

THE DRIVER'S BEHAVIORAL MODELLING AT DILEMMA ZONE OF A SIGNALIZED INTERSECTION

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Abstract

Purpose: The main motivation of this paper is focused on driver's behavior at the onset of the yellow period at signalized intersection either proceed to clear the intersection or stop safely before the stop line. Similarly, the existence of dilemma zone & its types in the selected intersection are studied too.

Approach: In these sorts of Dilemma zone, making decision, a number of criteria & alternatives are put forward as input data. The ranking of these alternatives, according to mentioned criteria & computer program VISSIM is regarded as the outcome of solving these kinds of problems. Initially Data was collected using Manual & video recording technique. Data were abstracted, processed and analyzed using the program.

Findings: The study indicated that the three types of conflicts namely, running red light, stopping abruptly and accelerating through yellow can be successfully used to identify vehicles that experience dilemma zone problems at signalized intersections. Study examined 220 Drivers on the amber onset, 62.5% of them were found to be conflicted by the dilemma zone phenomenon. 49.25% of them conflicted with accelerating, 46.9% that stopped abruptly, and 3.85% that passed during the red signal. **Value:** A risk of accident may be expected if a driver takes too long time to react with the instantaneous changes in traffic situations, and if the decision made was incorrect even though the time taken to decide was short. Therefore, it is important to consider human factor in the design of a traffic signal system at an intersection.

Keywords: Dilemma zone, amber onset, clearing distance, stopping sight distance, signalized intersection