

Ellis Ott: Prince of Quality

by J. Stuart Hunter

The word “Quality” in the title of this short paper recognizes Ellis Ott (1906 - 1981) as a quality educator and as a quality technology leader. The Quality profession is doubly in his debt. It is good occasionally to acknowledge his contributions and to remember a remarkable personality.

First some history. In 1946, sensitive to the educational needs of returning WWII veterans, Rutgers University formed a “University College”. One objective was to provide undergraduate courses that could be taken late in the day or early evening to accommodate returning veteran-working students. Bachelor degrees might also be obtained outside of Rutgers’ formal four year programs. The financial grants for education provided by Harry Truman’s “GI Bill of Rights” promised a flood of student veterans. Ellis Ott, (PhD Mathematics, University of Illinois) and previously a professor at the University of Buffalo became the chairman of the new University College Mathematics Department.

At the time of his appointment Ellis already possessed considerable industrial experience and before accepting the post at Rutgers he announced his intention to inaugurate courses on industrial quality control, a declaration his reluctant peers called “Ott’s Folly. But clearly, following WWII the demands were huge for formal education in the arts of industrial quality control.. Further New Jersey’s industries were a microcosm of the nation’s. As a direct consequence Ellis’ courses at Rutgers on statistics and quality control attracted scores of students and a masters degree in Applied and Mathematical Statistics soon became available. In a less formal environment Ellis also inaugurated (1949) the annual Rutgers’ All Day Conference on Quality Control in Industry. Hundreds (literally) of workers from industry plus students attended these Saturday affairs, one of which (1952) was almost blown out by a hurricane.

In 1952 the Statistics Center within the Graduate School at Rutgers University was formed and Ellis named Professor of Applied and Mathematical Statistics. Mason Wescott, then editor of ASQC’s journal /Industrial Quality Control/ joined the faculty as Professor. In 1958 Harold Dodge, retired from Bell Laboratories and internationally known for his work on acceptance sampling plans, also joined the faculty. A PhD program was approved in 1959 and the first PhD degrees granted in 1963. In 1965 the Center established a consulting intern program to expose students to the practice as well as the theory of statistics. By the time of Ellis’ retirement over 340 MS and 35 PhD degrees had been earned each a degree in applied and mathematical statistics. Ellis Ott’s vision and enthusiasm brought both the theory and application of quality control fully into realms of academia. Walter Shewhart has often been called the Father of Quality Control. Ellis Ott is his Prince and professor.

To his students “Plot the data” was Ellis Ott’s most insistent refrain.

Formal data analyses are subject to the deleterious influences of outliers, changing variabilities, time dependencies and, to put it simply, strange data. Signals of these phenomena rest in data plots and Ellis insisted his students look before they leaped. His ANOM (Analysis of Means, 1958) procedure is an example of his love of graphics. The ANOM reduces the complexities of the ANOVA for two level factorials experimental designs into familiar and easily interpreted Shewhart chart displays. The acronym KISS is sometimes translated to mean “Keep It Simple Statistician”. In Ellis’ case, it stood for “Keep It Sophisticatedly Simple”.

Ellis Ott died in 1981 and in 1982 the Ellis R. Ott Foundation was established employing funds raised by a series of special conferences and personal contributions. Every year the Ott Foundation, through the offices of the ASQ Statistics Division, offers the Ellis R. Ott Scholarship for Applied Statistics and Quality Management. The \$5,000 scholarships are for students currently enrolled in either a MS or PhD program. There have been 35 scholarships presented thus far. Interested students should contact lynne.hare@comcast.net

On a personal note, I first met Ellis while a graduate student at N. C. State. I spent my summers working for Frank Grubbs at the Aberdeen Proving Grounds, and in 1951 Dr. Grubbs sent me to the Rutgers All Day Conference with a special message for Ellis. It was a huge meeting and I eventually was able to find Professor Ott. He immediately swept me up into his professional family, introduced me to the movers and shakers of the Quality world and challenged me to come to Rutgers. He simply bowled me over. His cordiality, enthusiasm for the profession and his empathy for me as a student are well remembered. .

I can also lay claim to introducing Horace P. Andrews, a particularly popular member of the Rutgers faculty, to Ellis. I first met Horace Andrews in 1948 when we were both masters candidate students at N.C. State. I was taking a course on experimental design from Miss Gertrude Cox, founder of the Institute of Statistics. Horace was Miss Cox's homework grader. (I recall he marked papers in green ink.) He later went on to get his PhD at Penn State and then took employment in Chicago.

Sometime after getting my PhD, Ellis asked if I'd be interested in accompanying him to India to help teach design of experiments courses as part of a United Nations program. I declined, but mentioned that Horace Andrews would be a wonderful candidate. Horace agreed and later became a member of Ellis' faculty in 1964.

One final recollection. The Statistical Techniques Research Group at Princeton University had just hired a new secretary, a Swedish lady. One morning while I was visiting with George Box in his office she came in quite disturbed. In a heavy Swedish accent she blurted, "I don't understand, this man wants to speak to you and says he's hellish hot." Yes, in so many ways, Ellis Ott was a high energy particle.

I thank a small sample of Ellis' students: Ron Snee, Lynne Hare, Truman Koehler and Tom Boardman and Professor Joe Naus, Statistics Department Rutgers University, for their help in preparing this paper.

References:

The January 1983 issue of /Journal of Quality Technology / *15, *1/ /is devoted to Ellis Ott's memory.

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