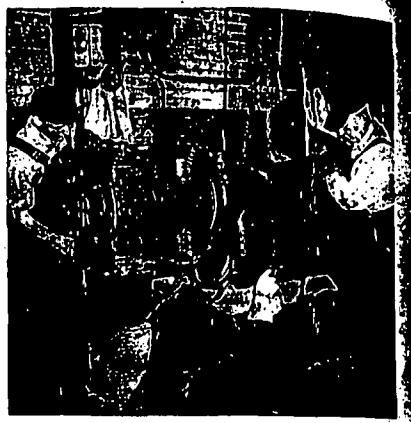


1 Maintenance Foreman Jim Whitehurst gives labor-account card to Charley Layton. Card has all needed data for job



2 Job started, maintenance gang carry out instructions on card. With down-time jotted, card goes back to foreman



3 Next, all information on cards is converted to punched holes on this machine by girls in tabulating department



4 Punched cards are sorted by machine number, department, employe, etc, before being placed in final tab machine

Records Help Find Weak Spots In Maintenance Picture

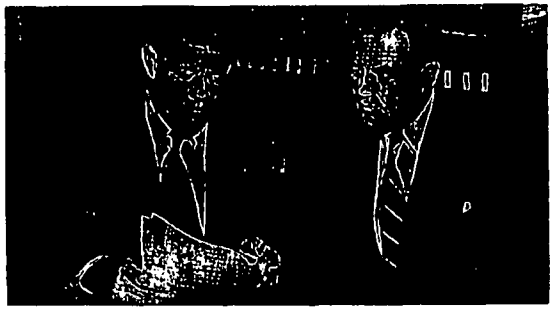
mostly routine, everyday jobs. "Rush" jobs are segregated from regular jobs. The maintenance man rings the time card "in" when he starts on the job. Then he rings "out" when he completes it. That shows exact time required for each job when completed.

This time card also shows material used. In this way we tie labor and material costs to each machine in each department. Maintenance-department clerk rechecks all cards for both labor and material.

From maintenance department, cards go to cost-accounting department. There labor and material costs are totaled.

Tabulating section gets cards next, where they are punched according to information written on them. Then tabulating equipment sorts cards and prepares the monthly summary. Maintenance cards for an entire month are punched, sorted by department and machine number, then tabulated in only three hours. That cuts down hours of bookkeeping and does job accurately, besides.

Copies of monthly summary are sent to vice-president in charge of production, plant engineer and division superintendents. Summary shows maintenance costs (both labor and materials) for the month, as they apply to each department and each machine in department. Also, cumulative costs for year to present date are shown for each department and each machine. These summary sheets give an over-all look at maintenance costs.



5 Plant Engineer Wm Hickey chats with Assistant A Jones about air compressor just installed. Monthly maintenance summary showed old unit cost too much for repair



6 T J Ellis checks monthly summary for overly high costs, goes into action

1 Using Data. What use is made of these data? Plenty. Here are some good examples.

2 Maintenance budget for the succeeding years is computed, with accurate, segregated maintenance costs for preceding year as a guide.

3 Summary, with cumulative totals, when compared with past performance, shows at glance costs that are out of line or unusually high by department and machine.

3 Data call attention to machines breaking down often. For instance, summary has shown maintenance unusually high on one press. Check showed that too many gasket changes were needed. Maintenance crew followed this up and found that press was slightly off-level. Leveling reduced gasket changes to normal. More important, over-all production from that press shot up as down-time for gasket changes nosedived.

In another case a check for reason behind high maintenance costs on a production machine showed a worker was abusing the machine. Why? Because he didn't understand its operation. Careful instruction stopped the trouble after a few weeks.

Inquiry into high repair costs on another machine showed that work handled had increased and machine couldn't turn out capacity.

4 Our system of maintenance accounting has also proved useful for evaluating different maintenance methods. A program is now getting on with two Banbury mixers. These machines are used for breaking down and mixing certain ingredients into rubber. Main moving parts are two metal rotors revolving inside a shell. Wear between rotors and shell must be kept down because too much clearance results in poor mixing. And overhauling a Banbury costs about $19,000 per machine.

In the past, we did a major overhaul every seven years. Key to reduced wear lay in getting lubricating oil to rotors. Before, we checked rotors once a month. During 1952, we gave more careful attention to keeping oil lines clear, and made a check every week. Costs for this special maintenance were easily kept by card system. Then rotors were measured by micrometer at beginning and end of period.

During 1953, lubrication system on Banburys will be checked and cleaned only every two weeks. Micrometer measurements will again be taken.

This one-week period is costing more than the old one-month period. Two-week period, at present, seems about right, but accumulating costs for one-week and two-week period over a year's time will leave little to guesswork. We'll then have accurate costs for setting a standard. This method for cutting down maintenance has also been used successfully in our power plant.

5 Performance of different types of machinery can be accurately evaluated. Cost summary showed last year, for instance, that cost of maintaining a hoist in wide use was too high, compared with cost of new one. We bought another type of same capacity. Costs accumulated over a period proved that new hoist took much less maintenance and saved us money. All old hoists are now being replaced with new. We know maintenance cost will be much less. Here again, our card system helped us spot our trouble.

6 Problem of knowing when to replace an old machine with new is simple. Accounting system gives accurate figures to management on maintenance costs. Purchasing provides costs on new equipment. A break-even point is determined. Further, soundness of each decision can easily be checked by referring to summarized figures in succeeding months. This does away with a lot of costly guesswork.

7 Intangible but real benefit is better employe morale. Like many companies, we pay workers on a wage-incentive plan. If a production machine is down, for example, premiums cannot be earned. Because there are fewer interruptions, production personnel now earn greater premiums.

For two years we have been keeping track of maintenance by this system. Tabulating equipment does many other accounting jobs, but it's a very important part of this program. And we save over 60% on maintenance bookkeeping for good measure.