

CURRICULUM VITAE

1. Personal data

- Family name** : **LIGTERINGEN**
- First name** : Han
- Year of birth** : 1945
- Nationality** : Netherlands
- Education** : 1970 M.Sc. Civil Engineering (with honours), Delft University of Technology, The Netherlands
- Languages** : English, German and French
- Professional affiliations** : Member of the Royal Dutch Institution of Engineers (KIVI)
Member of the International Navigation Association (PIANC),
Member of the Board of the Dutch Section of PIANC
Member of the Committee on International Cooperation of PIANC

Member Scientific Advisory Board of WL| Delft Hydraulics
Member Executive Committee Water-Front
- Present position** : Director with Royal Haskoning, Rotterdam, The Netherlands;
Professor Ports and Waterways, Delft University of Technology, The Netherlands
Professor Ports and Waterways, UNESCO-IHE, Delft, The Netherlands.

Employment Record

- 1995 - present : see present position.
- 1984 - 1995 : Frederic R. Harris, The Hague, The Netherlands; consecutively Head of Department, Director and Deputy Managing Director

- 1972 - 1984 : WL/Delft Hydraulics, Delft, The Netherlands; consecutively Project Engineer/Project Advisor and Head of Maritime Structures Department
- 1970 - 1972 : Polytechnical College, Malaysia with UNESCO under UNDP Assistance; Associate Expert in Hydraulics

2. Most Important Design Projects (selected)

- Planning and design of an LNG-Import terminal at Tatan, Taiwan (2002-2003)
- Design of Euromax Container terminal, Rotterdam (2002-2003)
- Containerland, an innovative concept for creation of land in port areas (1998-ongoing)
- Planning of a major port for Yunlin Basic Industrial Area, Taiwan (1994).
- Preparation of a masterplan of Kaohsiung's development of an international hub port for container vessels (1993).
- Planning of Hong Kong's container port development at Lantau Island(1992-1993).
- Hydraulic studies and design of the rehabilitation of Sines West Breakwater and the design of a new East Breakwater (1980-1993).
- Detailed design of the West Breakwater, Portugal (1988-1990).
- Damage investigations and repair design studies of the breakwater of Arzew in Algeria(1981-1983).
- Damage investigations and repair design studies of the breakwater of Tripoli in Libya (1981-1983)
- Preliminary design of a storm surge barrier in the Nieuwe Maas, Rotterdam (1987-1988).
- Hydraulic model studies for the design of the Eastern Scheldt Storm Surge Barrier (1976-1984)
- Feasibility studies on the reduction of salt intrusion in the Nagdong River in South Korea, including preliminary design of a barrage (1975-1976).

3. Advisorships

- External Assessor Examination Board UNESCO-IHE, Branch Hydraulic Engineering
- Advisor to Expertise Centre Maasvlakte 2 on hydro-nautical aspects (1998-present)
- Advisor to RWS Directie Noord Holland on Zeepoort IJmond (2000-present)
- Advisor on several LNG-terminal projects, for Shell Global Solutions (1996-present)
- Advisor to Genova Port Authority on a new master plan, including revitalisation of old port areas (1998-1999)
- Advisor on damage claims related to opening of the Beerdam in Rotterdam Europoort (1997-2000)
- Advisor on the review and final designs of the new breakwater for the port of Ashdod, Israel (1998-1999)
- Advisor on the development of innovative breakwater designs for the Maasvlakte expansion in Rotterdam (1997-1998)
- Advisor to the US Army Corps of Engineers on the preparation of a revised Coastal Engineering Manual (1996-1998)
- Advisor Port of Long Beach Authority on harbour resonance in Pier J slip and remedial measures (1995)
- Consultant to Lisbon Port Authority for review of short-term port improvement plans (1994)
- Advisor for studies on the preservation of Segara Anakan Lagoon in South-Java, Indonesia (1992-1994)
- Advisor to Taichung Port Authority on short-term improvements in the existing port and on the long-term development plan (1990)
- Advisor to Amsterdam Port Authority on the nautical and economic effects of the sealock capacity at IJmuiden (1990)
- Advisor on the rehabilitation and improvement of the breakwater at Ponta Delgada in the Azores (1989-1990)
- Advisor to International Finance Corporation on the lay-out, designs and operational aspects of a mineral export facility at Calica, Yucatan in Mexico (1987)
- Expert Witness on the failure of the St. Paul Breakwater, Alaska (1987)
- Advisor to the Moroc Government on the design and construction of the new breakwater for the port of Mohammedia (1983)

4. Teaching Assignments

- Since 2004 appointed as Professor Ports and Waterways at the UNESCO-IHE Institute for Hydraulic and Environmental Sciences
- Since 1995 responsible for the Chair of Ports and Waterways in the Section Hydraulic Engineering of the Faculty Civil Engineering and Geosciences of

Delft University of Technology. Teaching 2 courses at MSc level, guiding about 15 MSc Theses annually and supervision of Project Teams in the 4th year. Initiating and coaching research projects, including 1 PhD study.

- 2003, 2001 and 1999, organisation of the PAO course on Port and Terminal Planning, including lecture and exercise.
- 2000, Guest Lecturer at Yildiz Technical University, Istanbul, on port planning and coastal engineering.
- 1999, Guest Lecturer at Erasmus University Rotterdam, on port planning in relation to ship design.
- 1995, Guest Lecturer at the PAO course on Application of rock in hydraulic structures.
- Since 1995 lecturer at the annual Port Seminar of IHE on advanced port planning.
- 1990, organisation of a short course on Coastal Engineering, Taipei, Taiwan
- 1985, Guest Lecturer at the PAO course on Design of breakwaters.
- Since 1982 lecturer at IHE Hydraulic Engineering Course on Breakwater Design
- 1970-1972, lecturer in hydraulic engineering, Ipoh Polytechnic, Malaysia

4. Research Activities

- 2002-ongoing, Second Phase Joint Research Programme TU Delft and Rotterdam Port Authority, programme preparation and execution of the several projects.
- 2001, FAMAS-MV2, research on integral container terminal development for Maasvlakte 2.
- 2001, Probabilistic design of navigation channels, study sponsored by Cornelis Lely stichting, in preparation of a PhD research project.
- Since 2000 initiation and overall development of research programme on the Behaviour of Moored Ships, jointly with the Sections of Fluid Mechanics and Ship Hydromechanics of TU Delft and in collaboration with South African and Japanese research institutes. Four completed M.Sc. theses and two ongoing projects, one PhD study ongoing.
- 1999-2002, Joint Research programme TU Delft and Rotterdam Port Authority on innovative technology for the port. Specific projects related to Multifunctional use of quays, and removal of existing quay structures.
- 1982-1990, Joint Industry research on the strength of concrete armour units for rubble mound breakwaters.

5. Management Tasks (academic)

- 2000-2002, Chairman of the Profile and Search Committee for a new professor of Soil Mechanics.
- 2001-present, member of the Working Group on Project Education
- 1999, Chairman of the Committee on Structural Engineering Education
- 1998, Member of the Committee on Design Education.

6. Publications

2003 : "Behaviour of Moored LNG Ships in Swell Waves", Journal of Waterway, Port, Coastal and Ocean Engineering, January 2003.

"Key Topics in Port R&D", Proc.Int. Conf. on Port & Maritime R&D and Technology Singapore, Sept.2003.

"Long-period Wave Forces on a Moored Ship in a Harbour using a Strip Theory Approach" , Proc. Int. Conf. on Port and Maritime R&D and Technology, Singapore, Sept. 2003.

"Wind and Current Forces on Large Vessels", Proc.Int. Conf. on Port and maritime R&D and Technology, Singapore, Sept.2003.

"Application of Mathematical Modelling for the Colombo New North Port development, Sri Lanka", Proc. 6th Int. Conf. on Coastal and Port Engineering in Developing Countries, Colombo, Sept. 2003.

2002 : "CERES-Paragon Container Terminal in the Port of Amsterdam", Proc. Int. Navigation Conference, Sydney, Sept. 2002. PIANC Brussels.

"Container Terminals in North-West Europe. Expansion and Technological Development", Proc. Int. Conference on Port Development, Busan, May 2002, CIIMS/Dong Ah University.

2001 : " Dynadam- Theoretical Concept and Initial Feasibility Study", submitted for Int. Conf. on Port and Maritime R&D and Technology,

Singapore, Oct.2001

“Motions of Moored Ships in Long Waves”, submitted for Int. Conf. On Port and Maritime R&D and Technology, Singapore, Oct.2001

2000 : “Technical Innovations in Container Terminal Design”, Proc. Int. PIANC-PCDC Seminar , Buenos Aires, November 2000.

“Automatic Loading and Unloading of Inland Container Barges”, Proc. Second Int. Conf. On Maritime Engineering and Ports, September 2000 .

1999 : “Port Infrastructure Developments”, Proc. Int. Conf. On Port and Transport Development, Alexandria, February 1999.

1998 : “Developments in Shipping and their Consequences for Port Planning and Design”, Proc. Conference on Maritime Engineering and Ports, Genoa, Sept. 1998

"Container handling in Seaports, Recent Research in The Netherlands", Proc. 29th International Conf. PIANC, The Hague, Sept. 1998

"Revitalisation of Port Areas within Overall Port Development of the Port of Rotterdam"; Proc. Int. Conf. on Rehabilitation of Harbour Areas, Lisbon, June 1998

"A Progress Report on Research Achievements and their Influence on Breakwater Design", Proc. Int. Conf. on Coastlines, Structures and Breakwaters, London, March 1998

"Innovative Terminal Concepts for Container and Bulk Cargo Handling and Storage", Proc. Int. Conf. Ports '98, ASCE New York, March 1998

1997 : "Maritime and Logistic Aspects of Port Development", Ninth Int. Seminar Napoli, Dec. 1997

"Damage to Port Infrastructure, Who pays the Bill", Proc. Symposium on Damage in Hydraulic Engineering, Techn. University Delft, March 1997

"Breakwater and Seawalls, Design of Vertical Wall Structures", Lecture Notes PAO Course, Delft University of Technology, Febr. 1997

- "Vertical Wall Breakwaters, Performance of Existing Structures",
Lecture Notes PAO Course, Delft University of Technology, Febr.
1977
- "Design of Concrete Armour Units; Lecture Notes PAO Course, Delft
University of Technology, Febr. 1997
- 1996 : "Next Generation Container Terminals", Port Technology Inter-
national, London, March 1996
- "Thousand-and-one Ports in Sight", Inaugural Address, Delft
University of Technology,
June 1996.
- 1994 : "Land Reclamation and Port Development in Taiwan", Symposium on
Hydraulic Engineering, Delft University of Technology, The
Netherlands, February 1994
- "Other European Experience on Deep Water Breakwaters", Interna-
tional Workshop Wave Barriers '94, Japan, January 1994
- 1993 : "Maintenance of the West Breakwater", Seminar West Breakwater
Sines, Portugal, September 1993
- "Definitive Rehabilitation, General Concept", Seminar West Break-
water Sines, Portugal, September 1993
- "Emergency Repair, Hydraulic Studies", Seminar West Breakwater
Sines, Portugal, September 1993
- 1992 : "The Preferred Concept for the Lamma Breakwater, Western
Harbour", Hong Kong Ports 2000. International Conference on Port
Development for the Next Millennium, Hong Kong Institution of
Engineers, November 1992
- "Sines West Breakwater Portugal, Failure and Rehabilitation", Kozai
Club Seminar Engineering for Coastal Engineering, Hong Kong
Institution of Engineers, October 1992
- "Ponta Delgada Breakwater Rehabilitation Risk Assessment", ICCE
92, 23rd International Conference on Coastal Engineering Venice,
Italy, October 1992
- 1991 : "Dated Models Outdated", Proceedings Conference on Coastal
Engineering in National Development, Malaysia, March 1991

- 1990 : "Rubble Mound Breakwaters, Failure Causes and Remedies", First International Conference on Design, Construction and Operation of Ports and Marine Structures, Teheran, Iran, May 1990
- "The Rehabilitation and Expansion of the Port of Sines, Portugal", First International Conference on Design, Construction and Operation of Ports and Marine Structures, Teheran, Iran, May 1990
- "A Storm Surge Barrier in the New Waterway, The Netherlands", PIANC 27th International Navigation Congress, Osaka, Japan, May 1990
- "Applications of Risk Analysis in Port Design, Planning and Operations", PIANC 27th International Navigation Congress, Osaka, Japan, May 1990
- 1989 : "Sines West Breakwater, The Final Solution", Third National Conference on Dock and Harbour Engineering, Suratkal, India, December 1989
- "Strength of Concrete Armour Units, A Joint-Industry Research Project", Seminar on Stresses in Concrete Armour Units, CERC Waterways Experiment Station, U.S.A., November 1989 (published: ASCE New York, 1990)
- 1988 : "The Branch Model and the Segara Anakan Study", ASCE National Conference on Hydraulic Engineering, Colorado, U.S.A., August 1988
- "Drainage through Segara Anakan", Specialty Conference on Irrigation and Drainage Div. Nebraska, U.S.A., July 1988
- "State of the Art in Breakwater Design", Proceedings of the Third International Conference on Breakwaters '88, Eastbourne, U.K., May 1988
- "Sliding Doors in the Nieuwe Waterweg, Europoort", Symposium Royal Institution of Engineers, Delft, The Netherlands, February 1988
- 1986 : "On Integrated Coastal Management and Development", Proceedings First Australasian Port, Harbour and Offshore Congress, Sydney, Australia, October 1986
- "Motions of Moored Vessels, a Statistical Approach", First Australasian Port, Harbour and Offshore Conference, Sydney, Australia, October 1986

- 1985 : "Rubble Mound Breakwater in Deepwater, Structural Design", First National Conference on Dock and Harbour Engineering, Bombay, India, December 1985
- "Sedimentation Aspects in the Design of Ports and Channels", Conference Marintech '85 Shanghai, Republic of China, December 1985
- "Development of Criteria on Strength of Concrete Armour Units", Proceedings Breakwaters '85, London, U.K., October 1985
- "Concrete Armour Units" Post-doctoral course in Civil Engineering, Delft University of Technology, The Netherlands, September 1985
- "Structural Strength of Armour Units, Implication for Design and Construction", Workshops on Measurement and Analysis of Structural Response in Concrete Armour Units, U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, U.S.A., January 1985
- 1984 : "On the Offshore Application of Small-Scale Power Generation", International Conference ECOR '84, Buenos Aires, Argentina, November 1984
- "Recent Progress in Breakwater Design", The Dock and Harbour Authority, July 1984
- 1983 : "Developments in Model Studies for Rubble Mound Breakwaters in Deep Water", Seminar on Breakwaters in Deep Water, Casablanca, Morocco, November 1983
- "On failures of Breakwaters in Deep Water", Water Resources Journal, Bangkok, Thailand, June 1983
- "Risk Analysis in Breakwater Design", Conference on Breakwaters, London, U.K., May 1983
- "Wave Loads on Vertical Sliding Gates, Eastern-Scheldt Barrier" Coastal Structures '83, Arlington, U.S.A., March 1983
- "Sines West Breakwater, Study of Armour Stability", Coastal Structures '83, Arlington, U.S.A., March 1983
- "Sines West Breakwater, Overview of Rehabilitation, Synthesis of the Project", Coastal Structures '83, Arlington, U.S.A., March 1983

- 1980 : "Model Investigations as a part of the Design of Rubble Mound Breakwaters", International Seminar on Criteria for Design and Construction of Breakwaters, Santander, Colombia, July 1980 (also Delft Hydraulics Publication no. 246)
- "Wave Impact Forces, Consequences for Gate Design", Symposium on Hydraulic Aspects of Coastal Structures, Delft, The Netherlands, 1980
- 1977 : "Hydraulic Studies on Harbour Planning and Design", Delft Hydraulics, November 1977
- "Combined Use of Hydraulic and Mathematical Models in the Design of a Once-through Cooling Circuit along an Estuary", Proceedings of the Conference on Waste Heat Management and Utilization, Miami Beach, U.S.A., May 1977 (also Delft Hydraulics Publication no. 179)
- 1975 : "Heat Distribution in Surface-water: Near Field Considerations" Post-doctoral course Sanitary Engineering, Delft Hydraulics Publication no. 158, Delft, The Netherlands, 1975