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Editorial

Sustainability in Maritime Transport: Advances, Solutions and Pending Tasks

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1. Introduction

This Special Issue "Sustainability in Maritime Transport: Advances, Solutions and Pending Tasks", gives an up-to-date overview of the use new technologies to obtain more sustainable maritime transport based on new combustibles, working procedures and related industries, with all of them in agreement with the technical limitations indicated by safety on board.

2. New Procedures for Maritime Sustainability

Through their proposition of applied technical solutions to construct more sustainable maritime transport, the different perspectives of the international researchers can be deduced from the varying research topics. Some have focused on energy efficiency, others have attempted to synthesize new, less contaminating combustibles, and others have directed their attention to the operation of ships. Regarding the latter aspect, this operation was divided into two sections: the deck department in the form of navigational functions, and ship maintenance in the marine engineering department. Finally, all these points of view are derived from is the context of safety control, the most relevant factor to consider when changing technologies or working procedures on board.

Energy efficiency is associated with more sustainable transport, and the different works of this Special Issue showed how it can be implemented. When energy efficiency was investigated in a container terminal [1] it was concluded that there was a mutual interest for cooperation between the transport company and the terminal operator to mitigate truck congestion. When energy efficiency is achieved for onboard processes fuel reduction is obtained, but its emissions are still contaminated; more research papers aimed to reduce this effect using optimised scrubbers [2] to achieve a scrubber-silencer system. With the aim to reduce the emissions on board, different works aimed to analyse new combustibles like LNG or cold ironing [3,4] or electrical batteries [5], and other researchers propose the modification of ship [6] and port channels [7].

Once a ship is in service, few options to reduce its emissions are proposed, like crew attendance of navigational practices [8], the ship's interaction with tugboats [9] in different port manoeuvres, and daily maintenance [10]; these methods clearly ameliorate economic factors but do not do the same of rates of accidents. These accidents may have been a consequence of the previously proposed modifications to increase efficiency, so an analysis of the main risks on board was performed by another study [11], showing that machinery is the least-significant contributing cause of accidents.

3. Future Tasks

The collective results showed that a more sustainable maritime transport is possible, but it must be developed in collaboration with safety parameters. In consequence, future research works may be directed to parameters like resilience [12] and the maximum safe parameters [13] of ships in existing complex waterways [13]. What is more, the primary

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initial conclusion is that the study of human-related hazardous events [14] is the key to adequately move maritime transport improvement towards sustainability but within the safety limits recommended by international organizations.

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