THE CARRIER
Global
REPORT
NUMBER SIX JULY/AUGUST 1992

INTERVIEW: HENRY D. SARKIS

SAFETY EXPERT OUTLINES THE CULTURAL FACTORS Of SAFE ORGANIZATIONS

Henry D. Sarkis is president of The Reliability Group, based in Miami, Florida. Sarkis and his partner, Dr. Robert A Cooke, have spent years studying and working with companies that seek to improve the safety of the workplace. Their work is unusual in that it focuses on broader, nontraditional method, to improve employee safety The core of their research is the Human Systems Reliability Survey an in depth examination of the way individual employees perceive their work environment.

Sarkis is an electrical engineer by training; with management experience at Holiday Inns, an international chain of hotels, and with Florida Power 6- Light Company, a large utility company that was awarded Japan's coveted Deming Prize for quality.

Sarkis spoke to The Carrier Global Report by phone from his office in Miami.

Carrier Global Report: Let's start by going over the origins of the Human Systems Reliability Survey.

Sarkis: A lot of the work of the survey came from various studies Rob [Cooke] has been doing over the past 20 years. The actual survey has been in existence since about 1985 in its present form.

We designed the survey along several objectives. Number one, we wanted it to be simple to use and interpret, without a lot of special training for people in the field. We want it to be both objective and scientifically valid, so you don't get an interviewer's bias. We wanted it to be relevant to a number of industries without modification. The output of the survey had to be quantitative. We very strongly believe in measuring. With benchmarking and total quality management, you pretty much have to measure everything, then make modifications and measure again.

Finally, we wanted the survey to focus primarily on safety, but at the same time provide much more of a comprehensive human resources overview of the whole operation. We believe there is no such thing as a safety problem at the strategic level. Safety results are a function of the management systems and the culture and a number of other variables. So we wanted a diagnostic that would capture the essence of these factors.

CGR: What are the major components of the survey?

"We believe there is no such thing as a safety problem at the strategic level."

Sarkis: The first category looks at variables that are determined by senior management. For example, management commitment to safety, selection and placement of employees, training and development and vertical communication. These are examples of variables that are determined by senior management.

We then have a series of questions relating to variables, which are under the control of the work group. We measure things like the work flow stability as perceived by the employees. Another is work group autonomy, or to what extent can the work group make decisions at that level without having to check with higher levels. We look at health and well-being, which is partly measured by asking people, "Are your co-workers in the best shape possible, both physically and mentally; to deal with every day demands?" We also measure a variable called efficacy. This is an indication of the degree to which people feel like they have control over their environment. In the case of safety; it means "Do you believe you can prevent all accidents?" Of course, we find in very safe cultures people believe that an individual can make a difference in preventing accidents.

We also measure workplace characteristics that are more in the traditional safety area. Things like the physical environment, the cleanliness of the workplace, the layout, ambient conditions, brightness, temperature and how organized the workplace is. We also measure stress factors, whether it's a hectic workplace, or a cheerful or depressing work environment. We look at the quality, appropriateness and maintenance of the equipment, and the suitability and availability of materials and supplies.

The Carrier Global Report is a publication of United Technologies Carrier Corporation. It is sent to 3,500 Carrier managers in 32 countries. It's purpose is to keep Carrier managers current with trends and issues that affect their work.

We look at safe operating procedures, as well. Procedures can be important, but workers can follow the best procedures in the world and still have a lot of accidents if the organization is basically "sick," with very high stress levels, low job autonomy; depressing work conditions and autocratic supervision.

We also get down to the actual worker interface with the job, such as job feedback, role clarity (the degree to which employees know what is expected of them), job challenge, involvement and satisfaction.

"..for every accident, the odds are good that the worker has experienced one or more near misses in the past. "

We ask people to tell us if they have had an injury or a near miss in the past three years. We then segment the survey between people who have had accidents and those who haven't and determine statistical differences between those two groups.

CGR: How many factors have you identified, and which ones are truly the key variables when it comes to workplace safety.

Sarkis: We have about 120 factors that we measure as part of this survey. "Near misses" is a factor that relates very frequently to accidents. That's pretty obvious. It says that for every accident, the odds are good that the worker has experienced one or more near misses in the past. Near misses can therefore be a very key early warning system to preventing accidents before they happen.

Cheerfulness of the workplace frequently is strongly related to safety: Stress or lack of stress on the job is another significant factor in most organizations we have studied.

Employee selection and placement is one that comes up often. Are the right people being hired and promoted into jobs they are comfortable with, and are they accepted by their peers? Job autonomy - to what degree does a work group have control over their environment -is strongly related to a safe workplace.

CGR: What about traditional accident prevention training?

Sarkis: Safety training is 37th on the list of variables related to accidents. It's not real high in the organizations that we've studied. We presume that many companies have done adequate safety training. People know procedures, safe lifting and so forth. The low ranking for safety training in our study simply means that additional training isn't an effective way to prevent accidents in some companies.

CGR: Does culture really determine everything? Aren't some jobs just inherently more dangerous than others?

Sarkis: There's a phrase I heard a number of years ago: "Any condition can be unsafe if I act sufficiently unsafely." The converse of that is, "All conditions can be de if I act sufficiently safely." Yes, there are industries -logging, or poultry processing -that pose inherent dangers, but there's nothing that says that people in these occupations can't have a significant impact on changing things. There's always innovative things you can do; give employees more latitude, create self-directed work teams, pass accountability for safety to the workers themselves. You can make drastic improvements by redefining some of the roles.

"You can safely increase productivity beyond your wildest dreams, but other factors have to fall into place. You have to turn over more responsibility to the workers... "

CGR: What role does speed play in employee safety? Carrier is moving toward demand-flow manufacturing in which each factory is responsible to eliminate as much non-value-added time as possible. There are striking productivity improvements as a result, but I'm wondering what the effect is going to be on employee safety.

Sarkis: We measure a factor called workload appropriateness, which is exactly what me name implies. It doesn't turn up, generally, as being significantly related to accidents. You can safely increase productivity well beyond your wildest dreams, but other factors have to fall into place. You have to turn over more responsibility to the workers, hire and promote people who "fit in," and maintain low stress levels.

CGR: What role, if any; does the individual supervisor play in determining the safety of the workplace?

Sarkis: The first-line supervisor is often a key safety variable in the companies we have studied. We've looked at places where you find different subgroups performing the same task with substantially the same equipment, and yet there are striking differences in safety records across the subgroups. The biggest difference was the nature of the first-line supervisor. Some were "carriers" of stress, passing it along to their employees. In industry, certainly in American industry, "toughness" has historically been regarded as a positive trait in management. The problem is that "toughness" creates stress levels that are high.

We are not suggesting that you turn the factory into a country club. But on the other hand, if employees are driving to work every day with white knuckles on the steering wheel, is it worth it? Those employees are not going to be as effective, or safety-conscious, as employees who come to work and have high morale and high productivity.

He had no idea. Instead, he should find those people and make heroes of them. That's easy to do, people recognize they can do more of it and, generally; they do it.

Supervisory training always comes up, because you always identify differences among groups in the same company and it relates usually to me style of supervisors.

"I asked a manager in one company, 'How many people in this refinery have worked their whole career without an accident?' He had no idea."

One of the actions we recommend to many clients is to create a system of "upward feedback," in which subordinates evaluate their supervisors. Not many companies have done this. In fact, usually when we make this suggestion to senior managers, the room is so quiet you can hear a pin drop -they don't want to touch this idea. But in reality there are few things you can do that have as much impact on safety as focusing on that first-level supervisor.

CGR What are *some* of the steps that the clients you have worked with have taken when you have identified broad cultural *issues* as safety issues? How do they go about affecting the changes that are necessary?

Sarkis: One of the first things that comes up is recognition. Are people being recognized for safety results? For example, at a major oil company we learned mar production awards were very significant; people would win trips abroad and large dollar amounts. The safety award in the same company was a little wooden plaque. One employee told us: "What does that tell you about management's concern for production versus safety?" Therefore, one of the first things we look at is creating recognition for achievement.

I asked a manager in one company; "How many people in this refinery have worked their whole career without an accident?"

We want companies to consider using some kind of system for employees to give feedback to supervisors. But it's important that they have to have some way to measure whether these supervisors are doing anything different after receiving training or employee feedback.

We tell companies to have a little more fun on the job. Make the place a little more cheerful. How do you do char? Does management put out a letter insisting people have more fun? No. Work with some key supervisors and encourage them to make the place a little more zany. At one company; they had a marching band walk through me factory at noontime on the day they achieved an important production quota.

Most of our clients like me idea of having employees be more self-managing. At a practical level it means people doing things that staff groups or supervisors used to do, like having employees conduct their own safety meetings rather than me supervisors.

Or giving employees a greater role in accident investigations. In a lot of companies there is a safety person that does the analysis, and the supervisor gets involved, but the employee who was hurt has a minimal role. We say the employee involved in the accident should share responsibility for writing the report and recommending actions directly to management. ■

Comments from Gerald Bailey, Carriers vice president for environmental health and safety:

"It is a broadly accepted hypothesis that 80 percent of employee injuries are caused by unsafe acts, and 20 percent by unsafe conditions. It is clear, therefore, that management and employee attitudes are the primary factor in determining safety

Carrier has been working the human systems' issue for some time. Using our quality culture as a springboard we have made employee involvement in our safety effort a basic element in every plant in the United States. This strategic commitment to employee satisfaction is now spreading into our operations worldwide.

If you look at results, Carrier's U.S. safety record of 2.3 lost-time injuries per 100 employees is far better than the HVAC industry average of 5.1. Yet our rates outside America are higher and on the average workday, six Carrier employees receive a minor or major injury. We have a long way to go to become world class.

To succeed our local safety programs must share the following trait: employees at all levels must be involved and they must receive adequate training. That does not mean management can delegate the job and then turn its attention elsewhere; if safety is not clearly and visibly on managements agenda, our credibility will be lost. Finally we must constantly invest our attention in making process improvements that enable workers -our friends and colleagues -to perform their jobs safely".