

Review of Maritime Inventory Routing Problems

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Abstract

Maritime transportation is the most obvious choice for industries to transport large amounts of liquid or dry bulk products over long distances. Often, the bulk products are stored as inventories at or near the loading and unloading port. A maritime inventory routing (MIR) problem is a planning problem where the ship operator has the responsibility not only for the ship routing and scheduling, but also for the inventory management at one or both ends of the sailing legs. Here we review research on MIR and extension problems during the last two decades. Since this problem was first introduced in 1987, we have found over a hundred publications on it in refereed journals. Most of them consider static and deterministic problems even though uncertainty plays an important role in MIR. We also found that most recent research on this field focuses more on theoretical contributions, rather than on the real problems as in previous studies. However, future high-impact research remains wide open and provides challenging opportunities

Keywords

Maritime transportation; Ship routing and scheduling; Inventory management

Biographies

Stefanus Soegiharto is a full-time lecturer in the Department of Industrial Engineering, Faculty of Engineering, Universitas Surabaya. He obtained his Bachelor degree in Industrial Engineering from Universitas Surabaya and Master of Science degree in Industrial and System Engineering from National University of Singapore. His interests include supply chain engineering and optimization. He is currently pursuing his Doctoral degree in the field of maritime inventory routing and scheduling in the Department of Industrial Engineering, Universitas Indonesia.

Teuku Yuri M. Zagloel is a Professor and Head of Manufacturing System Laboratory at Department of Industrial Engineering, Faculty of Engineering, Universitas Indonesia. He started his higher education in Mechanical Engineering, Universitas Indonesia and graduated in 1987. Then, he continued his study in University of New South Wales and obtained his master degree (M.Eng.Sc.) in 1991. In 2000, he completed his education paths by finishing his doctoral degree in Universitas Indonesia. Mr. Yuri has taught several courses in Industrial Engineering UI,

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Sunaryo is an Associate Professor in the Department of Mechanical Engineering, Faculty of Engineering, Universitas Indonesia. He earned his Bachelor degree in Mechanical Engineering from Universitas Indonesia in 1982. He completed his Master of Science education and Doctoral of Ship Production Technology in Strathclyde University, Scotland in 1989 and 1993. His teaching career began in 1985. He is currently teaching various courses in the field of ship building including Engineering Shipyard and Ship Construction. In Department of Mechanical Engineering, a man who supports Ambalat petition served as Head of Naval Engineering Study Program.