>Ownership cost—daily</b>							
Annual use 1-day	346.24	4.40	10.00	—	360.64	32.18 <sup>b</sup>	392.82
Annual use 2-days	173.12	4.40	10.00	—	187.52	16.09	203.61
Annual use 3-days	115.41	4.40	10.00	—	129.81	10.73	140.54
Annual use 4-days	86.56	4.40	10.00	—	100.96	8.04	109.00
Annual use 5-days	69.25	4.40	10.00	—	83.65	6.44	90.09
Annual use 10-days	34.62	4.40	10.00	—	49.02	3.22	52.24
Annual use 15-days	23.08	4.40	10.00	—	37.48	2.15	39.63
Annual use 20-days	17.31	4.40	10.00	—	31.71	1.61	33.32
Annual use 25-days	13.85	4.40	10.00	—	28.25	1.29	29.54

<sup>a</sup>Ten-hour day.

<sup>b</sup>Calculated annual fixed cost (depreciation, interest, etc.) for two-bottom plow or disk.

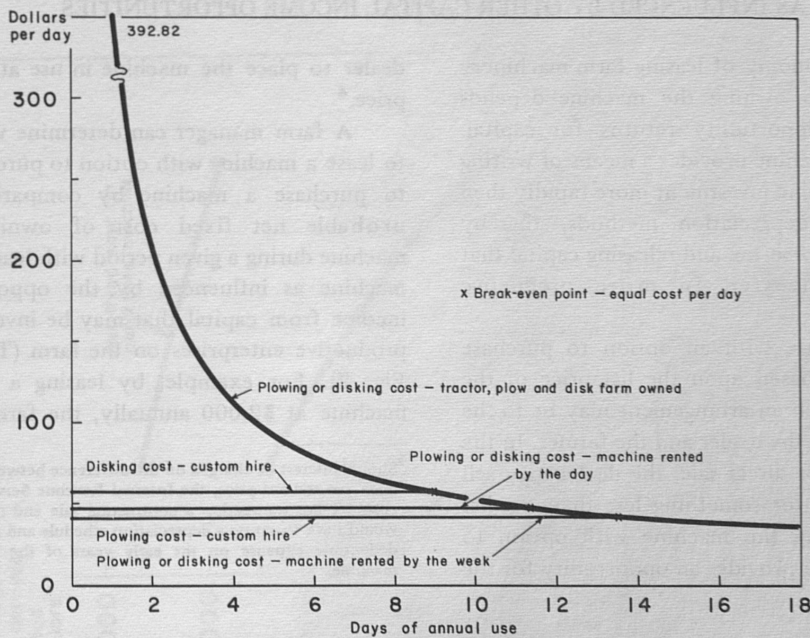


FIG. 1.——PLOWING OR DISKING COST PER DAY— TWO-PLOW TRACTOR, TWO-BOTTOM PLOW OR DISK.

charges. Increased annual use of owned tractor and plow or disk results in reduced daily cost for plowing or disking. An annual use of 10-15 days is required for the daily cost of the owned machines to equal custom hired or rented machine cost. Further higher opportunity income for labor than the \$1.00 per hour shifts the curve to the right increasing the amount of use required to obtain a break-even cost.

With a large volume operation, the custom machine usually is worn out sooner than the farm-owned machine, which allows the custom operator to keep a more up-to-date, efficient machine. Even with a more efficient machine used by the custom operator, he has the problem of timeliness of operation demanded by the farmer. The cost data presented here do not account for quality or timeliness of work.

Volume of work for forage harvesting to justify ownership of the line of equipment

approximates 10 days in comparison with custom operation and 20 days for rental equipment (Appendix Table 3 and Fig. 2). Harvesting operations such as combining, corn picking, and cotton harvesting require two to three weeks of work to justify ownership of harvesting machines (Appendix Tables 4, 5, 11, and 12; and Figs. 3, 4, 10, and 11). Hay-harvesting equipment requires 2 to 15 days of work to justify ownership of machines on a cost basis of machinery and labor.

Cost per acre covered, on the basis of average accomplishment, is lowest for machines rented by the week for limited acreages. For example, the cost (machine, power, and labor) of combining is less per acre for a combine rented by the week until approximately 85 acres of crops are combined annually. When 85 acres or more of crops are combine harvested, the combining cost is less for the farm-owned machine.

#### LEASING OF FARM MACHINERY IN COMPARISON TO FULL OWNERSHIP AS INFLUENCED BY OTHER CAPITAL INCOME OPPORTUNITIES

The economy of leasing farm machinery compared to owning the machine depends upon the opportunity returns for capital. Leasing a machine provides a means of writing off the machine investment more rapidly than the usual depreciation methods, thereby reducing income tax and releasing capital that may be invested in more productive enterprises.

The lease with an option to purchase generally is based upon the list price of the machine. Such an arrangement may be to the advantage of the dealer and the farmer. In the bargaining for direct sale, the dealer may sell the machine for something less than the list price. Leasing the machine with option to purchase later provides an opportunity for the

dealer to place the machine in use at his list price.<sup>4</sup>

A farm manager can determine whether to lease a machine with option to purchase or to purchase a machine by comparing the probable net fixed cost of owning the machine during a given period with leasing the machine as influenced by the opportunity income from capital that may be invested in productive enterprises on the farm (Table 3, Fig. 2). For example, by leasing a \$6,000 machine at \$2,000 annually, the farmer has

<sup>4</sup>Should interest be charged on the difference between annual lease fee and list price, the Internal Revenue Service would consider the transaction a contractual sale and the farmer would have to set up a depreciation schedule and reduce his deductible expense on the early years of the use of the machine.

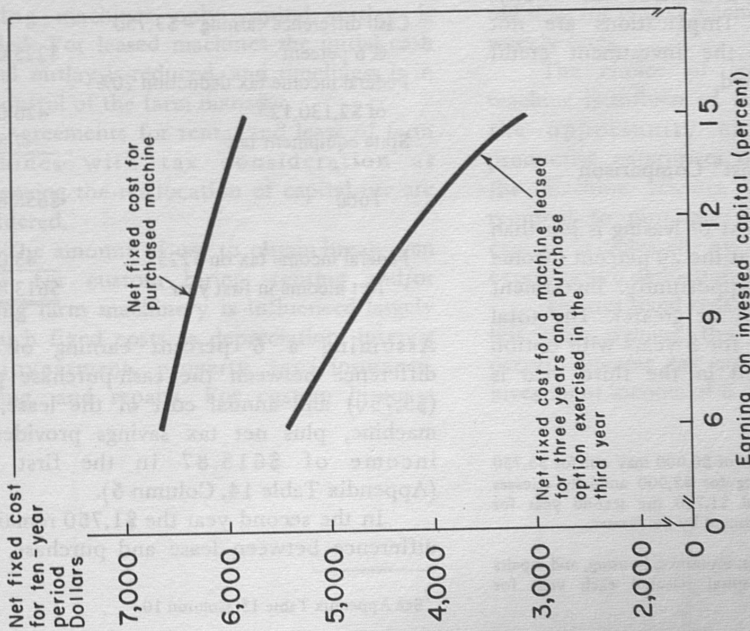


FIG. 2. --- NET FIXED COSTS<sup>a</sup> FOR A MACHINE WITH A LIST PRICE OF \$6,000-- NET FIXED COST FOR A LEASED MACHINE AND A PURCHASED MACHINE WITH VARIOUS RATES OF EARNING ON CAPITAL.

<sup>a</sup> Depreciation, interest, taxes, insurance, housing and repairs minus the earning of capital released each year for investment.

TABLE 3

NET FIXED COST<sup>a</sup> FOR A MACHINE WITH A LIST PRICE OF \$6,000 AND LEASED FOR \$2,000 PER YEAR FOR THREE YEARS WITH OPTION TO PURCHASE OR PURCHASED FOR \$5,750<sup>b</sup>

	Opportunity income invested at		
	6%	10%	15%
<b>Machine leased with purchase option exercised in the third year</b>			
Fixed cost	\$7,594.13	\$7,594.13	\$7,594.13
Opportunity income <sup>c</sup>	<u>2,162.91</u>	<u>2,989.01</u>	<u>4,476.63</u>
Net fixed cost for 10 years	\$5,431.22	\$4,605.12	\$3,117.50
<b>Machine purchased</b>			
Fixed cost	\$8,304.94	\$8,304.94	\$8,304.94
Opportunity income <sup>c</sup>	<u>1,667.43</u>	<u>1,992.41</u>	<u>2,497.19</u>
Net fixed cost for 10 years	\$6,637.51	\$6,312.53	\$5,807.75

<sup>a</sup>Fixed cost (depreciation interest taxes, insurance, housing, and repair) less the earning of capital released for productive investment during a ten-year period.

<sup>b</sup>See Appendix Tables 13 and 14.

<sup>c</sup>Earning from capital released by leasing and Federal income tax reduction at the 20 percent Internal Revenue bracket.

\$3,750 remaining the first year<sup>5</sup> and \$1,750 the second year to invest in productive enterprises (Appendix Table 14, Column 2). Further, savings from reduced income tax payments are available for investment. The income from these investments may be further increased by compounding the earnings from the investment over the life of the machine (Appendix Table 14, Columns 5, 9, and 13).

Investment credit, a reduction in the tax liability by some percentage of the purchase value of a machine, has been permitted in recent years, but was disallowed April 18, 1969. Since investment credit is used as an economy control factor, the years of availability is unpredictable. When investment credit is permitted on the purchase of a machine, the advantage of leasing diminishes because the purchase price of the machine, for all practical purposes, is reduced by the tax credit. In some instances the lessee receives investment credit on a leased machine, which would reduce the lease charge and offset the purchase advantage. The benefits accruing from investment credit will directly influence the decision to lease or buy, but the specific implications are not discernable until the investment credit allowance is determined.

#### Net Fixed Cost<sup>6</sup> Comparison

The net fixed cost of leasing is less than owning the machine at the 20 percent income tax bracket for opportunity investment income of 6 percent or greater. The total fixed cost of leasing for 3 years with option to purchase exercised in the third year is

<sup>5</sup>A machine with a list price of \$6,000 may sell for \$5,750 on a cash basis. In leasing for \$2,000 annually releases \$3,750 the first year and \$1,750 the second year for alternative productive investment by the farmer.

<sup>6</sup>Depreciation, interest, taxes, insurance, housing, and repairs minus the earning of capital released each year for investment.

\$7,594.13, while the total fixed cost of the purchased machine is \$8,304.94 for a 10-year period (Table 3 and Appendix Table 13). The reduction in total cost of leasing in comparison to full ownership is a result of rapid write-off of the investment which resulted in a smaller interest charge for the leased machine than for the full-ownership machine.

The economic advantage of leasing the machine is further increased by the productive employment of the capital annually released by leasing rather than purchasing the machine in the first or second year. The rapid write-off in investment in the first and second year is a deductible expense that reduces the amount of income tax. The reduction in taxes releases additional capital for productive investment. The net fixed cost for 10 years (total fixed cost less opportunity earning of released capital) with opportunity income from released capital at 6 percent was \$5,431.22 for the leased machine and \$6,637.51 for the purchased machine. For example, the earning for the lessee in the first year is as follows:

Cash difference earning = \$3,750	
@ 6 percent	\$225.00
Federal income tax deduction 20%	
of \$2,130.12 <sup>7</sup>	426.02
State equipment tax	<u>7.85</u>
Total	\$658.87
Federal income tax on \$225	<u>45.00</u>
Net income in first year	<u>\$613.87</u>

Assuming a 6 percent earning on the difference between the cash-purchase price (\$5,750) and annual cost of the lease, the machine, plus net tax savings provides an income of \$613.87 in the first year (Appendix Table 14, Column 5).

In the second year the \$1,750 remaining difference between lease and purchase, plus

<sup>7</sup>See Appendix Table 13, Column 10.

the \$613.87 provides \$2,363.87 for investment. After 10 years the accumulated earning for leasing the machine amounts to \$2,162.91, leaving a net fixed cost for 10 years of \$5,431.22 for the leased machine. The purchased machine had a 10 year net fixed cost of \$6,637.51 at the 6 percent level of interest and the 20 percent income tax bracket.

With opportunity earning of capital at 10 percent, the net fixed cost of the leased machine was \$4,605.12 and the purchased machine was \$6,312.53 for a 10-year period. At a 15-percent rate of return on capital, the net fixed cost was further reduced to \$3,117.50 for the machine leased with the option to purchase exercised in the third year and \$5,807.75 for the purchased machine.

### SUMMARY

Modern farming increases the capital needs and encourages specialized, larger farming units. Efficient use of labor and profitable employment of capital require the consideration of income-stimulating uses of capital.

Obtaining the use of machinery by custom hiring, renting, leasing and owning results in varying capital outlay, timeliness, and labor requirements. With custom hiring of farm machines, the farm operator avoids capital outlay and labor but has less control over the operating time of the machine. In renting machines only capital outlay is avoided. For leased machines the initial cash capital outlay is reduced, and timeliness is in the control of the farm manager.

Agreements for rental and lease of farm machines with tax consideration as influencing the reallocation of capital use are considered.

The amount of use to obtain break-even costs for custom hiring, renting and/or owning farm machinery is influenced largely by such fixed costs as depreciation, interest on investment, property tax, insurance, housing, and repairs. For custom hiring a

variable cost, labor for operating the machine is considered.

Custom hire, rental charge and ownership costs are compared for selected machines. As the annual use of the machine increases the ownership cost decreases, owing to the annual fixed cost of the owned machine, until the unit cost of the owned machine is equal to or becomes less than the cost of the custom operated or rented machine. The break-even points for custom charges versus ownership costs for selected machines generally occurred at fewer days of use than for rented machines at either daily or weekly rates.

The choice of leasing or owning a machine is influenced in a large measure by the opportunity earning of capital in productive enterprises of the farms. Leasing the machine releases part of the capital required to purchase the machine. Further capital is released by larger allowance of expenses as a deduction on income taxes.

The net fixed cost of leasing a machine is less than owning the machine at the 20 percent income tax bracket for opportunity investment income of 6 percent or more.

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APPENDIX

TABLE 1  
OWNERSHIP COSTS FOR SELECTED FARM MACHINES

Machine	Purchase price	Average annual value	Useful life years	Depreciation	Interest	Annual fixed cost					Total
						Insurance	Taxes	Housing	Repairs <sup>a</sup>		
Tractor—2 plow	\$ 2,962.00	\$1,629.10	15	\$ 177.73	\$ 97.74	\$ 6.19	\$ 2.44	\$ 8.14	\$ 54.00	\$ 346.24	
Tractor—4 plow	5,100.00	2,775.00	10	450.00	166.50	10.54	4.21	14.00	91.00	736.25	
Forage harvester—P.T.O., 1 row	3,056.00	1,665.52	7	392.91	99.31	6.33	2.52	14.00	75.00	590.07	
Combine—P.T.O., 7 foot	2,519.00	1,385.45	15	151.14	83.13	5.26	2.08	14.00	67.17	322.78	
Combine—S.P. 10 foot	10,300.00	5,665.00	10	927.00	339.90	21.53	8.50	28.00	261.40	1,586.33	
Mower—P.T.O., 7 foot	638.00	350.90	15	38.28	21.05	1.33	.53	4.48	31.90	97.57	
Rake—side delivery, 7 foot	575.00	316.75	10	51.75	19.00	1.20	.47	4.50	5.00	81.92	
Windrower—S.P., 7 foot	3,675.00	2,021.25	10	330.75	121.28	7.68	3.03	14.00	100.00	576.74	
Conditioner—P.T.O., 7 foot	890.00	489.50	15	80.10	29.37	1.86	.73	2.52	16.82	131.40	
Baler—P.T.O.	2,000.00	1,100.00	15	120.00	66.00	4.18	1.65	14.00	61.49	267.32	
Corn picker—mounted, 2 row	2,650.00	1,457.50	10	238.50	87.45	5.54	2.19	14.00	60.00	407.68	
Cotton harvester—S.P., 2 row	14,500.00	7,975.00	10	1,035.00	478.50	30.30	11.96	28.00	210.00	1,793.76	

<sup>a</sup>Average annual repair cost included as a fixed cost.

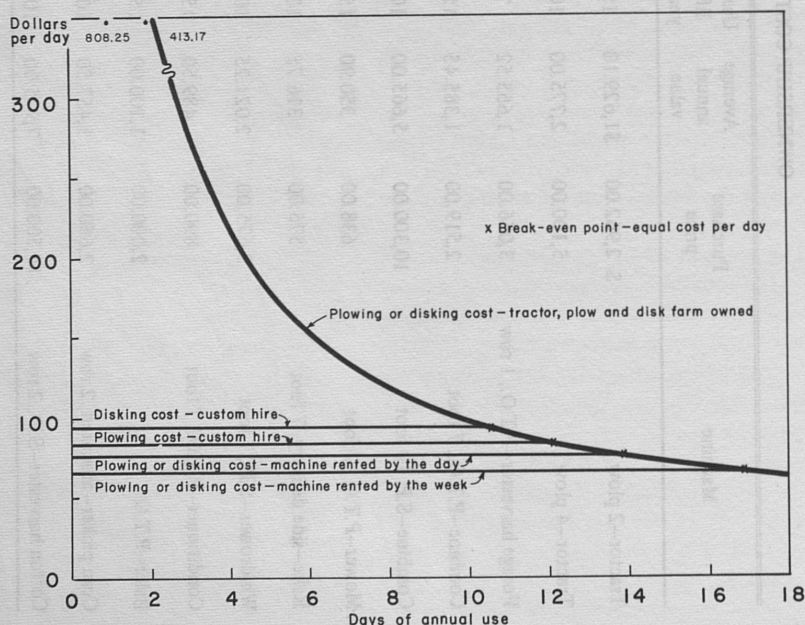


APPENDIX—Continued

TABLE 2  
CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS FOR FOUR-PLOW TRACTOR  
AND FOUR-BOTTOM PLOW OR DISK

	Plowing or disking cost—daily				Total	Four-bottom plow or disks—fixed costs	Four-plow tractor four-bottom plow or disk— total cost
	Fixed cost	Oper- ation	Labor	Deliv- ery			
<b>Custom</b>							
Plowing	\$ 84.00	—	—	—	\$ 84.00	—	\$ 84.00
Disking	94.00	—	—	—	94.00	—	94.00
<b>Rental charge</b>							
1% of purchase price—daily	51.00	\$8.10	\$10.00	\$1.50	70.60	\$ 6.00	76.60
5% of purchase price—weekly	42.50	8.10	10.00	0.50	61.10	5.00	66.10
<b>Ownership cost—daily</b>							
Annual use 1-day	736.25	8.10	10.00	—	754.35	53.90	808.25
Annual use 2-days	368.12	8.10	10.00	—	386.22	29.95	413.17
Annual use 3-days	245.42	8.10	10.00	—	263.52	17.97	281.49
Annual use 4-days	184.06	8.10	10.00	—	202.16	13.48	215.64
Annual use 5-days	147.25	8.10	10.00	—	165.35	10.78	176.13
Annual use 10-days	73.62	8.10	10.00	—	91.72	5.39	97.11
Annual use 15-days	49.08	8.10	10.00	—	67.18	3.59	70.77
Annual use 20-days	36.81	8.10	10.00	—	54.91	2.70	57.61
Annual use 25-days	29.45	8.10	10.00	—	47.55	2.16	49.71

<sup>a</sup>Ten-hour day.



APP. FIG. 1.—PLOWING OR DISKING COST PER DAY— FOUR-PLOW TRACTOR, FOUR-BOTTOM PLOW OR DISK.

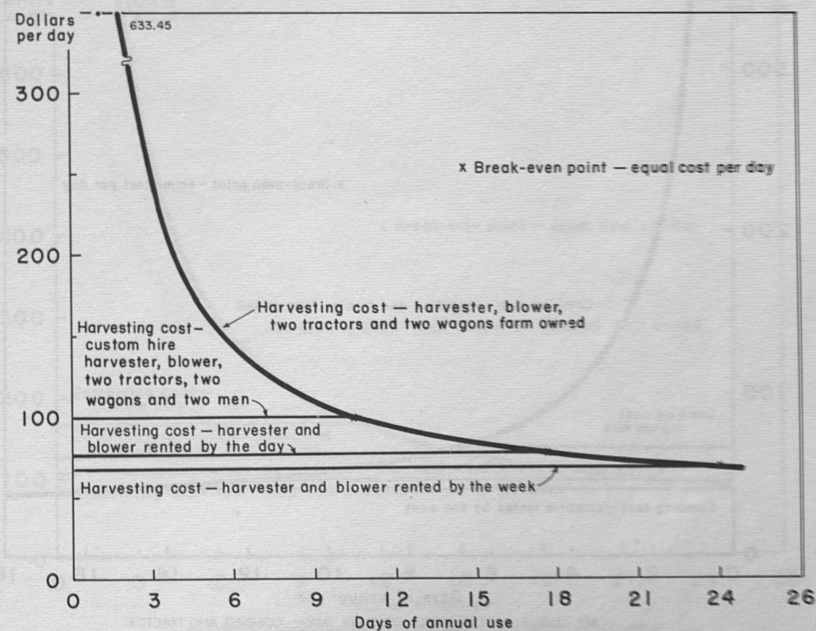
## APPENDIX—Continued

TABLE 3  
CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS FOR POWER-TAKE-OFF  
FORAGE HARVESTER

	Forage harvesting cost—daily					Total
	Fixed cost	Tractor <sup>b</sup> power (2)	Labor (2 men)	Wagons (2)	Delivery	
Custom—PTO forage harvester Two tractors, two wagons, two men	\$100.00	—	—	—	—	\$100.00
Rental—PTO forage harvester						
1% of purchase price—daily	30.56	\$20.78	\$16.00	\$6.60	\$3.00	76.94
5% of purchase price—weekly	25.47	20.78	16.00	6.60	.50	68.25
Ownership cost—daily						
Annual use 1-day	590.07	20.78	16.00	6.60	—	633.45
Annual use 2-days	295.04	20.78	16.00	6.60	—	338.42
Annual use 3-days	196.69	20.78	16.00	6.60	—	240.07
Annual use 4-days	147.52	20.78	16.00	6.60	—	190.90
Annual use 5-days	118.01	20.78	16.00	6.60	—	161.39
Annual use 10-days	59.01	20.78	16.00	6.60	—	102.39
Annual use 15-days	39.34	20.78	16.00	6.60	—	82.72
Annual use 20-days	29.50	20.78	16.00	6.60	—	72.88
Annual use 25-days	23.60	20.78	16.00	6.60	—	66.98

<sup>a</sup>Eight-hour day.

<sup>b</sup>Exclusive of repairs.



APP. FIG. 2.—FORAGE HARVESTING COST PER DAY— HARVESTER, BLOWER, TWO TRACTORS AND TWO WAGONS.

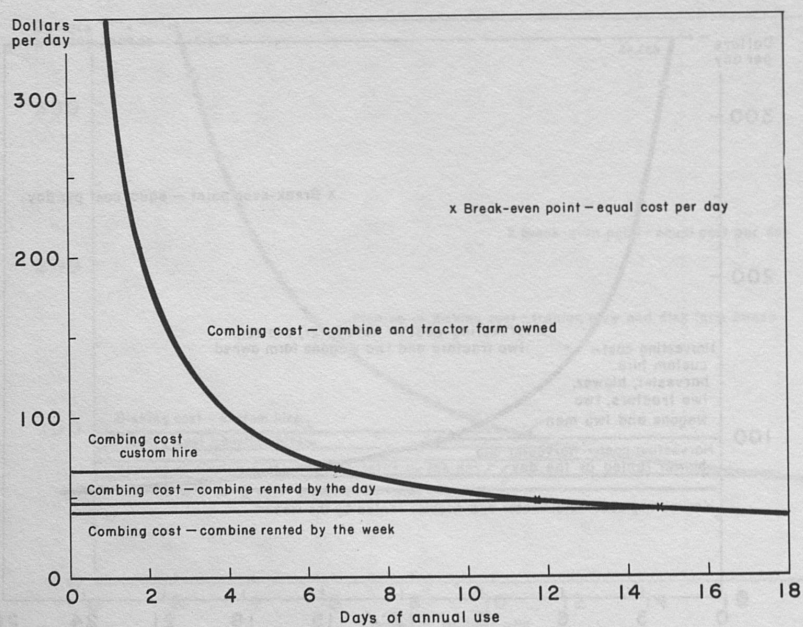
## APPENDIX—Continued

TABLE 4  
 CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS FOR SEVEN-FOOT  
 POWER-TAKE-OFF COMBINE

	Combining cost—daily				Total
	Fixed cost	Tractor <sup>b</sup> power	Labor	Delivery	
Custom—PTO combine Tractor and one man	\$ 67.50	—	—	—	\$ 67.50
Rental—PTO combine, seven foot					
1% of purchase price—daily	25.19	\$10.39	\$8.00	\$3.00	46.58
5% of purchase price—weekly	20.99	10.39	8.00	.50	39.88
Ownership cost—daily					
Annual use 1-day	322.78	10.39	8.00	—	341.17
Annual use 2-days	161.39	10.39	8.00	—	179.78
Annual use 3-days	107.59	10.39	8.00	—	125.98
Annual use 4-days	80.70	10.39	8.00	—	99.09
Annual use 5-days	64.56	10.39	8.00	—	82.95
Annual use 10-days	32.28	10.39	8.00	—	50.67
Annual use 15-days	21.52	10.39	8.00	—	39.91
Annual use 20-days	16.14	10.39	8.00	—	34.53
Annual use 25-days	12.91	10.39	8.00	—	31.30

<sup>a</sup>Eight-hour day.

<sup>b</sup>Exclusive of repairs.



APP. FIG. 3.—COMBINING COST PER DAY— COMBINE AND TRACTOR.

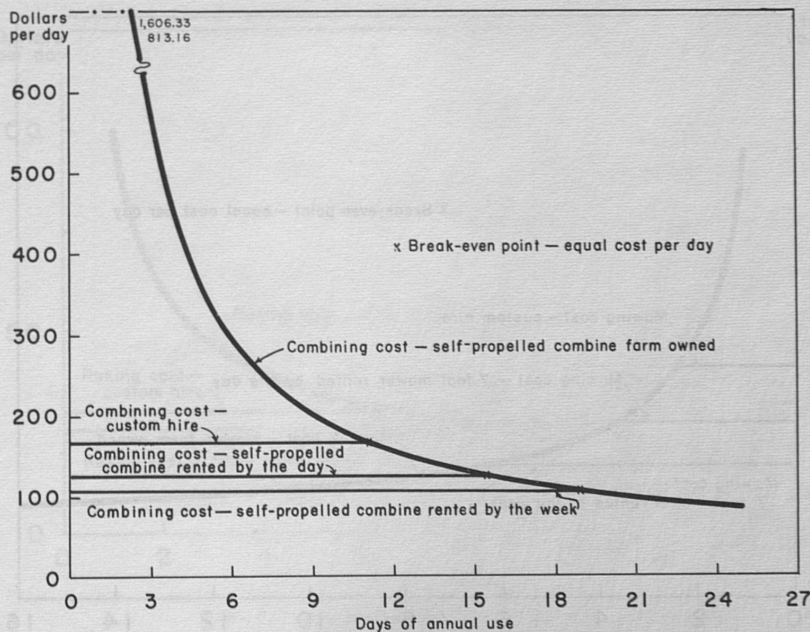
APPENDIX—Continued

TABLE 5  
CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS FOR  
SELF-PROPELLED COMBINE

	Combining cost—daily				Total
	Fixed cost	Operating <sup>b</sup>	Labor	Delivery	
Custom—self-propelled combine	\$ 168.00	—	—	—	\$ 168.00
Rental—self-propelled combine					
1% of purchase price—daily	103.00	\$12.00	\$8.00	\$3.00	126.00
5% of purchase price—weekly	85.83	12.00	8.00	.50	106.33
Ownership cost—daily					
Annual use 1-day	1,586.33	12.00	8.00	—	1,606.33
Annual use 2-days	793.16	12.00	8.00	—	813.16
Annual use 3-days	528.75	12.00	8.00	—	548.78
Annual use 4-days	396.58	12.00	8.00	—	416.58
Annual use 5-days	317.27	12.00	8.00	—	337.27
Annual use 10-days	158.63	12.00	8.00	—	178.63
Annual use 15-days	105.76	12.00	8.00	—	125.76
Annual use 20-days	79.32	12.00	8.00	—	99.32
Annual use 25-days	63.45	12.00	8.00	—	83.45

<sup>a</sup>Eight-hour day.

<sup>b</sup>Exclusive of repairs.



APP. FIG. 4.—COMBINING COST PER DAY— SELF PROPELLED COMBINE.

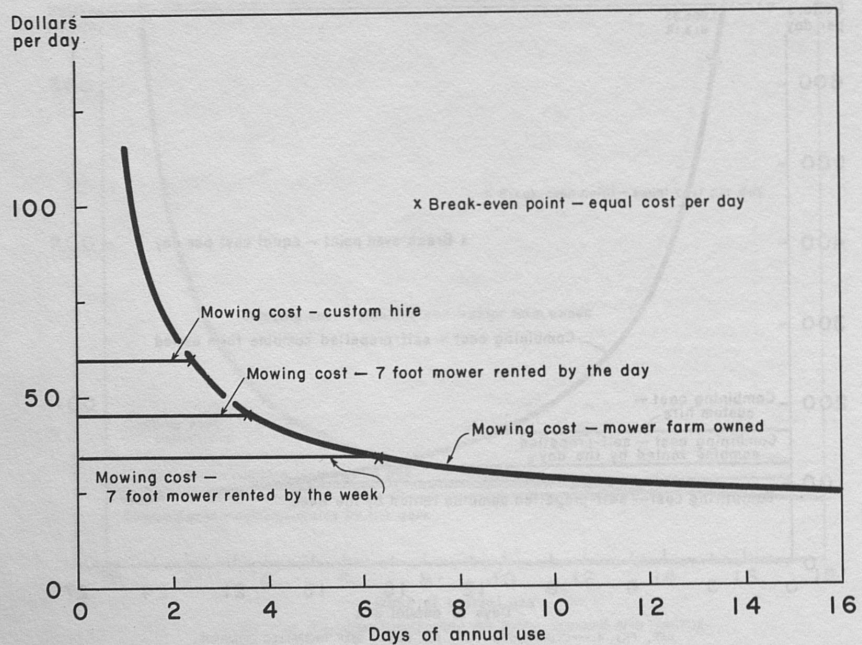
## APPENDIX—Continued

TABLE 6  
CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS FOR MOWER

	Mowing cost—daily				
	Fixed cost	Tractor <sup>b</sup> power	Labor	Delivery	Total
Custom—mower	\$59.00	—	—	—	\$ 59.00
Rental—seven-foot mower					
\$1.00 per acre—daily	25.05	\$10.39	\$8.00	\$3.00	46.39
\$5.80 per acre—weekly	16.00	10.39	8.00	.50	34.89
Ownership cost—daily					
Annual use 1-day	97.57	10.39	8.00	—	115.96
Annual use 2-days	48.78	10.39	8.00	—	67.17
Annual use 3-days	32.52	10.39	8.00	—	50.91
Annual use 4-days	24.39	10.39	8.00	—	42.78
Annual use 5-days	19.51	10.39	8.00	—	37.90
Annual use 10-days	9.76	10.39	8.00	—	28.15
Annual use 15-days	6.50	10.39	8.00	—	24.89
Annual use 20-days	4.88	10.39	8.00	—	23.27
Annual use 25-days	3.90	10.39	8.00	—	22.29

<sup>a</sup>Eight-hour day.

<sup>b</sup>Exclusive of repairs.



APP. FIG. 5.—MOWING COST PER DAY— SEVEN-FOOT MOWER.

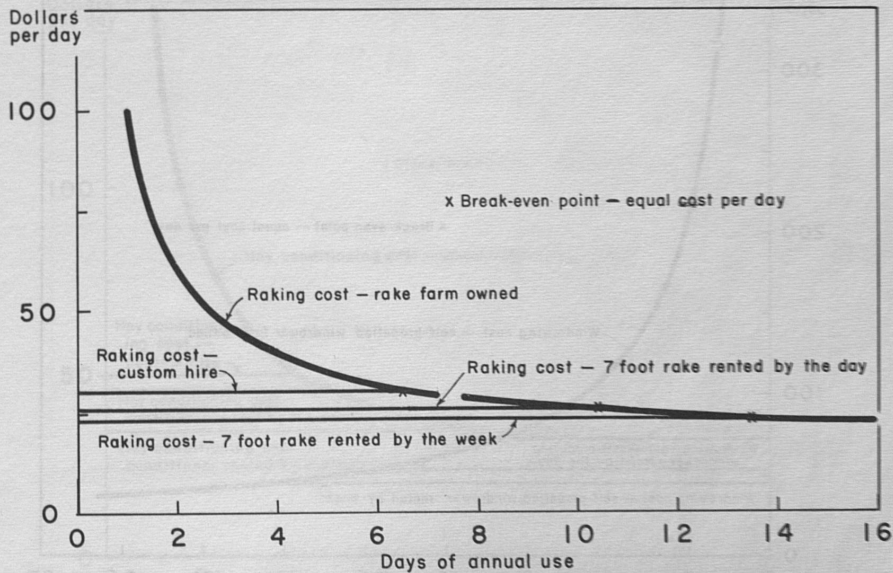
APPENDIX—Continued

TABLE 7  
CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS FOR HAY RAKE

	Hay raking cost—daily				
	Fixed cost	Tractor <sup>b</sup> power	Labor	Delivery	Total
Custom—hay rake	\$30.00	—	—	—	\$30.00
Rental—hay rake, seven-foot					
1% of purchase price—daily	5.75	\$9.50	\$8.00	\$3.00	26.25
5% of purchase price—weekly	4.79	9.50	8.00	1.00	23.29
Ownership cost—daily					
Annual use 1-day	81.92	9.50	8.00	—	99.42
Annual use 2-days	40.96	9.50	8.00	—	58.46
Annual use 3-days	27.31	9.50	8.00	—	44.81
Annual use 4-days	20.48	9.50	8.00	—	37.98
Annual use 5-days	16.38	9.50	8.00	—	33.88
Annual use 10-days	8.19	9.50	8.00	—	25.69
Annual use 15-days	5.46	9.50	8.00	—	22.96
Annual use 20-days	4.10	9.50	8.00	—	21.60
Annual use 25-days	3.28	9.50	8.00	—	20.78

<sup>a</sup>Eight-hour day.

<sup>b</sup>Exclusive of repairs.



APP. FIG. 6.—RAKING COST PER DAY— SEVEN-FOOT RAKE.

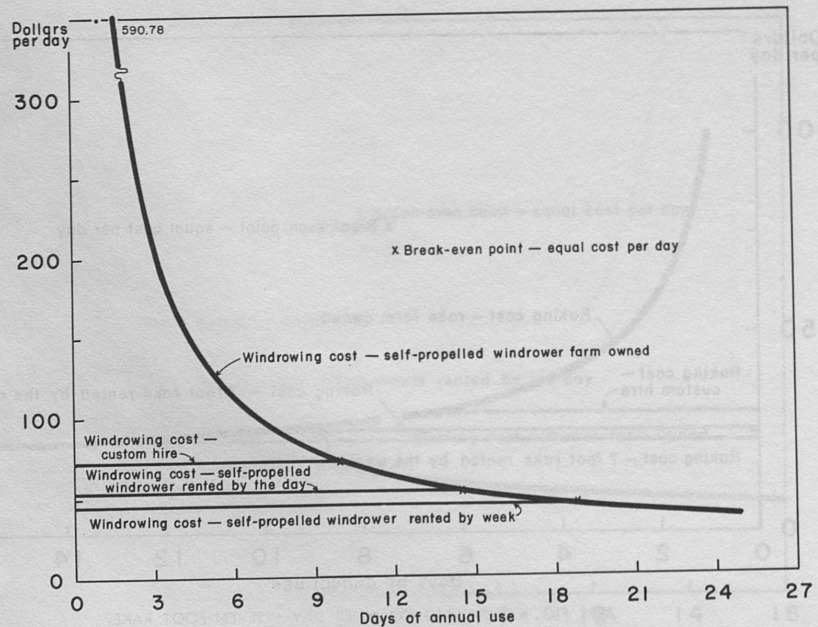
APPENDIX—Continued

TABLE 8  
CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS OF  
SELF-PROPELLED WINDROWER

	Windrowing cost—daily				Total
	Fixed cost	Operating <sup>b</sup> cost	Labor	Delivery	
Custom—self-propelled windrower	\$ 72.00	—	—	—	\$ 72.00
<b>Rental—self-propelled windrower, seven foot</b>					
1% of purchase price—daily	36.75	\$6.04	\$8.00	\$3.00	53.79
5% of purchase price—weekly	30.62	6.04	8.00	.50	45.16
<b>Ownership cost—daily</b>					
Annual cost 1-day	576.74	6.04	8.00	—	590.78
Annual cost 2-days	288.37	6.04	8.00	—	302.41
Annual cost 3-days	192.25	6.04	8.00	—	206.29
Annual cost 4-days	144.18	6.04	8.00	—	158.22
Annual cost 5-days	115.35	6.04	8.00	—	129.39
Annual cost 10-days	57.67	6.04	8.00	—	71.71
Annual cost 15-days	38.45	6.04	8.00	—	52.49
Annual cost 20-days	28.84	6.04	8.00	—	42.88
Annual cost 25-days	23.07	6.04	8.00	—	37.11

<sup>a</sup>Eight-hour day.

<sup>b</sup>Exclusive of repairs.



APP. FIG. 7.—WINDROWING COST PER DAY—TEN-FOOT, SELF PROPELLED WINDROWER.

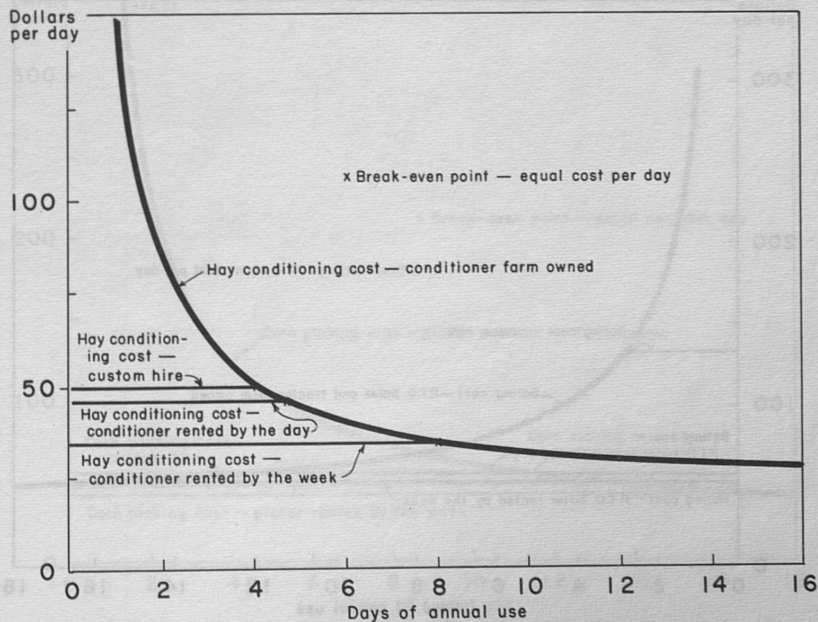
APPENDIX—Continued

TABLE 9  
CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS FOR  
HAY CONDITIONER

	Hay conditioning cost—daily				
	Fixed cost	Tractor <sup>b</sup> power	Labor	Delivery	Total
Custom—hay conditioner	\$ 50.00	—	—	—	\$ 50.00
Rental—hay conditioner					
\$1.00 per acre—daily	25.00	\$10.39	\$8.00	\$3.00	46.39
\$5.80 per acre—weekly	16.00	10.39	8.00	.50	34.89
Ownership cost—daily					
Annual use 1-day	131.40	10.39	8.00	—	149.79
Annual use 2-days	65.70	10.39	8.00	—	84.09
Annual use 3-days	43.80	10.39	8.00	—	62.19
Annual use 4-days	32.85	10.39	8.00	—	51.24
Annual use 5-days	26.28	10.39	8.00	—	44.67
Annual use 10-days	13.14	10.39	8.00	—	31.53
Annual use 15-days	8.76	10.39	8.00	—	27.15
Annual use 20-days	6.57	10.39	8.00	—	24.96
Annual use 25-days	5.26	10.39	8.00	—	23.65

<sup>a</sup>Eight-hour day.

<sup>b</sup>Exclusive of repairs.



APP. FIG. 8.—HAY CONDITIONING COST PER DAY— HAY CONDITIONER.



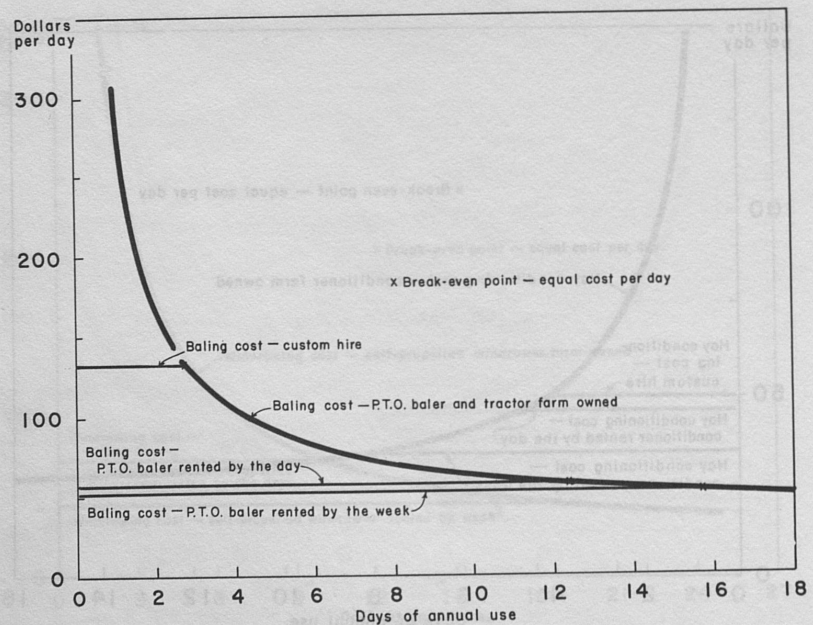
## APPENDIX—Continued

TABLE 10  
CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS FOR  
POWER-TAKE-OFF BALER

	Baling cost—daily					
	Fixed cost	Tractor <sup>b</sup> power	Labor	Twine	Delivery	Total
Custom—PTO baler	\$132.75	—	—	—	—	\$132.75
Rental—PTO baler						
1% of purchase price—daily	20.00	\$10.39	\$8.00	\$16.00	\$3.00	57.39
5% of purchase price—weekly	16.67	10.39	8.00	16.00	.50	51.56
Ownership cost—daily						
Annual use 1-day	267.32	10.39	8.00	16.00	—	301.71
Annual use 2-days	133.66	10.39	8.00	16.00	—	168.05
Annual use 3-days	98.11	10.39	8.00	16.00	—	123.50
Annual use 4-days	66.83	10.39	8.00	16.00	—	101.22
Annual use 5-days	53.46	10.39	8.00	16.00	—	87.85
Annual use 10-days	26.73	10.39	8.00	16.00	—	61.12
Annual use 15-days	17.82	10.39	8.00	16.00	—	52.21
Annual use 20-days	13.37	10.39	8.00	16.00	—	47.76
Annual use 25-days	10.69	10.39	8.00	16.00	—	45.08

<sup>a</sup>Eight-hour day.

<sup>b</sup>Exclusive of repairs.



APP. FIG. 9.—BALING COST PER DAY— POWER-TAKE-OFF BALER.

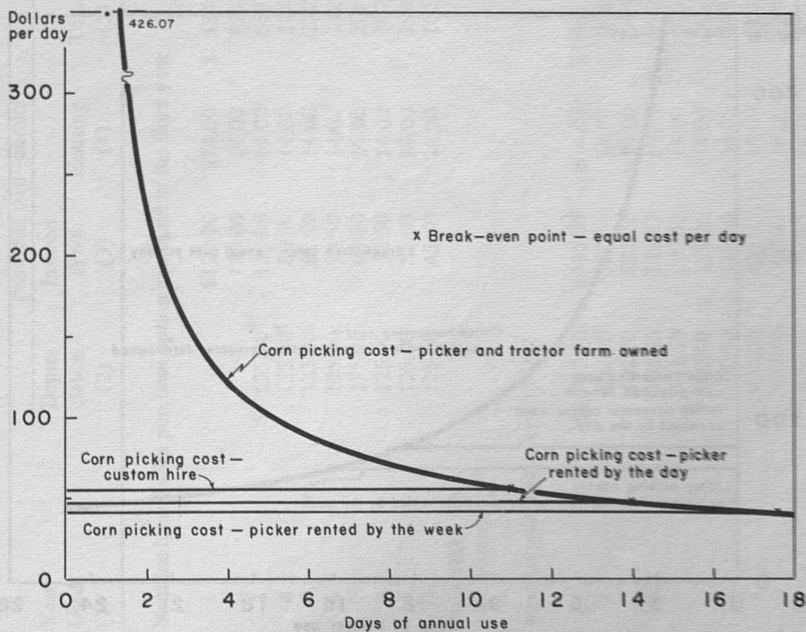
APPENDIX—Continued

TABLE 11  
CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS FOR TWO-ROW MOUNTED CORN PICKER

	Corn picking cost—daily				
	Fixed cost	Tractor <sup>b</sup> power	Labor	Delivery	Total
Custom—two-row mounted corn picker	\$ 56.00	—	—	—	\$ 56.00
Rental—two-row mounted corn picker					
1% of purchase cost—daily	26.50	\$10.39	\$8.00	\$3.00	47.89
5% of purchase cost—weekly	22.08	10.39	8.00	.50	40.97
Ownership cost—daily					
Annual use 1-day	407.68	10.39	8.00	—	426.07
Annual use 2-days	203.84	10.39	8.00	—	222.23
Annual use 3-days	135.89	10.39	8.00	—	154.28
Annual use 4-days	101.92	10.39	8.00	—	120.31
Annual use 5-days	81.54	10.39	8.00	—	99.93
Annual use 10-days	40.77	10.39	8.00	—	59.16
Annual use 15-days	27.18	10.39	8.00	—	45.57
Annual use 20-days	20.38	10.39	8.00	—	38.77
Annual use 25-days	16.31	10.39	8.00	—	34.70

<sup>a</sup>Eight-hour day.

<sup>b</sup>Exclusive of repairs.



APP. FIG. 10.—CORN PICKING COST PER DAY— TWO-ROW MOUNTED PICKER AND TRACTOR.

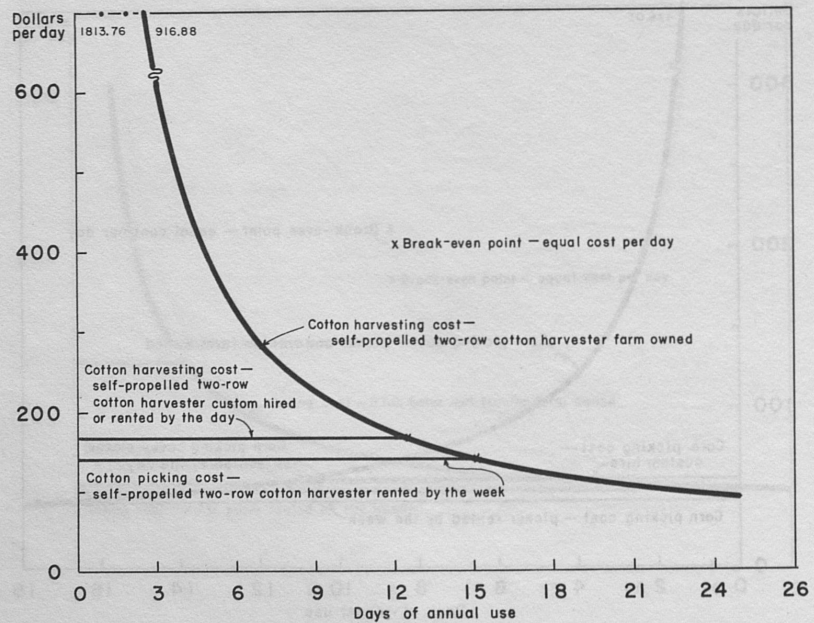
APPENDIX—Continued

TABLE 12  
 CUSTOM, RENTAL AND OWNERSHIP DAILY<sup>a</sup> COSTS FOR SELF-PROPELLED,  
 TWO-ROW COTTON HARVESTER

	Cotton harvesting cost—daily				
	Fixed cost	Operating <sup>b</sup> cost	Labor	Delivery	Total
Custom—self-propelled cotton harvester	\$ 168.00	—	—	—	\$ 168.00
Rental—self-propelled cotton harvester					
1% of purchase price—daily	145.00	\$12.00	\$8.00	\$3.00	168.00
5% of purchase price—weekly	120.83	12.00	8.00	.50	141.33
Ownership cost—daily					
Annual use 1-day	1,793.76	12.00	8.00	—	1,813.76
Annual use 2-days	896.88	12.00	8.00	—	916.88
Annual use 3-days	597.92	12.00	8.00	—	617.92
Annual use 4-days	448.44	12.00	8.00	—	468.44
Annual use 5-days	358.75	12.00	8.00	—	378.75
Annual use 10-days	179.38	12.00	8.00	—	199.38
Annual use 15-days	119.58	12.00	8.00	—	139.58
Annual use 20-days	89.69	12.00	8.00	—	109.69
Annual use 25-days	71.75	12.00	8.00	—	91.75

<sup>a</sup>Eight-hour day.

<sup>b</sup>Exclusive of repairs.



APP. FIG. 11.—COTTON PICKING COST PER DAY— SELF PROPELLED TWO-ROW COTTON HARVESTER.

TABLE 13

FIXED COSTS FOR MACHINERY LEASED FOR \$2,000<sup>a</sup> PER YEAR FOR THREE YEARS WITH OPTION TO PURCHASE OR PURCHASED FOR \$5,750

Year Used (1)	Non-cash cost—annual			Cash cost—annual				Total annual fixed cost (11)		
	Depreciation (2)	Interest @ 6% (3)	Housing (4)	Total (5)	Insurance (6)	Property tax (7)	Repairs (8)		Lease payment (9)	Total (10)
<b>Machine leased with purchase option exercised in the third year</b>										
1	—	\$120.00	\$14.00	\$134.00	\$20.74	—	\$109.38	\$2,000.00	\$2,130.12	\$2,264.12
2	—	120.00	14.00	134.00	18.75	—	109.38	2,000.00	2,128.08	2,262.08
3	\$525.00 <sup>b</sup>	120.00	14.00	659.00	16.64	—	109.38	—	126.02	785.02
4	125.00 <sup>c</sup>	88.50	14.00	227.50	14.59	\$5.76 <sup>d</sup>	109.38	—	129.73	357.23
5	125.00	81.00	14.00	220.00	12.54	4.95	109.38	—	126.87	346.87
6	125.00	73.50	14.00	212.50	10.49	4.14	109.38	—	124.01	336.51
7	125.00	66.00	14.00	205.00	8.36	3.30	109.38	—	121.04	326.04
8	125.00	58.50	14.00	197.50	6.38	2.52	109.38	—	118.28	315.78
9	125.00	51.00	14.00	190.00	4.33	1.71	109.38	—	115.42	305.42
10	125.00	43.50	14.00	182.50	2.28	.90	109.38	—	112.56	295.06
Total fixed cost for 10 years									\$7,594.13	
<b>Machine purchased for \$5,750</b>										
1	\$1,552.50	\$345.00	\$14.00	\$1,911.50	\$19.88	\$7.85	\$109.38	—	\$137.11	\$2,048.61
2	402.50	251.85	14.00	668.35	17.92	7.07	109.38	—	134.37	802.72
3	402.50	227.70	14.00	644.20	15.95	6.30	109.38	—	131.63	775.83
4	402.50	203.55	14.00	620.05	13.98	5.53	109.38	—	128.89	748.94
5	402.50	179.40	14.00	595.90	12.02	4.74	109.38	—	126.14	722.04
6	402.50	155.25	14.00	571.75	10.05	3.96	109.38	—	123.39	695.14
7	402.50	131.10	14.00	547.60	8.08	3.19	109.38	—	120.65	668.25
8	402.50	106.95	14.00	523.45	6.12	2.42	109.38	—	117.92	641.37
9	402.50	82.80	14.00	499.30	4.15	1.64	109.38	—	115.17	614.47
10	402.50	58.65	14.00	475.15	2.18	.86	109.38	—	112.42	587.57
Total fixed cost for 10 years									\$8,304.94	

<sup>a</sup>List price \$6,000 and cash sale price \$5,750.

<sup>b</sup>Depreciation at the third year—20 percent of \$2,000 + \$2,000 - (\$400 + \$600 salvage value) + 8 years of use.

<sup>c</sup>Annual depreciation—\$2,000 - (20% of \$2,000 + \$600 salvage value) + 8 years of use.

<sup>d</sup>Tax 15 cents per \$100 assessed value.

## APPENDIX—Continued

TABLE 14

**INCOME OPPORTUNITIES FROM RELEASE CAPITAL FOR A MACHINE LEASED FOR \$2,000<sup>a</sup> PER YEAR WITH AN OPTION TO PURCHASE OR A MACHINE PURCHASED FOR \$5,750**

Year Used (1)	Opportunity earning of capital <sup>b</sup>											
	6 percent		10 percent		15 percent							
(1)	Available investment capital (2)	Capital earning @ 6% <sup>b</sup> (3)	Net tax reduction <sup>c</sup> (4)	Total annual income (5)	Available investment capital (6)	Capital earning @ 10% <sup>b</sup> (7)	Net tax reduction <sup>c</sup> (8)	Total annual income (9)	Available investment capital (10)	Capital earning @ 15% <sup>b</sup> (11)	Net tax reduction <sup>c</sup> (12)	Total annual income (13)
<b>Machine leased with purchase option exercised in the third year</b>												
1	\$3,750.00	\$225.00	\$388.87	\$613.87	\$3,750.00	\$375.00	\$358.87	\$ 733.87	\$3,750.00	\$562.50	\$321.37	\$ 883.87
2	2,363.87	141.83	404.32	546.15	2,483.87	248.39	383.01	631.40	2,633.87	395.08	353.67	748.75
3	910.02	54.60	125.58	180.18	1,115.27	111.53	114.19	225.72	1,382.62	207.39	95.02	302.41
4	1,090.20	65.41	37.86	103.27	1,340.99	134.10	24.13	158.23	1,685.03	252.75	40	253.15
5	1,193.47	71.61	36.05	107.66	1,499.22	149.92	20.39	170.31	1,938.18	290.73	-7.78	282.95
6	1,301.13	78.07	34.19	112.26	1,669.53	166.95	16.41	183.36	2,221.13	333.17	-16.83	316.34
7	1,413.39	84.80	32.25	117.05	1,852.89	185.29	12.15	197.44	2,537.47	380.62	-26.91	353.71
8	1,530.44	91.83	30.29	122.12	2,050.33	205.03	7.65	212.68	2,891.18	433.68	-38.08	395.60
9	1,652.56	99.15	28.25	127.40	2,263.01	226.30	2.82	229.12	3,286.78	493.02	-50.52	442.50
10	1,779.96	106.80	26.15	132.95	2,492.13	249.21	-2.33	246.88	3,729.28	559.39	-62.04	497.35
Total income for 10 years				\$2,162.91				\$2,989.01				\$4,476.63
<b>Machine purchased for \$5,750</b>												
1	\$ 337.92	\$20.28	\$337.92 <sup>b</sup>	\$337.92	\$ 337.92	\$ 33.79	\$100.61	\$ 337.92	\$ 337.92	\$ 50.69	\$337.92 <sup>d</sup>	\$ 337.92
2	461.51	27.69	101.29	128.98	472.32	47.23	93.38	144.61	485.84	72.88	92.25	147.92
3	590.49	35.43	99.19	134.62	616.93	61.69	93.94	155.63	650.97	97.65	86.75	165.13
4	725.11	43.51	97.03	140.54	772.56	77.26	90.28	167.54	835.37	125.31	80.67	184.40
5	865.65	51.94	94.79	146.73	940.10	94.01	86.38	180.39	1,041.35	156.20	73.94	205.98
6	1,012.38	60.74	92.48	153.22	1,120.49	112.05	82.22	194.27	1,271.49	190.72	66.49	230.14
7	1,165.60	69.94	90.09	160.03	1,314.76	131.48	77.78	209.26	1,528.70	229.30	58.22	257.21
8	1,325.63	79.54	87.62	167.16	1,524.02	152.40	73.05	225.45	1,816.22	272.43	49.04	287.52
9	1,492.79	89.57	85.07	174.64	1,749.47	174.95	67.99	242.94	2,137.69	320.65	38.85	321.47
10												
Total income for 10 years				\$1,667.43				\$1,992.41				\$2,497.19

<sup>a</sup>List price \$6,000.<sup>b</sup>Interest on saving in capital invested in productive enterprise.<sup>c</sup>Expense shown in Appendix Table 13, Columns (2) and (10) deducted from gross income for assumed 20 percent tax bracket plus avoidance of property tax of \$7.85 first year, \$7.07 second year and \$6.30 third year minus 20 percent of Column (9) above for income tax on capital earnings.<sup>d</sup>Expense deduction from gross income for assumed 20 percent tax bracket.

