

The Winds of Change

"I have seen the future and it works."
Lincoln Steffens

Nashville — One of the highlights of this year's SME Advanced Gear Processing and Manufacturing Clinic was a tour of the new GM Saturn automobile manufacturing plant outside the city. There in the Tennessee hills is a hopeful vision of the future of the American automobile industry. It may well be the future of American large-scale manufacturing in general.

Lately in this country, a lot of predictions about the future involve gloomy visions of societal malaise, economic decline, and general American second-rate-ism. Places like the Saturn plant suggest that these prophets of gloom could be very wrong.

The Saturn plant is a different kind of manufacturing facility — different in design, layout, and attitude. My first impression of the Saturn plant compares favorably with that of other automotive plants I've seen. The Saturn plant is clean and efficient. The aisles are wide. The shop floor is immaculate. No loose tools, materials, or miscellany are stacked around to impede progress or endanger staff. The general impression is similar to entering an electronic clean room or a medical products manufacturing line.

The second thing that struck me was the amount of automation in place at the Saturn plant. Machinery does most of the work. Furthermore, this machinery is far more flexible than that found at other automobile factories. Every change in part design does not require a change in machinery.

The huge staffs on other automotive plant lines are also a thing of the past at Saturn. Work flows automatically along the production line, monitored by half-a-dozen people, as opposed to the 30, 40, or more on an old-style line. Inventory is not allowed to pile up, but is moved quickly to the next step in the manufacturing process by machine.

While the Saturn plant uses far fewer people than

the old-style system, the people who are used are used much more effectively — and this usage shows in their attitude and morale. The people we met were enthusiastic about their jobs. They seemed committed to quality products and excellent performance and determined to do the job right. Most important, I got the distinct impression that this attitude was genuine, not just something put on to impress visitors.

I suspect that a good deal of this attitudinal difference has to do with the different managerial techniques that the Saturn plant has implemented. Instead of a hierarchical system with many layers of management, the team concept is used. Everyone involved in the production of a component — designers, processing and manufacturing engineers, shop floor workers, quality control and marketing staffs — all are part of the *team* and part of the decision-making process. Individual workers are given much more control over their areas of responsibility. In short, the line workers are treated as important members of the manufacturing team, not just cogs in the system. This process makes for workers who feel as though they are important team members, involved in the *total* process and committed to its success.

Admittedly, it's still early days at the Saturn plant. The factory is designed to manufacture 1000

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cars a day, and, at the time of our tour, was in its shake-down phase, with output of only about 100. No one knows for sure how well this system will work under the pressures of full production. Furthermore, efficient manufacture of a product is only the beginning of making Saturn a success. The complex problem of selling the cars in a crowded market remains. However, at this juncture, everyone involved with Saturn is very enthusiastic and optimistic about the probable results. I think that after the shake-down, the system will work every bit as well as it does now. The people will make it work.

And how does the Saturn experiment relate to American manufacturing as a whole and to gear manufacturers in particular? A number of points are already obvious. First, the future of American

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Riding out the winds of change is the manufacturing challenge of the 1990s.

manufacturing is moving in the direction of more and more automation, fewer employees, less inventory build-up. Companies that wish to remain competitive need to be looking in that direction when making capital improvements. Secondly, one of the most important new manufacturing tools in the Saturn plant is communication. The most progressive and exciting work in the coming years will be done by companies using some variation of the Saturn team approach.

Dismissing the whole Saturn concept is easy. Any of us could build a state-of-the-art manufacturing plant if we had the resources of a General Motors. Those of us in businesses where capital improvement must be done slowly and carefully in small increments may find a Saturn-like manufacturing facility only within the realm of science fiction. At the same time, the Saturn plant is the direction in which we should be looking when we do our capital investing. We can't tear down our factories and start over, but every change we make should be integrating the newest manufacturing processes into our systems.

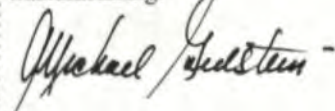
The other half of the Saturn approach — the management team concept — doesn't take a big capital outlay to implement. What it does take may

be something even harder to come by — a change in attitude. We have to look honestly at our own plants and organizational charts and ask ourselves whether or not there may be better ways to do our jobs, even when the present way is comfortable and easy out of long habit. As managers, we will have to shed some long-cherished assumptions about power and how to use it and about our employees and who they are and how they work.

Team concept manufacturing, such as is practiced at the Saturn plant, is not some mysterious Oriental philosophy that can be learned only at the hands of a guru imported at extraordinary expense, nor is it some alien system that runs against the American cultural and emotional grain. The idea came originally from an American industrial designer, W. Edwards Deming. It is simply a way of looking at getting the job done that admits that just because we're managers, we may not know everything; that the people on our shop floors or in other departments may have some valuable insights into the way our products are manufactured; that our employees are people too, and if we treat them like intelligent, responsible associates with a vested interest in getting the job done the best possible way, they might just respond accordingly.

All this is not easy, but it's also not impossible. It does require an attitudinal change, a change in perspective. It's something that doesn't require a capital investment, and it doesn't have to be expensive to implement — at least not as expensive as refusing to change and letting your competitors in this country and elsewhere take away your business and your jobs.

The winds of change are blowing harder and harder through the American economy. Riding them is THE manufacturing challenge of the 1990s. In spite of all the doom and gloom in the forecasts, and in spite of all the legitimate causes for concern about our economic future, the game is far from lost. There are steps we can take and things we can do to keep our footing, both as individual businesses and as a country. The Saturn plant is a shining example of creative innovation. Careful study of it would be a worthwhile exercise for anyone interested in the future of American manufacturing.



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