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Machinery Management VIII– Setting Custom Rates

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The charge for doing custom work, the custom rate, varies from one locality to another and is influenced by available competition. The custom operator, who makes his living doing custom work for others, charges a custom rate which includes:

1. Overhead, or fixed, cost
2. Operating, or variable, cost
3. Risk and profit cost.

For neighbors trading work or a farmer who does work for his neighbor and only intends to recover expenses, risk and profit cost is not included. The risk and profit cost ranges from 20 to 50 percent of the overhead cost, depending on risk to the machine due to field condition, type of crop, etc.

Repair and maintenance are usually handled as operating costs since they are influenced by the amount of use. For custom rate calculation, however, they are included with the overhead cost and are estimated as a percentage of the initial list price of the machine.

The unit overhead cost ($/acre) is obviously influenced by the annual use of the machine. The unit cost decreases as annual use increases.

Example: Assume that a farmer buys a diesel-powered combine with initial list price of $65,000. He plans to use the machine to harvest 400 acres of wheat and 800 acres of soybeans each year. He expects his average actual field capacity to be 5 acres per hour for both crops. If diesel fuel costs $1.00 per gallon, an economic life of 10 years is assumed, and he feels that a risk and profit factor of 30 percent is sufficient, what should he charge per acre for custom work?

Total annual overhead cost is estimated to be 20 percent of initial list price per year. (This percentage includes depreciation, interest on investment, tax, shelter and insurance. It is directly influenced by salvage value, economic life and interest rate.) Repair and maintenance is estimated to be 0.027 percent (or 0.00027) of list price per hour. Repair and maintenance factors suggested by Hunt[1] are given in Table 1 on the back.

Fuel consumption is estimated at 1 gallon per acre. Lubrication cost is estimated to be 15 percent of fuel cost. (If records are available, use estimates based on your own actual values.)

ANNUAL USE: $\frac{800 + 400 \text{ acres/yr}}{5 \text{ acres/hour}} = 240 \text{ hours/year}$

OVERHEAD COST Including repair and maintenance:

Depreciation, Interest on Investment, Tax, Shelter, Insurance } 0.20 x 65,000 = $13,000/year

Repair and Maintenance = 0.00027 x 65,000 = $17.55/hr, or $4,212/year

Total Overhead Cost = $13,000 + $4,212 = $17,212/year

$$\frac{\$17{,}212/\text{year}}{1{,}200 \text{ acres/year}} = \$14.35/\text{acre}$$

RISK AND PROFIT COST:

30% X (Total Overhead Cost) = .30 x 14.35 = $4.31/acre

OPERATING COST:

Fuel = 1 gallon/acre x $1/gallon = $1/acre

Lubrication = 15% X Fuel Cost = .15 x 1 = $0.15/acre

Labor (assumed to be $5/hour) = $1.00/acre

Total Operating Cost = $2.15/acre

CUSTOM RATE:

Overhead Cost + Risk and Profit Cost + Operating Cost

$14.35/acre + $4.31/acre + $2.15/acre = $20.81/acre

Table 1. Repair and Maintenance Costs, Percent of Initial List Price

Machine	*Average % P/100 hr*	*Total during Wear-out Life*
Tillage		
cultivator	6.0	150
disk harrow	6.5	168
one-way disk	5.0	125
disk plow	4.5	113
moldboard plow	7.0	175
spike-tooth harrow	4.0	100
spring-tooth harrow	6.0	120
Planting		
grain drill	8.0	96
row crop planter	7.0	84
Harvesting		
beet harvester	2.5	63
combine, 5-7 ft. trailed	4.5	90
combine, self-propelled	2.7	54
corn picker	3.2	64
cotton picker, drum-type	2.6	52
cotton stripper	2.0	40
forage blower	2.5	50
forage harvester, aux. eng.	2.4	48
forager harvester, PTO	2.9	58
hay baler, aux. eng.	2.2	55
hay baler, PTO	3.1	78
hay conditioner	4.0	100
mower	12.0	240
potato harvester, PTO	5.2	40
potato harvester, SP	3.6	28
rake, side-delivery	7.0	175
windrower, SP	4.0	100
Tractors and miscellaneous		
tractor, track-type	0.8	78
tractor, wheel-type	1.2	120
wagon, rubber-tired	1.8	90

[1]Hunt, Donnell. Farm Power and Machinery Management, 7th edition, pp. 66, Iowa State University Press. Ames, Iowa.

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