The 3rd ASME Failure Prevention and Reliability Conference was held 10–11 September 1979 in St. Louis, MO, under the chairmanship of Dr. Stephen B. Bennett, Westinghouse Electric Corp. Nineteen papers were presented, covering reliability design, reliable equipment operation, failure prevention by failure prediction, and techniques for failure prevention.

Numbered papers are available until 1 August 1980 from the ASME Order Dept. ($1.50 for ASME members, $3.00 for nonmembers, or $0.50 with coupon).

The conference program was as follows:

A. DESIGNING FOR RELIABILITY
1. Design of Ellipsoidal and Toroidal Pressure Vessels to Probabilistic Criteria
   C. O. Smith, University of Nebraska, Omaha, NE
   (79-DET-110)*
2. Optimum Structural Design Under Constraint on Failure Probability
   Y. Murotsu, F. Oba, K. Niwa, University of Osaka Prefecture, Sakai, Osaka, Japan and M. Yonezawa, Kinki University, Kowakao, Higashi-Osaka, Japan
   (79-DET-114)
   C. Bagci, Tennessee Technological University, Cookeville, TN
   (79-DET-103)
4. The Split Nut: An Easy-to-Fit Nut with a Higher Inherent Strength
   B. Cotterell, University of Sydney, Sydney N.S.W., Australia
5. Stresses in Adhesive Lap Joints with Pre-Bent Adherends
   S. Dasgupta, Bell Laboratories, Columbus, OH

B. RELIABLE EQUIPMENT OPERATION
1. Optimum Oil Level for Small Gear Boxes
   Y. T. Yen, Geo-Source Inc., Houston, TX and T. Lehnhoff, University of Missouri-Rolla, Rolla, MO
   (79-DET-50)
2. Four Square Gear Box Testing
   D. R. Speck, Ralston-Purina Co., St. Louis, MO and T. F. Lehnhoff, University of Missouri-Rolla, Rolla, MO
   (79-DET-117)
3. Evaluation of Long-Term Aging Effects on Hydraulic Components and Systems
   C. L. Conklin, Martin Marietta Aerospace, Orlando Division, Orlando, FL
   (79-DET-104)
4. Fatigue Life for Small Gear Boxes
   T. Lehnhoff, University of Missouri-Rolla, Rolla, MO
   (79-DET-116)*

C. FAILURE PREVENTION BY FAILURE PREDICTION
1. Cost Optimization Models for Planned Replacement
   A. K. Sheikh, Michigan Technological University, Houghton, MI and L. A. Kendall, Washington State University, Pullman, WA
   (79-DET-105)
2. A Distribution-Independent Plotting Rule for Ordered Failures
   C. R. Mischke, Iowa State University, Ames, IA
   (79-DET-112)*
3. Reliability Analysis of Truss Structures by Using Matrix Method
   Y. Murotsu, H. Okada, K. Niwa and S. Miwa, University of Osaka Prefecture, Sakai, Osaka, Japan
   (79-DET-113)*
4. Reliability and Optimal Replacement Via Coefficient of Variation
   S. M. Pandit and A. K. Sheikh, Michigan Technological University, Houghton, MI
   (79-DET-108)*
5. RGP—A Most Effective but Simple Reliability-Assurance Tool
   V. H. Dhadhia, Xerox Corporation, Dallas, TX
   (79-DET-116)

D. TECHNIQUES FOR FAILURE PREVENTION
1. Head Strength Evaluation of Recessed Threaded Fasteners
   V. B. Venkayya, Air Force Flight Dynamics Laboratory, Wright-Patterson Air Force Base, OH and J. P. Eimermacher, University of Dayton, Dayton, OH
   (79-DET-117)
2. Identification of Cracks in Circular Plates Welded at the Contour
   T. G. Chondros and A. D. Dimarogonas, University of Patras, Patras, Greece
   (79-DET-106)
3. An Approximate Explicit Solution for Polar Strain of Hydraulically Bulged Circular Diaphragms
   M. Atkinson, The University of Wollongong, Wollongong NSW, Australia
   (79-DET-111)*
4. On the Design of Ductile Elastic Annular Diaphragms
   T. Y. Na and G. M. Kurjajan, University of Michigan, Dearborn, MI
   (79-DET-109)*

*To be published in the Journal of Mechanical Design.