

# Ship accidents

[Law](#), [Security](#)



## **ABSTRACT**

Safety may be defined as an acceptable state of risk by society. In this respect, for assessing the current safety level of ships, it is necessary to quantify the risk level of the operating world fleet, thus estimate and assess the basic contributors to risk, namely the frequency of maritime accidents and the extent of their consequences.

As this paper deals with a systematic analysis of ship accidents in recent years and evaluates the current level of safety for the majority of ship subtypes present in the world fleet, namely, tankers, bulk carriers, containerships passenger and cruise ships, passenger Ro-Ro cargo vessels, Ro-Ro cargo ships, general cargo vessels, reefer ships, car carriers, fishing vessels, LNG and LPG carriers.

### Introduction

The history of maritime transport is marked by ship accidents with partly disastrous consequences on human lives and impact on society and the marine environment. In response to these disastrous accidents, more and more new requirements and amendments of existing regulations for the safe maritime transport were introduced by the International Maritime Organization (IMO), as this paper gives an overview of the global safety level of all basic merchant ship types in terms of accidents' occurrence, frequencies and consequences.

For each ship type, accidents occurred within the time period 1990-2012 are presented and analyzed with respect to the degree of accident severity,

accident category and accident's geographic area, number of fatalities and total losses of ships. Furthermore, the total accident frequency and frequencies per main accident categories are given as well as comparative results among the different ship types.

The ultimate goal of this investigation is the assessment of the relative safety level per ship type in order to identify those ship types that are more prone to marine accidents (per ship type), possible historical trends, and geographical areas, where accidents more often happen. Frequencies and basic consequences were investigated for the entire period of interest (i. e. 2012), as well as separately for the last decade of the studied period.

The source of the analyzed accidental data is the IHS Sea-web® database and the analysis pertains to the generic ship types as defined by the particular database; namely, Bulk carriers, Passenger and Cruise ships, Passenger Ro-Ro cargo vessels, Ro-Ro cargo ships, General Cargo vessels, Reefer ships, Car carriers, Fishing vessels, LNG and LPG carriers.

The analysis of accident records was performed for the time period 1990-2012; we included those accidents associated with merchant passenger and cargo ships, regardless ship size, however built after 1980. Operational fleet at risk has been calculated from the Lloyd's Register of Shipping® database for all the afore-mentioned ship types.

The output of the particular calculations was compared with corresponding data from Clarkson's SIN® and a rather good fit of the respective results was recorded.

The presented results related to Cellular Containerships and Large Crude Oil tankers (greater than 60, 000 DWT) are coming from two earlier completed research projects of NTUA, namely CONTIOPT (2011-2013) and SAFEDOR (2005-2009), as well as from internal NTUA research (Eliopoulou et al. 2012, 2013).