

EFEKTIVITAS PENGGUNAAN ECDIS DALAM MENUNJANG KESELAMATAN NAVIGASI DIKAPAL NIAGA MV. DIAN PROSPERITY

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Abstrak

Optimalisasi penggunaan ECDIS dalam meningkatkan keefektifitas pengawasan navigasi dan dalam meminimalisir resiko kecelakaan kapal di laut. *Electronic Chart Display And Information System (ECDIS)* adalah suatu alat navigasi berupa peta elektronik sesuai persyaratan peta terbaru konvensi *SOLAS 1974 V/20* yang dapat diintegrasikan dengan alat-alat navigasi lainnya sehingga diperoleh posisi dan informasi navigasi lain untuk para mualim melakukan perencanaan pelayaran serta monitoring rute pelayaran. ECDIS menawarkan sejumlah kelebihan dibandingkan dengan cara bernavigasi secara konvensional dan dengan pasti sebagai langkah maju cara bernavigasi yang lebih aman. Hasil penelitian menunjukkan bahwa penggunaan ECDIS berperan penting dalam meningkatkan keselamatan navigasi melalui perencanaan rute (*voyage planning*), pemantauan posisi kapal secara *real-time*, pengaturan parameter keselamatan seperti *safety contour*, *safety depth*, dan *cross track distance*, serta pemberian alarm dini terhadap potensi bahaya navigasi. Tingkat pemahaman dan keterampilan perwira navigasi dalam mengoperasikan fitur keselamatan ECDIS tergolong baik. Perwira mampu menyusun rute pelayaran, melakukan *route checking*, merespons alarm, serta mengintegrasikan informasi dari GPS, Radar, dan Automatic Identification System (AIS) dalam pengambilan keputusan navigasi. Kendala yang ditemukan meliputi keterlambatan pembaruan Electronic Navigational Chart (ENC), gangguan pada monitor dan integrasi sistem, serta munculnya *alarm overload*. Sementara itu, kendala nonteknis meliputi perbedaan tingkat kompetensi operator, keterbatasan penguasaan fitur lanjutan, ketergantungan terhadap sistem elektronik, dan perlunya pelatihan serta familiarisasi secara berkala.

Kata Kunci: ECDIS, Keselamatan Navigasi, Bridge Team Management, Perwira Navigasi, Kapal Niaga.

***EFFECTIVENES SOF ECDIS USE INSUPPORTING
NAVIGATION SAFETY ON MERCHANT SHIPS MV,DIAN
PROSPERITY***

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Abstract

Optimizing the use of the Electronic Chart Display and Information System (ECDIS) is essential for improving the effectiveness of navigational monitoring and minimizing the risk of maritime accidents. ECDIS is an electronic chart-based navigation system that complies with the chart carriage requirements of the SOLAS 1974 Convention, Chapter V Regulation 20. It can be integrated with other navigational equipment to provide ship position and navigational information, enabling deck officers to conduct voyage planning and route monitoring more effectively. Compared with conventional navigation methods, ECDIS offers significant advantages and represents a major advancement in achieving safer navigation. The results of this study indicate that ECDIS plays a significant role in enhancing navigational safety through voyage planning, real-time ship position monitoring, the configuration of safety parameters such as safety contour, safety depth, and cross-track distance, as well as the provision of early warnings for potential navigational hazards. The findings also show that navigation officers possess a good level of understanding and competence in operating the safety features of ECDIS. They are capable of planning voyages, conducting route checking, responding appropriately to system alarms, and integrating information from the Global Positioning System (GPS), Radar, and the Automatic Identification System (AIS) to support navigational decision-making. The technical challenges identified include delays in updating the Electronic Navigational Chart (ENC), monitor malfunctions, system integration issues, and alarm overload. Meanwhile, the non-technical challenges include differences in operators' competency levels, limited mastery of advanced ECDIS features, overreliance on electronic navigation systems, and the need for continuous training and familiarization.

Keywords: *Electronic Chart Display and Information System (ECDIS), Navigational Safety, Bridge Team Management, Navigation Officers, Merchant Ship.*