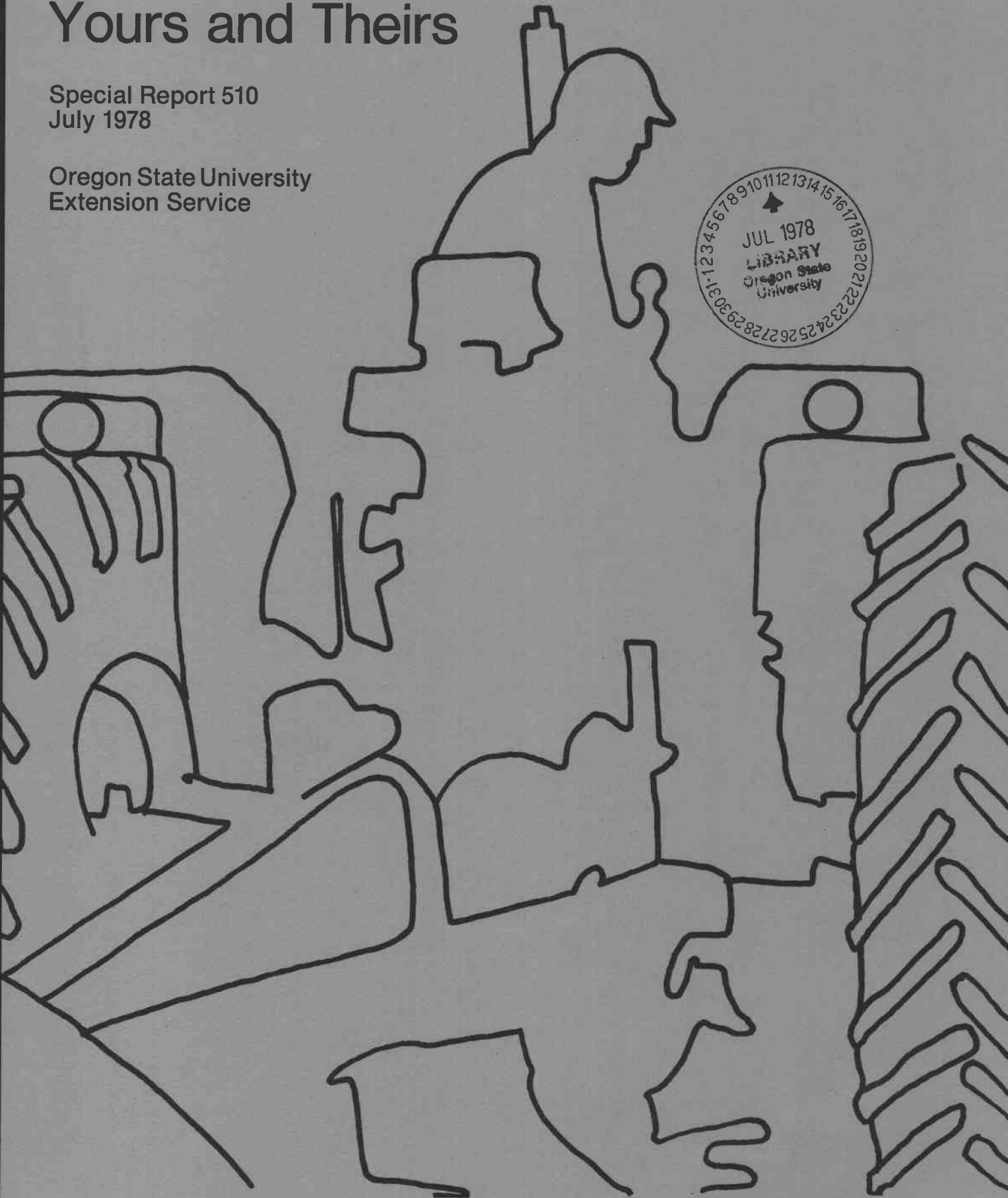


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Custom Rates for Farming Operations: Yours and Theirs

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CUSTOM RATES FOR FARMING OPERATIONS: YOURS AND THEIRS

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Many of Oregon's farmers and ranchers are involved in custom service operations. For some operators, hiring of custom services is one method of obtaining needed machinery services. For others, it's a way to market excess labor and equipment capacity, and for still others it's a full-time enterprise. The information in this report should be useful to both those purchasing and selling custom services. Specifically presented are:

- Guidelines and procedures for establishing custom rates
- Common custom rates for farm operations in eastern and western Oregon in 1977
- Analyzing whether machinery should be owned or custom hired

Custom operators face the problem of determining a charge for their services. An equitable custom charge would be the actual cost to do the job plus some reasonable amount for profit. The following discussion with accompanying machinery cost worksheet should be helpful in determining custom charges.

Custom operators incur two different types of costs: ownership and operating. Ownership costs include depreciation, taxes, insurance, interest on investment and, if appropriate, housing. These costs are fixed in that they are incurred whether the equipment is used little or much. Operating costs, on the other hand, vary directly with equipment use. Ownership and operating cost estimates are the basis of custom rates.

To assist in determining custom rates, custom operators should complete a Machinery Cost Worksheet (Exhibit 1) for each piece of equipment used in the custom operation. This worksheet is a simple budgeting framework which can be used to estimate annual ownership and operating costs associated with each piece of equipment. Under "Basic Information," the machine should be described (i.e., model, horsepower, width, etc.), new cost specified, and salvage value, estimated life and annual use estimated. Also specified is an annual interest rate. If the equipment is financed, the interest rate is the loan rate; otherwise, it is the rate of return on the owner's next best investment alternative--his opportunity cost of capital. Average investment is calculated by adding new cost and estimated salvage value and dividing this sum by two.

Ownership Costs

Under Ownership Costs, average annual depreciation, interest, taxes, insurance and housing costs are itemized and then totalled. Average ownership costs either per hour or acre are then estimated.

Depreciation

Depreciation is the loss of value due to age, use and obsolescence. Although depreciation is partly influenced by use, it is considered an ownership cost. To calculate average annual depreciation costs, subtract salvage value from new cost and then divide this figure by the number of years the machine is expected to be used. The estimated useful life should be consistent with salvage value. For example, a piece of equipment that is expected to be used for a few years and then traded would have a higher salvage value than if it were used for a longer period of time.

Machine _____ Salvage Value \$ _____

New Cost \$ _____ Interest rate _____ percent

Estimated life _____ years Annual use _____ hours, acres

Average investment: (_____ plus _____) \div 2 = _____ *

new cost salvage value

(Use this number in the blank spaces below where asterisk appears.)

1. Depreciation: $\left(\frac{\text{new cost}}{\text{salvage value}} \right) \div \frac{\text{years}}{\text{years}}$ \$ _____
2. Interest: Average Investment* _____ X _____ %
interest
3. Taxes: Average investment* _____ X _____ %
your tax rate
4. Insurance: Average investment* _____ X _____ %
5. Housing: $\frac{\text{square feet of space occupied}}{\text{annual building cost per square foot}}$ X _____

Total ownership cost of machine for year \$ _____

Average ownership cost per: hour, acre \$ _____

1. Fuel: _____ gallons per hour X \$ _____ per gallon X _____ hours \$ _____
2. Engine oil: _____ gallons per year X \$ _____ per gallon _____
3. Other lubricants and filters: _____
4. Repairs (parts, tires, plugs, repair & maintenance labor, etc.) _____
5. Operating labor: _____ hours X \$ _____ per hour _____
6. Other costs: (twine, wire, etc.) _____

Total operating costs for the year \$ _____

Average operating cost per: hour, acre \$ _____

AVERAGE ANNUAL MACHINE COST PER: HOUR, ACRE \$ _____

Interest

Interest costs are estimated by multiplying average investment by the interest rate. Each of these numbers appears as "Basic Information."

Taxes

Personal property tax is a cost that is based on equipment value. Since tax rates vary widely, your local tax rate times average investment (or assessed value) should approximate average annual taxes on the equipment.

Insurance

Insurance costs should be included as an ownership cost as risk of loss from fire, wind or other hazards must be borne by someone. If the custom operator does not want to bear this risk himself, he can pay an insurance company to bear it. Average annual insurance cost typically varies from 0.5 to 1.0 percent of the average investment. Select your appropriate insurance rate and multiply it times average investment.

Housing

Housing costs are incurred only if equipment is sheltered. This cost is estimated by determining the square footage required to house the equipment and then multiplying the estimate by the average annual cost of providing a square foot of shelter. In estimating this average annual cost for the building, depreciation, interest, taxes, insurance and repair costs need to be estimated (the same procedures as described in this Machinery Cost Worksheet can be used).

Annual Ownership Cost

The total average annual ownership cost of the machine is the sum of depreciation, interest, taxes, insurance and housing costs. This total is divided by annual use which appears as "Basic Information" to calculate the average ownership cost either per acre or hour of use.

Operating Costs

Under Operating Costs, fuel, oil, lubricants, repairs, operating labor, and other costs are itemized and then totalled. Average operating costs either per hour or acre are then estimated.

Fuel Costs

Fuel costs should be based on past records and personal experience. Gallons of fuel consumed per hour times current fuel price per gallon times hours or use determine annual fuel costs.

Engine Oil and Other Lubricants and Filters

These costs also should be based on past records. Gallons of oil used per year times current oil price per gallon determines annual oil costs. Quantities of lubricants and filters times their current prices yield annual lubricant and filter costs.

Repair Costs

Repair costs depend upon a number of variables such as type of machinery, skill of operator, nature of work, hours of use, etc. The amount of regular maintenance also affects repair costs. Repair costs should be based on past records and personal experience. In estimating these costs, remember the value of the operator's labor used in making repairs or maintenance should be added to the expenditure for parts and service labor.

Operating Labor

Since the custom operator usually operates his equipment and in some custom operations provides added labor, operating labor costs are important costs.

Annual labor costs are estimated by multiplying estimated labor hours per year times a labor charge per hour. Estimates of labor hours should exceed annual use hours of the equipment because of added labor in travel and equipment preparation. The labor charge should reflect the operator's return to labor in its best productive use.

Other Costs

Other costs, including twine, wire, etc., which are supplied with the custom operation are estimated on an annual basis. Past records and personal experience should serve as a guide in making these estimates.

Annual Operating Cost

Total operating cost of the machine for the year is the sum of fuel, engine oil, lubricant and filter, repair, operating labor, and other costs. This total is divided by annual use to calculate the average operating cost either per acre or hour of use.

Average Annual Machine Cost

The Machinery Cost Worksheet is completed by calculating average annual cost. This cost is the sum of average annual ownership plus annual operating costs. It represents your estimate of the total cost, either on a per acre or hour of use basis, for this piece of equipment. Included in this cost is a return to equipment investment and operator labor.

Setting Custom Rates

Knowledge of all costs involved in equipment operation is important to the operator when establishing custom rates. However, not all costs are relevant to all operators. The commercial custom operator must recover all costs, including opportunity cost and full replacement cost of equipment, when setting custom rates. On the other hand, a farmer doing custom work to utilize excess

machine capacity would only have to cover operating costs as he already has incurred ownership costs. Any higher charge would help recoup part of the ownership costs.

In determining specific rates, custom operators may also want to include an allowance for risk and a return to management. Differences in field and crop conditions and acreage involved will also influence specific rates. Supply and demand for custom services in your operating area, as well as timing and quality of your work, should also be considered when setting rates.

Written Contracts

In order to avoid any misunderstanding concerning the terms and conditions of an agreement to do custom work, there should be a written contract between both parties. The contract should include such items as the charge for the work done (by the units to be used--such as dollars per acre, per bushel, etc.); how the work is to be done; where and how much work is to be done; when the work is to be performed or completed; and when payment will be made.

Contracts should also include all the terms of any incentive plans. If a different rate is used, depending upon yield for example, the rates for specific yields should be specified in the contract. If there are minimum quality standards set, or if an incentive system based on quality is set, these standards should also be explained in the contract. The written contract need not be a long, complicated document but should contain sufficient detail so that both those doing custom and those hiring custom work completely understand the terms and conditions of the agreement. A sample contract form is illustrated in Exhibit 2.

Exhibit 2
CUSTOM WORK CONTRACT

This custom work contract is entered between _____
(custom operator)
and _____ the ____ day of 19___. It applies to the following
(crop owner)
crop(s) _____ and crop year(s) _____.

Terms and Conditions

Specifying charges, operations performed, where work is to be performed,
how much work is to be done, when work is to be performed. List quality
standards and incentives, if any.

_____, _____
Signature of crop owner date

_____, _____
Signature of customer operator date

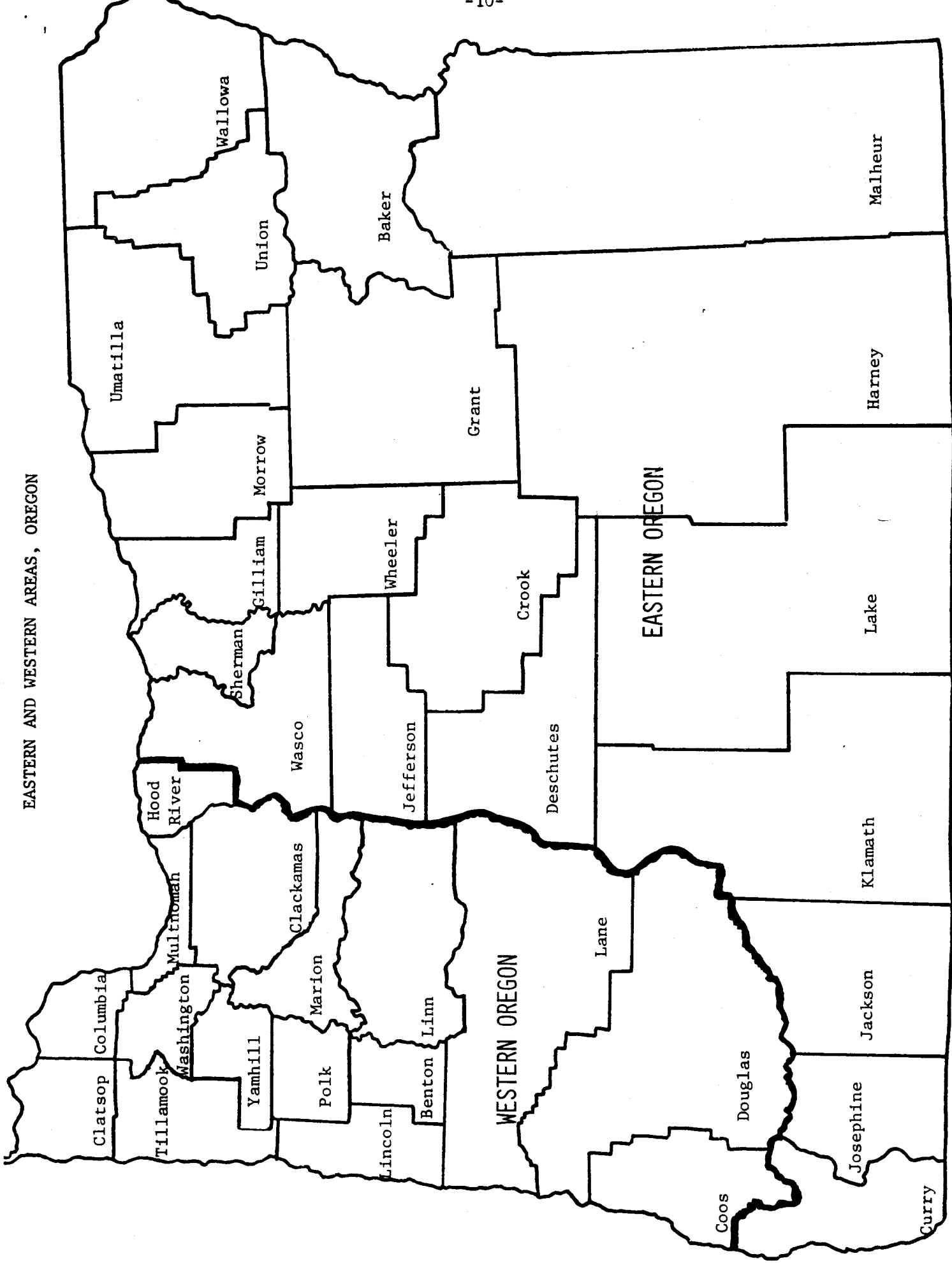
CUSTOM RATES FOR FARM OPERATIONS IN EASTERN AND WESTERN OREGON

Custom rates vary with the availability of custom operators in an area, land characteristics, yield, acreage and other conditions associated with the operation. Rates reported here are obtained from a survey of custom operators in the various counties of the state during early spring 1977. Custom operators by county were identified by local county Extension staffs. Rates anticipated for the 1977 year were reported. A range in rates, rather than average rates, is presented because of the variability in the rates reported. Custom rates are reported by operation and crop for eastern and then western Oregon. Counties in these two areas are identified in the state map on the following page.

OWN OR CUSTOM HIRE

The decision to hire custom service or own the necessary power and equipment, assuming no differences in returns, can be analyzed by comparing the costs of the two alternatives. Charges for equipment either on an acre or hour basis associated with owning the necessary equipment can be determined by using the Machinery Cost Worksheet which was discussed earlier. One difficulty which might be encountered in completing this worksheet is that of estimating operating costs if you have no prior experience operating this equipment. This type of information, however, might be available from machinery dealers, neighboring farmers, and/or your local Extension staff. Once the total annual cost of owning equipment either on a per acre or hour basis is determined, it can be compared against custom service charges expressed on the same basis, to determine which choice is most economical.

EASTERN AND WESTERN AREAS, OREGON



EASTERN OREGON - 1977

If you cannot find a rate under operation, check under specific crops.

<u>Operation</u>	<u>Charge</u>
Bale hay (wire)	\$8.00/ton
Chisel	6.20-8.20/acre
Chop	See specific crops
Combine	\$ 12-20/acre Hauling to farm storage or nearby elevator often provided
Cultivate	3.25-3.75/acre
Disk	4.75-5.25/acre
Drill	3.50-4.25/acre
Fertilize - Ground rig	1.70-3.00/acre
Harrow and roll	3.25-3.75/acre
Haul	See specific crops
Plow	6-8/acre
Rodweed	3-4/acre
Rototill	12.50-14.50/acre
Spray	
Aerial	
Field crops	
Helicopter	2.50-5.00/acre
Fixed wing	1.75-3.50/acre Excluding chemicals
Orchards	7-10.50/acre Higher rates include chemicals
Ground rig	
Field crops	1.50-3.50/acre Excluding chemicals
Stack bales	4/ton in field, 15-20¢/bale
Swath hay	5.75-7.00/acre
Swath/bale/stack	\$17-30/ton

Eastern Oregon, Cont.

EASTERN OREGON - BY CROP

Fruit

Charge

Spray-aerial-fixed wing or helicopter	\$7-10.50/acre	Higher rates include chemicals
Haul	1.00-1.20/loaded mile	
		Includes loading and unloading within 50 mile radius

Grain (wheat and barley)

Plow	6-8/acre	
Disk	4.75-5.25/acre	
Rodweed	3-4/acre	
Drill	3.50-4.25/acre	
Spray		
Aerial - Helicopter	2.50-5.00/acre	
Fixed wing	1.75-3.50/acre	Excluding chemicals
Ground rig	1.50-3.50/acre	
Fertilize - Ground rig	1.70-3.00/acre	
Combine	12-20/acre	Hauling to farm storage or nearby elevator often provided
Haul	.90-1.50/ton	Less than 10 miles
	.055-.07/ton-mile	
	.90-1.10/mile	Rates may be lowered \$.30 over 100 miles

Hay (all types)

Swath	5.75-7.00/acre	
Bale (wire)	8.00/ton	
Stack in field	4/ton, 0.15-.20/bale	
Swath/bale/stack	17-30/ton	
Chop and haul	10-14/ton	Includes wagons, extra driver and short hauls

Mint

Chop/haul/distill	\$1.75-2.25/lb. Oil distilled
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WESTERN OREGON - 1977

If you cannot find a rate under operation, check under specific crops.

<u>Operation</u>	<u>Charge</u>
Bale	\$10-12/ton
Combine	
Small grains	15-18.50/acre
	9-11/acre plus 1.75-2.25/ton
Seed crops	25-35/hr.
Cultimulch	4.50-10/acre
Disk	4.50-5/acre
Drilling grass seed with fertilizer	9-11/acre Hauling seed & fertilizer often included
Fertilize	
Ground rig	2-3.50/acre Hauling sometimes included, may be additional .20-.30 charge/acre for applications over 300 lbs./acre.
Aerial - Fixed wing	3-4.50/acre Hauling frequently included
Harrow and roll	2.75-3.25/acre
Mow-condition	6-8/acre
Mow or mow-condition/rake/bale	17.50-22.50/ton
Plant corn	13-17.00/acre Seed provided
Plow	7-7.50/acre, 28-32/hr.
Rake	1.75-2.25/acre
Rototill	15.50-18/hr.
Spray	
Ground rig	2.00-3.50/acre, 17.50-22.50/hr.
Orchards	3.50-4.50/acre Hauling often included
Aerial - Fixed wing	
Field crops	2.75-3.25/acre
Orchards	\$7-8/acre Hauling often included

Western Oregon, Cont.

<u>Operation</u>	<u>Charge</u>
Springtooth	\$2.75-3.25/acre
Stack	0.13-.17/bale, 4.50-5.50/ton
Subsoil	6-8/acre
Swath	4-5/acre
Swath/bale	17.50-22.50/ton
Wheel harrow	4.50-10/acre

WESTERN OREGON BY CROP

Bush Beans

Harvest	\$22-25/graded ton
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Cherries

Mechanical harvest	.03-.04/lb. Hauling and loading included, rates vary with yield and distance
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Plums

Mechanical harvest	.04-.05/lb. Hauling and loading included, rates vary with yield and distance
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Sweet Corn

Top	2.50-5.00/acre
Pick	\$4.75-5.25/ton

Average ownership and annual operating costs of owning equipment and custom service charges can also be used to determine a break-even acreage or use for a particular piece of equipment. The break-even acreage is that level of use where the total annual cost of owning equipment is equal to the custom charge. That is, if the acreage over which the equipment is to be used is less than the break-even average, it is less costly to purchase custom services; if more, it is less costly to own the equipment. Break-even acreage can be determined from the following equation:

$$\text{Break-even acreage} = \frac{\text{Total average annual ownership cost of owned equipment}}{\text{Custom rate charge per acre} - \text{operating cost per acre of owned equipment}}$$

The Decision

After either or both of the above comparisons, a decision is in order. But first, remember there are several other considerations which could influence the final decision.

The biggest advantage of custom hiring is that the need to make a large investment is eliminated; hence, limited capital can be used in other ways. Also, custom operators typically furnish additional labor with the necessary skills to operate the machine. This, however, may be a disadvantage to the farmer who is not able to put unused labor to profitable use.

Timeliness is often important to the farmer. Delays in planting and harvest are often costly, and small farmers may experience delays waiting for custom operators. Also, quality of work of the custom operator must be considered.

Excess machine capacity might be justified as a hedge against an adverse year. But, excess capacity has a cost, and it should be carefully considered in the final decision.

694



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