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University of Belgrade, Vojvode Stepe 305, 11000 Beograd, Yugoslavia Belgrade, Serbia. *Partially  
Monitored Reliability Models With Imperfect Maintenance.*

After the imperfect maintenance action is performed on the failed system, lifetime distribution and failure rate functions of that particular system might not be fully restored. In order to prevent system from undesired failures, the preventive maintenance is performed. System operation is monitored in order to avoid the idle periods. Monitoring action is performed only partially, or the outcome of the monitoring process is only partially correct. A one-unit reliability model with periods of monitoring and non-monitoring of the system operation is introduced. The costs of failures, replacements, monitoring and inactiveness are introduced. The main goal is to optimize the loss function that expresses the expected total cost of operating per unit of time. (Received October 02, 2000)