



THE ROYAL BANK OF CANADA

MONTHLY LETTER

Vol. 37, No. 11

HEAD OFFICE: MONTREAL, NOVEMBER 1956

Reducing Waste

IT IS JUST as important to reduce waste as it is to increase income. In business, in the home, in the public service, economy consists in seeing that we get our money's worth.

The recipe for reducing waste is simple: apply sound common sense supported by knowledge of the situation. We analyse the cause and put remedies to use.

Before doing this, however, we need to become aware that there is a state of affairs that offers opportunity for improvement. People who live near a railroad become so accustomed to the sound of trains that they no longer notice it. We live so close to our jobs that we do not see opportunities to make changes that will save money. Let's listen for the trains we never hear.

No workshop, office, store or home is so perfectly managed that there is no leak to stop, no corner to cut, no improvement in operations to make. We Canadians, composing one of the richest nations in the world, are wasting a tragically large proportion of our wealth every day of the year. Our prodigality extends from the massive waste of forest fires to the dribble of waste in our kitchens.

Every manufacturing concern has blue prints designed to facilitate production of goods economically, yet factory waste is tremendous. A committee of the Federated American Engineering Societies made a careful study some years ago of the wastes in six industries. The findings showed the losses to average 49 per cent, distributed as follows: metal trades 29 per cent; boot and shoe manufacturing 41 per cent; textile manufacturing 49 per cent; building 53 per cent; printing 58 per cent; men's clothing 64 per cent.

The tall buildings that punctuate the skylines of our cities have offices that transgress, too. There is overlapping of effort, useless duplication of reports, paper work of questionable value, and waste of supplies from paper clips to electronic machines.

Who is responsible?

Who is responsible for checking waste? While every worker shares in the duty to work economically, the elimination of waste is a particular duty of the chief executive, department heads, supervisors and foremen. More businesses fail or lose money from managerial oversight or short-comings than from any other single cause.

As an executive function, elimination of waste demands these abilities: awareness that there is a problem; a tendency to do something about it; cultivation of positive thinking; and willingness to try new methods. Nothing can reduce executive efficiency quite so much as acceptance of the belief that there is no room for improvement.

The man who is thinking of applying waste reduction in his business will need, first of all, to set his own house in order. No man can reach his greatest possible success who does not eliminate wastes from his personal operations.

The best executive, from workshop foreman or office manager up to the president himself, must remain free from tyrannical trifles. He will spend time in perfecting processes of information and communication to the end that he is always in command of essential detail, yet freed from its enslavement. He will organize his work, deputize subordinates and supervise them. He will select capable assistants and delegate to them all the work they can do, while he keeps busy on more vital problems.

What are these more important things? Originating ideas, directing staff and supervising operations so that (1) goods are produced on time; (2) goods conform with quality standards; (3) goods are produced at the least possible cost.

Working against him are tendencies to waste time, to waste material through sub-standard workmanship,

to waste money in non-profitable activity, the purchase of surplus machinery, and in many other ways.

Basic to the executive's success in eliminating waste is his ability to assess the values of men to do the jobs he requires of them. The shrewdest team work always turns out to be that which allots to each member of the team the special task for which he is best fitted.

If you will look around your own business, office or workshop, you may find certain men and women doing jobs for which they are not qualified or to which they are not adapted. By merely changing two men in their jobs you may fit both of them into places where they can work efficiently and resultfully, effecting better work with less effort.

What about routing of work? Unless work flows smoothly through the plant or office there is bound to be a great deal of time wasted while one department waits for something from another department. Remember that waste is not only material that is unused, scrapped or spoiled, but also idle labour. Holding up a department only a few minutes amounts to hours of lost labour when spread over the group of men involved.

What is efficiency?

Not every idea for waste elimination that is passed along to an executive, or thought of by himself, should be experimented with. The vital point is to remember that new ideas are not necessarily impracticable. They should be studied with a sincere desire to profit by any good that may be in them.

Ideas come from all over the place: observation by the executive, suggestions by workmen who are looking ahead of their immediate jobs and by foremen who have an all-over view of the plant; adaptation of labour, material and time saving practices used elsewhere: and technical journals. The executive with an open mind and a receptive manner will not lack ideas.

The enemy of efficiency is complacency. Its thinking goes like this. There is safety in routine. What you did yesterday and last year was all right. A new way might be too much for you; at the very least it would likely cause you some worry and unrest.

But progress in the economical use of materials, labour and machines comes only through men who have the courage and initiative to try new ways. They have, too, the imagination to speculate. Alex Osborn tells this anecdote in his little book *The Gold Mine Between Your Ears*. When Edison was looking for a filament for his first lamp, he tried 6,000 varieties of plants before he found the right fibre. "Try everything," Edison said, "even Limburger cheese!"

There are several definitions of efficiency, each valid within its field. One of the Alexander Hamilton Institute textbooks defines it in this way: "Economy of

energy, time and space". Mr. Roger Cain, a reader in Guelph, wrote: "Efficiency is the obtaining of the required result in the cheapest way possible." To the engineer, efficiency is the maximum of result produced by the minimum of energy.

It is significant that all these definitions of efficiency stress economy. Efficient work involves both doing what is effective and not doing what is wasteful.

How waste occurs

There seem to be infinite ways of wasting energy, space, material and time. A list of 100 possible causes of leaks and losses that may occur in a department is given in *The Foreman's Management Library* (National Foremen's Institute Inc., Chicago). These are divided into six classes: managerial methods; working force; building, equipment, tools and machinery; production; material; receiving and shipping.

Each factor may be broken down into many divisions. Take material, for example. It is wasteful when the right material is not used for a given job. This may result in an inferior product, or it may leave some other job short of material designed for it. The degree of waste is measured by the difference between the utility actually furnished by an economic good and the maximum utility it is capable of furnishing.

Every executive will interest himself in this means-end relationship. Look around your office or workshop to see how much of what is being done is necessary to your purpose, and then ascertain whether it is being done in the best way. How much sheer carelessness is at the bottom of waste by your staff — carelessness not only in workmanship but carelessness, too, in regard to what is necessary and what is surplus expenditure of money, time, energy, space and material. Are people working in the right direction to achieve your desired ends? Is effort duplicated? Are things being done twice?

Nothing provokes the tidy-minded executive quite so much as the needless use of energy. Sir Isaac Newton set forth some "Rules of Reasoning" in which he said this: "Nature does nothing in vain, and more is in vain when less will serve."

Everything, from paper work to erecting a factory building, offers opportunity for expending too much energy, too much time, too much material. One need not choose a strong prop to support a light burden, or build a bridge much wider than the road. There is an economic law of diminishing returns. After a certain point has been reached the application of labour and capital fails to cause a proportionate increase in the value and return.

The foreman or the office manager seeking to reduce waste will ask himself how much of the activity he sees is merely the movement of things from one place to

another; how much of the office bustle is only the shuffling of papers. It is what goes out of the door in the way of finished product that counts.

It is waste, said Aesop, when great activity produces small result. You will recall his fable: A mountain, from which were heard to proceed dreadful groans, was said to be in labour, and people flocked near to see what would be produced. After waiting till they were quite tired, out crept a mouse.

Time and haste

In Scrooge's day the office clock was of the grandfather type, ticking the seconds loudly and lazily as if it had time to spare. Today's clocks are electrical, leaping from minute to minute.

We turn the pages of time-tables with worried expressions; we punch time-cards; we rush from office to airport; we tear through one job so that we can start the next. But what are we doing effectively to manage our time to the best purpose?

Sir John Lubbock told us in *The Use of Life* that Pietro Medici is said to have once employed Michael Angelo to make a statue out of snow. That was a stupid waste of precious time.

Wasting time deciding trifles, doing unrewarding things, or planning actions that should have been made habitual: these explain why people do not get more things done and have the feeling of being pushed and pressed.

Procrastination afflicts all but people who are thoroughly well balanced mentally. It is an enemy to efficiency. It has to be cured by anyone seeking to eliminate waste from his own life and the work of those under him. Set a dead-line. Be punctual. A Swiss who recorded his time meticulously all his life figured that in his eighty years he had wasted more than five years waiting for tardy people.

A simple schedule will help to eliminate time-consuming trivialities and to find more time for the things that matter most to you. For the busy executive and for any man who is seeking to find in life all the satisfactions he can get, the best distribution of the day's twenty-four hours is of paramount importance.

The schedule should recognize three things, says Professor Morgan D. Parmenter, Director of The Guidance Centre, Ontario College of Education, in *You and Your Work Ways*: (a) the things you must do; (b) the things you would like to do, and (c) the things you will do "if time permits."

It is pleasantly surprising to find how much easier the rest of the day becomes when we dispose of the least enjoyable tasks first thing in the morning. But, of

course, a schedule must not become a slave-driver. It needs to be elastic enough to accommodate unforeseen events and demands.

Following a time-planned day eliminates the waste of bustling and haste. It will contribute to a feeling of being on top of the job. It will decrease restlessness, great thief of vitality. Neither the amount nor the nature of our work is accountable for the frequency and severity of our break-downs. Their cause rather lies in the sensations of hurry and having no time.

An interesting project

Nothing can undermine efficiency in production more thoroughly than compromise with waste. The overseer who is silent in the face of inefficient use of time, energy and material, even in small quantities, is remiss in his duty.

Yet the application of controls is one of the most delicate operations. People just don't like the idea of controls, however logical. The question raised by the controller about some accustomed practice: "Is it necessary?" is a red flag provoking indignation.

Nevertheless, avoiding waste can be made one of the most interesting projects in business. Did you ever think of starting an anti-waste drive as an antidote to dullness? In your office, workshop or home or on your farm, such a campaign opens up the opportunity to do creative thinking and constructive work.

The man eager to do his job well and economically is not impelled alone by his desire for professional advancement but also by personal pride. There is no glow of satisfaction for the man who throws a spoiled piece on the scrap pile, but the man who reclaims it is adding to his happiness because he is obeying his creative urge.

Every business manager and every foreman, every department head and every shift boss, has an opportunity to show the quality of his gray matter in avoiding waste. How should he go about it? Here is one way to start: (1) list the completed items or functions flowing from your department; (2) follow them back operation by operation to see of what activity and material they are made up; (3) take each activity separately and determine if there is a more efficient way of doing it (minimum motion, minimum time); (4) consider the material discarded at each step (why was it discarded? could it be saved by more careful work? can it be re-used?); (5) always determine causes; don't be content with symptoms. Only by studying operations in detail with an open, inquiring mind can you arrive at causes.

There is no more interesting and exciting game for the man in charge of a branch or a department to play than to apply his mind to thinking out ways to perform good work in less time.

What is to be done? Why?

The first step in any reformation is honest and thorough examination of the conditions to be reformed. In making the survey, ask many "why?" questions about even the most trivial things, questions like: "why do you do it this way instead of some other way? why don't you bring together these two operations at the same desk or bench? why don't you let this man complete the operation instead of passing it along to another?"

Planning of that sort will lead to intelligent managerial action that will result in higher production, lower costs, better morale, and elimination of waste. And it is stimulating to do. It raises you above the mediocrity to which routine men condemn themselves.

A few principles

There are several points to be kept in mind when planning to eliminate waste: good housekeeping, flexibility, conservation, thrift and reclamation.

The executive, of course, should insist on having his own work place kept orderly. Disorder and untidiness are wasteful of energy. To know where things are saves time.

In the general offices and in the workrooms, can waste space be used by planning? Is stock properly piled so as to be accessible and safe from damage? Do well-enforced rules keep passage-ways clear for traffic?

Every office and department should be so laid out that material flows directly from one operation to another with a minimum of handling. In some factories handling of materials accounts for as much as fifty per cent of the manufacturing cost.

Look for "choke points". Not many executives can go through their establishments observingly without detecting places where work piles up. Even if unnecessary handling consists only in lifting material a few inches, see if you cannot devise some method whereby that handling can be eliminated.

If you have trouble in detecting such opportunities for waste elimination (probably because you have been so close to the situation for so long) invite an observant friend or colleague to tour the premises with you.

Keep layout simple. Everyone seeking to increase efficiency will be tempted to over-organize, and over-organization leads, as Lord Beaverbrook reminds us, to strangulation. Rigidity of control is necessary to prevent waste, but there should be someone with authority to order what would ordinarily be a wasteful action if the result justifies it. The same act may be wasteful on one occasion or under certain circumstances, but not wasteful on another occasion or under other circumstances.

There can be waste in eliminating waste. Professor Robert P. Crawford tells in *The Techniques of Creative Thinking* (Hawthorn Books Inc., New York) about a man who thought he had invented a good machine. It would save his company \$3,000 a year. That appeared to be a tidy sum. But it would cost \$50,000 to install the machine. If the company had had to borrow that sum, interest and depreciation would have amounted each year to more than \$3,000.

This leads us to think of thrift. It takes as great ability to spend money well as to make it. Reckless expenditure leads to diminishing utility, like having too many machines for the amount of anticipated work. When you spend money for unnecessary things, you are wasteful in that you lose the opportunity of putting it out at interest or in investment.

Salvage or reclamation differs from waste elimination. The latter occurs during the process of manufacture and is designed to use primary resources to the best advantage. Salvage uses the reclaimed article after repairing it, or remakes it into some other useful article.

In some plants all material that has been damaged or discarded is collected by a salvage department that reconditions it for some beneficial purpose. Throughout our prosperous industrial plants the wastes of yesterday are converted into valuable raw materials of today. The history of the packing industry can well be written in terms of the progressive conversion of wastes into profitable by-products. It is of first-rate importance that the test tube should be applied to the waste heap and the junk pile.

Don't wait for big savings

It would be a mistake to put off examining your business while awaiting an opportunity to make a big saving. The backbone of a drive to avoid waste is paying attention to the little things.

Let us look at one of these "little" things: scratch paper. A letter from New Zealand asks about the manufacture of the envelopes in which these *Monthly Letters* are sent out. The correspondent writes: "I find the re-use value of these envelopes much higher than the other types commonly in use here in New Zealand."

Many thousands of dollars could be saved in offices if envelopes from incoming mail were slit at the sides and used for making calculations, drafting letters, and so forth. New paper will have to be used for inter-office memos, but a hundred opportunities will arise every week to save by making do with what is now cast into the waste paper basket.

Little savings are worth looking for in the office, the home and the factory. There is nothing demeaning about being a waste-eliminator. In fact, avoiding waste as a way of increasing gain is one of the signs of a good administrator.