

WHERE OUR HABITS TAKE US

IT'S HARD TO CHANGE

Our habits take us where we were yesterday. It's tough going to plough a new furrow.

It took us 40 years to get from the 48-inch buggy wheel down to the 16-inch automobile wheel.

If somebody drove a 1999 automobile into your yard tonight and offered it to you at today's prices, would you buy it? You wouldn't buy it? Habit is powerful!

Look in your kitchen. Admittedly, we have been imitating the ice box in our refrigerator designs for 25 years. Just now, we quit. We saw the wonderful new design that's built right in the kitchen cabinets so that there is no tombstone in the kitchen.

Admittedly, also, we for 40 years have been imitating the old kitchen range, where they burned twisted hay and wood and had to have all of the stove concentrated in one place to use the chimney. We put in a better burner; we made it white instead of black; we put lights on it, bells on it -- but we've been imitating it. Now that is just about ready to go. But it took us 40 years to do it!

WE'RE COPIERS

Basically, then, in all of our design work we really are copying what we have and refining it. It really takes strong medicine to get us away into new ground.

FOR SALE - THE GREAT WALL OF CHINA

A few weeks ago our drawings called for a ring of concrete 12 ft. high and 7 ft. thick to stop x-rays around a large x-ray equipment that's to be put in. This would cost \$50,000. A construction man using the Value Analysis approach, before he spent the Company's money, said, "What will we ever do with that concrete when we're through with the x-ray machine? Isn't there any other way to stop x-rays?" "Sure, you can stop them with lead, but that's mighty expensive." "Well, how about dirt? Won't dirt stop x-rays?" "We will look that up." They found that 2 ft. of dirt is equivalent to 1 ft. of concrete. So, the wall becomes \$5000 worth of earth instead of \$50,000 worth of concrete. -- It's that hard to get away from habit.

BRASS SCREW SHELLS - AND UNDERWRITERS

We were in one of our plants where they were making a light fixture to use in appliances. It had a standard brass screw shell socket and a point contact at the bottom. One of the Value Analysis engineers had asked: "Why don't we have a plastic or similar shell with only a spring brass wire pushing against the side and cut out all kinds of brass?" They said, "We can't do it." "Why not?" "Underwriters' won't allow it." Well, it happened that this group went next week to another G. E. factory making the same type of item. There, on the engineering manager's desk, were the two halves of plastic, put together with a nice spring brass wire that made contact. He asked, "What in heaven's name are you going to do about Underwriters'?" "We have Underwriters' tentative approval" was the answer.

"Underwriters'" are one of the stopper excuses. There are dozens of others.

IT'S PATENTED

In each area habits have developed. Let's think of some of them. "We can't make it; it's patented." We are paying 90¢ each for a vernier dial. We had one order of 100,000 to place. What is it really worth? We evaluated it at 30¢.

"But it's patented; we have to buy it."

"What's patented about it?"

"Well, when we get the facts, what is patented? We find one little ear is patented. If you took the ear off, there were a half dozen obvious ways for doing the same job. So, getting the facts -- instead of just accepting "It's patented; we can't do anything about it ..." opened up the job.

It happened to be my opportunity to purchase the item. We sat down with the Company president and said, "Your're overplaying the benefits of your patent on this. We know your patent is relatively unimportant." He said, "Yeah, yeah, that's right, but the big General Electric Co. wouldn't dare make a little supplier's product, even if it wasn't patented." We said, "No, we don't want to make it, but we're not going to be on the sucker list. That patent is worth some money; you're in business - that's worth something. We don't want to take your business, but it isn't worth \$90,000 for 100,000 of them. We can make it for 30¢ - and you know it. Now, let's talk business." Well, it didn't take an hour to settle on a price of \$50,000 for that lot, which gave him plenty and G. E. was dealing fairly.

But we had to get past the old idea that everybody had that that kind of a dial was patented before we could do anything with it.

WE DESIGN FOR CERTAIN MACHINE

We find areas where they design for certain machines. "Oh, we design that type of part for a 4-slide machine." Or, for something else -- always for that machine. Don't do it! In other cases they say, "You can never liquidate the tools for that type of part." In one of those areas we were paying \$2.00 each for a little bracket with a clip on it. "You'll never liquidate the tools." Go to a small lot supplier who's in that business. We use 1000 a year. He charges \$50.00 for tools and he made them for not \$2.00 each, but for 7¢! And still, for years, "You'll never liquidate the tools" just kept people away from that and a lot of others. This is where our habits take us.

WE ALWAYS USE A CERTAIN MATERIAL

We design for free-butting brass or steel so we can make it on a screw machine. Sure, you have to. But then year after year the quantity builds up. For many years we go ahead on screw machines before a change of spec to a steel or a brass that works in upsetters would cut costs to a half or a third. Right now, there are several projects open on military work where we can get hardware for half the cost. The only thing necessary is to take that sulphur out of the specifications so that we can use a tough material instead of a free-cutting material.

DO IT LIKE AN INDIAN

Up in Erie stainless steel was scarce and we wanted to make refrigerators. The engineering group assigned some engineers to work out a way of making a good welded aluminum construction for the shelf. There was also a better anodizing process which made anodized aluminum seem practical. After a few months of work the project was given up because they could not get good rugged welds every time. One engineer in the group dissented. He said, "I don't think we ought to quit. Why don't we try doing it like an Indian would do it?" Well, they quit it. The next week, however, the engineering manager called him and said, "What did you have in mind, mumbling about the way an Indian would do it?" He said, "I didn't have anything in mind except that I knew an Indian wouldn't weld it." "What are you doing now?" He told him. The manager then said, "Beginning right now you're on this job. Let's see what you and the Indians can do with it." He worked with people who had done an outstanding job of fabricating from wire - crimping, bending, forming, etc. Three months later the problem was solved. He had it. The management accepted it. It saved the Company 2-1/2 million dollars a year -- and they gave the lad the manager's award. That project certainly missed death by a thin margin. Trying to get away from the habit of welding was almost too large a deviation.

GET OFF ROUTE 21

Many of you know Kettering, the vice president of Research in General Motors. He has one story that I think is so appropriate. He had quite a lot of rivalry with one of his associates in Detroit. They drove from Detroit to Dayton regularly - lived in Dayton. Kettering always drove it in 4 hours. This other man said it couldn't be driven in 4 hours; that he couldn't drive it in that. Kettering said, "This week-end, you leave your car at home and ride with me." He did, and they drove up. They made it in 4 hours. Kettering said, "There it is - 4 hours." "Yeah, that's right", his friend said, "but you didn't stay on Route 21."

I think the whole job we're going to be working together here on is: "Let's find a way to get off of Route 21."