

Determining Labor Burden

In this chapter you will learn to determine the labor burden markup, which will help you better understand how to project these costs, whether they are to be used to bid a new job, price a change order, or project the cost to complete the project. In turn, this helps the general manager and owner determine the labor costs needed to prepare a general overhead budget.

To project costs or prepare a general overhead budget we must estimate the labor wages and burden for the employees. The estimated labor wages should include the wages paid to the employees, including all bonuses, and should include any anticipated raises that may occur during the budgetary period. Employees may be separated into two groups based on how their wages are calculated. The first group includes all employees who are paid an hourly wage based on the number of hours they work during the pay period. These employees are often referred to as hourly employees. To estimate the wages for hourly employees one must first estimate the number of hours each employee will work during an average pay period. Remember that pay rates for hourly employees may be different for overtime, holidays, and weekends. The wage rates for hourly employees and the rules governing overtime may be set forth by union contracts or government regulatory agencies. Federal Davis-Bacon wages—wage rates that must be used on contracts with federal funding—vary by state, county, and type of work being performed (for example, road work will have different wages than residential construction). These rates are published as General Decision by the U.S. Department of Labor. A sample General Decision is found in Figure 8-1. To ensure that you are using the correct General Decision for a specific project you should obtain the decisions from the contracting officer for the project. The total wages for an employee or group of employees is calculated by multiplying the number of hours by the wage rate for these hours and adding any anticipated bonuses.

FIGURE 8-1 General Decision*

GENERAL DECISION: **UT20080007** 04/11/2008 UT7

Date: April 11, 2008
 General Decision Number: **UT20080007** 04/11/2008

Superseded General Decision Number: UT20070007

State: Utah

Construction Type: Building

County: Salt Lake County in Utah

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single-family homes and apartments up to and including 4 stories).

Modification Number	Publication Date
0	02/08/2008
1	02/15/2008
2	03/07/2008
3	03/14/2008
4	04/04/2008
5	04/11/2008

ASBE0069-001 09/01/2006

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR (Includes insulators and abatement).....	\$ 22.84	9.70

SCOPE OF WORK:

Includes Application and Abatement of all Insulating Materials, Protective Coverings, Coatings, Finishings, and Abatement to all Types of Mechanical Systems.

BOIL0182-002 10/01/2007

	Rates	Fringes
BOILERMAKER.....	\$ 27.86	18.76

CARP2834-002 05/01/2001

	Rates	Fringes
MILLWRIGHT.....	\$ 22.22	5.78

ELEC0354-004 06/01/2007

	Rates	Fringes
ELECTRICIAN (Includes Low-Voltage and Fiber-optic Work).....	\$ 26.72	6.25+4.3%

*Downloaded from <http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=Davis-Bacon&docid=UT20080007> on April 17, 2008.

FIGURE 8-1 continued

IRON0027-010 01/01/2006		
	Rates	Fringes
Ironworkers; Structural, Reinforcing and Ornamental.....	\$ 21.84	9.92

LABO0295-004 07/01/2007		
	Rates	Fringes
Laborer, Common.....	\$ 16.90	4.45

PAIN0077-001 08/02/2007		
	Rates	Fringes
Painter, Brush, Spray, and Roller.....	\$ 17.90	4.80

PLAS0568-001 07/01/2007		
	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 22.70	4.86

PLUM0140-001 08/21/2007		
	Rates	Fringes
PLUMBER (Including HVAC Work)....	\$ 27.07	8.90

* SFUT0669-001 04/01/2008		
	Rates	Fringes
SPRINKLER FITTER.....	\$ 28.35	13.55

SHEE0312-004 07/01/2007		
	Rates	Fringes
Sheet Metal Worker (Includes HVAC Work and Architect/Roofing).....	\$ 25.91	8.78

SUUT1994-001 07/12/1994		
	Rates	Fringes
Power Equipment Operator Backhoe.....	\$ 12.09	
ROOFER, Including Built-Up, Composition, and Single-Ply Roofs.....	\$ 12.75	

WELDERS - Receive rate prescribed for craft in performance of operation to which welding is incidental.		

(continued)

FIGURE 8-1 continued

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1. Has there been an initial decision in the matter? This can be

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey-related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted, because those regional offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2 and 3 should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2. If the answer to the question in 1 is yes, then an interested party (a party affected by the action) can request a review and reconsideration from the wage and hour administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

FIGURE 8-1 continued

3. If the decision of the administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

4. All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Example 8-1: The secretary for your company makes \$8.50 per hour and last year was paid for 2,220 hours of work and 120 hours of vacation. The secretary is expected to work the same number of hours this year. Time-and-a-half is paid on any work over 40 hours per week. In the past the secretary has received a \$200 Christmas bonus. Determine the average wages paid to the secretary during a one-year period.

Solution: The secretary will be paid \$8.50 per hour on 2,080 hours (52 week × 40 hours/week) and \$12.75 per hour (\$8.50 × 1.5) on the remaining 260 hours (2,220 hours of work + 120 hours of vacation – 2,080 hours paid at regular rate). The wages, including bonus, are calculated as follows:

$$\begin{aligned} \text{Wages} &= (2,080 \text{ hours})(\$8.50/\text{hour}) + (260 \text{ hours}) \\ &\quad (\$12.75/\text{hour}) + \$200 \\ \text{Wages} &= \$21,195 \end{aligned}$$

The second group includes all employees who are paid a flat rate per pay period and are known as salaried employees. To estimate the wages for salaried employees you need not know how many hours each employee works. The total wages for an employee or group of employees is calculated by summing the salaries of the employees and adding any anticipated bonuses.

Burden includes all payroll taxes, unemployment insurance, workers' compensation insurance, general liability insurance, and fringe benefits or their cash equivalent paid for by the employer. Let's look at how labor burden is calculated.

CASH EQUIVALENTS AND ALLOWANCES

Cash equivalents and allowances include cash paid in lieu of providing fringe benefits or cash paid as an allowance. In some cases where a company is required to provide fringe benefits, it may be allowed to pay the cash equivalent of those

benefits. Allowances are used to help the employee cover out-of-pocket associated job expenses. For example, a company located in an out-of-the-way place or a company that requires its employees to use their personal vehicles during work hours may pay the employees a vehicle allowance. An allowance differs from reimbursing the employees for expenses or mileage because it is not based on the actual cost or mileage. Reimbursements are not considered part of the labor wages and burden but are costs that can be billed to the appropriate general overhead budget category. For example, mileage reimbursement is part of the Car and Truck Expense line item.

Cash equivalents and allowances are treated as regular wages for the purpose of payroll taxes, unemployment insurance, workers' compensation insurance, and general liability insurance.

Example 8-2: The secretary in Example 8-1 is paid a \$100 per month vehicle allowance to cover use of a personal vehicle for company business. Determine the annual wages, including allowances paid to the secretary, during a one-year period.

Solution: From Example 8-1, the secretary is paid \$21,195 plus allowances. The wages with allowances are calculated as follows:

$$\text{Allowances} = \$100/\text{month} (12 \text{ month}/\text{year}) = \$1,200/\text{year}$$

$$\text{Wages and Allowances} = \$21,195/\text{year} + \$1,200/\text{year}$$

$$\text{Wages and Allowances} = \$22,395/\text{year}$$

PAYROLL TAXES

The Federal Insurance Contributions Act (FICA) requires employers to pay social security and Medicare taxes for each employee. For the year 2007, the employer pays a social security tax of 6.2% of each employee's first \$97,500 in wages.³² Although the tax rate has not changed for many years, the amount of wages on which social security is paid increases yearly. Be sure to check with your tax advisor or the Internal Revenue Service for the current rates. For the year 2007, the employer pays a Medicare tax of 1.45% of the employee's entire wages.³³ The employee is required to match these payments. The social security and Medicare taxes paid by the employee are deducted from his or her wages and are not a cost to the employer. Cash equivalents and allowances must be included when

³²See IRS, *Circular E, Employer's Tax Guide*, Publication 15, 2007, p. 2.

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calculating these taxes; however, in some cases the amount the employee pays for benefits may be excluded.

Example 8-3: Determine the social security and Medicare taxes paid by the employer during the 2007 year for the secretary in Example 8-2. The secretary pays \$150 per month for health insurance, which is not subject to social security and Medicare taxes.

Solution: The wages used in calculating the social security and Medicare tax must include the allowances paid to the secretary. From Example 8-2 the annual wages, including allowances, for the secretary are \$22,395. This may be reduced by the \$1,800 ($\$150/\text{month} \times 12 \text{ months}$) per year the secretary pays for health insurance. The secretary's wages that are subject to social security and Medicare taxes are \$20,595 ($\$22,395 - \$1,800$). Because the secretary's wages are less than \$97,500, the employer must pay 6.2% for social security tax on all of the secretary's wages. The social security taxes are calculated as follows:

$$\text{Social Security Tax} = 0.062(\$20,595/\text{year}) = \$1,276.89/\text{year}$$

The Medicare tax is 1.45% of the secretary's wages and is calculated as follows:

$$\text{Medicare Tax} = 0.0145(\$20,595/\text{year}) = \$298.62/\text{year}$$

The secretary will have these same amounts deducted from his or her paycheck. The government will receive \$2,553.78 ($\$1,276.89 \times 2$) per year in social security taxes and \$597.24 ($\298.62×2) per year in Medicare taxes because of the secretary's employment.

Example 8-4: Determine the social security and Medicare taxes paid during the year 2007 on a general manager whose annual wages are \$125,000.

Solution: Because the general manager's wages are more than \$97,500, the employer must pay 6.2% on \$97,500 for social security tax. The social security taxes are calculated as follows:

$$\text{Social Security Tax} = 0.062(\$97,500/\text{year}) = \$6,045/\text{year}$$

The Medicare tax is 1.45% of the general manager's wages and is calculated as follows:

$$\text{Medicare Tax} = 0.0145(\$125,000/\text{year}) = \$1,812.50/\text{year}$$

The general manager will have these same amounts deducted from his or her paycheck.

UNEMPLOYMENT INSURANCE

By law, employers are required to pay federal unemployment tax (FUTA) and state unemployment tax (SUTA) if a state program exists.

For the year 2007 the federal unemployment tax rate was 6.2% on the first \$7,000 of each employee's wages paid during the year.³⁴ When a company pays into a state unemployment program, the company may reduce its FUTA liability by the amount paid into the program. These reductions are limited to 5.4% of the company's FUTA liability. To receive the entire 5.4% credit, a company must pay its state unemployment tax on time. When eligible for the full credit, the federal unemployment tax rate for a company is reduced to 0.8% of the first \$7,000 of each employee's wages paid during the year.

A company's state unemployment tax rate is based in part on its claims history and must be obtained from the state agency that administers the state unemployment tax. Companies may reduce their SUTA rate by reducing the unemployment claims against them. This is done by reducing the number of employees they lay off, which may be accomplished by hiring temporary workers for peak demands, proper use of overtime, and by proper labor resource leveling and allocation. The key is to keep labor resource demands as constant as possible through good planning and scheduling. The maximum rate a state charges and the amount of the employees' wages that are subject to tax vary from state to state. For example, for the year 2007, Texas' minimum rate was 0.29% and the maximum rate was 7.7%, and companies paid these rates on the first \$9,000 of each employee's wages paid during the year. Arizona's minimum rate was 0.02% and the maximum rate was 5.40%, and companies paid these rates on the first \$7,000 of each employee's wages paid during the year. Utah's minimum rate was 0.30% and the maximum rate was 9.3%, and companies paid these rates on the first \$25,400 of each employee's wages paid during the year.

Example 8-5: Determine the state unemployment and federal unemployment taxes paid by the employer during the 2007 year for the secretary in Example 8-2. The company's state unemployment rate is 2.0% on the first \$9,000. All state unemployment taxes were paid on time, and the employer can take the full 5.4% credit against his or her FUTA liability.

Solution: The wages used in calculating the unemployment taxes must include the allowances paid to the secretary. From Example 8-2 the annual wages, including allowances, for the secretary are \$22,395. Because the secretary's wages are more than \$9,000, the employer must pay 2.0% on \$9,000 for state unemployment tax. The state unemployment tax is calculated as follows:

$$\text{SUTA} = 0.02(\$9,000/\text{year}) = \$180.00/\text{year}$$

³⁴See IRS, *Circular E, Employer's Tax Guide*, Publication 15, 2007, p. 28.

The company may take the entire 5.4% credit, thus reducing the federal unemployment rate to 0.8% on the first \$7,000. The federal unemployment tax is calculated as follows:

$$\text{FUTA} = 0.008(\$7,000/\text{year}) = \$56.00/\text{year}$$

The total unemployment tax paid is \$236.00 (\$180.00 + \$56.00). The underlying assumption in these calculations is that the same person fills the secretary position for the entire year.

Example 8-6: The secretary in Example 8-5 was replaced during the year. The first secretary was paid \$18,095 and the replacement secretary was paid \$4,100. Determine the state unemployment and federal unemployment taxes paid by the employer during the 2007 year for the secretary position. The company's state unemployment rate is 2.0% on the first \$9,000. All state unemployment taxes were paid on time, and the employer can take the full 5.4% credit against his or her FUTA liability.

Solution: Because the first secretary's wages are more than \$9,000, the employer must pay 2.0% on \$9,000 for state unemployment tax. The state unemployment tax for the first secretary is calculated as follows:

$$\text{SUTA}_1 = 0.02(\$9,000/\text{year}) = \$180.00/\text{year}$$

Because the replacement secretary's wages are less than \$9,000, the employer must pay 2.0% on the wages paid (\$4,100) to the replacement secretary for state unemployment tax. The state unemployment tax for the replacement secretary is calculated as follows:

$$\text{SUTA}_R = 0.02(\$4,100/\text{year}) = \$82.00/\text{year}$$

The total state unemployment tax paid for the secretarial position is \$262.00 (\$180.00 + \$82.00) per year.

The company may take the entire 5.4% credit, thus reducing the federal unemployment rate to 0.8% on the first \$7,000 for each employee. The federal unemployment tax for the first secretary is calculated as follows:

$$\text{FUTA}_1 = 0.008(\$7,000/\text{year}) = \$56.00/\text{year}$$

The federal unemployment tax for the replacement secretary is calculated as follows:

$$\text{FUTA}_R = 0.008(\$4,100/\text{year}) = \$32.80/\text{year}$$

The total federal unemployment tax paid for the secretarial position is \$88.80 (\$56.00 + \$32.80) per year.

The total unemployment tax paid for the secretary's position is \$350.80 (\$262.00 + \$88.80) per year. The increase of \$114.80 (\$350.80 - \$236.00) is due to turnover in the secretarial position.

WORKERS' COMPENSATION INSURANCE

By law all employers are required to provide their employees with workers' compensation insurance. Workers' compensation insurance is governed by the individual states and requirements may vary from state to state.

Workers' compensation insurance covers reasonable medical costs as well as some of the lost wages for employees who are injured on the job or who contract an occupational illness. For employees who are killed on the job, workers' compensation insurance may pay part of the burial expense and may provide surviving family members a weekly or monthly benefit.

The cost of the insurance is to be paid entirely by the employer. The premium is based on the gross payroll, the type of work performed by the employees, the company's accident history, and other factors. Employees are grouped into a standard set of classifications set by the National Council on Compensation Insurance (NCCI) based on the type of work they do. The NCCI sets a standard lost cost factor for each job classification, which is modified by the individual states to take into account local variances in losses and regulations. The premium rate is based on the lost cost factor and is expressed in dollars per \$100 of payroll.

The premium rate may be modified by an experience modifier, which is done by multiplying the premium rate by the experience modifier. Experience modifiers are calculated by NCCI and reflect the relationship between the company's actual losses and the expected losses for similar companies. An experience modifier greater than one indicates that a company had higher than expected losses, whereas an experience modifier of less than one indicates that a company had lower than expected losses. By implementing good safety practices, holding safety meetings, and providing employees with incentives for working safely, companies can reduce the severity and frequency of accidents. This translates into a lower experience modifier, which reduces the company's workers' compensation insurance costs. Smaller companies are often assigned an experience modifier of 1 regardless of their accident history. The experience modifiers are based on the past three years' losses not including the most recent policy year. For example, the experience modifier for the year 2009 would be based on the years 2005, 2006, and 2007. For companies to receive an experience modification they must meet a minimum level of premiums, thus companies with small payrolls are often not given experience modifiers. Experience modifiers may be as low as 0.6 and as high as 2.0.

The workers' compensation insurance premiums may also be adjusted based on the safety practices of the company. Other discounts may be offered for such items as policy size.

Throughout the year, companies pay workers' compensation insurance premiums based on the estimated payroll. At the end of the year or more frequently, the insurance carrier will audit the payroll of the company and make adjustments in the premiums to reflect the actual payroll. It is important to note that this is an adjustment in the total premium, not the premium rate.

Example 8-7: Determine the cost of workers' compensation insurance for the secretary in Example 8-2. The company's workers' compensation insurance rate for office personnel is \$1.24 per \$100.00 in wages.

Solution: The wages used in calculating the workers' compensation insurance must include the allowances paid the secretary. From Example 8-2 the annual wages, including allowances, for the secretary are \$22,395. The workers' compensation insurance cost is calculated as follows:

$$\text{Workers' Compensation} = (\$1.24/\$100) (\$22,395/\text{year})$$

$$\text{Workers' Compensation} = \$277.70/\text{year}$$

GENERAL LIABILITY INSURANCE

General liability insurance protects the company against claims due to negligent business activities and failure to use reasonable care. The types of claims include bodily injury, property damage or loss, and other personal injury such as slander or damage to reputation. Like workers' compensation insurance, the cost of the insurance is based on gross revenues by workers' class.

Throughout the year, companies pay general liability insurance premiums based on the estimated payroll. At the end of the year or more frequently, the insurance carrier will audit the payroll of the company and make adjustments in the premiums to reflect the actual payroll.

Example 8-8: Determine the cost of general liability insurance for the secretary in Example 8-2. The company's general liability insurance rate for office personnel is 0.51% of wages.

Solution: The wages used in calculating the general liability insurance must include the allowances paid to the secretary. From Example 8-2 the annual wages, including allowances, for the secretary are \$22,395. The general liability insurance cost is calculated as follows:

$$\text{Liability Insurance} = 0.0051 (\$22,395/\text{year}) = \$114.21/\text{year}$$

INSURANCE BENEFITS

As part of the employee benefit package, the employer may provide health, dental, life, and disability insurance for which employees and their families are beneficiaries. The employer may pay the entire cost of the benefits, split the cost with employees, or require employees to pay the entire amount. The amount the employees pay is deducted from their wages and does not represent a cost to the employer. The part of the costs that is paid by the employer is a real cost to the employer and needs to be included in the cost of the benefits.

Example 8-9: Determine the cost of health insurance for the secretary in Example 8-2. The company pays \$100 per month toward health insurance for its employees. An additional \$250 is deducted from the employee's paycheck.

Solution: The cost of the health insurance only includes those costs paid by the employer and is calculated as follows:

$$\text{Health Insurance} = \$100/\text{month}(12 \text{ month}/\text{year}) = \$1,200.00/\text{year}$$

RETIREMENT

As part of the employee benefit package, the employer may provide a traditional pension plan, pay funds to a union to provide pension benefits, or participate in a profit-sharing plan such as a 401(k). Like insurance benefits, the employer may pay all, part, or none of the cost of the retirement. The amount the employees pay are deducted from their wages and do not represent a cost to the employer. The part of the cost that is paid by the employer is a real cost to the employer and needs to be included in the cost of the benefits.

Example 8-10: Determine the cost of retirement for the secretary in Example 8-2. For retirement the company has provided the employee with access to a 401(k) plan and matches the employee's contributions to the plan at a rate of \$0.50 per \$1.00 contributed by the employee on the first 6% of the employee's wages—including allowances—for a maximum matching contribution of 3% of the employee's wages. The secretary is expected to make a wage contribution of at least 6% to the 401(k) plan.

Solution: From Example 8-2 the annual wages, including allowances, for the secretary are \$22,395. The cost of retirement is calculated as follows:

$$\text{Retirement} = (\$0.50/\$1.00)0.06(\$22,395/\text{year}) = \$671.85/\text{year}$$

UNION PAYMENTS

Employee unions often require the employer to make payments directly to the union which are used to provide benefits and training for union employees. Payments to unions are governed by the contract between the company and the union. Union costs paid by the employer should be included in the cost of the benefits. Unions may also require the employer to deduct union dues from the employees' paycheck. The amounts the employees pay do not represent a cost to the employer and should not be included in the cost of the benefits.

OTHER BENEFITS

The employer may provide other benefits not covered in one of the categories mentioned earlier. Other benefits could include reimbursement for school or training, professional society dues for the employee, and so forth. One must be careful that taxable items, such as vehicle allowances, are treated as allowances subject to taxes, rather than as benefits. Where possible the costs of these benefits should be included.

The total cost of the employee's burden may be determined by summing the individual burden items. The total cost may then be divided by the wages paid to the employee to get the burden markup. For an hourly employee, the average hourly cost may be determined by dividing the total cost of the employee during the period by the number of hours worked during the period.

Example 8-11: Determine annual cost, average hourly cost, and the burden markup for the secretary in Example 8-1 using Examples 8-2, 8-3, 8-5, 8-7, 8-8, 8-9, and 8-10. Assume the same person fills the secretary position during the entire year.

Solution: From Examples 8-1, 8-2, 8-3, 8-5, 8-7, 8-8, 8-9, and 8-10 we calculated the following costs:

Wages = \$21,195/year
 Allowances = \$1,200/year
 Social Security Tax = \$1,277/year
 Medicare Tax = \$299/year
 SUTA = \$180/year
 FUTA = \$56/year
 Workers' Compensation = \$278/year
 Liability Insurance = \$114/year
 Health Insurance = \$1,200/year
 Retirement = \$672/year

The total cost of burden is \$5,276 ($1,200 + 1,277 + 299 + 180 + 56 + 278 + 114 + 1,200 + 672$) per year. The annual cost of the secretary is \$26,471 ($21,195 + 5,276$) per year.

From Example 8-1, the secretary worked 2,220 hours. The hourly cost is calculated as follows:

Hourly Costs = Total Cost/Hours Worked
 Hourly Costs = ($26,471/\text{year}$)/2,220 hours = \$11.92

The burden markup is calculated by taking the total cost of the employee and dividing it by the wages paid for work performed and subtracting 1. The work performed equals the wages paid to the employee less the wages paid for time off. This allows us to include the cost of vacation, holidays, and sick leave in

the markup. The wages in Example 8-1 must be reduced by \$1,020 (120 hours \times \$8.50/hour) for time off. The burden markup is calculated as follows:

$$\begin{aligned}\text{Burden Markup} &= \text{Total Cost}/(\text{Wages}_{\text{Total}} - \text{Wages}_{\text{Time Off}}) - 1 \\ \text{Burden Markup} &= (\$26,471/\text{year})/(\$21,195/\text{year} - \$1,020/\text{year}) - 1 \\ \text{Burden Markup} &= 0.312 \text{ or } 31.2\%\end{aligned}$$

It is important to note that we cannot take the base hourly rate of \$8.50 and add the burden markup to get the hourly cost because for five hours a week the secretary is earning 1.5 times the base rate. The overtime rate is not included in the burden markup.

CONCLUSION

When projecting costs that include labor it is important to include all of the costs associated with employees. The cost of employees includes their wages and the associated labor burden. Employees' wages may be determined by market rates, union contracts, or Federal Davis-Bacon wages decisions. Labor burden includes cash equivalents and allowances paid to the employees, payroll taxes, unemployment insurance, workers' compensation insurance, general liability insurance, insurance benefits, retirement, union payments, and other benefits.

PROBLEMS

1. Determine the annual cost, average hourly cost, and burden markup of an hourly employee given the following information. Assume the employee takes full advantage of the 401(k) benefit. The employee's health insurance is paid for entirely by the employer. Last year the employee worked 2,104 hours and was paid for an additional 80 hours of vacation. The employee was paid for at least 40 hours each week and is to be paid time-and-a-half on any work over 40 hours per week.

ITEM	COST
Wages	\$12/hr
Bonus	\$500
Allowances	None
Social Security	6.2% of wages to \$84,900
Medicare	1.45% of wages
FUTA	0.8% of wages to \$7,000
SUTA	2.0% of wages to \$20,000
Workers' Comp.	\$0.85 per \$100 of wages
General Liability	0.65% of wages
401(k)	50% match up to 6% of wages
Health Insurance	\$200/month

2. Determine the annual cost, monthly cost, and burden markup for a salaried employee given the following information. Assume the employee takes full advantage of the 401(k) benefit.

ITEM	COST
Wages	\$80,000
Bonus	\$10,000
Allowances	\$500 per month for vehicle
Social Security	6.2% of wages to \$84,900
Medicare	1.45% of wages
FUTA	0.8% of wages to \$7,000
SUTA	3.0% of wages to \$7,000
Workers' Comp.	\$4.25 per \$100 of wages
General Liability	1.02% of wages
401(k)	100% match up to 6% of wages
Health Insurance	\$175/month

3. Set up a worksheet to calculate the annual cost, average hourly cost, and the burden markup of an hourly employee. The spreadsheet should allow you to enter the hourly wages, the average number of hours paid for each week, number of days off per year, annual bonus (\$/year), monthly allowances (\$/month), the amount of employee expenses that are not subject to social security and Medicare taxes, social security percentage rate and limit, Medicare percentage rate, FUTA percentage rate and limit, SUTA percentage rate and limit, workers' compensation insurance rate (\$/\$100), general liability percentage rate, 401(k) matching rate and limit, monthly health insurance payment, monthly union payments, and other monthly benefits. Assume the employee takes full advantage of the 401(k) benefit. Check your answer against Example 8-11.
4. Set up a worksheet to calculate the annual cost, the monthly cost, and the burden markup of a salaried employee. The spreadsheet should allow you to enter the annual salary, annual bonus (\$/year), monthly allowances (\$/month), the amount of employee expenses that are not subject to social security and Medicare taxes, social security percentage rate and limit, Medicare percentage rate, FUTA percentage rate and limit, SUTA percentage rate and limit, workers' compensation insurance rate (\$/\$100), general liability percentage rate, 401(k) matching rate and limit, monthly health insurance payment, monthly union payments, and other monthly benefits. Assume the employee takes full advantage of the 401(k) benefit. Check your answer against Problem 2.