Title: **The Meaning of LIFE (Low Impact Failure Effect)**

Author: Richard Purser, *GL Noble Denton*

Abstract

The Low Impact Failure Effect (LIFE) concept evolved from the development of the MTS DP Design Philosophy Guidelines. It is a simple design tool intended to help ensure a DP vessel design satisfies the owner's aspirations. It also provides the vessel with the operational flexibility and uptime to carry out its industrial mission efficiently and effectively taking into account the fact that equipment failures can occur and maintenance activities must be carried out. The origins of LIFE lie in recognition of the fact that classification society rules for DP provide a good minimum standard but do not address the vessel's industrial mission.

The LIFE concept adds very little to the cost of building a DP vessel compared to class minimum standard (and could actually be less expensive in some applications) but the investment can be recovered many times over during the vessel's operational life. The basic principles are easily understood and can be applied by any design team. The important point is that they should be applied from design initiation and carried through the basic and detailed design phases.

The concept can be applied to designs approved by any classification society and is fully compatible with all DP notations. The LIFE concept is applicable to vessels designed for all types of DP operations and is currently being applied to new build drillship and diving vessel designs. This paper describes the LIFE concept methodology using practical examples of how it is applied across a range of systems.

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