

IDENTIFIKASI RISIKO KECELAKAAN PERLINTASAN SEBIDANG KERETA API

Studi Kasus: Jl. Prambanan Piyungan dan Jl. Pirak Patukan

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ABSTRAK

Transportasi merupakan sarana penting dalam kehidupan masyarakat. Terdapat banyak jenis moda transportasi yang biasa digunakan oleh masyarakat salah satunya yaitu kereta api. Kereta api menjadi sarana transportasi yang banyak diminati oleh masyarakat seperti di wilayah yogyakarta. Kereta api erat kaitannya dengan perlintasan sebidang yang merupakan perpotongan antara jalan raya dengan jalur yang dilewati kereta api. Adanya perlintasan sebidang menimbulkan beberapa permasalahan seperti kemacetan dan risiko kecelakaan. Penelitian ini bertujuan untuk mengetahui kondisi volume lalu lintas harian rata rata, mengetahui tingkat risiko kecelakaan yang terjadi di perlintasan sebidang dan prediksi kecelakaan tahunan.

Penelitian dilakukan pada perlintasan sebidang kereta api di Jalan Prambanan Piyungan dan Jalan Pirak Patukan. Identifikasi risiko kecelakaan perlintasan sebidang kereta api dilakukan dengan menggunakan metode *HRGX RailRoad Highway Grade Crosse* yang dikembangkan oleh *U.S Department of Transportation*.

Hasil penelitian menunjukkan bahwa volume lalu lintas harian rata rata sebanyak 23165,8 smp/hari di Jalan Prambanan Piyungan dan pada Jalan Pirak Patukan sebanyak 10161,41 smp/hari. nilai prediksi kecelakaan awal (a) di Jalan Prambanan Piyungan 0,222 dan Jalan Pirak Patukan sebesar 0,165, nilai probabilitas kecelakaan akhir (A) 0,589 dan 0,694. Selain itu probabilitas kecelakaan fatal pada kedua jalan tersebut 0,1757 dan nilai probabilitas kecelakaan cederanya 0,0220. Indeks keselamatan pada Jalan Prambanan Piyungan dan Jalan Pirak Patukan didapatkan hasil 90 dimana pada kedua perlintasan tersebut dikategorikan aman.

Kata kunci: Kereta api, Perlintasan sebidang, Risiko kecelakaan, Transportasi

IDENTIFICATION OF RAILROAD LEVEL CROSSINGS ACCIDENT RISK

Case Study: Jl. Prambanan Piyungan and Jl. Pirak Patukan

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ABSTRACT

Transportation is an important means in people's lives. There are many types of transportation modes commonly used by the community, one of which is trains. Trains are a means of transportation that are in great demand by the public, such as in the Yogyakarta area. Trains are closely related to level crossings which are the intersection of the highway and the track that the train passes. The existence of level crossings raises several problems such as congestion and the risk of accidents. This study aims to determine the condition of the average daily traffic volume, determine the level of risk of accidents that occur at level crossings and predict annual accidents. The research was conducted at a railroad crossing on Jalan Prambanan Piyungan and Jalan Pirak Patukan. The identification of the risk of a railroad crossing accident is carried out using the HRGX RailRoad Highway Grade Crosse method developed by the U.S Department of Transportation. The results showed that the average daily traffic volume was 23165.8 pcu/day on Jalan Prambanan Piyungan and on Jalan Pirak Patukan as much as 10161.41 pcu/day. The prediction value of the initial accident (a) on Jalan Prambanan Piyungan is 0.222 and Jalan Pirak Patukan is 0.165, the final accident probability value (A) is 0.589 and 0.694. In addition, the probability of a fatal accident on both roads is 0.1757 and the accident probability value is 0.0220. The safety index on Jalan Prambanan Piyungan and Jalan Pirak Patukan obtained 90 results where both crossings were categorized as safe.

Keywords: Train, Level crossing, Accident risk, Transportation