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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

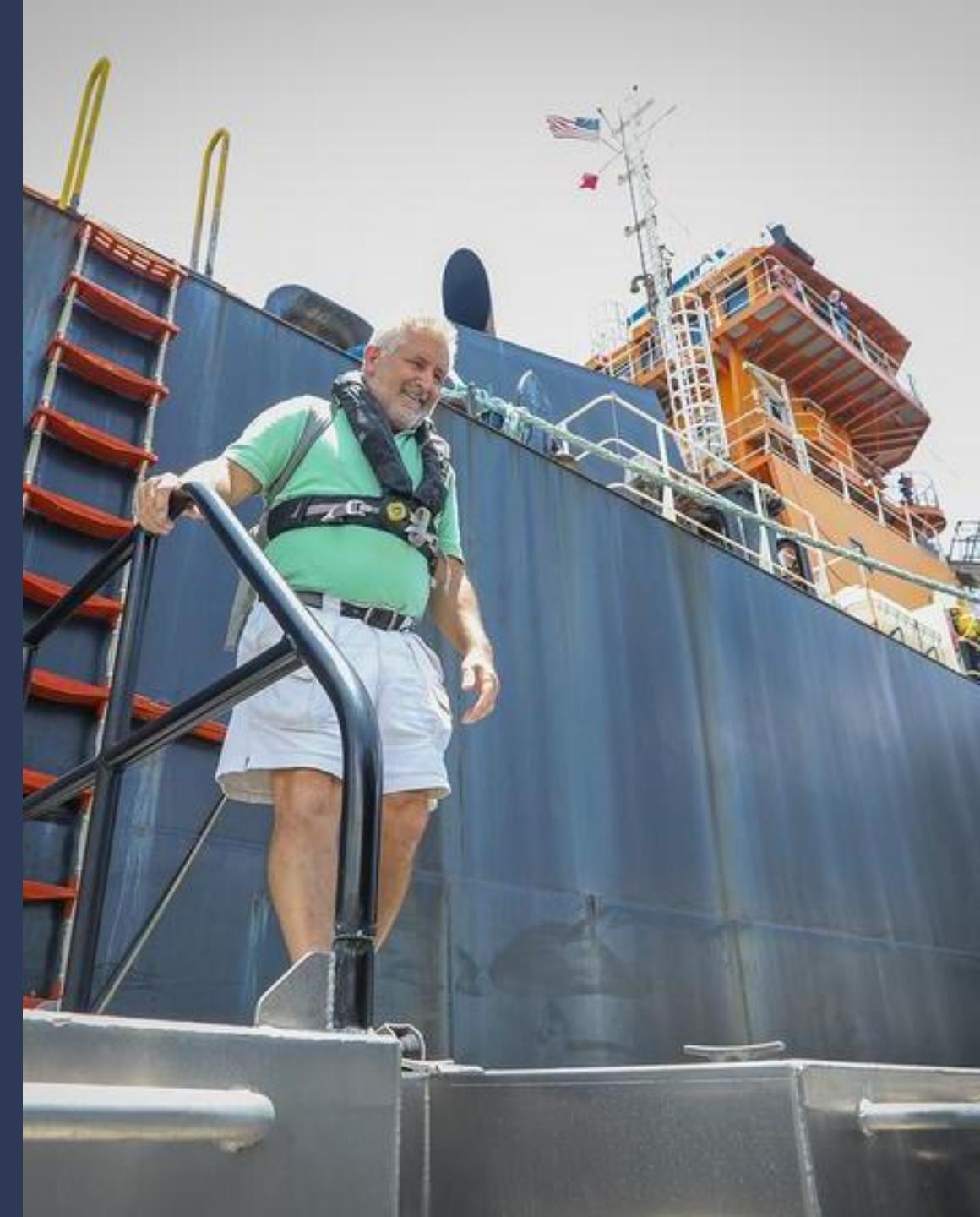
“One ship’s safe arrival
can hinge on one pilot’s
expertise.”





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.

**10,000
BABY
BOOMERS
RETIRE
EVERY
DAY**





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

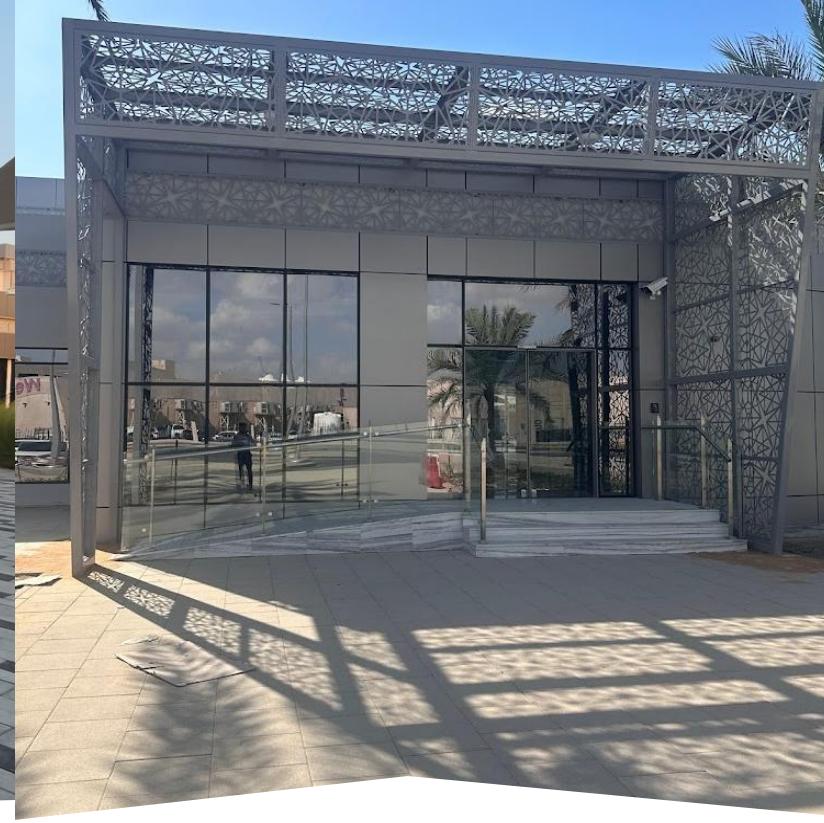
Securing funding and policy support for workforce development

Mentorship

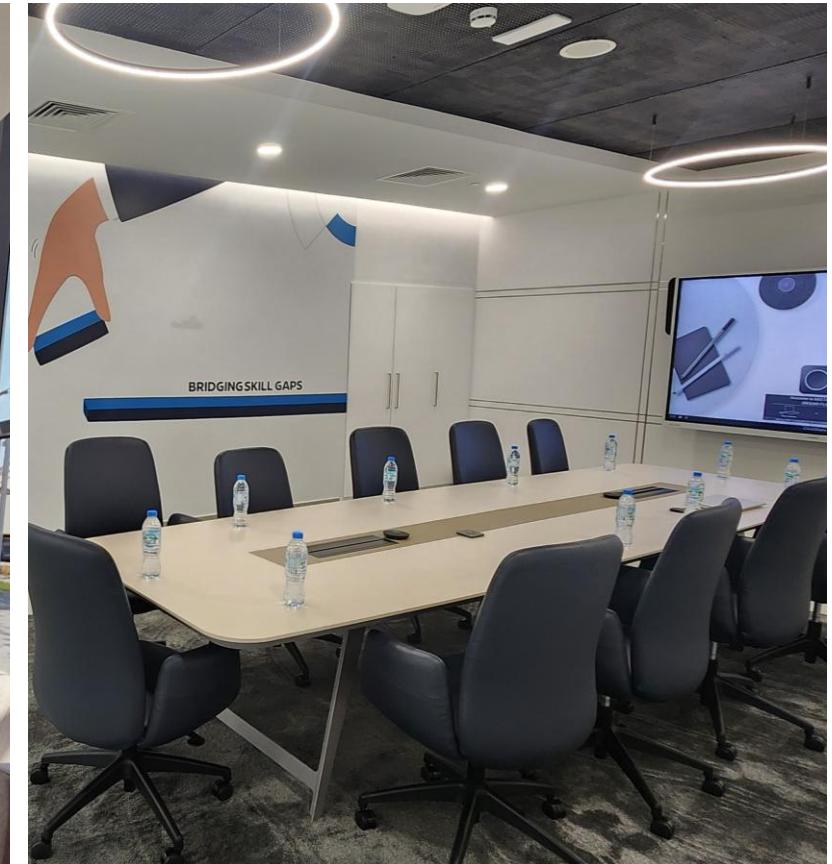
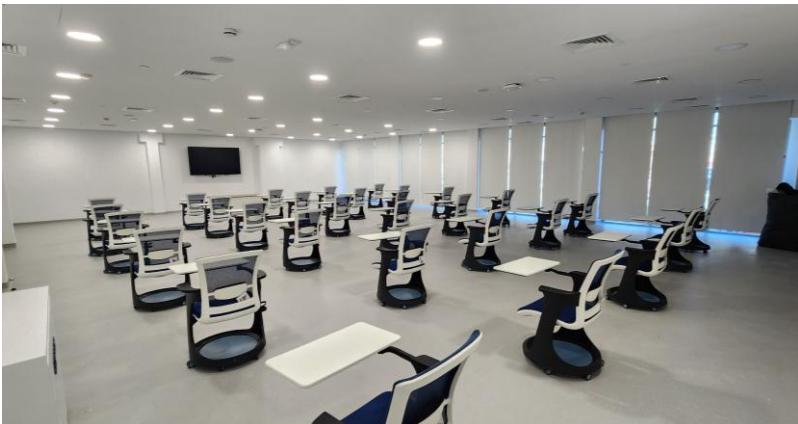
Mentoring the next generation of pilots

Abu Dhabi Maritime Academy





Abu Dhabi Maritime Academy

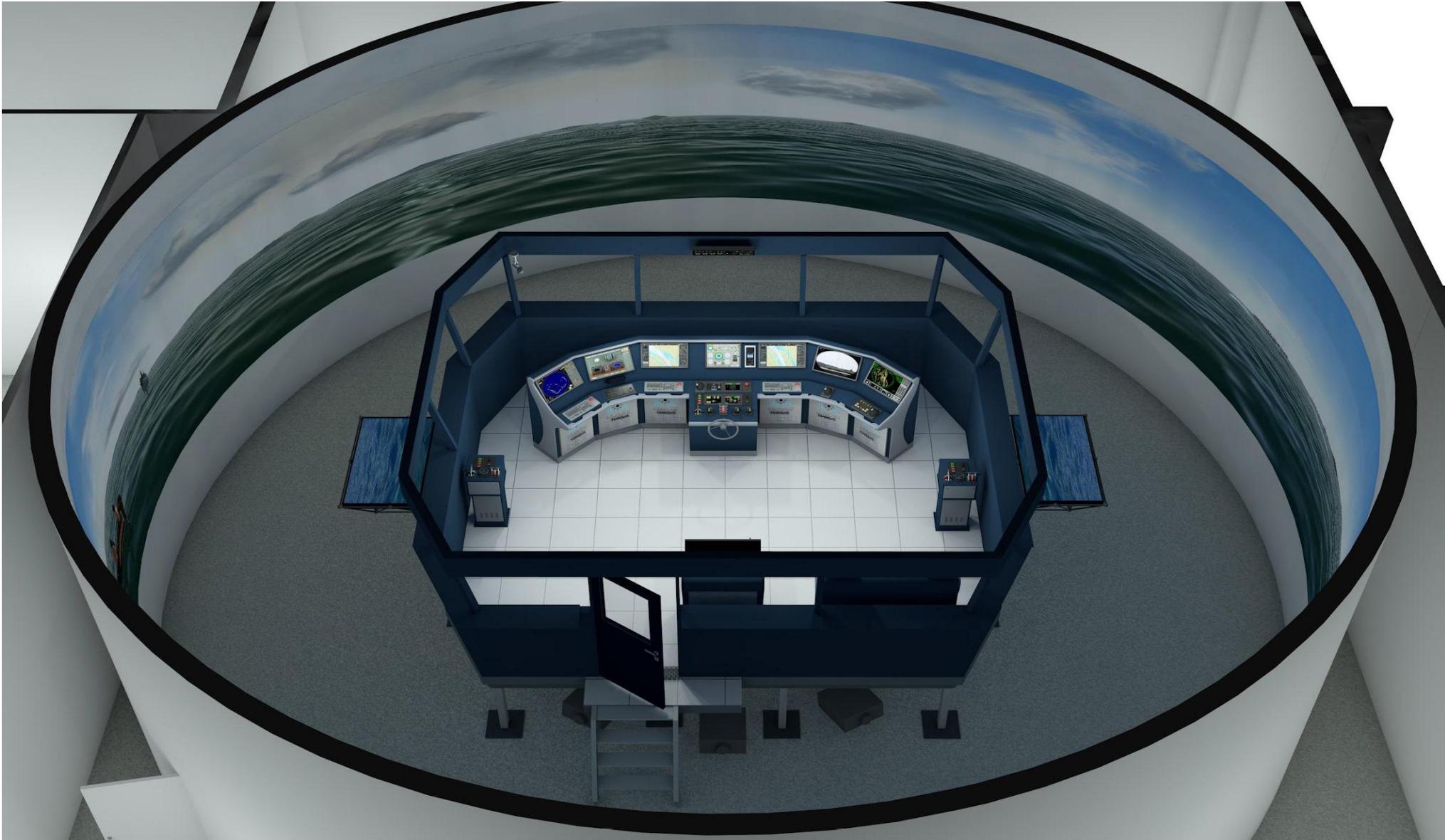


Abu Dhabi Maritime Academy premises

Navigation Bridge Simulators



Full Mission (FM 360° Bridge Generic view) 1



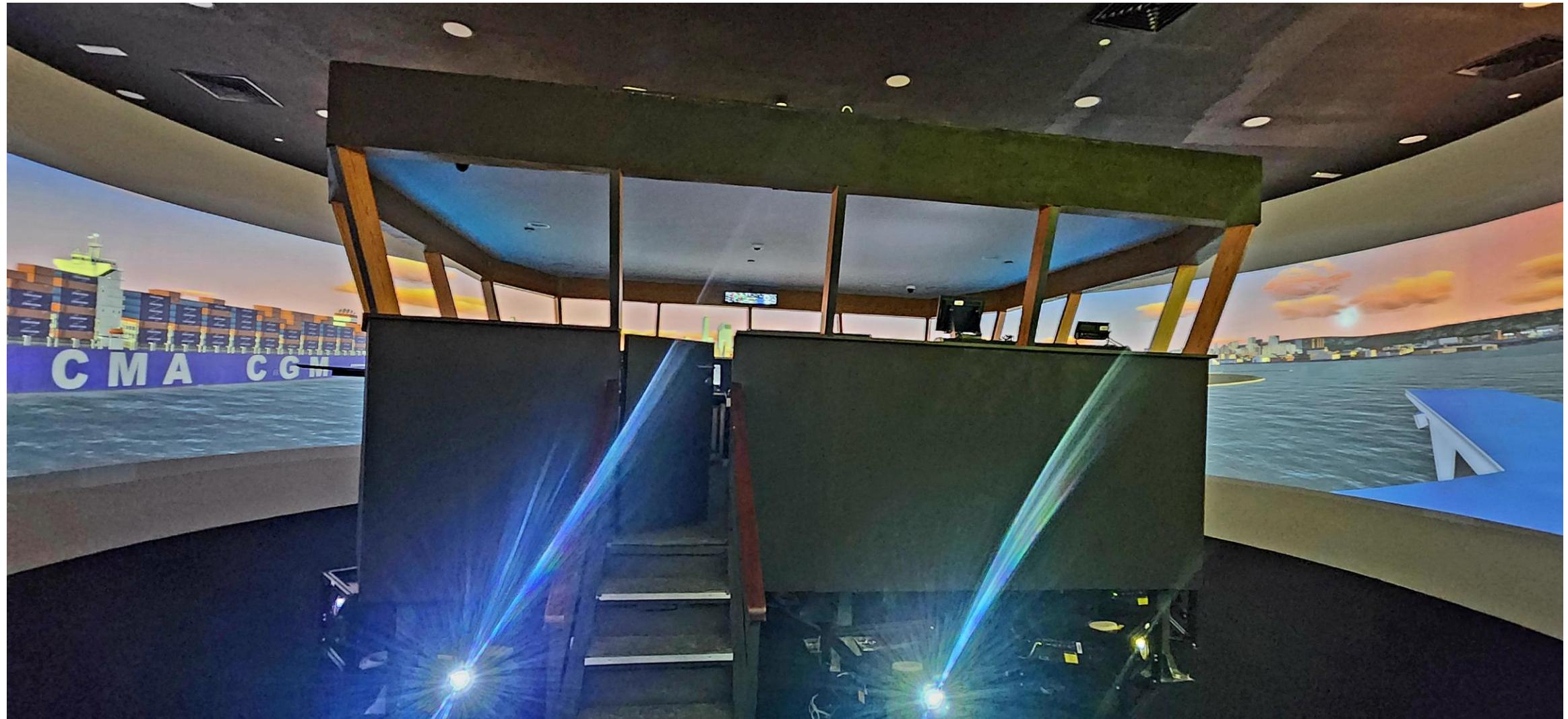


Full Mission (FM 360° Bridge view from Port quarter)





Full Mission (FM 360° Bridge view from Aft)

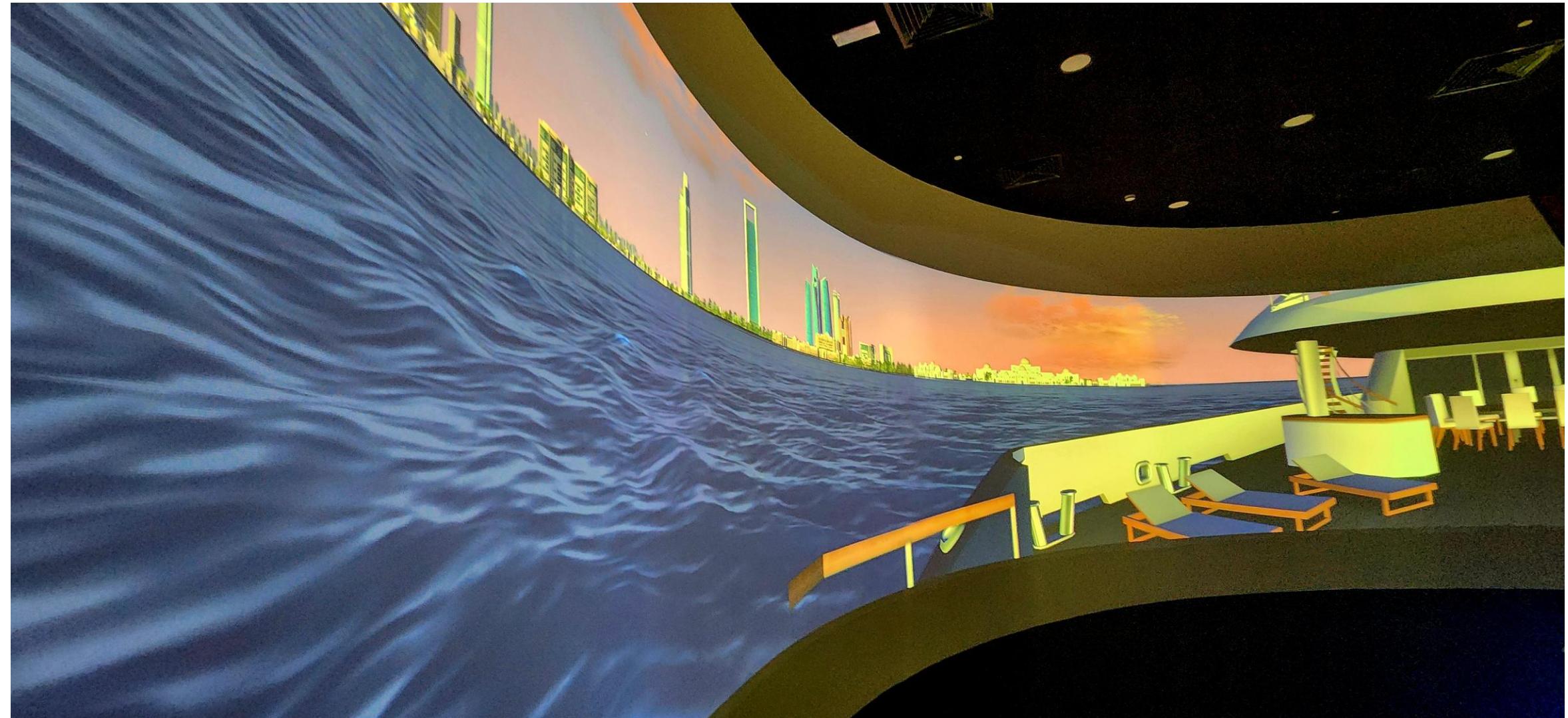


360° Tug Bridge





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



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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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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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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).
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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).
16. Port of Los Angeles (2017). Los Angeles Harbor Pilot Training Program Description (Harbor Safety Plan excerpt, Jan 2017). (Describes Jacobsen Pilot Service's training: a 24-month, seven-step program with ~1000 supervised ship moves required to progress; use of simulators and manned models; continuous training for all pilots).



References

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).
18. IMPA (2025). IMPA on Pilotage and IMO Standards. IMPA Brochure 2025. (Emphasizes IMPA's role at IMO and reference to IMO Resolution A.960(23) as the international benchmark for pilot training and operational procedures).
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).
20. IMO (2025). “NextWave Seafarers Project launched to bridge global seafarer gap.” IMO News, 11 Feb 2025. (Announces an IMO-KSA initiative training cadets from developing states to address shortages; demonstrates high-level recognition of maritime workforce issues and willingness to invest in training programs).



References

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23. All Aboard Alliance (2023). Diversity@Sea Report, Global Maritime Forum. (Investigates pain points for female seafarers; while focused on diversity, indirectly supports the argument for widening recruitment pool – e.g., by improving conditions to attract/retain more women in maritime, who could also enter pilotage).
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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.)
28. UK Maritime and Coastguard Agency (2021). “Review of Maritime Training and Careers.” MCA Publication. (Recommends initiatives for cadet sponsorship, tonnage tax training commitments, and career marketing – relevant to embedding career pathways in ports as part of national maritime strategy.)



References

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Thank you

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