

ASQ Statistics Division Newsletter

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Incoming Chairman's Message

By Ed Mytytka



Incredible. Over the past year, membership in the Statistics Division has grown from about 5700 to over 7500 and continues to rise. Just six years ago, Bill Hunter (our founding chairman) noted that, from 1979 to 1980, "membership went from zero to 335, a percentage increase of infinity, which will be difficult to top in the future. We certainly haven't topped that growth rate, but the numbers are still staggering.

This growth should be both satisfying and challenging to Division members. It is gratifying since it indicates that what we have to offer is perceived as valuable. It reflects that tremendous national interest in quality improvement and the recognition that statistical methods provide an important set of tools for accomplishing that goal.

On the other hand, it is challenging since the Division is a resource organization which serves to promote the use of statistical methods for quality and productivity improvement. As such, the Division provides a focal point within ASQC for research, development, dissemination, and application of such methods serving Division members, the Society, industry, academia, and government. Its rapid growth indicates that the need for these services is great.

Strategic Plan

In response to this challenge, a number of Division officers and councilors recently met to develop a strategic plan for the Division which allows us to continue to develop mechanisms to meet these needs. The objective of this plan is to establish short and long-range goals which will enable us to utilize our resources most effectively. As this plan is developed and refined, I will be sharing it with you in subsequent messages.

In the seven years of its existence, the Division has established a firm foundation for future growth and activity. We have established a number of successful ventures including:

- This Newsletter.
- The How-To booklet series.
- Conference co-sponsorship at both the national and local levels.
- Sponsorship of preconference short courses.
- Standards development and review, and
- A Speaker's list

In addition, many Division members are actively involved with the American Statistical Association Committee on Quality and Productivity.

To date, I would say that, through such activities, the Division does a reasonably good job "promoting statistical methods for quality improvement" at the national level, particularly for industrial and academic

statisticians. One of our objectives for the coming year will be to give more attention to reaching other quality professionals closer to home. We will do this by continuing to develop the Newsletter and How-To booklets, strengthening our conference-related activities, and by encouraging more active relationships with Sections and other Divisions of ASQC.

It is likely that we will survey our members sometime soon in order to more accurately determine the best means to develop such relationships and the directions that Division activities should take. In the interim, I welcome your comments, criticisms, and suggestions and invite you to write or phone me.

Please also feel free to contact any of the individuals who are involved formally in this planning exercise. Ron Askin (our new secretary), Lynne Hare (Division treasurer), Pete Jacobs (our outgoing Chairman), Bob Perry (regional councilor and Examining Committee chairman), and John Ramberg (chairman, 1983-84). I would like to take this opportunity to thank each of these gentlemen for their efforts and to also thank Mike Mazu (Education Committee chairmen) for his valuable inputs.

Thanks, Pete

Acknowledging the work of the out-going chairman is a privilege of the incoming chairman. Pete Jacobs has made a total commitment and has been truly dedicated in his activities as Chairman of the division.

Pete has provided the Division with aggressive leadership and was the main force behind our strategic planning sessions. He is very much responsible for the Division's continued success and vitality. On behalf of all division members, I extend my sincere thanks to Pete for his dedicated service. Like the Division's initial growth rate, his contributions as chairman will be difficult to top.

A Tool for Teaching on the Front Lines of Quality

**By Barry Griffin,
Valparaiso University**

In the contest for high quality manufactured products, numerous United States industries lag behind Japan. Noted consultants feel we are closing the gap very slowly at best, possibly not at all; the Japanese do not rest on their laurels. When Quality Progress asked the internationally famous consultant, J. M. Juran, if the U.S. were closing its gap in quality compared to foreign products, he replied in part:

"We'd have to work at it more energetically than we have been, and particularly redesign our approaches so that every year without fail we make improvements at a rapid pace."

Only if current production practices assimilate the technology of quality control will improvements advance "at a rapid pace." The production departments of vendors pursuing the Ford Q101, Eaton VC-7, or other standards already use statistical process control (SPC), particularly X-bar and R charts, to monitor and react to their processes. In order to help workers whose jobs have grown to include the calculation of control limits, I designed a step-by-step form which simplifies the computations. If technique begets understanding, as indeed it seems, use of the form will lead to a better understanding of the limits, especially for those who have been away from algebra for a long time.

Data presented in the Ford Supplier Institute Seminar will be used to illustrate the form. ITT Hancock of Jackson, Michigan manufactures front door hinges for Lincoln, Mark and Continental car lines; the totals of 25 subgroup averages and ranges for the December, 1982 chartings are 931.4 and 174.0 respectively. Averages of the 5 measurements per sub-group track the foot-pounds of torque required to rotate the hinges.

Users of the [Control Chart Calculations form](#) write the number of subgroups, the total of sub-group averages, the total of sub-group ranges, and the sub-group size into appropriately labeled rectangles on the form as they proceed with the sequenced instructions. The Control Chart Calculations form has been completed for the ITT Hancock hinge data and is shown for your convenience and understanding.

Each arithmetic instruction in the computational sequence is accompanied by a rectangle divided into three segments: (1) a bold face identification number, (2) a description of the data element or instruction, and (3) a blank space for recording the resultant data. Bold face numbers written beneath the description or instruction in segment (2) refer you back to the rectangles corresponding. In the descriptive portion of rectangle number 5 for example; 4/1 (in bold face) means that you should divide the data element written in rectangle number 4 by the data element in rectangle 1. By stepping through this simple logic, you will calculate control limits for both X-bar and R charts by the time you complete rectangle number 12.

The [form](#) is simple and easy to use; 92% of the people participating in a recent statistical process control course offered at their plant agreed that the form helped. Sequenced instructions, statistical constants, and clear logic make the form an attractive computational tool that automatically stores results for future use.

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Outgoing Chairman's Message

By Pete Jacobs

The 1985-86 Statistics Division program year has been very successful. Our membership has grown to over 7,500 and we are the second largest division within ASQC. We are financially very sound and are currently supporting a number of outstanding programs including the "How To" Booklet Series, quality/statistics national and international standards activities, several joint projects with the ASA Committee on Quality and Productivity, co-sponsorship of the Fall Technical Conference and the Conference on Applied Statistics, active participation in the Annual Quality Congress, and, of course, the division newsletter.



As I mentioned in the last newsletter, we have recently undertaken an extensive division planning exercise. This effort has involved the development of strategic or long-range plans covering our activities for the next two to five years. A summary of the planning project is presented in this newsletter by our incoming Chairman, Ed Mykytka. Clearly, we have been very successful at what we have been doing since the division was founded in 1979. Just as clearly though, there are many very worthwhile opportunities for expanded action and much remains to be accomplished.

I have found my year as Statistics Division Chairman to be tremendously educational and personally rewarding. I have had the opportunity to meet many of you and have appreciated your numerous comments and suggestions. With more than 7,500 members, the division has a wealth of talented human resources. It is these people resources that must be effectively utilized to further expand the many division programs. I strongly encourage each of you to become actively involved.

I thank you very much for your support during the past year and welcome Ed Mykytka as incoming Chairman. Ed, along with the other new officers Ron Askin, Lynne Hare, and Steve Bailey, will provide solid leadership as the division continues to expand its scope of activities and sphere of influence in the statistical and quality arenas.

Division Members Elected Fellows

We are pleased and proud to announce that three members of the Statistics Division have been elected Fellows of ASQC. Their citations read as follows:

Dr. Lynne B. Hare (T. J. Lipton, Inc.):

For his outstanding leadership in promoting, teaching and applying statistics and quality control to enhance food industry productivity improvements; for his significant efforts (Section and National levels) in the promotion of these concepts and for his contributions to the Society through numerous division activities.

Dr. Douglas C. Montgomery (University of Washington):

For his outstanding university work as an educator in statistics, reliability and quality; for authoring six books and numerous articles in those fields; for his dedicated service in ASQC and for his outstanding activities in promoting quality control and ASQC in other professional societies.

Dr. Peter R. Nelson (Rensselaer Polytechnic Institute):

For his outstanding contributions to the quality field and ASQC, through his editorial efforts on Journal of Quality Technology, for numerous technical articles and his activities as a university educator.

National Quality Month

October 1986 marks the third annual National Quality Month. Douglas D. Danforth, Chairman and Chief Executive Officer for Westinghouse Electric Corporation is serving as chairman. For the first time, Canada will officially join in Quality Month; coordinating activities there is Dwight Cameron of Duracell, Inc. An advertising/ editorial supplement, based on the theme "Quality and the bottom line:" is scheduled to appear in the September issue of *Fortune*.

ASQC is developing a series of promotional materials and press kits related to Quality Month, and Westinghouse is preparing a short film, "Quality in America," which will be available to sections during and after October. For further details about National Quality Month, contact Kathy Klein, Manager, Public Relations, ASQC (414) 272-8575.

Treasure's Report

By Lynne Hare

The following information is provided to put down, once and for all time, any charges that I have been siphoning off funds into my numbered Swiss bank account!

As you can see, the Statistics Division is doing quite well financially. Dues are our largest source of income, exceeding expectation by almost \$2,000. The Division has grown faster than we expected. Conference income reflects monies from the Applied Statistics Conference and some registrations for the Taguchi Preconference Tutorial in Anaheim. We've earned more interest money than expected this year, thanks to Kris Bauman's (ASQC Staff Accountant) help. She arranged for us to put a larger portion of our funds in a money market account. Royalties from the "How To" series also represent income, but those monies are passed on to the authors as a token of our thanks.

We think our expenses represent money well invested. For example, the Administrative expenses include \$250 and \$500 in donations for the 1985 and 1986 Annual Quality Months, respectively, and another \$790 for an exhibit to promote the Division's activities at the Annual Quality Congress. Our largest financial expense is the Newsletter, our primary vehicle to keep our membership informed of Division activities. Reference literature expenses represent the Division's program of returning something of value to the membership. As announced in the November 1985 Newsletter, each Statistics Division member may apply for a free booklet from the "How To" series.

We welcome your suggestions.

Carried over from FY 84-85 \$32,011.60

Income

Dues	\$20,556.00
Conferences	3,296.00
Interest	2,388.10
Royalties	277.53

Total \$26,517.63

Expenses

Administrative Expenses	\$2,187.35
Newsletter Expenses	7,546.89
Conference Expenses	7.50
Reference Literature Expenses	604.00
Royalties Paid to Authors	277.53

Total \$10,623.27

Expenses

Checking account balance	3,508.97
Money Market Savings balance	44,396.99
Total cash on hand	\$47,905.96

Experimental Design Short Course

A short course entitled "Design of Experiments for Quality Improvement" will be presented by Dr. J. Richard Trout on Wednesday, October 22. Intended for quality practitioners with an introductory background in basic statistics, the course will introduce the basic principles and procedures associated with performing carefully planned experiments, their benefits, and their practical limitations. Participants will gain an understanding of how experimental design procedures can be used actively to improve the quality of a process.

Dick Trout is an Associate Professor in the Department of Statistics and director of Statistical Consulting for the New Jersey Agricultural Experiment Station at Rutgers University. Dick has 17 years' experience in teaching and consulting in the food, pharmaceutical, and chemical industries.

The course, restricted to 50 people, will last from 8:00 a.m. to 5:00 p.m. The \$50 fee will include lunch and an informal discussion hour after the course.

Statistical Consulting Workshop

Doug Zahn, Dan Boroto, and Andrea Zahn will present a workshop entitled "Increasing the Effectiveness of Statisticians" on Wednesday, October 22. Participants will identify the most difficult problems they encounter in their statistical practice and engage in a series of simulated consulting sessions developed to illustrate these problems. Videotapes of these sessions will be used to analyze the difficulties that arise and to provide a basis for developing creative solutions to complex consulting problems.

One's definition of statistical consulting, criteria for success, and attitude toward statisticians, clients, management, and problems will be addressed with respect to how they both facilitate and limit one's ability to do statistical consulting. Participants will enhance their ability to generate productive consultation or collaboration regardless of the character of the person(s) involved or the technical issues at hand.

Doug Zahn has consulted extensively with clients from industry, government, and academia and teaches in the Department of Statistics at Florida State University. Dan Boroto is an associate professor of psychology at Florida State University, a practicing clinical psychologist and supervisor, and an experienced workshop leader. Andrea Zahn brings to the workshop skills in sales, marketing, and management to enable statisticians to be more effective in consulting with clients and management in business and industry.

The workshop is restricted to 35 participants and will last from 8:00 a.m. to 5:00 p.m. The \$50 fee will include lunch and an informal discussion hour after the workshop.

Registration

Two days (includes 2 luncheons)	\$75.00
One day (includes lunch)	50.00
Short Course (either course)	50.00
Non-technical Program	25.00
Additional lunch tickets	12.00

If your registration is postmarked after October 1, 1986, add \$5.00 to the advance fee prices. Advance registration will be promptly acknowledged by mail. A conference material packet will be available at the advance registration desk upon arrival.

To help facilitate planning the conference, please indicate on the registration form which sessions you most likely will attend (not binding). If corporate registrations are sent, please include individual registration forms for each person with payment. No purchase orders please. To encourage advance registrations, the entire registration fee will be refunded if you cancel before October 3, 1986. After that date the registration fee minus the luncheon costs will be refunded.

For more information contact: Bill Hart (803) 433-4582 or Sam Cain (803) 433-4640 at M. Lowenstein Corporation, Lyman, SC 29365 or Jim White (615) 229-6607 at Tennessee Eastman Company.

Editor's Corner

I'm pleased to report that Dr. John E. Orban has accepted the position of associate newsletter editor for minipapers. John is a research scientist in the Applied Statistics and Computer Applications Section of Battelle. His professional background and experience are very extensive, and we welcome his assistance.

Minipapers should be submitted to Dr. Orban at Battelle Columbus Laboratories, 505 King Avenue, Columbus, Ohio 43201-2693.