

1096-VH-1390 **George Mytalas*** (mytalas@aueb.gr), 236 86Str Brooklyn, New York, NY 11209. *An M/G/1 Queue System with Feedback, Disasters and Repairs with Vacation.*

We study a queueing system with batch Poisson arrivals and Bernoulli feedback subject to disasters. Server when remains empty takes vacation of arbitrary distribution, while we consider two models of vacation policies, single and multiple. Also after completion of the service customer can immediately join the tail of the queue as a feedback customer for receiving another service with probability r . Otherwise the customer may depart forever from the system with probability $1-r$. The server, whenever is busy serving customers, is subject to disasters which occur according to a Poisson process, independent of all other processes in the system. When a disaster occurs the system is cleared of all customers and the server initiates a repair period. During the repair period arriving batches of customers accumulate in the queue without receiving service. When the system becomes empty as a result of the server serving the last customer waiting in line, the server takes vacations single or multiple, dependent of the model. We analyze this system using the supplementary variables technique and we obtain the probability generating function of the stationary queue length distribution and the Laplace transform of the busy period's distribution. (Received September 15, 2013)