

A Note on Some Results on M/G/1/K Queue with Removable Server

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Abstract

This paper deals with the analysis of a finite capacity queuing system of the M/G/1/K type operated with a removable server employing an (a, b) -policy for closing down and starting up of the station; ie, when a service terminates with 'a' customers left in the system, the station is closed down. It is resumed when a queue of 'b' customers has queued up where $0 \leq a < b \leq K$. The model is analyzed using the theory of regenerative process. The stationary distributions of the number of customers in the system at arbitrary time points as well as at departure epochs are investigated through the busy period analysis of the model. The results of this paper generalize those of standard M/G/1/K model. A numerical illustration of the results is also provided.

Keywords: Finite Capacity M/G/1 Queue, Removable Server, Regenerative Process.