Evacuation and Egress

Ship and Offshore Evacuation Analysis

BMT Offers comprehensive ship and offshore structure evacuation analysis. BMT performs advanced analysis of evacuation arrangements using simulations which include human behaviour and lifesaving apparatus performance.

An Advanced Approach to Evacuation Simulation

To safeguard passenger safety, assess the flow of people or evaluate the impact of crew tasking, the prediction of the movement of people is an integral part of accurate evacuation simulation. BMT uses EXODUS for advanced evacuation analysis. Developed by the University of Greenwich (FSEG), this software package allows for:

- in-depth analysis of complex people-people, people-structure, people-environment interaction;
- vessel specific modelling of unlimited numbers of people on all types and sizes of vessels and structures, including small ferries, commercial vessels and offshore platforms;
- extensive assessment of ship or structure layout, exit arrangements, muster stations and evacuation system capacities and locations;
- enhanced hazard modelling including the effects of radiant heat and the incorporation of a smoke and toxicity model.

Optimizing Safety and Efficiency

A thorough analysis is required to design initial plans, assess procedures on existing vessels or platforms and investigate the impact of design change, thorough analysis is required.

BMT applies the advanced features of EXODUS to assist designers and operators in the creation of a safer, more efficient design; assist in identifying the impact of design change and facilitate crew training.
Enhanced Realism
Designation of tasks or individual characteristics to crew or passengers and the affect on their subsequent route selection are modelled.

Fire and Smoke Hazard Modelling
Incorporation of fire and smoke toxicity models will calculate the effect of smoke and toxic gases on occupants.

Fully Integrated Abandonment Model
Lifeboat allocation, operational status, entry delay times and performance in extreme conditions are examined.

Passenger and Crew Movement
Normal circulation patterns are analyzed, predicting how individuals will interact during disembarkation, emergency drills and the clearing of decks, theatres or dining rooms.

BMT is involved in world leading research into human performance on ships and offshore structures. A unique approach to BMT’s use of computer simulation is the concurrent collection of real performance data in the company’s large scale Ship Evacuation Behaviour Assessment (SHEBA) facility.

Human performance data for corridors, stairs, ladders and hatches in different lighting and smoke conditions, both with and without lifejackets, is a significant factor in evacuation analysis.

Full scale trials on passenger vessels and offshore platforms have also validated BMT’s simulations.

BMT’s marine and offshore services are based upon three decades of involvement in ambitious international research and development initiatives.

With a team of multidisciplinary experts, BMT possesses engineering expertise including ship/structure design and modification, propulsive performance assessments, full scale trials and arctic engineering.