MOWING/JOB-COSTING

by R.K. Reynolds, Ph.D.

COVER STORY

ADDING MOWER AND OPERATOR COSTS WILL GIVE YOU A REASONABLY ACCURATE ESTIMATE OF HOW MUCH IT COSTS YOU TO MOW BY THE HOUR.

■ What does it really cost to mow? To begin with, no two businesses are likely to have identical mowing costs. Some may be fairly close to others, but many will be significantly different.

The detailed costs that make up total mowing cost, in all likelihood, will vary widely from one business to another.

Determining the cost to do something is difficult for many managers. There appears to be too much uncertainty, too many exceptions, too many unanticipated events to provide an accurate cost. The whole process is overwhelming.

Your job is to find an approach that works for you. I believe in biting off small pieces—I call it a building block method. It is a complete and integrated system that you can adopt and tailor to your particular needs or situation.

The elements to the system are really very simple. Most all questions involve (1) labor, (2) equipment and (3) materials. In addition, any business has something called (4) overhead, and most businesses strive to have something called (5) profit. These major five types of information can be developed using any system that works for you.

Starting out– The two major costs that make up total mowing cost are mower cost and operator cost.

Each category can be broken down into detailed costs such as (mower cost) depreciation, interest, gas and repairs; and (operator cost) wages, Social Security and insurance.

You therefore need a method for doing the best job you can in estimating these costs for your business. If you are interested in arriving at an hourly rate for mower cost that can be used in estimating the cost of particular jobs, Form 1 will give you the means to do that.

Since operator cost is often composed of something more than straight wages—such as the employer's share of Social Security, unemployment insurance, workman's compensation insurance and perhaps fringe benefits—we need another tool that will permit a reasonably accurate estimate to be made of

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FORM 1.
ESTIMATE OF ANNUAL MACHINE COST

LINE	AMOUNT
1. Purchase cost	$_____
2. Salvage value (usually 0)	$_____
3. Cost to be recovered (Line 1 minus Line 2)	$_____
4. Estimated years of life	_____
5. Hours of estimated annual use	_____
6. Cost recovery and interest factor (from accompanying table)	_____
7. Cost recovery and interest (Line 3 x Line 6)	$_____
8. Interest on salvage value (Line 2 x interest rate ___%)	$_____
9. Insurance, taxes, housing (Line 1 x 4%)	$_____
10. License (usually 0)	$_____
11. Total Fixed Cost (add Lines 7 thru 10)	$_____
12. Fixed Cost Per Unit (Line 11 divided by Line 5)	$_____
13. Fuel (gallons/hour x Line 5 x cost/gallon)	$_____
14. Oil, grease, anti-freeze (estimate)	$_____
15. Repairs including service labor, tires, etc, (estimate)	$_____
16. Total Variable Cost (add Lines 13 thru 15)	$_____
17. Variable Cost Per Unit (Line 16 divided by Line 5)	$_____
18. Total Annual Machine Cost (Line 11 plus Line 16)	$_____
19. **Total Cost Per Unit** (Line 18 divided by Line 5)	$_____

FORM 2.
LABOR COST ESTIMATING WORKSHEET

Name of employee_____ Title_____

LINE	COST ITEM	COST TO EMPLOYER
1.	Regular hours (hrs./wk. x no. weeks) ____ hrs.	_____
2.	Regular wages (Line 1 x rate/hr.) ____ hrs.	_____
3.	Overtime hours (hrs./wk. x no. weeks)	_____
4.	Overtime wages (Line 3 x rate/hr.)	_____
5.	Cash bonuses	_____
6.	Total adjusted cash wages (total Lines 2, 4 & 5)	_____
7.	Employer's share of Social Security (___% of Line 6)	_____
8.	Federal unemployment insurance	_____
9.	State unemployment insurance	_____
10.	Workman's compensation	_____
11.	Other	_____
12.	Total value of mandatory costs (total Lines 6 thru 10)	_____
13.	Value of insurance (life, dental, health)	_____
14.	Retirement (business contribution)	_____
15.	Uniform (purchase/rental/cleaning)	_____
16.	Educational expense	_____
17.	Transportation (mi./day x no. days x rate)	_____
18.	Other	_____
19.	Total value of fringe benefits (total Lines 13 thru 18)	_____
20.	Total Labor Costs (total Lines 6, 12 and 19)	_____
21.	Holiday hours ____ hrs.	
	Vacation hours ____ hrs.	
	Sick leave hours ____ hrs.	
	Total hours paid for but not worked (add above) ____ hrs.	
22.	Total hours (total Lines 1, 3 and 21)	_____
23.	**Total Individual Labor Costs Per Hour** (Line 20 divided by Line 22)	_____

FORM 3.
JOB COST ESTIMATE FORM

TYPE OF MACHINE	COST/HR.	HRS. ON JOB	MACHINE COST
1.			$
2.			$
3.			$
4.			$
5. Total machinery cost (add lines 1 thru 4)			$

LABOR FUNCTION	COST/HR.	HRS. ON JOB	LABOR COST
6.			$
7.			$
8.			$
9.			$
10. Total labor cost (add lines 6 thru 8)			$

MATERIALS	QUANTITY	UNITS	$/UNIT	MATERIALS COST
11.		x		$
12.		x		$
13.		x		$
14.		x		$
15. Total materials cost (add lines 11 thru 14)				$
16. Total direct cost (add lines 5, 10 and 15)				$
OVERHEAD AND CONTINGENCIES				
17. General overhead (15% of line 16)				$
18. Other				$
19. Total overhead/contingencies cost (add lines 17 and 18)				$
20. Total job cost estimate (add lines 16 and 19)				$
21. This job cost per hour (divide line 20 by number of hours)				$

COSTS *from page 8*

true labor cost per hour. Form 2 will give you the means to do that.

Now, the sum of the mower and operator costs, as derived through this process, will provide a reasonably accurate hourly estimate of the mowing function.

To make reasonably accurate and reliable mowing job cost estimates requires additional cost considerations like the cost to get men and equipment to the job site and a share of the business's overhead expenses (utilities, advertising, office rent, supplies).

Factors that impact significantly on the mowing function cost:

- wages paid;
- purchase cost of mower;
- how long mower will last;
- interest rate used for capital recovery;
- fringe benefits provided labor; and
- actual hours worked per year.

Factors that impact significantly on the mowing job cost:

- all of the above;
- distance to job; and
- level of overhead costs.

The Job Cost Estimate (Form 3) provides a way to pull all costs together to arrive at a cost estimate for a particular mowing job—which is, of course, greater than the cost of the mowing function alone.

When filling out Form 3, please note that the machinery category should be broken down by type of machine (42-inch walk-behind mower, string trimmer, pick-up truck, etc.). The labor category should be broken down by labor function (mowing, trimming, raking, etc.) and not by individual employee name. You might also note entries for overhead and contingencies. Generally, overhead costs run about 15% of direct costs, which you should add to the total.

I am appalled at the reports about people in your industry who do not know what it is costing them to do a job. Some, I'm told, don't even want to know. In the economic world, such an attitude can be fatal.

—Dr. R. K. Reynolds is associate professor emeritus in agricultural economics at Virginia Tech. This article is excerpted from presentations made at the 28th and 30th Virginia Turfgrass Conferences in January, 1988 and January, 1990.

ANNUITY OR CAPITAL RECOVERY CHART
(Annual charge for capital recovery and interest

YR.	8	10	12	14
1	1.0800	1.1000	1.1200	1.1400
2	0.5608	0.5762	0.5917	0.6073
3	0.3880	0.4021	0.4163	0.4307
4	0.3019	0.3155	0.3292	0.3432
5	0.2505	0.2638	0.2774	0.2913
6	0.2163	0.2296	0.2432	0.2572
7	0.1921	0.2054	0.2191	0.2332
8	0.1740	0.1874	0.2013	0.2156
9	0.1601	0.1736	0.1877	0.2022
10	0.1490	0.1627	0.1770	0.1917
11	0.1401	0.1540	0.1684	0.1834
12	0.1327	0.1468	0.1614	0.1767
13	0.1265	0.1408	0.1557	0.1712
14	0.1213	0.1357	0.1509	0.1666
15	0.1168	0.1315	0.1468	0.1628

Illustration:

$11,500.00	mower purchase price
-1,150.00	salvage (10%)
$10,350.00	capital to be recovered
x .2432	from table
$2,517.12	annual recovery (12%/6 yrs.)
138.00	12% int. on $1,150 salvage
$2,655.12	total capital recovery and interest annually