

# **OPTIMALISASI PENGGUNAAN ALAT NAVIGASI RADAR UNTUK MENINGKATKAN PEMAHAMAN PERWIRA JAGA PADA KONDISI CUACA BURUK DI KAPAL SPOB BAHTERA KAPUAS**

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## **ABSTRAK**

*Navigasi maritim di kapal SPOB Bahtera Kapuas sering menghadapi tantangan akibat cuaca buruk, seperti hujan lebat dan kabut, yang mengurangi visibilitas dan meningkatkan risiko kecelakaan. Penggunaan radar sebagai alat bantu navigasi menjadi krusial dalam situasi ini, namun efektivitasnya sering terhambat oleh gangguan seperti rain clutter. Penelitian ini bertujuan untuk mengetahui kendala penggunaan alat navigasi radar pada kondisi cuaca buruk, mengidentifikasi faktor penyebab terjadinya kesalahan interpretasi radar oleh perwira jaga, serta merumuskan upaya optimalisasi penggunaan radar di kapal SPOB Bahtera Kapuas. Penelitian ini menggunakan metode kualitatif dengan teknik pengumpulan data berupa observasi, wawancara, dan dokumentasi, sedangkan analisis data dilakukan melalui reduksi data, penyajian data, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa kendala penggunaan radar saat kondisi cuaca buruk meliputi munculnya rain clutter, kurang optimalnya pengaturan Gain, Rain Clutter, dan Sea Clutter; terbatasnya jarak pandang akibat cuaca buruk, serta meningkatnya beban pengamatan perwira jaga. Faktor penyebab kesalahan interpretasi radar antara lain kurangnya pemahaman perwira jaga terhadap fungsi dan pengaturan radar sesuai kondisi pelayaran serta belum tersedianya Manual Book Radar sebagai pedoman pengoperasian di atas kapal. Sebagai upaya penyelesaian, penulis mengusulkan penyusunan Manual Book Pengoperasian Radar ICOM sebagai pedoman penggunaan radar dan penerapan Operational Radar Log sebagai media pencatatan serta evaluasi penggunaan radar selama pelayaran. Selain itu, peningkatan kompetensi perwira jaga melalui pelatihan, familiarisasi, dan penerapan prosedur pengoperasian radar sesuai Standard Operating Procedure (SOP) diharapkan dapat meminimalkan kesalahan interpretasi radar, meningkatkan efektivitas pengamatan navigasi, serta mendukung keselamatan pelayaran pada kondisi cuaca buruk.*

**Kata Kunci :** Radar, Perwira jaga Cuaca Buruk, Keselamatan Pelayaran.

**OPTIMIZING THE USE OF RADAR NAVIGATION  
EQUIPMENT TO IMPROVE WATCH OFFICERS  
UNDERSTANDING OF ADVERSE WEATHER CONDITIONS ON  
SHIPS SPOB BAHTERA KAPUAS**

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***ABSTRACT***

*Maritime navigation on the SPOB Bahtera Kapuas ship often faces challenges due to bad weather, such as heavy rain and fog, which reduce visibility and increase the risk of accidents. The use of radar as a navigation aid is crucial in these situations, but its effectiveness is often hampered by interference such as rain clutter. This study aims to identify the challenges associated with using radar navigation equipment during adverse weather, determine the factors leading to radar misinterpretation by the watch officer, and formulate measures to optimize radar usage on the vessel SPOB Bahtera Kapuas. A qualitative research method was employed, utilizing data collection techniques such as observation, interviews, and documentation review; data analysis involved data reduction, data presentation, and conclusion drawing. The results indicate that challenges in radar usage during adverse weather include the appearance of rain clutter, suboptimal settings for Gain, Rain Clutter, and Sea Clutter; reduced visibility, and an increased monitoring workload for the watch officer. Factors contributing to radar misinterpretation include the watch officer's lack of understanding regarding radar functions and settings relative to navigational conditions, as well as the absence of an onboard radar operation manual. To address these issues, the author proposes the creation of an ICOM Radar Operation Manual to serve as a usage guide and the implementation of an Operational Radar Log to record and evaluate radar usage during voyages. Furthermore, enhancing watch officer competence through training, familiarization, and adherence to Standard Operating Procedures (SOP) for radar operation is expected to minimize misinterpretation, improve the effectiveness of navigational monitoring, and support navigational safety during adverse weather conditions.*

**Keywords:** Radar, Watch Officer, Adverse Weather, Navigational Safety.