

# APPENDIX - I

## MARITIME CAREER HIGHLIGHTS

### I. Seafaring

- Navigation, ship-handling and watchkeeping duties on board Egyptian Navy Units (Destroyer - Troop Carrier), 1973 – 1980
- Navigation and watchkeeping duties onboard cadet's training ship (Aida – 4), 1980

### II. Teaching

- A senior lecturer for the following subjects:
  - Astronomical Navigation;
  - Coastal Navigation and Chart Work;
  - Magnetic and Gyroscopic (True) Compass;
  - Navigational Instruments;
  - Navigation Control;
  - Radar and Electronic Aids to Navigation; and
  - Marine Meteorology.

### III. Training

- A senior Instructor for the following courses:
  - Radar Observer
  - Radar Simulator
  - Automatic Radar Plotting Aids (ARPA)
  - Electronic Navigation Systems
  - Navigation Control
  - Shiphandling
  - Tailored courses, including Vessel Traffic Management System (VTMS), Pilotage, Radar Plotting and Navigation Control for Saudi and Kuwaiti Coastguard Officers and Pilots from ARAMCO of Saudi Arabia.

### IV. Projects

#### 1. The Integrated Simulators Complex (ISC)

I spearheaded a groundbreaking four-phased endeavour to establish the largest integrated simulator complex (ISC) in the Middle East, generously funded with a US\$165 million grant from USAID. This comprehensive initiative encompassed meticulous planning, rigorous supervision, seamless implementation, and effective management processes. The ISC, a pioneering venture, incorporates cutting-edge marine, environmental, and crisis management simulations tailored to address a spectrum of natural and artificial disasters, including explosions, floods, earthquakes, terrorism, and oil spills. Its primary objective is to bolster the capabilities of Arab nations while nurturing their human capital across diverse sectors. ISC has emerged as a beacon of excellence, hosting numerous trainees from various countries and spearheading research endeavours that have significantly contributed to the developmental trajectory of multiple nations. In collaboration with the Egyptian Ministry of Transport, ISC's establishment catalysed the implementation of the Vessel Traffic Management System at Sharm Elsheikh, Gulf of Aqaba, underlining a substantial investment of 24 million USD. The Integrated Simulators Complex comprises a wide range of simulators and laboratories as follows:

- A. Crisis Management Simulator** handles natural and artificial disasters such as explosions, floods, earthquakes, terrorism, and oil Spills.
- B. Shiphandling Simulators** comprise:
  - Full Mission Bridge Simulators 360°.
  - Tug Boat Simulator 180°.
  - Small Fast Ship Simulator
  - Integrated Bridge Simulator (IBS)
  - Vessel Traffic System (VTS)
  - Radar Cubicles
- C. Petrochemicals Simulators** comprise:
  - Liquefied Natural Gas (LNG)
  - Liquefied Petroleum Gas (LPG)
  - Very Large Crude Carrier (VLCC)
  - Crude Oil Carrier
  - Chemical Cargo Carrier
- D. Global Maritime Distress and Safety Simulator System (GMDSS)**
- E. Marine Engine Simulator**
- F. Vessel Traffic System (VTS).**
- G. Crane Simulator**
- H. Truck Simulator**
- I. River Simulator (Inland Water Transportation – Nile River)**
- J. Environmental Laboratory.**
- K. Chromatography Laboratory.**
- L. Spectroscopy Laboratory.**

Since February 1996, ISC has been fully functioning with all its research, project development, and training assignments, which I have directed and supervised. Many research projects by ISC staff are conducted under my close supervision or jointly supervised by a research team, including other professors from specialised national universities and research institutes and me. ISC has been instrumental in training and certifying mariners in Egypt and other Countries, aligning with the stringent standards of the International Maritime Organization (IMO). Over 15,000 seafarers from diverse backgrounds have been successfully trained and certified through ISC's 55 comprehensive courses, including specialised training for bridge, emergency communications, and liquid cargo officers to ensure proficiency and safety in maritime operations. ISC has established the Oil Spill Management Centre at the Egyptian Environmental Affairs Agency in Cairo. This is to address environmental concerns and enhance preparedness for maritime emergencies. ISC's involvement in forming the Egyptian National Contingency Plan, alongside relevant authorities, has earned ISC recognition as the sole authorised training institute in the region. Recognising the importance of crisis management, ISC facilitated the establishment of the Crises Management Centre in Cairo under the Cabinet's auspices, bolstering Egypt's resilience and response capabilities during crises. Additionally, ISC provided comprehensive training for the petroleum industry, benefiting almost 900 trainees through 64 tailored courses over ten years. ISC's initiatives extend to technological advancements, such as developing and implementing the River Nile Simulator in Maadi, Cairo, to enhance the skills of Egyptian River Transport Authority (ERTA) staff and technical personnel. ISC analysed the East Port Said maritime channel design using simulation techniques to optimise navigation safety and efficiency, contributing to improving maritime infrastructure and operations in Egypt. Furthermore, ISC designed the North El SUKHNA Port and Provided Simulation and

validation of the design of the multipurpose international port serving. The Marine Simulators at the ISC also performed simulated studies. They submitted a complete document stating points of strength and weaknesses in addition to detailed recommendations in all the following research:

- Bulk Quay at Alexandria Port – Egypt;
- Petroleum Quay at El Dekhaila Harbor – Egypt;
- Al Fujairah SBM Terminal – UAE;
- Damietta LPG – Terminal – Egypt;
- Damietta LNG – Terminal – Egypt;
- Damietta E-Methanex – Terminal – Egypt; and
- Damietta Agrium – Terminal –Egypt.

## **2. College of International Transport and Technology**

Inauguration of the College of International Transport and Logistics in 2007, the Academy broke new ground by establishing the first-of-its-kind College of International Transport and Logistics in the Middle East. This pioneering endeavour laid the foundation for excellence in the field and underscored the Academy's commitment to advancing transportation education and practice;

## **3. Faculty of Fisheries and Aquaculture Technology & The Aquaculture Research Centre.**

The establishment of the Faculty of Fisheries and Aquaculture Technology and the Aquaculture Research Centre. This strategic move aimed to equip the Arab region with a cadre of highly skilled professionals in fisheries and aquaculture technology. The initiative bore fruit in several promising prototypes, including cultivating desert areas using "Salicornia," a halophyte that thrives in seawater, for human consumption and bio-diesel production. Additionally, ISC successfully pioneered the production of various algae proteins for human nutrition, pharmaceuticals, and carbon dioxide mitigation. Moreover, ISC's efforts extended to producing "Artemia Salina" shrimp for human consumption and aquaculture applications. These initiatives underscore Prof. Farghali's unwavering commitment to driving transformative change through innovative solutions and capacity-building.

## **4. The Industrial Services Complex**

The Industry Services Centre boasts a diverse array of labs tailored to meet the demands of modern industries. Among these are the Metrology Lab, where precise measurements are conducted to ensure quality standards are met. The Mechatronics Lab is a hub for interdisciplinary research and development, integrating mechanical and electrical systems. Meanwhile, the Electronics Lab provides a hands-on environment for exploring circuitry and electronic components. Finally, the PC Lab offers software development, simulation, and analysis resources, empowering students and professionals in the digital realm. The workshops are crucibles of practical knowledge and skill in the institution's heart. The Automotive Workshop hums with the sounds of engines being tuned and systems being analysed, preparing students for the challenges of the automotive industry. At the Metal Cutting Workshop, sparks fly as precision tools shape raw materials into intricate components, nurturing the craftsmanship essential to manufacturing. At the Marine Diesel Workshop, the scent of oil hangs heavy in the air as students delve into the complexities of marine propulsion, readying themselves for a career at sea. At the nexus of innovation and support, the Development & Maintenance Centres cater to the evolving needs of industries in the digital age. The Multimedia Centre is a creative hub where audio and video

production flourish, giving rise to captivating content and immersive experiences. Meanwhile, the Maintenance and Technical Support Centre stands as a bastion of reliability, providing essential services to ensure the smooth operation of complex systems. Lastly, the Database Modelling Centre harnesses the power of data, offering insights and solutions through advanced modelling techniques, driving progress in various fields.

## **5. Railway Training Institute**

In 2006, I proposed an innovative plan that led to a feasibility study, overseeing the implementation of a transformative transportation endeavour: the revitalisation of Egypt's Wardan, the Egyptian Railway Training Institute (ERTI). Situated on 150 neglected acres south of Cairo, this institute, founded by the United Nations in 1968, had languished for over four decades. Our proposal aimed to leverage the Academy's expertise in self-financing policies and advanced technology transfer to elevate ERTI into the Middle East's premier transportation technology academy. Securing an additional \$60 million in the fourth phase of the longstanding American grant, which dates back to 1994, we embarked on a comprehensive four-year development plan. This plan modernised the institute's infrastructure, including the train station, Olympic-standard swimming pool, stadiums, residential and recreational facilities, and essential utilities like sewerage, fire alarms, electricity, and water networks. We also focused on enhancing educational and training facilities, upgrading classrooms, laboratories, workshops, and student accommodation. We also prioritised amenities such as restaurants, cinemas, and theatres to enrich the learning experience. We successfully trained 1,560 individuals across 50 courses of training trainers at our Alexandria and Cairo headquarters throughout my tenure. Rigorous evaluations, carried out by international experts, gauged the efficacy of our training programs, informing future iterations. Regrettably, upon my departure from the presidency, the momentum waned. Training initiatives stalled, prospective investments floundered, and equipment lay dormant. ERTI, once poised for resurgence, reverted to neglect, mirroring its state upon inception in 1968.