



University of Applied Sciences

HOCHSCHULE
EMDEN-LEER

BEST PRACTICE -MARINE FACULTY

COMBINING BRIDGE AND HUMAN
ELEMENT SIMULATION

Development opportunities



Leadership in Bridge
Teams



Situational awareness
in real time



Learning from each
other



Experiencing
complexity

Shared Mental Model...? Hands-on!

Ship and Crew, Bridge and Ressources, Task and Team

Combining bridge simulation with human element simulation,
students really experience the FULL scope of ship handling -
turning learning from push to pull!

by Prof. Capt. Rudolph Kreutzer

What's the set up?

- Ship Handling Course integral part of the last study semester before graduation
- 8 weeks, one bridge simulator session per week a 4 hours, plus self-directed preparation and reflection
- Intensive 4 days of Human Element In Shipping Simulation (TOPSIM - HEISS) spread over the course
- Hybrid delivery: Combination of physical, virtual and e-learning, integration of psychometrics on individual and team level

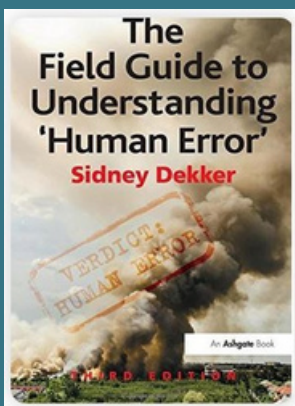
Experience sharp & blunt end:

- Sharp end - acquiring competences on the bridge through:
Interconnected bridge system simulation
Different navigational situations
Different roles within the teams
- Blunt end - preparing the tasks and developing as bridge team
Refresh system knowledge: ECDIS, Radar, Conning, Weather
Refresh situational competences: Route planning, ColReg, Port regulations, Ship specifics
Develop the team: Feel the team development process
Develop team competences as a real team: decision-making, communication, back-up behavior, delegation





Human Element in Shipping Simulation



Sharp and blunt end
- interested in a
deep dive?



Modern Campus and
modern technologies



DIVING DEEPER

PROGRAM DESIGN

Combining Bridge and Human Element Simulation?

The increasing traffic density on waterways leads to complex situations. Managing bridge teams is crucial and thus, personal skills and effective resource planning are key elements of a successful management. Accordingly, sufficient levels in management and leadership competencies are also required by the STCW. Contemporary accident analysis published f.i. in the MAIB Safety Digests still point out failures in situation awareness, alerting others, communication, complacency and safety culture onboard accounting for 75% of the causal factors in maritime incidents.

The bridge simulator offers the opportunity to train and improve the "sharp end skills" and helps to increase efficiency as well as safety and security, and the Human Element simulation makes the saying "we all are the human element" tangible, thus creating the drive to also train and develop the "blunt end skills".

Win - Win

- Combining TOPSIM-HEISS and bridge simulator, students benefit from team- and task-oriented decision-making directly, receive constructive feedback for their challenges in the near future
- Through this embedded training they can experience the bridge simulator on a more in-depth level
- Students have a personal and deep learning experience, teachers are asked for relevant support and feedback - and the final assessments go very smoothly
- A valid and reliable environment for further scientific maritime research in the areas of human factors is created

