

ANALISIS STABILITAS *BARGE* PADA SAAT PROSES PELUNCURAN *FIXED JACKET OFFSHORE*

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ABSTRAK

Semua bangunan di laut tidak terkecuali *barge* juga memiliki perhitungan stabilitas. *Barge* adalah kapal dengan lambung datar yang memiliki fungsi untuk mengangkut muatan, dan dengan cara ditarik atau didorong oleh kapal tunda. Selain membawa muatan *barge* juga memiliki andil besar dalam dunia offshore, seperti membawa *jacket* dari tempat fabrikasi menuju tempat instalasi. Setelah mencapai tempat instalasi, *jacket* akan diluncurkan ke dalam air dengan posisi *barge* dalam keadaan *trim* agar *jacket* dapat meluncur dengan sendirinya ataupun ditarik dengan *winch*. Proses *launching* terbagi menjadi 3 proses yaitu *jacket slides*, *jacket tipping*, dan *jacket separates*. Penelitian ini bertujuan untuk mengetahui kondisi stabilitas dan perubahan *trim* pada proses *launching*. Analisa stabilitas *barge* pada proses *launching* dilakukan dengan menggunakan software *Maxsurf Stability Adv*. Dengan sebelumnya membuat pemodelan dari *launch barge* dengan bantuan software *Maxsurf Modeller Adv* dan pemodelan *Jacket* dengan menggunakan software *SACS 12.0*. Penelitian dilakukan secara *continue* dengan memasukan hasil analisa pada tahap sebelumnya ke dalam data analisis yang akan dianalisis. Hasil penelitian menunjukkan pada setiap kondisi *launching* ketinggian *trim* pada *launch barge* semakin meningkat, dimulai pada kondisi inisial dimana *launch barge* dalam kondisi *trim* setinggi 1,287 m atau 0,4° dan pada kondisi *jacket tipping* kondisi *trim* meningkat menjadi 10,372 m atau 3°. Selain mendapatkan hasil perubahan *trim* analisis juga menghasilkan Grafik GZ, dimana sesuai standar aturan Noble Denton 0028, bahwa puncak dari Grafik GZ tidak dibawah 20°. Dari 4 kali percobaan analisis hanya 1 kondisi inisial memenuhi standar aturan peluncuran.

Kata kunci: *Barge, Fixed Offshore Platform, Stabilitas, Trim*

BARGE STABILITY ANALYSIS ON THE LAUNCH PROCESS OF FIXED JACKET OFFSHORE

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ABSTRACT

Ship dynamics is the movement that the ship responds to. With the dynamics of the ship, the ship also has stability. All buildings on the sea, including barges, also have stability calculations. Barge is a ship with a flat hull that has a function to transport cargo, and is pulled or pushed by tugboats. In addition to carrying cargo, barges also have a big role in the offshore world, such as carrying *jackets* from the fabrication site to the installation site. After reaching the installation site, the *jacket* will be *launched* into the water with the barge in a *trim* position so that the *jacket* can slide by itself or be pulled by a winch. The *launching* process is divided into 3 processes, namely *jacket slides*, *jacket tipping*, and *jacket separates*. This study aims to determine the stability conditions and *trim* changes in the *launching* process. Analysis of the stability of the barge in the *launching* process was carried out using the Maxsurf Stability Adv software. By previously making modeling of the launch barge with the help of Maxsurf Modeller Adv software and modeling Jacket using SACS 12.0 software. The research is carried out continuously by entering the results of the analysis in the previous stage into the analytical data to be analyzed. The results showed that in each *launching* condition the trim height on the launch barge increased, starting at the initial condition where the launch barge in trim condition was as high as 1,287 m or 0.4° and in the *jacket tipping* condition the trim condition increased to 10,372 m or 3°. In addition to getting the results of trim changes, the analysis also produces a GZ Graph, which according to the standard Noble Denton 0028 rule, that the peak of the GZ Graph is not below 20°. From 4 times of analysis experiment only 1 initial condition met the standard of launch rules.

Keyword: *Barge, Fixed Offshore Platform, Stabilitas, Trim*