USBC Bowling Ball Motion Study chosen for International Technical Conference

05/05/08

USBC Equipment Specifications and Certification

Presentation scheduled for Oct. 9 in Phoenix area

The recently completed **United States Bowling Congress bowling ball motion study**, which was started to help protect the sport's future by addressing technology issues, has been selected as a presentation topic for the 52nd Annual Fall Technical Conference in October in Mesa, Ariz.

Co-sponsored by divisions of the American Society for Quality and the American Statistical Association, the conference will include presentations by researchers and practitioners dealing with technical aspects of statistics and quality in various industries.

Representatives from MIT, Luleå University of Technology in Sweden, the Intel Corporation, GlaxoSmithKline and Merck & Company, Inc. are among those scheduled to give presentations.

The USBC seminar titled **"Identifying the Critical Factors that Contribute to Bowling Ball Motion on a Bowling Lane"** is scheduled for 9:15 a.m., Thursday, Oct. 9 at the Hilton Phoenix East/Mesa Hotel.

USBC Vice President - National Governing Body **Neil Stremmel**, USBC Research Engineer **Paul Ridenour** and USBC Equipment Specifications and Certification Committee Technical Advisor **Scott Sterbenz** will be the presenters.

The theme of the conference is "Statistics and Quality: Coming to the Table for Growth and Improvement."

The presentation is based on a two-year, joint study of bowling ball motion by USBC and ball manufacturing companies that was completed in March. Conducted by research engineers at the USBC

testing facility in suburban Milwaukee, the study incorporated a robotic bowling ball thrower nicknamed "Harry" (pictured left) and a sophisticated computer and electronic sensor tracking system (Computer Aided Tracking System) which recorded data such as velocity and positioning of the balls as they were rolled down a lane. Statistical evaluations were used to validate which properties of bowling balls significantly influence their motion.

That study resulted in USBC creating a new manufacturing specification that - starting next year - will put limits on the porosity and chemistry of new bowling ball surfaces. The research was started because technological advancements in bowling ball cover stocks and cores in the last two decades, combined with improved lane surfaces and lane oiling patterns, have contributed to an increasing rate of honor scores and overall scoring pace which is jeopardizing the integrity of the sport to the point where technology is having too great an impact on scoring compared to player skill.

Typically the Annual Fall Technical Conference receives submissions dealing with statistics and quality issues relating to the manufacturing and pharmaceutical industries, said James D. Williams, Ph.D., statistical leader from GE Global Research and chair of the 2008 FTC Program Committee which selected the abstracts for the conference.

"The committee thought that this paper demonstrated sound statistical techniques to a non-standard technical problem," Williams said. "The USBC paper introduces a unique application of quality and statistics that have not been seen before at the Fall Technical Conference. We felt that this paper would be interesting and enjoyable for the conference participants, and this is why we chose this paper to be the first contributed paper to be presented at the conference."

The USBC abstract is one of only 21 at-large papers selected from a pool of 57 submittals. "This year we had a larger-than-normal number of submissions and fewer open spots in the program to fill, thus making our decision of which papers to accept even that much harder," Williams said.

"I believe that the use of statistical and quality techniques highlight a commitment to excellence in the sport of bowling," said FTC committee member Jennifer Golek.

FTC committee member Frank Rossi, a longtime bowler and USBC member, will moderate the USBC presentation.

"I'm pleased to see any businesses that use statistical tools," said Rossi, Program Manager for Applied Quantitative Sciences for Kraft Foods. "I've been bowling for 40 years. "It's gratifying for me to see this in bowling."

The USBC ball motion paper is in the running for the Shewell Prize, which is awarded to the most outstanding paper at the conference. That honor consists of a certificate of achievement and a cash prize. Entries are judged both on the oral presentation and any written material.

"We are honored that the USBC and its research work on bowling ball technology is receiving attention and respect from ASQ and ASA, both internationally known organizations," Stremmel (left) said. "This further legitimizes the work USBC has done in the sport of bowling."

"I think it's important for the sport of bowling to be recognized because the methodologies taught and the theories practiced by such societies have useful applications outside of manufacturing industries," said Sterbenz, an engineer at Ford Motor Company in Dearborn, Mich.

"While manufacturing industries use statistics and numerical methods to improve quality and productivity, USBC is using similar statistical and numerical methods to preserve the integrity of the sport it governs. There are many other sports that are dealing with the same issues of scoring as bowling. Perhaps our presentation with ASQ in October will encourage other sports to follow USBC's lead in using data to drive decisions regarding specifications for their equipment."

Stremmel and Ridenour also will discuss the bowling ball motion study findings in detail during technology presentations at the USBC Convention in Kansas City, Mo., (Wednesday, May 7 and Thursday, May 8 at 10:30 a.m.) and International Bowl Expo in Orlando, Fla., (Monday, June 23 from 2:15-4:15 p.m.).