# Impact of Incidents on Traffic Congestion in Dar es Salaam City

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## Abstract

Poorly managed traffic incidents have largely contributed to congestion and delay in the city of Dar es Salaam. A thorough understanding of travel delays caused by incidents is therefore essential for effective countermeasures against the increasing congestion. The method used to determine delays in this research is based on the deterministic queuing theory. Information on incidents was obtained from traffic surveys, traffic police and road users. Counting the number of vehicles passing the incident location was done on incident and incident-free days. The cumulative traffic counts on incident and incident-free days were then calculated and used to plot the queuing diagram used to determine incident induced delay. This method turned out to be a useful tool for estimating incident induced delay in areas with less sophisticated equipment i.e. where there are no sensors, closed circuit television (CCTV) cameras, etc. The method provided good estimates of incident induced delay which may help planners and transportation officials in better understanding incident related congestion and in selecting more effective countermeasures against incident related traffic congestion in the city. It was found out that the effects of incidents were different for the different zones, types of incidents and the periods the incident occurred. In addition to the incident duration and the number of vehicles affected, the impact of incidents also depended on availability of alternative routes, number of lanes on the road, discipline of the driver in manoeuvring at incident location and traffic control at the scene.

**Subject Areas:**
Highways; Operations and Traffic Management; I73: Traffic Control