SINGLE PHASE MULTI CHANNEL QUEUE MODEL WITH HETEROGENEOUS SERVICE RATE FOR ANALYDSIS OF EVALUATION OF SHIP'S DELAY AND DEPARTURE PERFORMANCE

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ABSTRACT

The ever-increasing demand for fuel is one of the choices by sharing different types of companies. But the ever-increasing service resulted in a queue on the ground. So it is necessary to know how to determine a suitable queue model to describe the arrival and departure vessel queue system, how to build service with heterogeneous service rate, to know the performance level of ship queue at PTBukit Asam (Persero) Tbk Bandar Lampung. The exact model is (M/M/2) : (FCFS / ∞ / ∞) with heterogeneous service rate. By using the heterogeneous service rate analysis results indicate that the existing queue is quite effective. The results of this study can be used as a reference for calculating ship queues with heterogeneous service rates. The results obtained using the heterogeneous service rate is that there are no ships in the queue, the number of ships in the system is around 12 ships / month. The time spent aboard in the system is about 592 minutes / ship, and the time spent aboard is in the queue of about 16 minutes / ship. In other words, the queues at PT Bukit Asam (Persero) Tbk Bandar Lampung have been quite effective.

Keywords: Queue, Ship, Heterogeneous Service Rate