

UDHNA COLLEGE
SYBCOM SEM-3
ADVANCED ACCOUNTING & AUDITING-1
Accounting for LABOUR
THEORY

1. Chapter Overview and Purpose of Study

After material, labour is the second most important element of cost. In many industries (engineering, construction, services) labour cost exceeds material cost. Labour is a living, thinking factor – its efficiency depends on ability, willingness, working conditions and the wage system. The purpose of 'Accounting for Labour' is to record labour time and cost correctly, control labour cost, measure efficiency and design a wage system that is fair to workers and economical to the employer.

1.1 Why study this chapter?

- **Correct cost:** to charge each job with correct direct wages and apportion indirect wages fairly.
- **Control:** to prevent idle time, overtime abuse, ghost workers and excess labour turnover.
- **Motivation:** to select a wage method that rewards efficiency without sacrificing quality.
- **Compliance:** to maintain muster rolls, wage sheets and statutory records correctly.
- **Decisions:** to decide between overtime vs new recruitment, time rate vs piece rate, and incentive rates.

1.2 Learning outcomes

- Distinguish direct and indirect labour and explain organisation for labour control.
- Explain time keeping vs time booking and documents used.
- Compute labour turnover by different methods and suggest remedies.
- Give treatment of idle time and overtime in cost accounts.
- Compute wages under time rate, piece rate, Taylor, Merrick, Halsey and Rowan systems.
- Compare incentive schemes and recommend a suitable scheme for a given situation.
- Pass journal entries for wages, overtime, idle time and incentive bonus.

2. Meaning, Definitions and Types of Labour

2.1 Meaning

Labour cost is the cost of human effort used in production or operations. It includes wages, salaries, allowances, bonus, employer's contribution to PF/ESI, and welfare expenses. 'Direct labour' can be directly identified with a job or product; 'indirect labour' supports production generally.

Basis	Direct Labour	Indirect Labour
Identity	Directly engaged in converting material into product	Assists production indirectly
Examples	Machine operator, carpenter, tailor, mason	Supervisor, cleaner, watchman, storekeeper, maintenance staff
Treatment	Part of prime cost, charged directly to job	Part of factory overhead, apportioned
Variability	Usually variable with output	Usually fixed / semi-variable
Control	Time cards, job cards, piece records	Budgets, attendance, supervision

Labour cost includes: (1) gross wages, (2) overtime premium, (3) employer's PF/ESI contribution, (4) bonus and gratuity, (5) idle time and holiday pay to the extent treated as cost. Distinguish carefully between gross earnings of workers and cost to the employer.

3. Labour Cost Control and Its Organisation

3.1 Objectives of labour cost control

- Ensure optimum number of workers – neither surplus nor shortage.
- Ensure full and efficient utilisation of labour – minimum idle time.
- Correct recording of time and output for each worker and job.
- Fair and prompt payment to maintain morale and reduce turnover.
- Correct allocation of wages to jobs and overheads.

3.2 Organisation – five functions

Function / Dept.	Work Done
1. Personnel Department	Recruitment, selection, appointment, transfer, promotion, training, discipline, maintaining service records.
2. Time Office (Time Keeping)	Recording attendance – in-time and out-time of every worker (muster roll, token/disc, biometric).
3. Production / Shop Office (Time Booking)	Recording how the attended time was spent – on which job, idle or indirect work (job card, idle time card).
4. Pay Office	Computation of gross and net wages, deductions, preparation of wage sheet and payment.
5. Cost Office	Analysis of wages into direct/indirect, allocation to jobs, idle/overtime analysis, labour efficiency reports.

4. Time Keeping and Time Booking

4.1 Methods of time keeping (attendance)

Method	How it Works	Merit / Demerit
Muster Roll / Attendance Register	Register signed by workers or marked by time clerk	Simple and cheap; but proxy marking possible
Metal Disc / Token Method	Each worker hangs token on IN/OUT board	Mechanical check; tokens may be misplaced
Time Recorder / Punch Card	Card punched in time clock machine	Accurate; needs machines
Biometric (fingerprint / face)	Electronic recording linked to payroll	Best control; higher initial cost

4.2 Methods of time booking (utilisation)

- **Job Card:** record of time spent by a worker on each job – job number, start/end time, output. One card per worker per job or combined daily card. Basis for charging direct labour to jobs.
- **Time Card / Time Ticket:** record of total time attended. Reconciliation: Time Card hours = Job Cards + Idle Time Card.
- **Piece Work Card:** record of output (units) of a piece worker – quantity produced, rate, amount.
- **Idle Time Card:** reasons for idle time – machine breakdown, power failure, waiting for material/instructions.
- **Combined Time & Job Card:** single card showing both attendance and job-wise breakup – saves duplication.

4.3 Reconciliation of time

Attended time (as per Time Card) must equal Booked time (as per Job Cards) + Idle time (as per Idle Cards) + Indirect work. Any difference indicates error or unrecorded idle time and must be investigated.

5. Labour Turnover – Meaning, Causes, Measurement and Control

5.1 Meaning

Labour turnover means the rate at which workers leave and are replaced in an organisation. Some turnover is natural (retirement, marriage, death), but high turnover indicates dissatisfaction and increases cost of recruitment, training, low output, wastage and accidents. Control of turnover is a key duty of the personnel department.

5.2 Causes of labour turnover

- **Avoidable (management should act):** low wages, bad working conditions, long hours, unfair promotion, bad supervision, lack of incentives, housing/transport problems, monotonous work.
- **Unavoidable:** retirement, death, illness, marriage, education, migration, retrenchment due to automation or closure.

5.3 Effects / costs of turnover

- Direct costs: recruitment, selection, training, induction, extra supervision.
- Indirect costs: low production, more wastage and defectives, machine damage, accidents, low morale of old workers.

5.4 Measurement – formulas (very important)

Let: A = number of workers at beginning, B = at end, Average = $(A+B) \div 2$. S = separations (left), R = replacements, N = new workers for expansion.

Method	Formula
1. Separation Method	$(\text{No. of separations} \div \text{Average workers}) \times 100$
2. Replacement Method	$(\text{No. of replacements} \div \text{Average workers}) \times 100$
3. Flux (Combined) Method	$[(\text{Separations} + \text{Replacements}) \div \text{Average workers}] \times 100$ OR $[(S + R) \div 2 \div \text{Average}] \times 100$ in some books – follow your university convention
4. Annualised rate	$\text{Turnover for period} \times (12 \div \text{months in period})$

- New workers for expansion are NOT replacements – exclude from replacement method, include only in total flux if asked.
- If only separations given, use separation method; if only replacements, use replacement method.

5.5 Control / reduction of turnover

- Fair wage policy with incentives and bonus; timely promotion and increments.
- Good working conditions – ventilation, safety, canteen, rest rooms.
- Proper selection, placement, training and induction.
- Grievance machinery, joint committees, welfare and housing facilities.
- Exit interviews to find real reasons for leaving and corrective action.

6. Idle Time and Overtime – Causes and Treatment

6.1 Idle time

Idle time is the time for which workers are paid but no production is done – waiting for material, machine breakdown, power failure, tea breaks beyond allowed time. It is recorded on Idle Time Cards.

Type	Meaning	Treatment in Cost Accounts
Normal idle time	Unavoidable, routine – setting tools, tea/lunch, personal needs	Part of cost: inflate the wage rate (effective rate = wages ÷ productive hours) or charge as factory overhead
Abnormal idle time	Avoidable – strikes, breakdown due to negligence, no orders	Not part of cost: transferred to Costing Profit & Loss Account

Effective hourly rate = Total wages of the period ÷ Productive (net) hours. Example: wages ₹880 for 8 hours with 1 hour normal idle time → effective rate = $880 \div 7 = ₹125.71$ per productive hour.

6.2 Overtime

Overtime is work beyond normal working hours, paid usually at double or higher rate. Overtime premium is the extra amount over normal rate.

Situation	Treatment
General / routine overtime to meet production target	Normal wages to job; premium to factory overhead
Overtime at customer's request (rush order)	Full overtime cost (normal + premium) charged to that job
Abnormal overtime due to fault / breakdown	Premium transferred to Costing P&L

7. Methods of Wage Payment – Time Rate and Piece Rate

7.1 Time Rate System (Day wage system)

Wages = Hours worked × Rate per hour. Workers are paid for time, irrespective of output. Overtime is easily computed.

- **Merits:** simple, assured income, good quality, suitable for indirect work, artistic/precision jobs and where output cannot be measured.
- **Demerits:** no incentive for efficiency, needs strict supervision, shirkers and efficient workers get the same pay, cost per unit rises if workers are slow.
- **Suitable for:** maintenance, supervision, jobs where quality matters more than speed, beginners and apprentices.

7.2 Piece Rate System (Payment by results)

Wages = Units produced × Rate per unit. Workers are paid for output, irrespective of time taken. A guaranteed minimum is often added.

- **Merits:** direct incentive, higher production, lower cost per unit, less supervision, efficient workers earn more.
- **Demerits:** quality may suffer, wastage and accidents may increase, beginners and slow workers suffer, fixation of fair piece rate is difficult, jealousy among workers.

- **Suitable for:** standardised, repetitive jobs where output is measurable and quality can be inspected – garments, assembly, packing.

7.3 Time rate vs Piece rate

Point	Time Rate	Piece Rate
Basis of pay	Time attended	Output produced
Incentive	None	Strong
Quality	Better	May suffer
Supervision	More needed	Less needed
Earnings	Stable	Fluctuating
Suitable	Non-standard, quality jobs	Standard, measurable jobs

8. Differential Piece Rates – Taylor and Merrick Systems

To punish inefficiency and reward efficiency more sharply, differential (two or three) piece rates are used. Standard output for a day is fixed by time and motion study.

8.1 Taylor's Differential Piece Rate System

- **Rule:** If output < standard → low rate (e.g., 80% of normal). If output ≥ standard → high rate (e.g., 120% of normal). No guaranteed minimum (in original Taylor plan).
- **Merits:** strong incentive for efficient, strong punishment for inefficient, high total production.
- **Demerits:** harsh on beginners/slow workers, no security, may cause over-speeding, wastage and jealousy; trade unions oppose it.

8.2 Merrick's Multiple Piece Rate System (improved Taylor)

- **Rule (three rates):** Below 83% of standard → normal rate; 83% to 100% → 110% of normal; Above 100% → 120% of normal. Beginners are not punished.
- **Merits:** less harsh than Taylor, progressive incentive, beginners get normal rate.
- **Demerits:** still no guaranteed minimum in strict form; rate fixation is complex.

How to solve sums: Step 1: compute standard output for actual hours. Step 2: compare actual output with standard. Step 3: select the correct rate slab. Step 4: wages = actual output × selected rate.

9. Premium / Bonus Plans – Halsey, Rowan, Emerson, Bedaux

Premium plans combine time rate security with piece rate incentive: a guaranteed time wage PLUS a bonus for time saved. Standard time is fixed for a job; if the worker finishes early, the time saved is shared between worker and employer.

Common symbols: S = Standard time, A = Actual time taken, T = Time saved = S – A, R = Rate per hour, B = Bonus.

9.1 Halsey Plan (50% sharing – most popular)

- **Bonus** = 50% (usually) × Time saved × Rate per hour. Total wages = (Actual hours × Rate) + Bonus.
- **Merits:** simple, guaranteed minimum, employer also shares benefit, moderate incentive.
- **Demerits:** worker gets only half the benefit of saving; may not give full effort.

Formula: Total Wages = (TT × R) + [50% × (TS × R)]

9.2 Rowan Plan

- **Bonus** = (Time saved ÷ Standard time) × Actual time × Rate. Bonus rate rises up to 50% of time saved and then falls – automatic check on over-speeding.
- **Merits:** guaranteed minimum, quality protected because bonus falls if job is rushed too much, suitable where quality matters.
- **Demerits:** complex to understand, efficient workers may feel cheated at very high efficiency.

Formula: Total Wages = (TT × R) + [(TT×TS×R) ÷ TA]

9.3 Halsey vs Rowan – examiner's favourite

Point	Halsey	Rowan
Bonus	Fixed % (usually 50%) of time saved	Proportion of time saved to standard time
Bonus at 50% efficiency gain	Equal under both plans	Equal under both plans
Beyond that	Bonus keeps rising with efficiency	Bonus rate falls – protects quality
Simplicity	Simple	Complex
Workers' preference	Efficient workers prefer Halsey	Average workers / quality jobs prefer Rowan

9.4 Emerson's Efficiency Plan

- Bonus starts only after 66.67% efficiency; below that only time wage.
- Bonus rises in steps with efficiency, up to about 30%+ at and above 100% efficiency.
- Suitable for beginners – no punishment, gradual incentive.

9.5 Bedaux (Points) Plan

- Standard time is expressed in Bedaux points (B): 1 B = 1 minute of standard work; 60 B = 1 standard hour.
- Bonus = 75% of (Points earned – 60 × hours) × rate per point. Worker gets 75%, foreman often gets 25%.
- Needs accurate time study; popular in engineering industries.

10. Group Bonus and Other Incentive Schemes

- **Group / collective bonus:** bonus paid to a team for combined output when individual output cannot be measured (assembly line, construction gang). Distributed in proportion to time wages. Builds teamwork but may shelter shirkers.
- **Profit sharing:** share of annual profit paid to workers in addition to wages – builds loyalty, but link with individual effort is weak and payment is delayed.
- **Co-partnership:** workers also become shareholders – stronger belonging, but risk of loss.
- **Non-monetary incentives:** promotion, job security, housing, medical, education, canteen – equally important for morale.

Essentials of a good wage / incentive system: fair and adequate, guaranteed minimum, direct link with effort, simple to understand, prompt payment, quality safeguard, flexibility, economy in administration and acceptance by workers and unions.

11. Treatment of Labour Cost in Cost Accounts

Item	Treatment
Direct wages (regular)	Charged directly to job / WIP
Indirect wages	Factory / office / selling overhead as applicable
Normal idle time	Part of cost – inflated rate or factory overhead
Abnormal idle time	Costing P&L
Overtime premium – general	Factory overhead
Overtime – rush job at customer's request	That job
Overtime – abnormal cause	Costing P&L
Bonus under incentive plan	Direct: to job; general/attendance bonus: overhead
Employer's PF/ESI, holiday pay, leave pay	Apportioned as overhead or inflated rate as per policy
Cost of training new workers (normal)	Overhead; abnormal/excessive: Costing P&L

12. Formula Chart, Differences and Examination Tips

12.1 Formula chart – one page revision

Item	Formula
Labour turnover (separation)	$(\text{Separations} \div \text{Avg. workers}) \times 100$
Labour turnover (replacement)	$(\text{Replacements} \div \text{Avg. workers}) \times 100$
Time rate wages	Hours $\times$ Rate
Piece rate wages	Units $\times$ Rate per unit
Halsey wages	$(TT \times R) + [50\% \times (TS \times R)]$
Rowan wages	$(TT \times R) + [(TT \times TS \times R) \div TA]$
Effective rate (with normal idle)	Total wages $\div$ Productive hours
Efficiency %	$(\text{Standard time} \div \text{Actual time}) \times 100$