

DIGITIZING HYDROLOGICAL PATTERNS FOR RIVER TRAFFIC SAFETY

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ABSTRACT

This paper is intended to assess risk of river transportation due to flow conditions during adverse weather and barrage operation modes. Passenger boat sailing conditions for the mentioned conditions is rarely addressed in the literatures. Safety issue is prevalent as Kuching communities rely on Lower Sarawak River for mobility. The river conditions are represented by means of computer river model, both in 1-D and 2-D approaches. The outputs of model are in the forms of identification of critical stretches exposed to rapid currents, flushing mechanisms, velocity patterns and its associated relationships. Such modelling results provide a tool quantitatively compares the barrage operations and velocity ranges along Lower Sarawak River in graphical and information to support critical safety decisions.

Key words: Barrage, Boat accident, Inland waterways, Modelling, River safety, River transport

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1. INTRODUCTION

In this study, we attempt a computer modelling approach to explore sailing conditions during wet seasons in line with river barrage operations. There have been previous studies that have utilized river modelling in many areas. These include foreign studies [1-2] as well as local [3-4] to gain knowledge of river dynamics.

While transportation of other states in Malaysia give attention to roads and rails, river transportation remains essential to Sarawak State. The state's road network is still