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Failure Probability of Ship Diesel Parts Under Operating Conditions

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Abstract

The dependences are given to determine the probability of accidental failure for any transition, accidental failure to achieve maximum wear, and the density distribution of the probability of wear rate (cylinder bushings, main and connecting rod bearings). In the case of simultaneous action on the element (e.g., the cylinder bushing), the most common and severe factors that cause wear during operation (including during start-ups) and accidental failures. The other set of conditions or its partial case corresponds to other elements of the considered system. Calculation formulas are given for determining the average number of failure-free transitions during the standard service life, which

can be replaced at any time from the start of operation of the parts to the time under investigation. The regularities are given, which allow determining the probability of emergency failure at any time and the probability that the whole period will not be an emergency failure and that the emergency failure will occur in the first transition.

Keywords

Diesel **Distribution** **Random failures**

Wear **Emergency failure**

Two-dimensional law

Two-dimensional density **Energy efficiency**

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