

11/83/18

Engineering

ASQ Members' and Officers' Papers

Arthur Bender Jr. Papers, 1944-1996

Box 1:

Correspondence

Meetings, conferences, and membership, 1946-49, 1952, 1979

Memos and conferences, 1949-50, 1955, 1959, 1962, 1975, 1982, 1984-85

General ASQ correspondence, 1959, 1974, 1984-85

General Correspondence, 1949-50, 1956, 1961, 1974, 1978

Sales of Bender Calculators, 1950

Fatigue Paper, 1953-55

J. A. Davis and Deland Davis of G. E. regarding Life Testing, 1954-55

Dr. Emil Gumbel (regarding Fatigue Testing), 1954-55

General follow-up letters (regarding papers), 1959-62-74

Invitations to speak and correspondence related to speaking (2 folders), 1955-63, 1968, 1972, 1985

"Look Ma, No Arithmetic," 1969-73

Frank Norris (regarding Environmental Technical Committee), 1972-73

Public hearing on Consumer Products and Safety (2 folders), 1973-74

Correspondence and memos (regarding awards), 1973, 1978-79, 1991

G. E. Sorber of Western Electric and "Variables Inspection Plans for Fraction Defective When Process Average and Standard Deviation Are Unknown," 1974

Joseph Stumpf, 1976

U. K. Quality Assurance Directorate (regarding standard quality control), 1976

Dr. L. Weaver, 1978

Binomial Expansion and Sampling Analysis, 1979

Tulsa Conference, 1979-80

Richard Lugar, 1981

Unaddressed letter (regarding "The Huge Untapped 'Gold Mine' within G.E. !"), 1981

ASQ Headquarters, 1981-82

C. A. Roloff and John Hromi, 1982

Automotive Division Conference and papers presented at conference, 1983

Toledo Conference, 1985

ASQC's 40<sup>th</sup> Anniversary, 1985

Paul Robinson of G. E. (regarding Statistical Technologies), 1986

Art Bender Scholarship Fund, 1988

Courses

"Quality Control By Statistical Methods," (Indianapolis – Purdue University Extension), 1944

Notebook from Michigan State Quality Control Course, June 8-17, 1944

Quality Control Courses taken at Michigan State University and Ohio State University, 1945

Course taken at Purdue University and photograph of class, 1947; letter, 1974

Course material, notes, and correspondence on Quality Control Courses, 1948-49, 1952  
 Notes and five class problems (regarding Sampling from a Known Distribution;  
 Distribution of Censored Data; Voltage Readings; and Tensile Strengths), not  
 dated

#### Papers and Courses Taught

“An Elementary Approach to Industrial Quality Control” a course taught by Arthur  
 Bender and George McDermott, 1949; correspondence concerning course taught  
 at Purdue University, 1949-50

“The Application of Probability: Paper to Life or Fatigue Testing” by Arthur Bender,  
 1953

“Probability Paper to Life or Fatigue Testing” by Arthur Bender and Arnett Hamm, 1953  
 Development of Probability Paper, 1954-55

Speech at Midwest Conference, (“Past, Present, and Future”), 1955

Course notes, outlines, and correspondence regarding Brainstorming and Creative  
 Thinking, 1957-58

“A Graphical Method of Determining the Characteristics of a Frequency Distribution” by  
 Arthur Bender, 1958?

Reduced Probability Paper and Short Cut, 1959

“6 Times 2.5 = 9 ? : ‘Benderizing’ Tolerances: A Simple Method of Handling Tolerances for  
 Limit Stack-Ups” by Arthur Bender, 1963

Unidentified photograph of a group in front of ASTM building, c. 1970s

“Statistical Tolerancing As It Relates to Quality Control and the Designer (6 times 2.5 = 9)”  
 by Arthur Bender, 1968

“Look Ma - No Arithmetic: A Graphical Method of Determining the Characteristics of a  
 Frequency Distribution” by Arthur Bender, date unknown

Notes concerning “Look Ma - No Arithmetic” c. 1970s

“Decision Quality” by Arthur Bender, 1973

“Matching A Variables Sampling Plan to an Attributes Plan” by Arthur Bender, 1974

“PRE-Control - The Dorian Shainin Method: Statistical Process Control for Short Runs” by  
 Arthur Bender, 1985

“PRE-Control” – overheads and paper, 1986-87

“A Graphical Method of Determining the Characteristics of a Frequency Distribution Plan”  
 by Arthur Bender, date unknown

#### Certificates of Achievement

Certificate awarded to Arthur Bender from the Quality Control Engineering Workshop for  
 Completing Design and Management of Quality Systems Workshop, 1977

Golden Anniversary Certificate Presented to Arthur Bender from Purdue University, 1983

Golden Anniversary Certificate Awarded to Arthur Bender from the Indianapolis Section of  
 the ASQC for Lifetime Achievement, 1995

#### Miscellaneous

Bender Control Calculator, c. 1940s

Arthur Bender’s ASQC Membership Cards, 1945-47

Membership, 1950, 1984

“Reflections On My Experiences in ASQC” by Arthur Bender, 1986

Arthur Bender's Biographical Background in ASQC, date unknown  
 Name tags, 1953, 1984-85  
 G. E. Co. Stock Certificates, 1957  
 Photographs of Indianapolis Section (including Arthur Bender), 1978  
 Photographs and negatives (mainly of Arthur Bender) at 50<sup>th</sup> ASQ Anniversary Celebration, 1996  
 Address Books

Box 2:

Documents On Affiliation with the International Organization for Standardization (ISO)

Correspondence related to ISO, 1974, 1978  
 Lists of 105D Working Group and the Australian STD1199, 1974  
 Minutes of American National Standards Committee (ANSI) Subcommittee for International Interface, 1974  
 ISO 69 SC2, Interpretation of Statistical Data, 1974  
 ISO Draft Report - Second Meeting of ISO/TC 69/WGC "Sampling by Variables Held at Nederlands Congresgebouw, The Hague, 13 and 14 June 1974"  
 Correspondence from J. C. Gascoigne of the Ministry of Defense (London) regarding ISO, 1974, 1976, 1978  
 American National Standards Committee (ANSI) on Quality Assurance: Working Draft of Proposed Definitions, 1976  
 ANSI Committee on Quality Assurance: Distribution Documents ISO/TC-69 N200, 1976  
 Minutes of ANSI Systems and Procedures Subcommittee, 1977  
 Minutes of ANSI International Interface Subcommittee, 1977  
 Minutes of ANSI Subcommittee on Definitions and Nomenclature, 1977  
 Presentation of "John F. McAllister, G. E. Co., to Systems and Procedures Subcommittee, ANSI," 1977  
 ISO No: 69/SC5 "Acceptance Sampling" Netherlands Review of Isolated Lot Problem, 1977  
 ANSI Committee Correspondence on Quality Assurance: Distribution Documents ISO/TC 69 - DIS #5725 Applications of Statistical Methods, 1977  
 Minutes of Executive Committee of ANSI, 1977; Memo from Standards Committee, 1978  
 ANSI Committee on Quality Assurance: Distribution Documents USA Comments on Document 69/5N30, 1978  
 ANSI Committee on Quality Assurance: Distribution Documents ISO/TC 69 "Application des methods statistiques" Circulaire No. 37 574 ISO/TC 60 Annual Report, 1977  
 ANSI Committee on Quality Assurance: Distribution Documents ISO Directives (11<sup>th</sup> edition), 1978  
 ANSI Committee on Quality Assurance: Distribution Documents ISO/T669/SC5 N54-58, 60-63, 66-68, 1978  
 ANSI Committee on Quality Assurance: Distribution Documents ISO/TC69/SC2 N154-157, 162-197F, 169F, 170E and F, 1978  
 ANSI Committee on Quality Assurance Distribution Documents: ISO/TC69/Circulaire #75610 Ballot on Reaffirmation of ISO STD 2602, 1978

ANSI Committee Correspondence on Quality Assurance Distribution Documents  
ISO/TC69/SC3 Circulaires #6098 Requesting Comments on: DIS4120, DIS4121,  
1978

ANSI Committee Correspondence on Quality Assurance: ISO/TC69/SC5 Documents: Draft  
Collection of Sampling Plans and Tables to Compliment ISO 2859; Secretariat  
Report on Acceptance Sampling Developments Issued for Liaison Purposes; Ballot  
Relating to 69/5N69, 1978

ISO/TC 69/SC 6 "Application of Precision Data," 1978

Proposal on Revision of ISO 3951, 1978

ANSI Committee Meeting Announcement and A. Bender's Official Standards Ballot, 1978

ANSI Committee Correspondence on Quality Assurance: ISO TC69 SCI N150  
"Terminology for Design of Experiments," 1979

ANSI Committee Correspondence on Quality Assurance: A.B. Mundel's Report (79-05-10)  
of the April 23-27 Meeting of ISO-TC69 at Philadelphia, 1979

Model form for Statement of Results of Meeting of Technical Committee or Sub-Committee  
(Philadelphia), 1979

Model form for Statement of Results of Meeting of Technical Committee or Sub-Committee  
(Philadelphia), 1979

Lettre Circulaire Aux Members "B" et "O" L'ISO/TC 69/SC 4 "Controle Statistique de  
Qualité," 1979

Letter of Appreciation to Arthur Bender, 1979

"Sampling Procedures and Charts for Inspection by Variables for Percent Defective," 1981

ISO Document: ISO/TC 69/SC N73: Proposals for LTPD Sampling Plans (date unknown)

### Box 3:

#### Documents Related to ASQC Committee Involvement

Correspondence, memos, documents, and reports on Long-Range Planning Committee,  
1969, 1971-73

Draft Three to ASQC Standard A2-1971 (Revision One), 1978

ASQC Standards Committee Meeting Minutes, May 22, 1973; List of Quality Standards,  
1975; and Memo to members of Standards Committee, 1977

Correspondence Concerning Ad-Hoc Standards Committee, 1973

#### Documents Related to Indianapolis Section

Indianapolis Section A-1 Mailing List, 1973

General Memos, 1973, 1977

#### Documents Related to MIL-STD Involvement

MIL-STD-105A, 1950

"Sampling Procedures and Tables for Inspection By Variables for Percent Defective" by  
U.S. Department of Defense (MIL-STD-414), 1952

"Mathematical and Statistical Principles Underlying Military Standard 414 Technical  
Report" by U.S. Department of Defense, 1958

Draft – "Sampling Procedures and Charts for Inspection By Variables" prepared by SS  
Branch of the Quality Assurance Directorate (London) concerning MIL-STD-414,

1971

Notes and Correspondence with U.S. Navy concerning MIL-STD-414, 1972

Memo from Standards Committee regarding revision of MIL-STD-414; Changes in MIL-STD-414; "Sampling Procedures and Tables for Inspection By Variables for Percent Defective," 1977

Correspondence concerning MIL-STD-105D and MIL-STD-414, 1977

Audio tape of speeches given at Indianapolis banquet in honor of Arthur Bender and George McDermott, 1974?

Box 4:

Allison Division of General Motors Corporation—Photographs, 1954

American Society for Quality Control

Annual Technical Conference—Papers, 1970

Automotive Division—Directory, 1969-70

AICE Conference, 1974

Conference Program, 1970

Education and Training Institute—Configuration Management Training Course, 1968

DCAS Quality Assurance Program Training Course, 1968

Introduction to Probability Statistics, 1969

Teacher-Training Course, 1970

Electronics Division—Newsletter, 1963, 1965

Indiana Section—Program, 1948-49

Indianapolis Section—Photographs and Correspondence, 1954

Midwest Conferences List

Midwest Quality Control Conferences—Correspondence, 1948-52

Muncie Section—Training Classes, 1949

Rochester Section—Correspondence, 1949

Rutgers Conference—Correspondence, 1968

University of Iowa Section, 1967

American Society for Testing Materials

Annual Meeting—Preprints for 2<sup>nd</sup>, 5<sup>th</sup> and 6<sup>th</sup> Sessions, 1953

Preprints for 16<sup>th</sup> and 21<sup>st</sup> Sessions, 1953

Manual on Fatigue Testing, 1949

Symposium on Fatigue with Emphasis on Statistical Approach—II, 1952

Symposium on Statistical Aspects of Fatigue, 1951

Symposium on Usefulness and Limitations of Samples, 1948

Attendance Lists, 1947

Attributes One- and Two-sided  $n < 30$  and  $n > 30$

Bruceton Test or the Up-and-Down Method, 1959

Irving Burr—Correspondence, 1949, 1958

Retirement—Notes

Conference Notes, 1969

Definitions and Symbols for Acceptance Sampling by Attributes, 1957

Definitions and Symbols for Control Charts, 1951  
 Delco-Remy Membership in ASQC Automotive Division, 1973  
 Delco-Remy–Press Release on Arthur Bender, Jr.  
 Distribution of 1000 Balls with 8 Colors Using Measurements–Notes  
 European Organization of Quality Control–Prague Conference, 1969  
 Extension of the Weibull Scale, 1960  
 Factorial Design–Random Balance, 1957  
 Larry Fetz–Letter to Alonzo Cohen, Jr., 1971, 1973  
 General Motors Corporation–A Report on Warranty Prediction Techniques, 1965  
 General Motors Corporation Failure Prevention Analysis Program, 1969  
 General Motors Institute–Design of Experiments Group Photograph, 1964  
 Graphical Variation Research  
 Hazard Plotting (2 folders), 1968-70  
 International Harvester Company–Beating Competition with Quality Control, 1965  
 Joe Juran–Talk on Product Safety, 1972  
     Talk on Quality Control, 1956  
 Manual for Authors of Technical Papers for Publication in Industrial Quality Control, 1954  
The Milwaukee Journal–“Quality Body to Base Here,” 1955  
 Newspaper Articles, 1955  
 Optimum Metric Fastener System–Fastener Quality Assurance Plan, 1973  
 Papers  
     H. J. Becker, “Errors of Measurement,” 1953  
     A. C. Beiler and P. L. Schmidt, “Interlaminar Eddy Current Loss in Laminated Cores,” 1947  
     Arthur Bender, Jr., and Arnett Hamm, “The Application of Probability Paper to Life or Fatigue Testing,” 1953  
     Arthur Bender, Jr., “Decision Quality,” 1973  
     Arthur Bender, Jr., “Statistical Tolerancing As It Relates to Quality Control and the Designer,” 1969  
     R. L. Brickley and D. M. S. Peckner, “Obtaining Accurate Mechanical Property Data on High-Strength Steel,” 1954  
     Irving Burr, “Specifying the Desired Distribution rather than Maximum and Minimum Limits,” 1967  
     Grant I. Butterbaugh, “Applications of Statistical Methods in Business Administration”  
     Herman Chernoff and Gerald Lieberman, “Use of Normal Probability Paper”  
     W. S. Connor and Shirley Young, “Fractional Factorial Designs for Experiments with Factors at Two and Three Levels,” 1961  
     Frank J. Dahlhaus, “Learning Curve Methodology for Cost Analysis,” 1967  
     Harold F. Dodge, “Chain Sampling Plans–ChSP-2 and ChSP-3,” 1958  
     Harold F. Dodge, “A General Procedure for Sampling Inspection by Attributes–Based on the AQL Concept,” 1959  
     Graydon A. Dodson and B. T. Howard, “High Stress Aging to Failure of Semiconductor Devices,” 1961  
     John C. Elston, “New Jersey’s Automotive Emission Inspection Law–First in the Nation,” 1972

- Norbert L. Enrick and Harry E. Mottley, Jr., "Manufacturing Quality Control," 1966
- Norbert L. Enrick, "Practical Ways to Experiment in Your Plant," Parts 1 and 2, 1965
- E. Epremian and R. F. Mehl, "Investigation of Statistical Nature of Fatigue Properties," 1952
- Benjamin Epstein, "Application of the Theory of Extreme Values in Fracture Problems," 1948
- General Motors Process Development Staff, "Linear Correlation Aids in Reducing Dynamometer Test Time," 1958
- M. L. Godfrey, "Theory of Extremal Values Applied in Tests," 1958
- Frank E. Grubbs, "On Estimating Precision of Measuring Instruments and Product Variability"
- Emil J. Gumbel, "Probability Tables for the Analysis of Extreme-Value Data," 1953
- Emil J. Gumbel and Julius Lieblein, "Some Applications of Extreme-Value Methods," 1954
- Emil J. Gumbel, "Statistical Theory of Extreme Values and Some Practical Applications," 1954
- A. A. Hamm, "Control Chart Methods for Within Piece and Between Piece Variation," 1956
- H. Leon Harter, "Expected Values of Normal Order Statistics," 1960
- L. R. Hill and P. L. Schmidt, "Insulation Breakdown as a Function of Area," 1948
- John D. Hromi, "Some Aspects of Designing Industrial Test Programs," 1969
- L. G. Johnson, "Analysis of Fatigue Data by Means of the Weibull Distribution," 1958
- Titus G. LeClair, "Quality Control in the Electric Service Industry," 1957
- Eustace M. Mele, "Measurement Error Considerations," 1974
- James A. Mitchell, "Control of the Accuracy and Precision of Industrial Tests and Analyses," 1947
- Frederick Mosteller and John W. Tukey, "The Uses and Usefulness of Binomial Probability Paper," 1949
- G. Mouradian, "Tolerance Limits for Assemblies and Engineering Expressions," 1966
- August B. Mundel, "Process Control and Lot Acceptance by Narrow-Limit Gaging," 1972
- Frank Proschan, "Investigation of Latin Squares," 1954
- Warren R. Purcell, "Balancing and Randomizing in Experiments," 1950
- John H. Reynolds, "Simcel: A Quality Control Game"
- F. E. Satterthwaite and Dorian Shainin, "Polyvariable Experimentation: A Powerful Statistical Test for Experimentation and Control," 1959
- Anthony J. Schneider, "Product Noise Control," 1974
- Dorian Shainin, "The Statistically Designed Experiment: A Tool for Process and Product Improvement," 1957
- Leslie E. Simon, "On Variation in Materials, Testing, and Sample Sizes," 1948
- Leslie E. Simon, "Quality Control at Picatinny Arsenal, 1934-1945," 1971
- M. Sobel and J. A. Tischendorf, "Acceptance Sampling with New Life Test Objectives"
- L. H. Stember, Jr., et al, "Research and Study of Analytical Techniques for Predicting Reliability of Flight-Control Systems," 1963
- Statistical Engineering Laboratory, U. S. Department of Commerce, "Fractional Factorial Experiment Designs for Factors at Two Levels," 1957
- Walter Thompson, "A New Look at Probability Plots," 1972
- F. Trowbridge, "A Technique for Estimating Precision of Measurement in Non-Destructive

Testing,” 1946

Abraham Wald, “An Extension of Wilks’ Method for Setting Tolerance Limits”

Gordon L. Webster, “Evolutionary Operation–EVOP”

W. Weibull, “The Phenomenon of Rupture in Solids,” 1939

Box 5:

W. Weibull, “The Statistical Aspect of Fatigue Failures and its Consequences”

W. Weibull, “A Statistical Representation of Fatigue Failures in Solids,” 1949

W. Weibull, “A Statistical Theory of the Strength of Materials,” 1939

S. S. Wilks, “Determination of Sample Sizes for Setting Tolerance Limits”

S. S. Wilks, “Statistical Prediction with Special Reference to the Problem of Tolerance Limits”

W. J. Youden, “Technique for Testing the Accuracy of Analytical Data,” 1947

Pollution–Articles, 1970

Prediction Interval–Articles, 1968-69

Procurement Quality Control–A Handbook of Recommended Practices, 1969

Quality Control News, 1949

Quality Control School–Class Exercise Book (2 folders), 1948

Repeatability–Correspondence and Papers, 1963-66

Right Line–Notes, 1971

Sampling Inspection Plans–Papers, 1951, 1955

Significance Tests and Analysis–Eight Papers Presented at the 12<sup>th</sup> Annual ASQC Conference, 1958

Box 6:

Society of American Engineers–Talk (2 folders), 1968

Stage Sampling Procedures–Papers, 1970-71

Statistical Quality Control Class–Note

Technical Papers (2 folders), 1964-66

Training Program Examples, 1968-72

Training Programs in Statistical Quality Control Conducted, Co-sponsored or Sanctioned by Delco-Remy Engineering and Quality Control Sections

Weibull Distribution Analysis Sheet, 1968

Weibull Symbols and Formulas

Western Electric–Operations Research, 1959

XM 705 Reliability Calculations, 1969

(For ASQC Commemorative Glass, 1960, ASQC Tie, ASQC Pen holder, 1979, see ASQ Artifacts record series 11/80/60)