Engine Room Ergonomics and Machinery Layout

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"An applied science concerned with designing and arranging things people use so that the people and things interact most efficiently and safely."

‘Guidelines for engine-room layout, design and arrangement’
MSC/Circ.834 (1998)

‘...principles for the integration of health, safety and ergonomics in the design and arrangement of the machinery space onboard ships.’

How can new developments based on these guidelines improve efficiency and safety in machinery spaces?
Limited engine room space becoming increasingly more limited:

1. Hull design; commercial, efficiency and strength requirements
2. Myriad of machinery components interconnected to form a machinery system
3. MARPOL void space requirements
4. Environmental no-discharge requirements + inadequate reception facilities = more storage tanks

Two new and crucial developments!

1. Ballast water management systems
2. Selective Catalytic Reduction
   and don’t forget...
3. Storage of chemicals and waste from the above systems
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Engine Room Layout Solutions (1)

1. Commendable 3D modelling (yards and class)
3. Increasing automation

*Increasing automation welcome but physical labour still required for maintenance*

Engine Room Layout Solutions (2)

Human factor is not just a question of maintenance and practicality;
1. Safety in confined spaces
2. Emergency situation and rapid response
3. Increased exposure to heat, noise and vibration in a confined space
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Proposal to Tripartite and way forward

*Time for better governance of engine room space and machinery layout?*

*Proposal for Tripartite to resurrect MSC Circular 834*