



AMERICAN SOCIETY FOR QUALITY CONTROL

STATISTICS DIVISION

NEWSLETTER

CHAIRMAN: OTTO DYKSTRA
EDITOR: BARBARA Y. FERRARO
EDITORIAL ASSISTANT: PATRICIA R. DEKDEBRUN

VOLUME 2, Number 1

March 6, 1981

MESSAGE FROM THE
NEW CHAIRMAN

The accomplishments under Dr. William G. Hunter's leadership are impressive, for which we can all gratefully offer our thanks.

However, no activity can succeed because of the efforts of one person. Many others worked very hard to make this first year a successful one. The goals carry the theme of service to the quality control profession, through participation and cooperation with the Sections and the other Divisions. We will need the continued assistance of many other dedicated individuals to fulfill our goals.

The message of the Statistics Division is carried to the Divisions through our liaison persons. Each of us can carry the message to our home Sections, either formally or informally. Our Region 3 Councillor, Tom Calvin, will be addressing the Metropolitan Section in May. I have two speaking commitments scheduled.

The goals cannot be accomplished without your effort. I urge all of you to determine how you can best help to make this another successful year.

Short-Range Plans (1 year or recurring)

1. Participate in the Annual Quality Congress and provide program sessions.
2. Participate in sponsorship and program sessions of the annual Conference on Applied Statistics (this is the "Princeton Conference", held at Villanova in December 1979, scheduled for Newark, NJ, December 4-5, 1980). This meeting had been jointly sponsored by the Metropolitan Section, ASQC, and the Biopharmaceutical Section, ASA. Also, organize a short course for that conference.
3. Participate in the Fall Technical Conference, sponsored by Chemical Division, ASQC, and Section for Physical and Engineering Sciences, ASA, to the extent we are invited to do so. Organize a short course, to be co-sponsored with the Chemical Division.

4. Continue development of the booklet series, The ASQC Basic References in Quality Control: Statistical Techniques.
5. Continue distribution of a quarterly newsletter.
6. Participate in the development of ASQC Standards.
7. Establish a procedure for assisting those with statistical problems, on a short-term basis.
2. Develop a close working relationship with the other Divisions and with the Sections, looking toward joint sponsorship of short courses.
3. Develop longer courses (2-5 day) on Engineering Statistics and Quality Control, not necessarily tied to a specific conference.
4. Establish an awards program for recognition of individuals who have made significant contributions in advancing the use of statistical methods in quality control.

Long-Range Plans (3 years)

1. Establish the Statistics Division as the focus within ASQC for training and education in statistical procedures in quality control, for those within ASQC who have no background or limited background in statistics (for example, "service" courses) and for our own members who have a background in statistics (for example, state-of-the-art courses, recent developments).

Illustration: Short course, "How to Apply Continuous Sampling," was given the day prior to the Annual Quality Congress in Atlanta.

Illustration: Two tutorial sessions were arranged for the AQC:

- a. "How to Perform Skip-Lot and Chain Sampling:
- b. "How to Test Normality and Other Distributional Assumptions."

5. Develop a leadership potential to assure continued growth of the Statistics Division.
6. Develop a report on "Training of Quality Control Specialists," similar to the report by Ron Snee.
7. Develop a "Speakers List" of members of the Statistics Division.

-- Otto Dykstra



COURSE BEING OFFERED

Data Analysis
With Simple Plots

Dr. Wayne Nelson will conduct a one-day course on data analysis with simple plots in conjunction with the 36th Annual Conference on Applied Statistics. The course will be held Wednesday, December 3, 1980, at the Holiday Inn North, Newark Airport (NJ). Dr. Nelson is the author of "How to Analyze Data with Simple Plots," Volume 1 in the ASQC Basic References in

Quality Control, and the course will draw extensively from this material. This practical course will discuss histograms, probability plots, crossplots, hazard plots, and other graphical techniques. The course fee is \$150 and includes the textbook, lunch, and two refreshment breaks.

Further information is available from:

Walter R. Young
American Cyanamid Company
Building 2, Room 403
Pearl River, NY 10965

-- Douglas C. Montgomery

STATISTICS DIVISION
BOOKLET SERIES

The aim of the booklet series is to provide the quality practitioner in the manufacturing plant with specific ready-to-use tools for conducting statistical analysis in the quality investigative process. The booklets are written in a style that can be understood and interpreted by both engineers and technologists. Each booklet is to be approximately 50 pages in length.

To date, three booklet volumes have been printed. Their titles and the authors are listed on the enclosed page 1. Other manuscripts at advanced stages are listed as (4), (6), (7), and (8). Of the thirty-eight additional topics listed, ten topics have been assigned to prospective authors and the remaining twenty-eight topics (18)-(45) are available to interested persons.

Persons who are interested in preparing a booklet on any of the above topics or who would be interested in reviewing manuscripts on any specific topic are encouraged to write either or both Co-Editors.

-- John A. Cornell
Samuel S. Shapiro

NEWS RELEASE

If you are interested in the correct way to screen parts, modules or systems, there is good news ahead. In the fall of 1981, the Institute of Environmental Science will publish a Screening Guidelines Manual. Here is the story.

In April of 1979, the IES sponsored a Screening Workshop at San Jose, California. Its purpose was to examine the screening methodologies in use at that time. A good deal of information was attained and a great amount of interest was generated. There were many recommendations for future actions. These recommendations did not fall by the wayside. A steering committee sponsored by the IES was convened to set up an analysis of screening programs. This was the birth of the National Program Environmental Stress Screening Electronic Hardware (ESSEH).

It was decided that the output of this effort would be a Screening Guidelines Manual and this manual would be the subject of a second workshop to be held in San Jose in September of 1981 (September 20 thru 25). The Steering Committee is directed by C. E. Mandel of Hughes Aircraft and the Workshop Sessions are to be led by D. Odle of Lockheed. The charter of the group is to advance the state of the art relative to environmental stress screening of electronic hardware by improving techniques,

developing and publishing guidelines and educating management. The objectives of the charter are being fulfilled by the active participation of five different committees, each concerned with a different aspect of the screening problem. All of these committees are directed by A. Hauter of Collins Radio. Each has its own goals and leader, and is described briefly below.

1. Cost Tradeoffs

Model equations will be presented which will lead to the most cost efficient screening methods for any particular scenario. This effort is directed by Rudy Cazanjan of GTE Sylvania.

2. Piece Parts

From the examination of existing data, the most effective screens for any particular part will be developed. This group is chaired by I. Doshay of TRW.

3. Modules, Units, and Systems

A group directed by D. Edgerton of Hughes is examining the best way to screen any assembly once the parts are installed.

4. Glossary of Terms

It was felt that there is a necessary requirement to standardize the common terms and definitions used in the screening vocabulary. Helen Potthoff of Collins Radio is heading up this effort.

5. Industry Survey

To support the various working committees and to gather more data, Paul Welshinger of Sperry Univac is attacking this problem. If you get any questionnaires, please answer them promptly.

The output of these efforts will be a draft manual of about 300 pages. When you register for the Workshop, you will receive a copy. The Workshop will be organized to allow discussions and recommendations for each section. Active participation by all attendees is expected. The final version of the Guidelines Manual will reflect the comments made during the working sessions.

-- M. Raphelson

Annual Quality Congress, to be held in San Francisco, May 27-29, 1981. There will be a Council Meeting and a Division Meeting.

STATISTICS DIVISION, ASQC

ANNUAL REPORT, 1979 - 1980

William Hunter, Chairman

1. Three booklets have been published as part of the ASQC Basic References in Quality Control: Statistical Techniques, under the editorship of Edward Dudewicz:
 - (a) Volume 1. "How to Analyze Data with Simple Plots" by Wayne Nelson.
 - (b) Volume 2. "How to Perform Continuous Sampling" by Kenneth S. Stephens.

(c) Volume 3. "How to Test Normality and Other Distributional Assumptions" by Samuel S. Shapiro.

The Editorial Review Board of this series consisted of Joseph W. Foster, Normal L. Johnson, H. Alan Lasater, Edward A. Sylvestre, and Harrison M. Wadsworth. Outside referees were Cuthbert Daniel (Volume 1), Peter R.B. Whittingham (Volume 2), and K.O. Bowman (Volume 3).

2. A tentative agreement has been reached with the organizers of Annual Conference on Applied Statistics (the so-called Princeton Conference) that the Statistics Division will be a co-sponsor of next and subsequent meetings. The next one is to be held in Newark in December.
3. Two issues of our newsletter have been published under the editorship of Barbara Ferraro.
4. A publicity brochure for the division was produced by Peter Jacobs.
5. An Advisory Board has been appointed. Members were: George E.P. Box, Acheson J. Duncan, Richard A. Freund, H.O. Hartley, John D. Hromi, J. Stuart Hunter, Norman L. Johnson, William H. Lawton, Fred C. Leone, Lloyd S. Nelson.

6. To promote better communications and to aid in the identification of worthwhile joint projects, liaison persons were appointed with other groups, with Harrison Wadsworth serving as Liaison Coordinator. These persons were: Aerospace and Defense-Daniel Gleason, Automotive Division-Gregory Gruska, Bio-medical Division-Michael Lotti, Chemical Division-James King, Electronics Division-Jake Sredni, Food, Drug and Cosmetic Division-David Brauch, Reliability Division-Amrit Goel, Textile and Needle Trades-Charles Aultman, American Statistical Association-Richard Bingham, Journal of Quality Technology-John Ramberg.

EDITOR'S CORNER:

Any articles or communications that you would like to appear in the Newsletter, please sent to:

Barbara Y. Ferraro
Eastman Kodak Company
Bldg. 25, MSD, Kodak Park
Rochester, New York 14650

Also: any comments or suggestions about the Newsletter will not be thrown out before they're read; or, call me at (716) 458-1000, extension 76719.

NOTICE
30TH ANNIVERSARY MEETING OF
GORDON RESEARCH CONFERENCE ON
STATISTICS IN CHEMISTRY AND CHEMICAL ENGINEERING

New Hampton School
New Hampton, New Hampshire
July 28 - 31, 1981

Chairman: William G. Hunter, University of Wisconsin
Vice-Chairman: Toby J. Mitchell, Union Carbide Corp.

Monday, July 27

Morning: The Sampling Eve and the Bayesian Adam in Relation to Data Analysis and Robustness

George E.P. Box, University of Wisconsin

Donald A. Gardiner, Union Carbide Corp. (moderator)

Evening: Chemical Kinetics and Health Risk Assessment

David G. Hoel, National Institute of Environmental Health Sciences

Spencer M. Free, Jr., SmithKline Animal Health Products (moderator)

Tuesday, July 28

Morning: Regression Diagnostics and Transformation with an Accent on Graphics
Anthony C. Atkinson, Imperial College of Science and Technology

A. Baines, Imperial Chemical Industries Ltd. (moderator)

Evening: Exploratory Classification Analysis in Chemistry

David L. Duewer, Monsanto Agricultural Products

Joan R. Rosenblatt, National Bureau of Standards (moderator)

Wednesday, July 29

Morning: Projection Pursuit Techniques for Data Analysis

Jerome H. Friedman, Stanford University

Anne Barton, Environmental Protection Agency (moderator)

Evening: The Quality Measurement Plan: Empirical Bayes Control Charts

A. Bruce Hoadley, Bell Laboratories

Herman Sahrman, 3M Canada Inc (moderator)

Thursday, July 30

Morning: Do Chlorofluorocarbons Deplete Stratospheric Ozone? A Statistical Analysis

George C. Tiao and Gregory C. Reinsel, University of Wisconsin

Richard Stolarski, National Aeronautics and Space Administration
(moderator)

Evening: (How) Can Statistical Consultants be Trained?

Douglas A. Zahn, Florida State University

Donald B. Rubin, Educational Testing Service (moderator)

Friday, July 31

Morning: Techniques for Specifying Calibration Models and Protocols:
An Application in Clinical Chemistry

Garrett Brauer and Edward A. Sylvestre, Eastman Kodak Co.

Anastasios Tsiatis, St. Jude Children's Research Hospital (moderator)

Persons interested in attending the Conference should write for application forms to:

Dr. Alexander M. Cruickshank, Director
Gordon Research Conferences
Pastore Chemical Laboratory
University of Rhode Island
Kingston, Rhode Island 02881
Tel. (401) 783-4011

(1-22-81)