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Total Quality Management Bulletin

Volume 3, Issue 1

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ISTC/AIAC Aerospace Total Quality Initiative Update

The Aeronautics Branch of Industry, Science and Technology Canada (ISTC), in cooperation with members of the Aerospace Industries Association of Canada (AIAC) Total Quality Committee, is developing a handbook on Total Quality Management for the Canadian aerospace industry. The handbook will be based in large part on input from quality professionals within the sector. It will be a practical desk-top reference on Total Quality Management, intended for use by both managers and hourly employees throughout the aerospace industry. Companies that already have their own handbook will find the ISTC/AIAC TQM handbook useful as a supplementary information source. On the other hand, companies which do not have their own TQM handbook will hopefully choose to use the ISTC/AIAC TQM handbook as their own "company handbook."



A key section of the handbook will contain case studies dealing with quality management topics based on actual industry experience. We believe that the case studies section of our handbook will be of tremendous value to sector companies, especially those who have yet to get serious about TQM. Letters have been sent to several aerospace sector companies requesting that they share their TQM experience by contributing a case study for this section of the handbook. If we missed you and you are interested in providing a case study or have some suggestions about the handbook, please call Bob Atkinson, ISTC, at (613) 954-3269 or Stuart Alexander, Spar Aerospace Limited (Chairman of the AIAC Total Quality Committee), at (416) 629-7727. We hope to have the handbook ready for distribution in the May/June timeframe.

In the meantime, you will soon be receiving your copy of a Report on the Status of Total Quality Management

in the Aerospace Industries of Canada and the United States. The report highlights the results and conclusions of a recent Total Quality (TQ) Survey of Aerospace Industries Association of America (AIAA) member companies and compares the results of the AIAA TQ Survey with the results of the Canadian Aerospace TQ Survey 1991. We believe you will find the report of considerable interest. Distribution is scheduled for early April.

Also coming your way soon will be a comprehensive listing of TQM references and an overview of Canadian community colleges and universities that offer training in quality and productivity. Look for these publications in early April as well.



About This Bulletin

The Aerospace Total Quality Management Bulletin is published periodically by the Aeronautics Branch of ISTC in cooperation with the Total Quality Committee of the AIAC. The purpose of the Bulletin is to keep members of the aerospace sector informed on the status of the ISTC/AIAC Aerospace Total Quality Initiative and to provide a forum for the exchange of news, ideas and experiences on quality and productivity issues.

In keeping with the spirit of TQM, the editorial staff is committed to the continual improvement of this Bulletin. Each issue will bring exciting new information designed to increase your TQM awareness level. Your suggestions will help. Short articles about TQM in your company would also be appreciated and should be sent to: Bob Atkinson, ISTC/Aeronautics Branch, 235 Queen Street, Ottawa, Ontario K1A 0H5.



Aerospace Industries
Association of Canada

Association des industries
aérospatiales du Canada



The Tools of Quality

An article in the March 1992 issue of *Journal for Quality and Participation* discussed the results of a research project on the use and effectiveness of Quality Tools carried out by the Ventana Corporation of Tucson, Arizona. A total of 400 companies recognized for their expertise in implementing TQM were surveyed.

Highlights of the project results are as follows:

- **Teamwork** is the best way of involving all employees in corporate decisions and problem solving. The best results are achieved through use of the appropriate problem solving techniques.
- **Training** received strong emphasis by all companies. Significant resources are allotted to ensure every employee receives some training in quality problem solving tools.
- Of the seven basic tools, flowcharting was the most popular with 70% of respondents using this tool. Cause-and-effect diagrams was next (67%), followed by Pareto diagrams (63%), control charts (48%), scatter diagrams (36%), and histograms (25%).
- Other frequently used basic quality tools included:
 - brainstorming (79%)
 - cost/benefit analysis (64%)
 - survey (63%)
 - statistical process control (51%).

In order to improve your processes, you have to understand them. Knowledge and use of the basic tools of quality can help. These tools are used extensively by the leaders in TQM. You should be using them as well. To assist you in this regard, this issue of the TQM Bulletin sees the beginning of a new column titled "Continuous Improvement Toolbox."



Continuous Improvement Toolbox

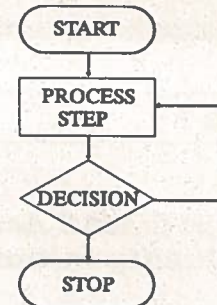
This is the first in a continuing series of segments which will describe generic continuous improvement tools that can be used to identify and analyze problems. Each segment will contain a brief description, instructions and an example of how the tool can be applied.

Process Flow Charts

A flow chart is a pictorial representation which describes the main inputs, steps, branches and outputs of a process. Flow charts are practical and useful tools to document and examine how the various steps in a process relate to each other. They are especially useful when you need to describe the actual and ideal path that any product or service follows in order to identify

deviations. Flow charts are generally used as a first step in process improvement.

Flow charts use standard and easily recognizable symbols to show the type of process being performed. They can be applied to any process, simple or complex, from billing a customer to assembling large and complex products.



Typically, flow charts are constructed by employees with the most knowledge about a specific process. They meet and agree on a flow chart that best describes how the process actually works. Then they work on constructing a flow chart that describes how the process should work. Where the two charts are different becomes the focus for change and improvement. Alternatively, the flow chart of how the process actually works can be used as a basis for further data gathering and analysis using other continuous improvement tools.

Flow charts are not just for specialists! All employees can use them to improve processes and procedures. Remember, the person doing the job is the most knowledgeable about the job! In constructing and using flow charts, it is important to clearly define the boundaries of the process, use the simplest symbols possible, and make sure every feedback loop has an escape. There is usually only one output out of a process box. If more than one is necessary, it probably requires a decision box.

By analyzing processes through flow charting it is possible to reduce errors, reduce cycle time, simplify processes, eliminate unnecessary and non-value added work, and improve efficiency. Improved quality and profitability is the bottom line!

Next Issue: Pareto Charts and Check Sheets

Editor's Note: Thanks to Peter Boag of AIAC for suggesting this series and following through with the above article. Peter, who is employed by the Canadian Transportation Accident and Safety Board, is on assignment to the AIAC for a period of approximately 18 months.





Sharing

Continuing with this issue of our Bulletin, we report on Total Quality experiences and practices of sector companies. This is your forum for communicating lessons learned and ideas on TQM and productivity issues to others. Its success depends on your contributions. Thanks to Allied-Signal Aerospace Canada who have given us permission to print the following excerpts from a recent issue of their Customer Focus Bulletin.

Customer Advocate Program

In November 1991 we launched our Customer Advocate Program. The program is designed to provide executive management direct exposure to our customers.

Customer satisfaction is the main element in Allied-Signal Aerospace Canada's mission and in achieving the mission goal. Each advocate—who are direct reports to our president Ken Kivenko—has the assignment to determine through personal contact how our customers perceive our performance and what we need to do to fully satisfy that customer.

Since November our advocates have visited several customers and, armed with all the relevant background information, collected valuable first hand data on our customer's perception of Allied-Signal Aerospace Canada.

Here is the memory jogger used by the advocates:



PRODUCT PERFORMANCE

- Product Quality
- Durability
- Reliability/Product and System
- Maintainability
- Specification Conformance
- Product Design
- New Product Development
- R & D

PRODUCT DELIVERY

- Lead Time
- Flexibility
- On-Time Delivery
- Invoicing
- Documentation

SERVICE QUALITY

- Product Support
- Responsiveness
- Repair Manuals

- Accessibility
- Training
- Communication
- Repairs
- Turntimes
- Complaint Handling
- Attitude of Personnel
- Field Representation
- Parts Availability

VALUES

- Pricing
- Risk Sharing
- Non-Recurring Costs

Customer advocates provide quarterly reports on customer satisfaction status and discuss major issues at regular management team meetings.

The next article appeared in Computing Devices' TQMP News. In a few short paragraphs introducing their January 1992 newsletter, Jim Slinger very effectively puts things into perspective. The article follows:

I recently read an excerpt written by an Ernst & Young partner which in a few words describes the essence of our initiative at Computing Devices.

"Total Quality Management (TQM) is an integration of management attitudes, ideas, methods and beliefs into the company's culture to bring about continuous improvement. Quality does not mean perfection, but it does require a very careful assessment of what customers' expectations are. Decisions made by management should ensure that quality is the focus of every business function including product design, sales, marketing, receiving, production and accounting."

Computing Devices led the way nearly seven years ago when we began to implement TQMP. Since then, much has been achieved in this area.

This Newsletter, along with previous newsletters, describes how, by working together, our efforts are providing continuous improvements in departments all over the company.

Most companies have started to implement TQMP initiatives because they realize that it is the means for survival. Therefore, we cannot let our efforts dwindle. Each of us can make a contribution by improving our processes—in engineering, in manufacturing and in the support divisions. This contribution is essential to remain competitive. That benefits us all.



The Mismanaged Concept of Quality



All too often, we hear managers say, "Our company is committed to quality." This statement is heard from top officials as well as from so-called quality professionals. If we try to dissect the meaning of this phrase, we find that very few people, even in the same organization, will define it in the same way. What this means is that the big picture is missed and a commitment to quality will never be achieved.

If a company's senior manager and his quality professional cannot agree on a meaning of quality, how can they expect the people performing the activities that affect quality to be motivated enough to produce a quality product? If employees' questions regarding their contributions to quality have not been answered, a total commitment to quality does not and never will exist. For example, the person typing yesterday's board meeting minutes needs to know whether making no mistakes is really important, the engineer designing experiments needs to know whether parameter X is really needed, the personnel administrator needs to know whether he should tell the employees about the intricate details of the insurance program, and the production coordinator needs to know whether she will get the credit if she tells her boss about her new idea.

This brings us to missing the big picture, which is apparent in many companies. It is very disturbing when a company hires a quality professional to set up a statistical process control and statistical quality control program and then says, "See, we really are committed to quality." What about the mistyped meeting minutes, the parameter that wasn't monitored, the information withheld from the employees, and the idea that was never shared? All the statistics in the world will not motivate or improve operating efficiency. Company managers must realize that the quality of an activity is only as good as the attitude of the person(s) performing that activity.

Managers in any industry must first evaluate the philosophies and values that they project to their employees. If they cannot honestly say that their relationship with all employees is open, honest, and genuine, then the first hurdle will never be overcome.

A total quality commitment is a management philosophy that must encompass all activities performed for and by all employees. Quality professionals today cannot help managers achieve a total quality program if they are charged with accomplishing product quality using statistics and inspection. It is true that statistics and inspection are necessary tools for measuring quality activities, but they are just small parts of an efficient machine. Hiring quality people, purchasing quality materials, eliminating waste, encouraging creative engineering, and generating accurate reports are just as

important as statistics and inspection in building this efficient machine.

Accomplishing a total quality commitment is a difficult task initially and appears, on the surface, to be striving for the impossible. But we must all realize that quality (the road to success) is people. In our search for total quality, all people involved will be more motivated to improve and achieve. This requires quality attitudes. No one will ever achieve Utopia in our structured society, but the results of our efforts will surely improve the continuity and consistency of any company's operations. (Robert R. Wery, Dairyland Power Cooperative, La Crosse, Wisconsin, U.S.A.).

Editor's Note: The above article appeared in the March 1992 edition of ASQC's Quality Progress magazine and has been reprinted with permission.



Something to Think About

*You don't have to do these things.
Survival is not compulsory.*

Dr. Edwards Deming



Canadian Network For Total Quality

In April 1992, an integrated proposal to provide Total Quality services to Canadian organizations was submitted to ISTC by the Canadian Network for Total Quality (CNTQ). Current member organizations are: the Canadian Manufacturers' Association, Canadian Trucking Association, College Edouard Montpetit, The Conference Board of Canada, Durham College, Institute of Quality Assessment, The Manufacturing Technology Centre Inc., Quality Council of Alberta, The Winnipeg Quality Network, Association Quebecoise de la Qualité, British Columbia Institute of Technology, The Institute of Market Driven Quality, and the Canada Quality Council.

The stated mission of the CNTQ is:

To contribute to the economic and social well-being of Canada by promoting and facilitating the use of total quality principles and practices throughout the country.

The network proposal consists of five components operating at different levels, or in different parts of the economy. These include:

- a community component;
- a sectoral component;
- a functional component;
- a provincial component; and
- a national component (the National Quality Institute).

The "Customer Needs" met by the network would include:

- increased awareness, understanding and use of Total Quality Control (TQC) principles;
- overall strategies for TQC at several levels and identification of vehicles for implementation;
- exchange of information and experiences;
- assistance in implementation of TQC; and
- keeping abreast of TQC developments in other countries.

For more information on the CNTQ and/or the National Quality Institute, please contact John Longair by phone at (613) 526-3280 or by fax at (613) 526-4857.

Watch this bulletin for periodic updates on the activities of the CNTQ.



The European Quality Management Movement

In September 1988, 14 presidents of Western European business organizations took the initiative to establish the European Foundation for Quality Management (EFQM). One year later, they were joined by 53 more presidents, committed to the Total Quality Management movement in Europe. In October 1989 the EFQM came into existence. The objective was clear: to enhance the competitiveness of Western European businesses in the world markets.

Today over 150 Western European organizations have joined the EFQM. Most Western European countries and business sectors are represented and many universities and business schools have also joined.

Future issues of the TQM Bulletin will take a closer look at the TQM movement in Europe and how it is rapidly becoming an integrated value of European society.



ISO 9000 in Europe

European companies are moving quickly to obtain third party certification of their quality management systems in an attempt to enhance customer service and sharpen their competitive edge, according to a recently obtained

survey report of 238 companies in nine European countries.

In six of the countries, more than 60% of the companies surveyed were either registered or seeking registration to ISO 9000. In one country, the figure exceeded 95%. Other important findings:

- Implementing ISO 9000 has helped companies' operations by promoting better efficiency and, consequently, a lowering of costs.
- Registration to the ISO 9000 series, with the advent of the single European Market, is perceived by the companies surveyed as being important since it will provide an immediately recognizable benchmark.
- Promoting ISO 9000 registration is a way for companies to show their commitment to quality and to generally improve their linkage among existing and potential customers.

If the report findings are any indication of current trends, the ISO 9000 series seems set to become a permanent feature of doing business in Europe in the next decade. The survey points out that although some organizations see registration as a "knee-jerk" reaction to pressure from their customers, the majority see it as a prerequisite for staying competitive in the 1990s. By implementing the requirements of the series, and opening themselves to the scrutiny of a third party, companies can bring their quality assurance systems up to a standard that ensures that all the performance requirements and needs of the customer are fully met.

Information on how to obtain a copy of the report titled ISS Eurosurvey can be obtained by faxing your request to Editor, ISTC/AIAC TQM Bulletin, at (613) 998-6703.



Book Review

One of the most recent books on quality to hit the market is titled:

*ISO 9000 Certification
Total Quality Management*

The book's author, Subhash C. Puri, is well versed in all aspects of quality assurance and TQM and is effective in showing the reader how TQM and ISO 9000 complement one another and how the combination can lead to competitive excellence.

Puri's book is available from:

Standards-Quality Management Group
P.O. Box 4146, Station C
Ottawa, Ontario
K1Y 4P2

Tel./Fax: (613) 820-2445



Did you know?

The American Society for Quality Control (ASQC) was founded in 1946 and is the worldwide leader in the development, promotion, and application of quality-related information and technology. The ASQC is headquartered in Milwaukee, Wisconsin, and serves business, industry, government, and academia. The Society is composed of more than 115 000 individual and 900 sustaining members in the United States and 62 other countries.

The ASQC has several local chapters throughout Canada. Call 1-800-248-1946 for the number of the chapter nearest you.



Introducing Dr. Q

Do you have questions about TQM? Tired of wondering how to get started/what to do next/who to go to for help/how important is ISO 9000/how to measure results/etc.? Need advice from an experienced TQM practitioner? Want your problem analyzed by an expert with some operational experience, someone with real live "in the trenches" TQM smarts? Look no further. After an exhaustive search and intensive negotiations we have secured the services of a noted TQM authority who is willing to share his knowledge and experience with readers of the TQM Bulletin. Respecting our expert's wishes to remain anonymous, we shall refer to him simply as Dr. Q.

The process is simple. Just sent your questions by fax to:

Dr. Q
c/o Editor
ISTC/AIAC TQM Bulletin
Fax: (613) 998-6703

Please note, if you do not wish to have your own name or your company's name appear in the bulletin, please

indicate this in the fax. As many questions as possible will be answered on a first come, first served basis.



For Your Calendar

- ASQC's Second Annual Service Quality Conference will be held 19-20 April 1993, at the Hyatt Regency Hotel in Atlanta, Georgia. Professionals from any service-oriented organization will benefit from this conference. Call 800-248-1946 for more information.
- The AIAC and Canadian General Standards Board will co-sponsor a seminar on ISO 9000 Wednesday, 21 April 1993, at the Ottawa Congress Centre. For more information on this important seminar call 613-232-4297.
- BENCHMARKING WEEK '93 will be held in Washington, DC, 17-21 May 1993, at The Crystal Gateway Marriott. For additional information, call the American Productivity and Quality Center at 713-685-4671.
- The 47th Annual Quality Congress will be held 24-26 May 1993, at the Hynes Convention Center, in Boston, Massachusetts. "Proven Results Through Total Quality" is the theme of this ASQC-sponsored conference, which features more than 200 technical sessions as well as over 200 exhibits and a tour of companies and attractions in the Boston area. Call 800-248-1946 for more information.
- QPMA will be holding their Spring 1993 Conference 1-4 June 1993, in San Antonio, Texas. One of the speakers will be Dr. Armand V. Feigenbaum, the originator of the term Total Quality Management. The theme of the conference is "Empowerment—Unleashing the Full Potential of Your TQM Effort." Call 708-619-2909 for more information.



NEXT ISSUE

More about the tools of quality
ISO 9000 in Canada
Dr. Q makes his debut
Why some TQM programs fail