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Navigating the Global Maritime Workforce Crisis

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Navigating the Global Maritime Workforce Crisis:

Addressing the Shortage in the Pilotage Industry





The Audience & The Challenge

Marine pilots, harbor masters, port authorities, united by a common concern.





Global Shipping: High Stakes

90% of world trade moves by sea....shipping cannot afford a talent crisis.





Marine Pilots: Guardians of the Harbor

“One ship’s safe arrival
can hinge on one pilot’s
expertise.”



☼ The Workforce Crunch: Shipping's "People Problem"

**Global maritime
workforce: aging
mariners, fewer recruits,
a shrinking talent pool.**





Labor Shortage by the Numbers

ICS/BIMCO Seafarer Workforce Report (2021):



26,000+

Current officer shortfall



90,000+

Projected need by 2026



560+

Regional impacts worldwide

☼ Root Causes: Aging and Retiring

Baby Boomers retiring,
fewer young mariners,
experience gap widens.



Root Causes – Recruitment & image problem



Sea Blindness

Maritime careers suffer from 'sea blindness' among youth, leading to a lack of interest in pursuing these professions despite their potential rewards.



Enrollment Decline

U.S. maritime academy enrollment dropped from over 1,000 in 2017 to around 800 in 2023, indicating a growing gap in future maritime workforce.



Long Training

Training pipelines take 10-15 years to produce seasoned officers suitable for pilot training, making it a lengthy commitment for aspiring candidates.



Root Causes: Working Conditions & Retention

Stressful job, safety concerns, competition from other sectors, retaining talent is hard.



The Pilotage Pathway: Traditional Model



Master Mariner's License

Achieve Master Mariner's license after 10-15 years sea service



Pilot Training Age

Enter pilot training in late 40s or 50s, near career end



Apprenticeship

Complete multi-year apprenticeship and tough exams



Limited Service

Limited years of service post-training before retirement



Talent Pool

Result: A narrow, aging talent pool struggling to replace retiring pilots

Pilot Shortage On the Ground: Case Studies



Mombasa

Severe pilot shortage forced senior officials to assume pilot duties, causing delays and inefficiencies. This situation highlights the urgent need for solutions to address staffing issues.



Papua New Guinea

With only ~40 active pilots, the demand is rising due to oil and gas projects. This situation necessitates calls for regional cooperation to address the pilot shortage effectively.



United Kingdom

UK ports are launching apprenticeship programs aimed at grooming younger pilots in anticipation of retirements. This proactive approach is crucial for ensuring future pilot availability.



United States

National security concerns are linked to insufficient pilot numbers amidst a broader seafarer shortage. Addressing this issue is vital for maintaining maritime safety and security.



Consequences if Unchecked

Step 1: Port Delays & Congestion

Queues lead to fuel wastage, logistical snarls, and disrupted supply chains.

Step 2: Higher Costs

Demurrage and insurance hikes passed to consumers; ports pay premium to freelancers.

Step 3: Safety Risks

Overwork, rushed training, and unqualified personnel increase collision and grounding risks.

Step 4: Erosion of Standards

Pressure to lower training requirements threatens professionalism and safety norms.

Turning the Tide: Strategies & Success Stories



Enhanced Training Pipelines

Port of London Authority and Associated British Ports run structured, earlier pilot training. This ensures a steady influx of qualified personnel equipped for modern challenges.



Modern Recruitment Models

Hiring younger officers with intensive training accelerates pilot qualification, thereby addressing staffing needs and enhancing operational readiness in critical maritime sectors.



Retention & Incentives

Improved pay, predictable schedules, and mental health support reduce attrition, fostering a more stable workforce that is vital for maintaining effective port operations.



Technology as Force-Multiplier

Simulators and remote pilotage boost training and operational efficiency, allowing organizations to maximize resources while improving safety and effectiveness.

Safety Nets: Standards & Codes

**Upholding standards (IMO
Res. A.960, ISPO Code)
even as we innovate
training.**



**International Standard
for
maritime Pilot Organizations**

The Code



Interactive Moment: Your Port's Story

How is YOUR port
affected?



Vision: A Global Pilotage Academy Network

**International network of
pilot training centers &
exchanges (ISPO / IMPA-
led?)**





Embed Pilot Career Pathways in Every Port



Maritime Partnerships

Partnerships with maritime academies and shipping companies enhance the pathway from cadet to pilot.



Veteran Mentoring

Apprenticeships with veteran pilot mentoring provide essential hands-on experience for aspiring pilots.



Regional Cooperation

Regional cooperation between ports allows for shared training resources and collaborative pilot programs.



Human Capital Planning

Proactive human capital planning treats pilot development as critical infrastructure for the maritime industry.



Collaborate Across Sectors

Maritime authorities, shipping companies, academies, and pilot associations must join forces.





Invest in People and Tech



High-fidelity simulators

High-fidelity simulators for realistic training scenarios enhance learning and skill retention significantly.



Scholarships and sponsorships

Scholarships and sponsorships, targeting diversity and underrepresented groups, encourage inclusivity in the industry.



Improved work conditions

Improved work conditions including safe transfer methods and better scheduling ensure safety and productivity.



Funding partnerships

Public-private funding partnerships to sustain long-term development are vital for ongoing improvement and innovation.



Bold Call to Action

Let's secure our maritime future: commit to a global pilot academy network & port career pathways now!



Global Pilot Academy

Championing the Global Pilot Academy Network through advocacy and partnerships



Trainee Programs

Establishing or scaling formal pilot trainee programs in your ports



Funding Support

Securing funding and policy support for workforce development



Mentorship

Mentoring the next generation of pilots

Abu Dhabi Maritime Academy





Abu Dhabi Maritime Academy



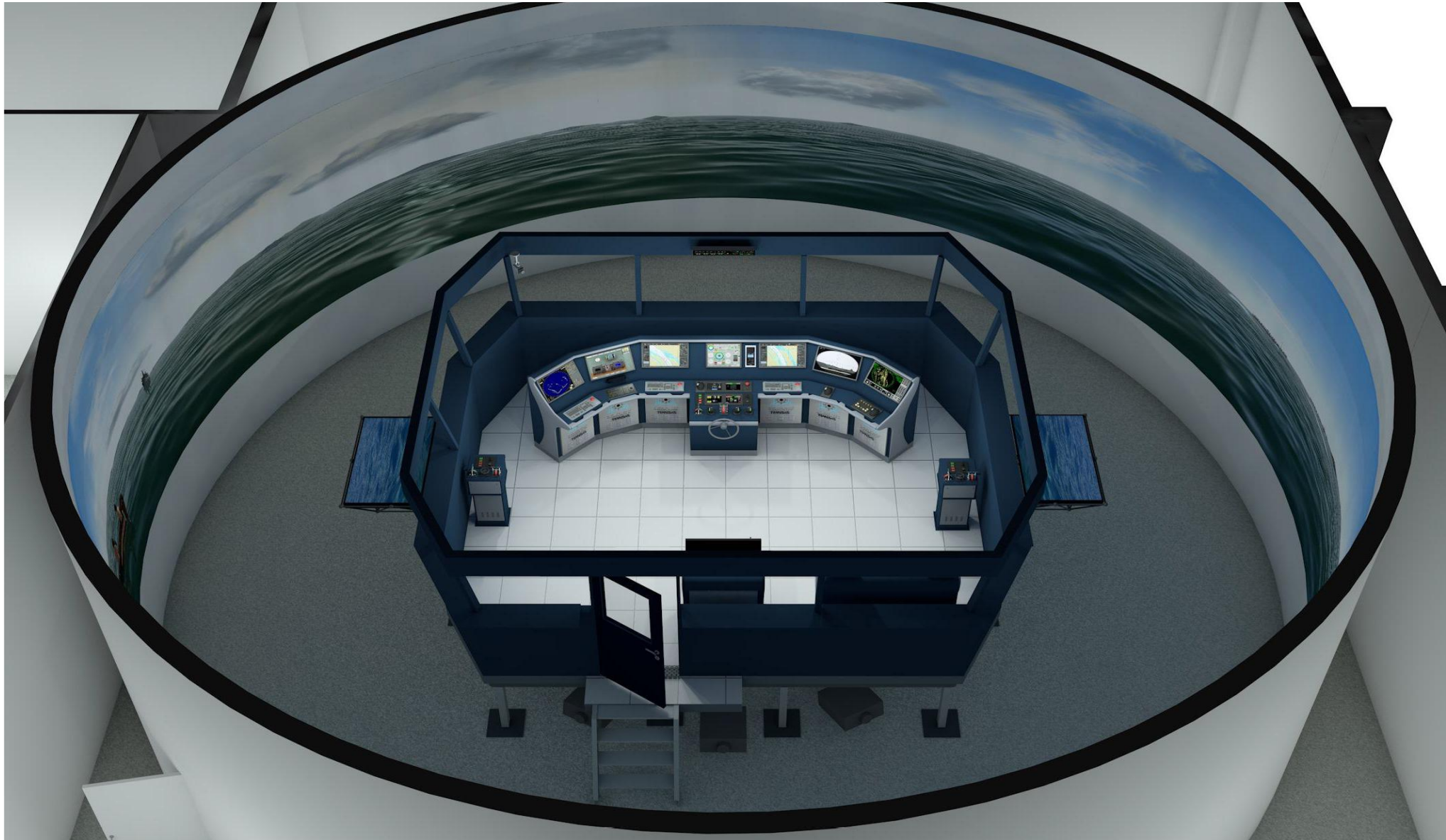
Abu Dhabi Maritime Academy premises

Navigation Bridge Simulators

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Full Mission (FM 360° Bridge Generic view) 1



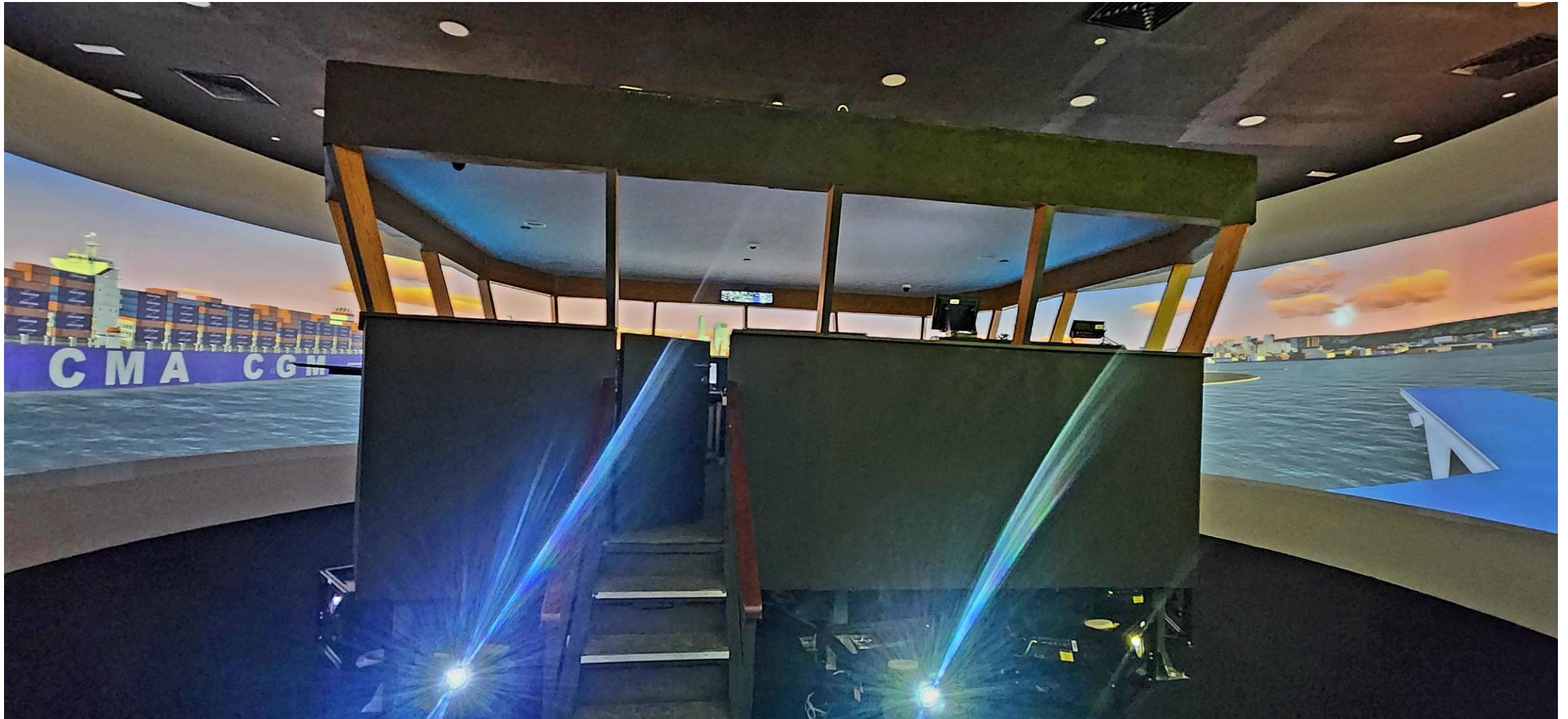


Full Mission (FM 360° Bridge view from Port quarter)





Full Mission (FM 360° Bridge view from Aft)

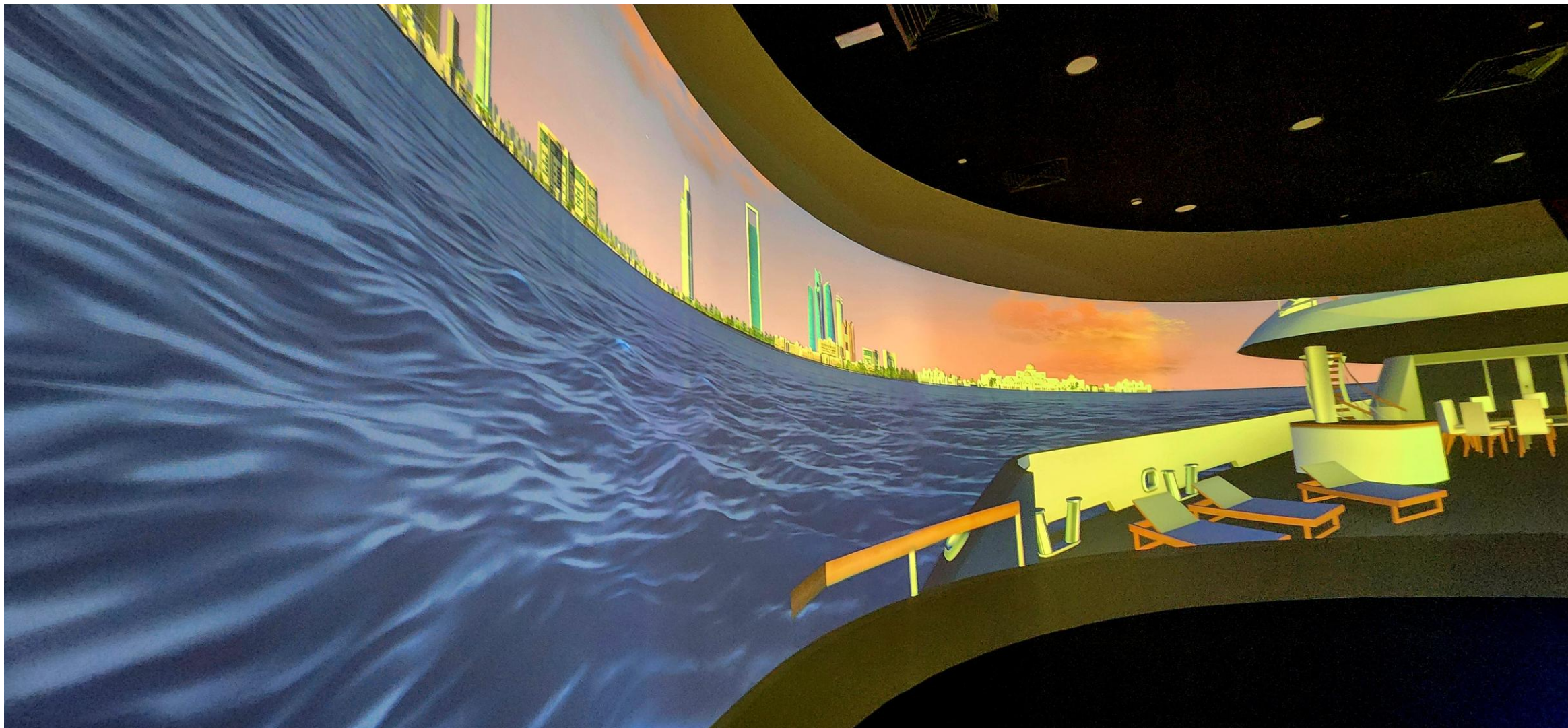


360° Tug Bridge





Tug bridge 360° Bridge (view from outside port quarter)



☼ Tug bridge 360° Bridge (Inside view)



360° secondary Bridge (LCD Screens)





360° Secondary Bridge using LCD screens



AH / DP Bridge (LCD Screens)





AH & DP Bridge (Generic view)- 1





AH & DP Bridge (Generic view) - 2





AH & DP Bridge (Generic view)- 3



Pilot Training- Bridge Resource Management course for Pilots



Pilot Training- Bridge Resource Management course for Pilots





Pilot Training- Various other course for Pilots





Pilot Training- Various other course for Pilots





Pilot and Tug Master combined training courses



Emergency Pilotage courses for Pilots and STS training courses





Pilots & Tug Master pre-employment evaluations





Pilots and Tug Master Annual assessments





Assessments for Promotion to masters on Super Yachts





Port operations procedures to enhance the efficiency of berthing and unberthing processes



References

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References

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2. International Chamber of Shipping & BIMCO (2021). Seafarer Workforce Report. ICS/BIMCO. (Reports a current shortfall of 26,240 officers and projects need for ~90,000 officers by 2026).
3. Intelsat (2025). “Amidst Seafarer Shortage, Multi-orbit Connectivity is Key for Recruiting.” The Maritime Executive, 6 May 2025. (Notes ICS expects a shortfall of 90,000 seafarers by 2024/25 and discusses labor shortages across maritime sectors).
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5. Mwangura, A. (2025). “Concern as marine pilots’ shortage hit Mombasa port.” Africa Eco News, 17 March 2025. (Describes severe pilot shortage in Mombasa, causes like aging workforce, poaching by higher-paying ports, and resulting delays and stop-gap measures).
6. Clark, J. (2024). “Papua New Guinea Faces Marine Pilot Shortage Amidst Industry Expansion.” One PNG News, 27 June 2024. (Covers alarm raised at shortage of marine pilots (~40) in PNG amid growing demand; calls for improved training, regional cooperation, updated standards).
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8. Farajnezam, A. (2025). “Beyond Experience: Building the Next Generation of Maritime Pilots.” Marine-Pilots.com, 8 May 2025. (Opinion piece proposing modern pilot recruitment: hire younger candidates (e.g. 2nd Mates) and train intensively, vs traditional late-career model; highlights benefits of longer service and tech adaptability).



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10. International Maritime Pilots' Association (2025). International Standard for Maritime Pilot Organizations (ISPO) Code, 2025 Edition, Section 6.1.4. (Sets requirements for pilot orgs to have recruiting procedures and minimum standards for candidates, ensuring pilot competence).
11. The Hindu Business Line (2017). "Marine Pilots Shortage May Affect Ship Movement in Major Ports." Business Line, 14 June 2017 (via Mfame). (Early report on pilot shortages in India; notes foreign ports poaching Indian pilots with high pay, need for better retention and training in major ports).
12. The Maritime Executive (2021). "Potential for Serious Shortage of Officers by 2026." The Maritime Executive, 28 July 2021. (Summarizes key findings of 2021 ICS/BIMCO report: 1.89M seafarers globally, 26k officer shortfall then, need 89k more by 2026; urges training and recruitment efforts).



References

13. The Maritime Executive (2018). “Sydney’s Marine Pilots Boost Safety for 225 Years.” The Maritime Executive, 8 Feb 2018. (Provides historical context on pilotage in Sydney; notes pilots have guided ships since 1792 and importance of pilotage for port safety; also includes descriptions of pilot transfer methods and images of pilot vessels).
14. Mallory Alexander (2025). “Rotterdam Port Congestion Update.” Mallory Group News, 14 Oct 2025. (Mentions Belgian pilot union slowdown over pensions causing 130+ ships to wait at Antwerp, illustrating how pilot labor issues can disrupt port traffic).
15. Waterways Council (2024). “No Shortage of Good Ideas to Address the Mariner Shortage.” Marine Log / WCI, 20 May 2024. (Discusses U.S. perspective: Mariner shortage seen as national security risk; outlines formation of a Maritime Workforce Working Group and measures like reducing sea time for certain certifications to attract mariners).
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17. Port Authority of NSW (2018). 225 Years of Pilotage in Sydney – Media Release/Feature. (Highlights pilotage’s long history in Sydney and ongoing essential role; notes modern practices like fast cutter vessels and occasional helicopter transfers, underscoring adaptation in pilotage methods).
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19. Nautilus International (2023). “Maritime Education Starts With Local Action.” The Maritime Executive, 2023. (Op-ed noting decline in maritime academy graduates in the US and need for bolstered local recruitment and training initiatives; indirectly stresses importance of grassroots action in workforce development).
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22. Marine Pilots Institute (2022). Social Media/Outreach posts. (MPI highlights training opportunities like manned model courses and simulator workshops for pilots worldwide, indicating existing collaborative training efforts that could feed into a larger network).
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26. International Chamber of Shipping (2020). “ICS Diversity Tracker.” ICS Report. (Found only ~1.28% of global seafarers are female, underlining need to tap into underrepresented demographics to alleviate workforce shortages).
27. Business Insider (2021). “The Shipping Industry Can’t Find Enough Workers.” Business Insider, Aug 2021. (Discusses how COVID-19 and lifestyle factors led to many seafarers leaving and fewer joining, exacerbating an already looming worker shortfall; context for current crisis.)
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References

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30. Port Authority of New York/New Jersey (2019). Pilot Training and Safety Report. PANYNJ. (Details steps taken post-2018 pilot ladder incidents, including enhanced training and equipment upgrades, showing ports responding to pilot safety/work conditions which aids retention).



Thank you

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