ISSN 0511-5728
The West Indian Journal of Engineering
Vol.42, No.2, January 2020, pp.77-86

Driver Gap Acceptance Behaviour at Roundabouts in Trinidad and Tobago

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(Received 19 January 2019; Revised 01 December 2019; Accepted 14 January 2020)

Abstract: *One important node used to manage conflicting traffic at intersections is the roundabout. Roundabouts operate based on the gap acceptance behavior of drivers, with a major flow in the circulatory lane of the roundabout and minor flows on the approaches which enter the roundabout when there is a gap the driver decides to accept. This study investigates the gap acceptance behaviour of motorists to determine the critical gap in Trinidad and Tobago (T&T). The research found that, for the roundabouts selected, critical gap estimates do not differ significantly based on either time of day or location. The estimated critical gaps were compared with values commonly used in the Highway Capacity Manual (HCM), so as to determine the effect on estimated intersection capacity. The results indicate that the critical gap values differ significantly from the United States (US) default values (which is one of the standards adopted by T&T), which therefore affects the estimated capacity of the roundabouts. The published values from the HCM are significantly higher than the values obtained, which means that the estimated capacities using the default US values underestimate the existing capacities in T&T.*

Keywords: *Roundabout, driver behaviour, critical gap, gap acceptance, capacity*