

Motion Sickness Incidence

MSI is the percentage of individuals who would become physically ill if subjected to motions of prescribed characteristics for a given time interval. The original experiments to determine the MSI boundaries were carried out by subjecting a group of young caucasian men, unacclimatised to motions, to a series of single frequencies of vertical sinusoidal motion (no roll motion). These experiments had a number of limitations including:

- Experiment subjects limited to young men - it is known that sea sickness incidence varies with age, sex and race.
- Statistically, tolerance to motions increases with time at sea, therefore ferry passengers are likely to be more susceptible to motion sickness than the crew.
- Performance may be degraded before vomiting occurs.

MSI has however become a standard method for comparing seakeeping performance of different designs, particularly passenger vessels. The MSI data may be displayed in two forms:

- The percentage of people likely to vomit within two hours.
- The time period after which severe discomfort (sea sickness) occurs in given conditions. This system has been developed by the International and Australian Standards.

The MSI for a vessel operating in a particular seaway is determined by calculation or experiment then plotting against the standard curves, as shown in Figures 1 & 2.

It should be remembered that the boundaries shown apply only to vertical accelerations and to infrequent (or inexperienced) travellers amongst the general public. Additional influences such as vision, fear, odours etc. affect sea sickness, but their effects have not yet been quantified. Tolerance also varies with age though no adjustments are given at present to cover this effect.

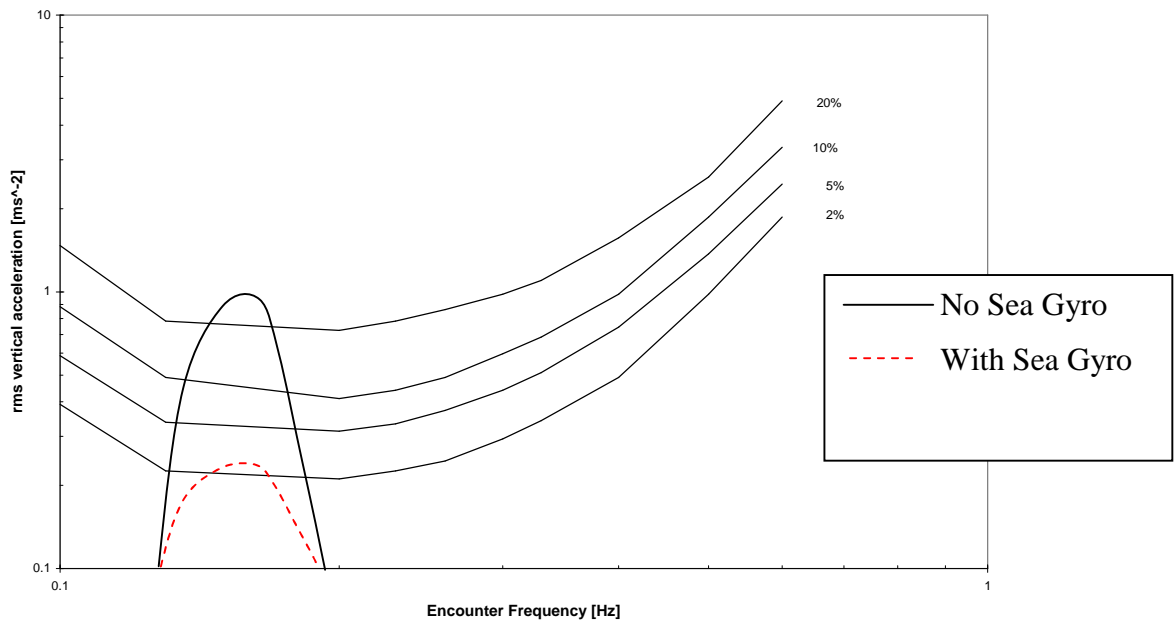
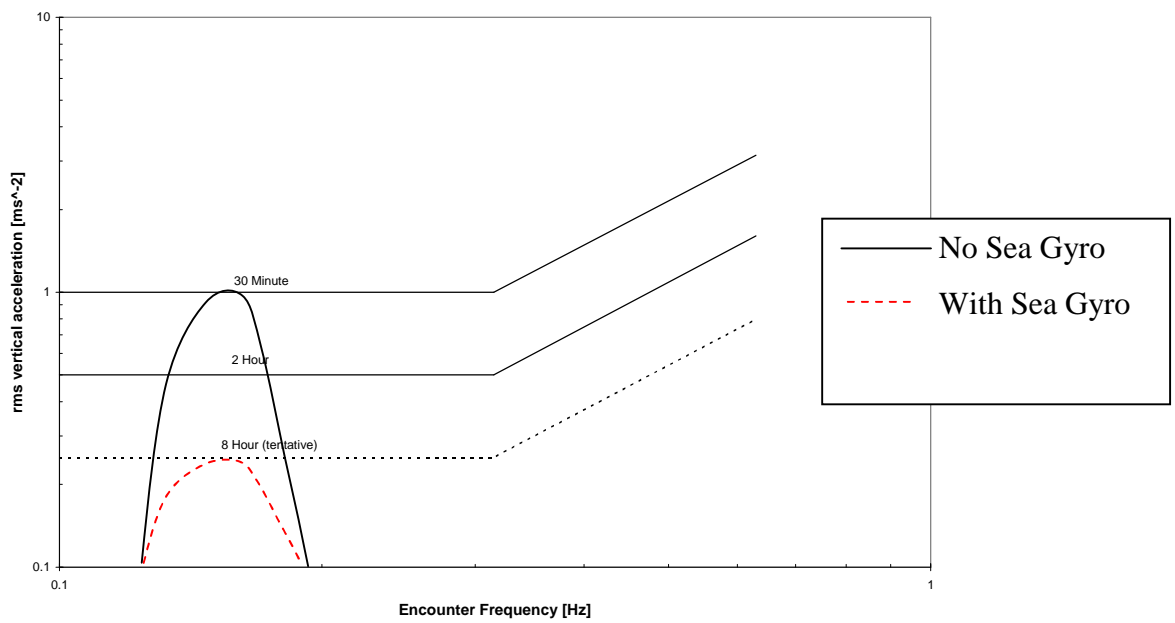


Figure 1 Effect of Sea Gyro on Motion Sickness Incidence



Effect of Sea Gyro on time to severe discomfort