ModTech International Conference - New face of TMCR
Modern Technologies, Quality and Innovation - New face of TMCR
21-23rd May 2009
603

CONSIDERATIONS CONCERNING THE WORK IN DYNAMIC REGIME OF DIESEL ENGINES

Mihai Simionov[1]

[1]"Dunarea de Jos" University of Galati, Romania, Department of Thermodynamical and Thermal Engines

Corresponding author: Mihai Simionov, mihai.simionov@ugal.ro

Abstract: This paper makes some considerations concerning the work in dynamic regime of Diesel engines used in naval propulsion installations. It will be presented a mathematical model concerning dynamic work of the Diesel engine around stationary regime. Also, it will be considered the static characteristics of Diesel engines are linear near stationary regime. Starting from equations written for a mobile mechanic, where will be found the inertia moments of the motor mechanism, the transmission power and consumer power (in this case the propeller) and the effective torsion moments of engine and the consumer is determined the differential dynamic equation for propulsion system of the ship. Differential equation solutions with the partial derivative represent the values for optimal speed in different case loading of the ship. In this way, one can determine the optimal operating regimes of the diesel engine so that fuel consumption for the entire power plant of the ship to be minimal.
Keywords: Diesel engine, naval propulsion, dynamic regime, stationary regime