

April 1986



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MEETING NOTICE

DATE : Wednesday, May 07, 1986

(TOUR)  
TIME : 7:00 - 9:00 p.m.

SUBJECT: Tour of Lumonics plant. Lumonics  
are manufacturers of laser systems.

PLACE : Kanata, Ontario

A bus will be provided for transportation to and  
from Lumonics. The bus will depart from Canadair  
Plant #1, 1800 Laurentien Blvd., at 5:00 p.m.,  
May 07, 1986.

Please contact Debbie Deslauriers at 744-1511,  
extension 3246, no later than May 01, 1986, to  
confirm your attendance and travel mode.

For those who may wish to drive, a map is attached.

The A.S.Q.C. May meeting has been arranged for Wednesday, May 7'86  
This meeting will take place at Lumonics Inc. in Kanata, just west of  
Ottawa. Lumonics are the manufacturers of laser systems, and have  
kindly agreed to a plant tour. The contact is Dave Sandoz, manager test  
& Q.A. A map to the plant is attached.

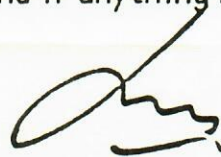
The following is a tentative agende:

- 7:00 - 7:30 pm - arrival at Lumonics refreshments will be available welcome by Dave Sandoz and Tony Don
- 7:30 - 7:45 pm - introduction to Lumonics by marketing person
- 7:45 - 8:45 pm - plant tour guided by D.Sandoz
- 8:45 - 9:00 pm - question period

The visit will end no later than 9:00 pm to allow for the Montreal team to return in a timely manner.

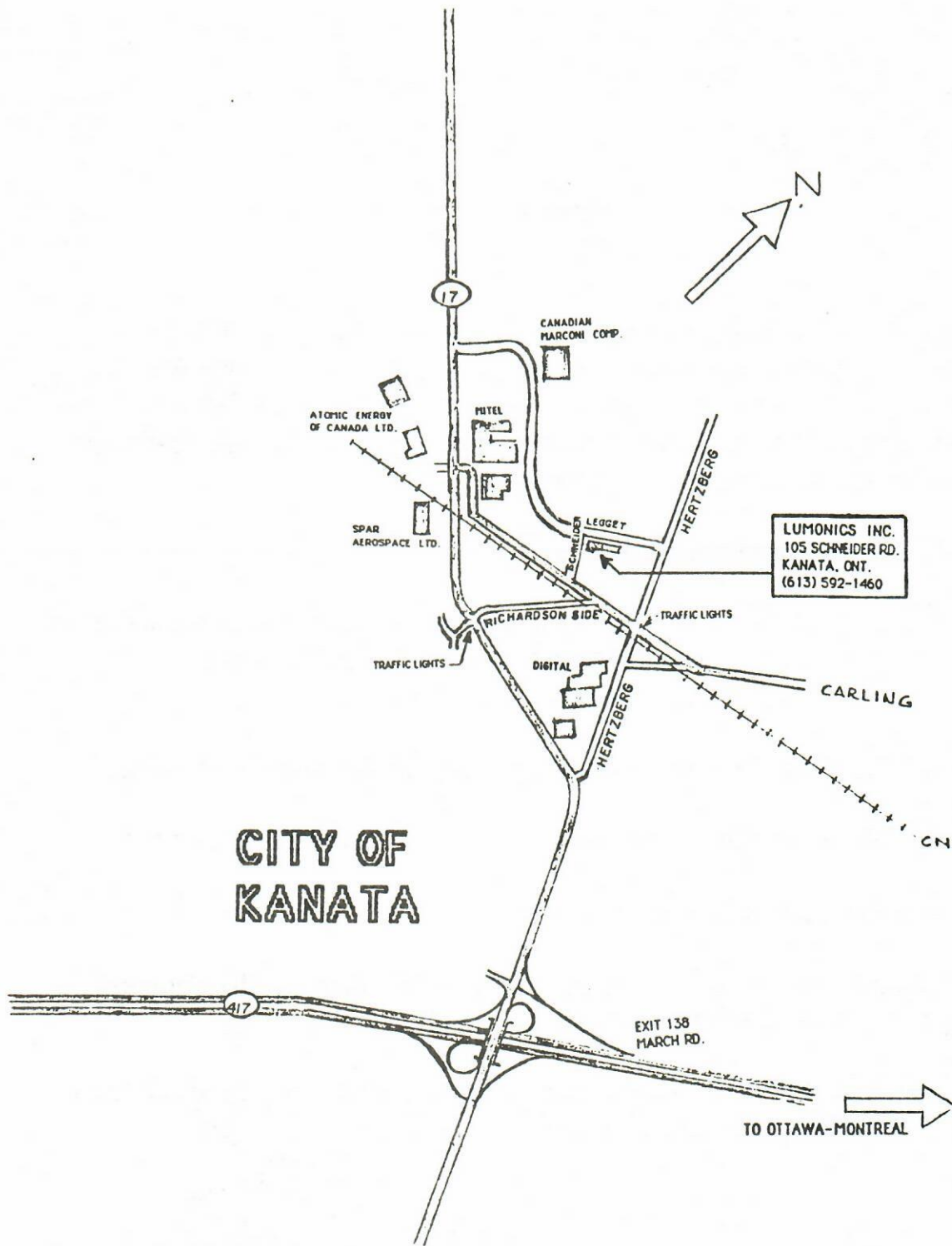
We trust that this arrangement is satisfactory, and if anything needs to be added or changed please let us know.

regards,



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A.T. Don  
ASQC coordinator  
Ottawa sub-section



**DIRECTIONS TO LUMONICS INC.**

FOLLOW HIGHWAY 417 WEST THROUGH OTTAWA  
 GET OFF AT EXIT 138, MARCH ROAD AND BEAR RIGHT  
 YOU ARE NOW ON HIGHWAY 17 (MARCH RD.)  
 TURN RIGHT ONTO HERZBERG ROAD  
 PASS THE RAILWAY CROSSING  
 TURN LEFT AT THE TRAFFIC LIGHTS ONTO CARLING  
 TURN RIGHT ONTO SCHNEIDER ROAD  
 LUMONICS IS THE LAST BUILDING ON THE RIGHT

TO ASQC ON JANUARY 29, 1986

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QUALITY MANAGEMENT IN THE 80'S

Productivity through Quality Assurance can only be attained when effective quality systems are coupled with management philosophy which puts QUALITY FIRST. Putting quality first is not another slogan. The "Quality is Job 1" approach never fooled anyone. Dr. Norihiko Nakayama, President of Fujitsu American, Inc., is quoted as saying that:

"Quality control is --- or should be --- a state of mind. It must permeate the entire operation. Everyone from the president to the production trainee is part of quality control. But it is up to the top manager to instill in everyone the desire to produce goods of the highest quality."

To achieve this 'STATE OF MIND', top management must address the following:

1. Vendor relationships. For too long the relations between purchasing departments and vendors has been adversarial in nature.
2. Labor relationships. Many times the worker is blamed for failures he cannot control. The raw materials may be bad, the design unachievable, or the training before assignment inadequate.
3. Utilize technology. The Japanese and others have demonstrated that it is important to implement and use technology; not invent it.
4. Long term v/s short term profits. For many years there has been shift to an economy where success is judged by short term profits. The "Cash Cow" status of many manufacturing operations usually results in declining productivity. There must be a shift back to an economy based on long term planning/investment and management teams which have an understanding of the process they are to manage.
5. Customer relations. It is imperative that management understand the quality needs of their customers. Only with such understanding can design requirements, production capacities, and marketing strategies be planned.

Companies such as Proctor and Gamble, IBM, Bendix, Hewlett Packard, John Deere and Boeing have this state of mind.

There are four basic approaches to quality control, each representing a substantially different level of control.

1. INSPECTION PROGRAM

To detect defects after production (reactive system).

## 2. VERIFICATION PROGRAM

To detect defects during production (reactive system).

## 3. CONTROL PROGRAM

To detect defects and take corrective action (reactive system).

## 4. ASSURANCE PROGRAM

To eliminate causes of defects (positive system).

One important aspect should be pointed out about these levels of control. There is no way that going to a higher level of control can raise the "quality". It cannot raise the "prescribed acceptance criteria". There is no way it can convert a Chevrolet into a Cadillac - only an unnecessarily expensive Chevrolet. It may improve the yield of acceptable products, and it certainly will raise the assurance of quality - perhaps unnecessarily so - but will not raise the "quality".

We have before us four possible levels of control:

An Inspection Program kills alligators.  
A Verification Program kills them when they are smaller & fewer  
A Control Program hunts out their nesting places.  
An Assurance Program drains the swamp.

It's damned difficult to keep our minds on draining the swamp when we're up to our ass in alligators. Nevertheless, it's got to be done and it will take statistically competent, dedicated professionals to do it.

According to a 1977 article ("Quality and Productivity") in Quality Progress by A. F. Feigenbaum: "From 15% to 40% of the manufacturer's costs of almost any American product that you buy today is for waste embedded in it - waste of human effort, waste of machine time, loss of accompanying burden." The devastating results are visible today. Many American manufactured products are hard to sell at home or abroad and imports are dominating domestic markets.

Before you can increase productivity or improve quality you must have stability and continuity in your manufacturing process. How can you have stability when crises (especially at month end) are occurring? The job of management is to keep crises from developing on the production floor so that production workers can focus their attention on quality and productivity. A reduction in scrap and rework will free productive capacity in any company. This available capacity can then generate more shippable product - a true productivity improvement.

Statistical control charts have been around for about fifty years yet their North American use is sporadic and poorly applied. Control limits, once we have achieved a stage of statistical control, tell us what the process is, and what it will likely do tomorrow, and not necessarily where we wish the limits to be. The control chart is the process speaking to us.

The distribution of a quality characteristic that is in statistical control is stable and predictable, day after day, week after week. Engineers and chemists can then become truly innovative toward improvement or change of the process. They sense the fact that further improvement is up to them. Without statistical methods, attempts to improve a process are hit and miss, with results that usually make matters worse. Why don't we use them?

Lag in American productivity improvement has been attributed in editorials and articles in the trade press to failure to install new machinery and the latest types of automation. Such suggestions make interesting writing for people that do not understand the real problems of production. There is a quicker and surer way to improve productivity, namely, better administration of employees and existing machinery. Then, after the present problems are conquered, talk about new machinery. First learn how to farm, then mechanize. Automation can MAKE more defects FASTER.

A Japanese plant manager who turned an unproductive Canadian factory into a profitable venture in less than six months says: "It's simple. You treat people like human beings and they react like human beings." Once the superficial, adversarial relationship between managers and workers is eliminated, they are more likely to pull together during difficult times and to defend their common interest in their firm's health.

Without a cultural revolution in management, the quality-control-circle concept and other innovations will not produce the desired effects for American corporations. Nor can anyone guarantee that job security for the rank and file would be enough to produce high productivity and product quality.

Putting the appropriate strategies into practice is not a short-term ploy to improve the next quarterly report. The management emphasis towards employees and defect prevention must be as firm as their commitment to profitability and order bookings.

Good intentions with half-hearted interest are actually counter-productive. Case in Point: A designer had recommended that an expensive practice of redoing engineering change notices be avoided by having the changes notices checked by designers before issuance. Thus, errors could be corrected and the unnecessary expense of issuing new change notices could be drastically reduced. He put his suggestion into the company suggestion system. He anxiously waited a week for a response from the committee in charge of evaluating and approving cost reduction suggestions. He waited three more weeks and no response was received. He confided to a friend that at least a call saying that the idea was being reviewed would have made him feel better. A month later, he told a number of people that he would never submit another idea. The company not only lost potentially good ideas, but the frustration and anger evoked reduced the suggestor's productivity and probably cost the company thousands of dollars in lost output during this period. His experience also affected the attitudes and morale of those who heard about his bitter experience.

Conversely, Sears, who is not a manufacturer, gets a tremendous return on its quality control activities. According to an August 20, 1984, article in TIME: The suppliers' products must meet the standards of the Sears product-testing labs. The labs were started in 1911 with a single chemist, but have evolved into a full-fledged testing organization that employs 138 engineers and technicians who run evaluation on 10,000 products annually. Mattresses are rolled over 100,000 times with a 225 lb. wooden cylinder. Leather boots spend hours dunked in pools of water or strapped to automatic walking machines. Toilets are flushed 1000,000 times-once a minute, day and night-to assure dependability. Last year, 2,239 products were tested.

Technicians in the labs come up with ideas of their own that find their way into Sears products. Engineer-Manager Jim Roach estimates that 1,000 patents have been granted to Sears since 1930. Few innovations have been startlingly new or involved complex technology; they were just nice and convenient. Example: medicine cabinets that light up when touched. Still another: a hot-air popper for gourmet popcorn. Earlier models did not work with such popcorn because of extra moisture in the corn.

This paper has emphasized the human element as the major force in the drive towards better competitive products. When employers are motivated then the full benefits of automation, microprocessors and robotics can be realized. It is not the intention to rehash the many computer applications available to the astute QC manager. These have been widely covered in numerous books, magazines and seminars. I would, however, like to emphasize that the information revolution entails rapid technological changes. Here are some points to ponder:

- Intermediate and long term manpower planning
- Joint labor/management discussions on the impact of automation
- Progressive training and retraining of employees to avoid creation of "techo-peasants"
- Close cooperation with local community colleges and universities
- Dislocation avoidance through:
  1. aggressive worldwide sales/marketing
  2. subcontracting during peak workloads
  3. above average use of overtime
  4. use of temporary help, summer students, part timers
- Job rotation/transfers to build up base of multi-skilled employees
- Advance training courses for operators and maintenance personnel affected by new machines

If US managers wish to start a truly effective quality program, they must overcome such internal organizational obstacles and external pressures and include the following in any plan of action:

- Make quality a specific corporate objective and plan a long term program structured around a definable concept and market philosophy

- Begin training line personnel in quality practices as soon as possible.
- Eliminate all possible defects at the design stage rather than revoking them later.
- Institute statistical quality control methods throughout the manufacturing process.
- Upgrade the materials functions to buy fewer defective materials.
- Forge strong working partnerships with vendors.
- Build quality teams and keep them motivated.
- Reward improvements to quality with appropriate recognition.
- Invest in new equipment and machinery.

The mission is clear, the methodology is available - what we need is the will to succeed.

KIVENKO'S KOMMANDMENTS

- The customer is God, stay close to him.
- Utilize MBWA.
- Recognize perceptions are as important as reality.
- Believe that quality is never an accident.
- Lead, follow or get out of the way.
- Avoid 'surprises' - employees, boss, vendors, customers.
- Watch overheads carefully.
- Remember - there ain't no free lunch.
- Don't ever get so busy, you can't think.
- Understand that people are only motivated by unfilled needs.
- Realize that buyers are the managers of your outside factory.
- Incorporate Murphy's law into all plans.
- Appreciate that consumers are stats; customers are people.
- Constantly improve or you will fall by the side.



From :



MONTREAL SECTION

P.O. BOX 444, POINTE CLAIRE

DORVAL H9R 4P3



To :

31  
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MONTREAL, QC H3S 1H5

