TRIPLE STAGE POINT ESTIMATION FOR THE EXPONENTIAL LOCATION PARAMETER

H. I. HAMDY¹, N. MUKHOPADHYAY², M. C. COSTANZA³ AND M. S. SON¹

¹Department of Mathematics and Statistics, University of Vermont, 16 Colchester Avenue, Burlington, VT 05405, U.S.A. ²Department of Statistics, The College of Liberal Arts and Sciences, The University of Connecticut, 196 Auditorium Road, Storrs, CT 06268, U.S.A. ³University of Vermont, Medical Biostatistics, College of Medicine, Given Building, Burlington, VT 05405, U.S.A.

(Received August 19, 1987; revised January 5, 1988)

Abstract. This paper deals with the problem of estimating the minimum lifetime (guarantee time) of the two parameter exponential distribution through a three-stage sampling procedure. Several forms of loss functions are considered. The regret associated with each loss function is determined. The results in this paper generalize the basic results of Hall (1981, *Ann. Statist.*, 9, 1229–1238).

Key words and phrases: Two parameter (negative) exponential distribution, minimum lifetime, three-stage sampling, regret, Taylor expansion, uniform integrability, minimum risk, bounded risk.