

## In Memoriam

### Professor Ignacy GLOZA



1961 – 2016

On 4th November 2016 Professor Ignacy Gloza passed away. He was a wonderful person, still full of creative powers, committed to researchwork in hydroacoustics carried out in cooperation with Polish and foreign research institutes.

Professor Ignacy Gloza, Navy Captain, was born on 23rd June 1961 in Gdynia. In 1985 he graduated from the Polish Naval Academy (The Faculty of Mechanical and Electrical Engineering) obtaining master's degree in electrical engineering, with a specialization in marine electrical and electronic equipment.

After graduation, from 1985 to 1996 he worked in the Polish Navy Test Range in Gdynia earning practical and theoretical experience in the field ship signatures and methods used to measure them. He had worked at different positions before he was appointed deputy commanding officer (head of a section of measurement and analysis of ship signatures). In 1994 he successfully defended his doctoral dissertation titled "The investigation of underwater noise produced by

ships in shallow water" and was awarded a doctoral degree in technical science in the field of machine construction and exploitation, in the subfield of hydroacoustics.

From 1996 Professor Gloza worked in Polish Naval Academy in Gdynia. He started as an assistant professor and after a year he became of Ship Signatures Section. In the years 2004–2009 he was head of Radiolocation and Hydrolocation Section. In 2009 he was appointed head of Science Team and in 2011 director of Marine Technologies Centre of the Polish Naval Academy. In recognition of his research-work he was awarded postdoctoral degree (habilitation) in technical science in the field of machinery construction and exploitation by University of Science and Technology in Cracow. In the same year he was appointed a member of the Scientific and Industrial Board of the Ministry of National Defence of the Republic of Poland. Then in October 2014 he was appointed an associate professor by the Minister of National Defense. In the same year

he became the Dean of the Faculty of Navigation and Naval Weapons. He performed the duties of the dean for two years until 1st September, 2016. On that day he took over the post of the Vice-Rector for Science of the Naval Academy.

He taught subjects such as hydroacoustics, hydrolocation, marine technical surveillance systems, marine objects identification, methods for analysis and measurements of ship signatures, ship passive countermeasures students of full time studies and special courses. He supervised writing 11 MA theses, 5 BA theses and MA theses for students from Ecole Naval Brest (French Naval Academy).

Professor Ignacy Gloza, Navy Captain was not only an educator but also – and perhaps above all – a scientist.

In his scientific research he focused on solving exploitation problems important for Polish Navy concerning technical surveillance of objects in the marine environment and marine safety systems.

Of the many problems which he dealt with in his research activity the following must be mentioned:

- developing the concept and the design, and engineering realization of the system for monitoring underwater noise produced by ships,
- identification and localization of underwater acoustic sources,
- determining the trajectory of an acoustic source moving under the water surface,
- examining the marine engines for diagnostic purposes,
- ship as a source of underwater noise (transmission of vibration energy through the hull into water, structure of underwater noise spectrum produced by a moving ship,
- condition of propagation of elastic waves in natural water regions (conditions specific of the Baltic Sea),
- non-contact evaluation of the technical condition of the marine propulsion system.

It must be emphasized that the research carried out by professor Gloza was intended to develop and implement new technical solutions and technologies in naval vessels. In the Naval Test Range in the Centre of Radio-electronic Reconnaissance of Polish Navy he was a supervisor of 32 research projects financed, among others, by the Polish Navy Headquarters, The Armament Policy Department of Polish Defense Ministry, Ministry of Science and Higher Education, The National Centre for Research and Development. Important in his his achievements was implementation of the results of 14 research projects which he had supervised. Four of his projects were given awards at international fairs:

- Amber Medallion BALT-MILITARY-EXPO 2005, SAFETY 2005 for “The controller of parameters

of the sources of acoustic disturbances generated by a moving ship”;

- Amber Medallion BALT-MILITARY-EXPO 2006, SAFETY 2006 for “Portable monitoring system of physical fields parameters of vessels”;
- Second Prize (Central and East Europe region) in conference NIDays 2011 for “cRIO underwater”;
- Rear Admiral Xawery Czernicki Grand Prix, BALT-MILITARY-EXPO 2012 for “The module for multidimensional physical surveillance and underwater reconnaissance”.

One of his indisputable achievements of Captain Ignacy Gloza was research on systems and methods for monitoring underwater noise produced by ships which was used as the basis of an original project and structurally complete “System for monitoring underwater noise produced by ships”.

Using the results of the investigations into sound propagation in water, radiation of acoustic energy in water environment, employing the intensity method in water allowing for measuring in a close field (shallow sea) with a system designed for measuring an acoustic wave Professor Gloza combined the theoretical deliberations and laboratory-based experiments to develop an original measuring system. Operation of the above system was proven during international intercalibration investigations. The obtained results were compared with those produced by modules of other countries (e.g. Holland, France, Germany, Sweden, Spain) used simultaneously in the test range. The comparative analyses confirmed very good technical parameters and operation of the constructed system. The designed system for monitoring underwater noise is an interdisciplinary scientific achievement. The system can be used for tele-detection, identification of underwater objects, monitoring underwater environment and its disturbances caused by appearance and movement of objects, exploration of underwater environment, and remote marine technology diagnostics.

Particularly noteworthy is Professor Gloza’s activity in international research projects in the field of security and defense. He participated in 3 projects (European Defense Agency program) as an executor and coordinator of measurements and hydroacoustic signal analysis.

He also participated in the research work of a NATO group as a co-organizer of international research and coordinator of hydroacoustic signal analysis. Between 2005–2010 he was a member of the NATO Scientific Board of Undersea Research Centre, La Spezia, Italy.

The results of Professor Gloza’s research work were published in many articles in journals such as *Acta Acustica* united with *Acustica*, *Archives of Acoustics*, *Acta Physica Polonica A*, *Polish Maritime Research*, *Polish Journal of Environmental Studies*, *Hydroacoustics*, *quarterly Mechanics*.

Captain Ignacy Gloza was a co-author of two patents, two classified standardization textbooks and 43 joint studies documenting research work. Many of his results were presented during Polish and international conferences and later they were published in conference papers.

Captain Ignacy Gloza had extraordinary organizational skills which allowed him to create research teams able to solve current problems of the Polish Navy in the field of naval technologies.

In 2006 Professor Gloza initiated and established Center of Marine Technologies which he ran the entire time since its foundation. The Center was set up to carry out research for the Ministry of National Defense and Ministry of the Interior Affairs. The existence of this Center allowed the Naval Academy to meet the requirements necessary to carry out implementation-focused and often classified research investigations for state defense and security.

Professor Ignacy Gloza participated in scientific activities of acousticians; he was a member of Committee on Acoustics of the Polish Academy of Science, European Acoustics Association and Polish Acoustical Society (PAS). He was also a vice president of Gdańsk branch of PAS.

He was a member of organization committee of 22 conferences including Symposia on Hydroacoustics, International Symposia on Hydroacoustics (EAA International Symposium on Hydroacoustics), Open

Seminars on Acoustics. In the years 1997–2016 he held various positions in organization committee of symposia on hydroacoustics including the position of the chairman. He was a chairman of structural session titled “Underwater noise” on 18 ICA Kyoto 2004 and vice-chairman of the organization committee of Hydroacoustics of Shallow Water international symposium in 2012.

Many times he was awarded for his research and didactic work: The Award of Minister of National Defense, The Medal of Commission of National Education, Silver Cross of Merit, Silver Medal for Long Service, The Gold Medal of the Armed Forces in the Service of the Fatherland, The Gold Medal of Merit for National Defense and six times awards of Rector-Commandant of Polish Naval Academy for research and didactic work.

Professor Ignacy Gloza, Navy Captain, was a man of great heart and modesty. Thanks to his hard work, sense of duty, kind and positive attitude to people he easily won over students’ and colleagues’ affection.

It is hard to accept that a man so valued and respected is no longer with us. The man who all his professional life devoted to his fatherland, who knew how to sow the wisdom in human hearts and showed how to respect each other and how to unite for the common good.

*Eugeniusz Kozaczka, Grażyna Grelowska*