

A Technical Note on An Expression of the Mean of a Lot relative to a Quality Characteristic

Abraham F. Jalbout^{1*}, Hadi Y. Alkahby², Fouad N. Jalbout³, Abdulla Darwish³

¹Department of Chemistry, University of New Orleans, New Orleans, LA 70148-2820 USA, E-mail: AJalbout@ejmaps.org

²Department of Mathematics, Dillard University, New Orleans, LA 70112 USA

³Department of Physics and Engineering, Dillard University, New Orleans, LA 70112 USA

*Author to whom correspondence should be addressed.

Received: 14 December 2001 / Accepted: 5 January 2002/Published ASAP: 15 January 2002

Abstract: A quality control manufacturing process is designed to produce certain types of components (i.e. mechanical, electrical or chemical). The process is defined to be under control if the fraction of the items manufactured that are defective is reasonably small. The fraction of items defective varies from lot to lot, which is the main assumption that we will use in the mathematical development of our reliability model. It is logical to assume in this case that the mean of the lot is a random variable and so is the fraction defective. A relationship between the two quantities is the subject of this paper.

Keywords: fraction defective, industrial process, Bayesian methods, statistics,
