

## TWENTY YEARS OF SYMPOSIA ON HYDROACOUSTICS IN POLAND

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Underwater acoustics in Poland in the eighties, similarly in fact as in the past, was geographically concentrated in the Pomeranian Voievodship. The main objective of scientific research teams were projects assigned by the Polish Navy and national economy scientific and implementation projects. Additionally, research was conducted under the Central Plan for Basic Research (CPBP) and Central Plan for Research on Implementation (CPBR).

As the number of research teams was relatively high and growing, mutual scientific contacts were rare, apart from those relating to joint projects. A number of scientific and implementing institutions located at some distance from the sea co-operated or carried out research on underwater acoustics. Thus, the concept to devote a few days per year and discuss underwater acoustics, unify scientific terminology used by physicians, engineers and oceanographers and in some cases fishermen found a solution in the form of a symposium on hydroacoustics, initially a national and with time an international event.

Here, we must express words of appreciation for our colleagues who have passed away and those who for various reasons have terminated their adventure with underwater acoustics. The organisational contribution of the late Prof. Dr. Eng. Zenon Jagodziński. and both organisational and merit contributions of Dr. Eng. Aleksander Kołodziejcki as well as Dr. Eng. Stanisław Kubica in the initial and later developed symposium phases deserve special appreciation. Their work bore fruit by giving rise to better awareness of the science on underwater acoustic in Poland and popularising this branch of knowledge in the country. The international importance of these annual meetings brought wider contacts with recognised scientists in Europe and in the world.

Several days ago, on May 23th, the 20 anniversary took place of the day when Prof. Zenon Jagodziński opened the first Symposium on Hydroacoustics. He spoke to all the participants in the so typical for him lively manner, of the opportunities that underwater acoustics provided for studying sea depth.

Organisers of this Symposium and its participants did not expect at the time that it would become a regular scientific event of international rank among thematic conferences on

acoustics. Participating regularly in the events it is difficult to notice the gradual changes that it undergoes. Nevertheless, the results achieved through the last twenty years show that systematic, well performed work can give impressive effects.

#### A WORD OF HISTORY

The first Symposium on Hydroacoustics was organised in 1984 in Jastrzębia Góra by the Navy Academy (at the time called 'Wyższa Szkoła Marynarki Wojennej') together with the Hydroacoustics Department of the Gdańsk University of Technology. The Polish Acoustical Society held patronage over the project.

At the time there were two main centres where work on underwater acoustics was carried out – they took on organisation duties of the Symposium. These centres co-operated with each other and it seemed that a joint presentation of research results may not be necessary. However, facts abolished any earlier doubts on this matter. The Symposium gathered a large number of participants. It turned out that underwater acoustics generated considerable interest and had many fans not only in the coastal region.

During the first Symposium 35 papers were presented including the opening paper given by Prof. Jagodziński and entitled: „Underwater acoustics – goals and development trends”

And four plenary presentations devoted to basics in underwater acoustics issues:

- E. Kozaczka „Propagation of sound in the marine environment and related fundamental problems”
- R. Salamon „Problems in designing and conducting ultrasound underwater acoustic transducers”
- A. Stepnowski „Problems in digital processing of signals in contemporary hydro location systems”
- M. Szustakowski „Fibre optics sensors”.

The way of conducting scientific discussions, studying results of research on related issues, exchange of experience and establishing direct contact with representatives of other research centres were well approved by the Symposium participants. In effect it was decided to hold another event in a year's time.

And thus, year after year, the Symposia on Hydroacoustics were held and did not loose on popularity.

#### SYMPOSIA ON HYDROACOUSTICS – A WINDOW OUT TO THE WORLD

At the initial phase the Symposia on Hydroacoustics were a national event to which guests from abroad were invited. But as a review of papers presented shows only the first symposium was not attended by foreigners.

Co-operation of the Gdańsk University of Technology with technical universities in Germany (formerly GDR) as well as personal contacts of the organisers have made presentations of research results of foreign scientific centres more attractive.

In order to make our discussions easier to understand for our guests we started introducing the English language in our meetings, starting with Polish and English captions under diagrams. We even once, during the VI Symposium, attempted simultaneous interpreting, however it did not meet our expectations, so we started learning English individually. The symposia on hydroacoustics motivated participants to learn foreign languages and provided an opportunity to many participants to give presentations in English.

Starting 1997 we organise symposia in two formulas, interchangeably international and national events. However, the question whether this year's event is national or international is



not so easy to determine. It should be a national event but we are expecting 10 foreign participants.

The beginnings of the symposia as an international event were not easy. The Polish Acoustical Society was appointed to organise the 13 FASE symposium. Symposium on Hydroacoustics, in recognition for scientific results and good management, was granted the opportunity to organise the event as an international symposium. But, can we afford to ignore the superstitious implications of the number 13? When preparations were in progress FASE was wound up and a new organisation was established in its place called EAA. For us the organisers this meant complications. The organisation which held patronage was to be dissolved before the opening of the event. Fortunately, a satisfactory solution for all parties was found and the International Symposium on Hydroacoustics and Ultrasonics was established, EAA Symposium (formerly 13<sup>th</sup> FASE Symposium). The Symposium was a success with 62 papers, including 23 foreign papers. Today no one remembers the stressing atmosphere and dozens of letters exchanged between the organising committee and the management boards of both organisations.

The following symposia were organised under the patronage of EAA (1999 and 2001) and met with similar success. The good reputation enjoyed contributed to the decisions to entrust Poland to arrange the 6<sup>th</sup> ECUA. This decision is viewed as an expression of recognition of the European scientific acoustical circles as Poland is the first country outside the European Union to have this privilege.

Table. 1. Number of foreign participants in Symposia on Hydroacoustics

1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
0	1	4	4	3	8	13	10	4	4	4	3	4	23	4	28	10	27	106

#### SCIENTIFIC COMMITTEE OF SYMPOSIUM

Initially symposia on hydroacoustics had a less formal nature. Listing in the international calendar of events required the establishment of a Scientific Committee, which would review the scientific level of papers to be presented and works published.

The first Scientific Committee was founded at the International Symposium on Hydroacoustics and Ultrasonics, EAA Symposium (formerly 13<sup>th</sup> FASE Symposium). Consent to participate was expressed by many recognised specialists in the field of underwater acoustics and ultrasonic techniques. The Scientific Committee comprised:

Prof. Ignacy Malecki – Poland -chairman  
 Prof. Leif Bjorno – Denmark  
 Prof. Mack. A. Breazeale – USA  
 Prof. Giovanni B. Cannelli – Italy  
 Dr. Robert Chivers – UK  
 Prof. Bengt Enflo – Sweden  
 Prof. Leszek Filipczynski – Poland  
 Prof. Juan Antonio Gallego-Juarez – Spain  
 Prof. Halvor Hobaek – Norway  
 Prof. Zenon Jagodzinski – Poland  
 Prof. Hugh Jones – Canada  
 Prof. Eugeniusz Kozaczka – Poland  
 Prof. Werner Lauterborn – Germany

Prof. John S. Papadakis – Greece  
Prof. Jerzy Ranachowski – Poland  
Prof. Roman Salamon – Poland  
Prof. Jean-Paul Sessarego - France  
Prof. Andrzej Stepnowski – Poland  
Prof. Alexander Sutin – Russia  
Prof. Antoni Sliwinski – Poland  
Prof. Jan Thoen - Belgium

Due to the reduction of ultrasonic subjects in the symposia held at later dates membership in the Committee underwent certain change. In the following years other scientists became its members:

Prof. Michael Buckingham - USA  
Prof. Rafael Carbo – Spain  
Dr. Alan Edwards – European Commission  
Prof. Sergio M. Jesus – Portugal  
Prof. Zygmunt Klusek - Poland  
Eng. Klaus Kremer – Germany  
Prof. Leonid Lyamshev – Russia  
Prof. Thomas Neighbors – USA  
Prof. Nick Pace – UK  
Prof. Ryszard Panuszka - Poland  
Prof. Dick G. Simons – The Netherlands  
Prof. Timothy Stanton – USA  
Prof. Jozef Swiniarski - Poland  
Prof. Peter Wille – Germany  
Prof. Brian Woodward - UK  
Prof. Manell E. Zakharia – France  
Prof. Ren-He Zhang - China

Reviewing of papers submitted for the Symposia on Hydroacoustics by members of the international Scientific Committee is a challenge for the participants and gives benefits. Members of the Committee are considered to be the leading authority in their countries and on becoming acquainted with issues presented during our Symposia become a potential link for international co-operation.

Evidence of the Symposia success is the patronage taken over by scientific organisations. The Polish Acoustic Society is a co-organiser from the very beginning. The Acoustic Committee of the Polish Academy of Sciences has provided patronage since 1993. Symposium on Hydroacoustics organized in 2001 was held under the patronage of the International Commission for Acoustics ICA, and this XX symposium is organized under the patronage of ICA and Acoustical Society of America ASA. All international symposia on hydroacoustics are symposia of the European Acoustical Association.

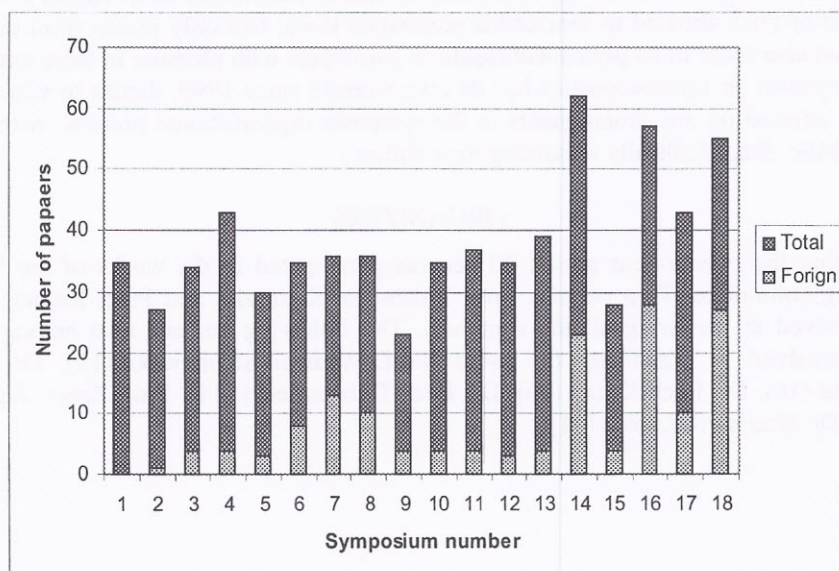
#### PUBLICATIONS

One of the basic targets of the Symposia on Hydroacoustics is to deliver to the participants and all parties interested in the issues concise information on results of presently progressed research and technical solutions applied. Conference materials are published from the very first Symposium. The publications evolve together with the Symposium in line with the current trends in scientific circles and typographic capacity. Up to the year 1996, they were issued in the form of scripts. The international formula of the conference in 1997



encouraged us to publish conference papers in book form. At present, a annual journal called „Hydroacoustics” ISSN 1642-1817 is being issued on the basis of works contributed by conference participants. Papers presented during the 6<sup>th</sup> European Conference on Underwater Acoustics were issued as conference proceedings, and some as a special issue of *Acta Acustica*.

Interest in the symposia does not waiver. The number of participants in the twenty-year



period was between 60 to 90 persons. The number of papers presented at national Symposia varied generally from 35-40, and during international Symposia approximately 55-60. An exception to this rule was the 6<sup>th</sup> ECUA, where 135 papers were presented, including 28 Polish papers.

#### NUMBER OF PAPERS PUBLISHED IN SYMPOSIA PROCEEDINGS

Apart from papers presenting results of current research work the Symposia also featured plenary papers (invited papers). These papers presented as introductory presentations are to focus the attention of Symposium participants on current research problems. They also provide an opportunity to present results of own research on a selected issue against the background of achievements of other scientific teams. The choice of subjects on invited papers indicate issues, which the organisers view as important and worth noting. During the twenty year history of Symposia on hydroacoustics, 73 invited paper were presented. The titles of these presentation are given in the addendum to this issue of „Hydroacoustics”.

#### CURIOSITIES

Hydroacoustic specialists are closely bound with the sea. 18 out of the 20 Symposia were held close to the sea. We also easily get used to chosen locations. The first 5 Symposia were held in „Celuloza” Hotel in Jastrzębia Góra. For the next two years we moved onto the Kashubian area to Stawiska, next to return to the sea and settle for good in „Delfin” Hotel in Jurata. This year’s symposium will be the 13<sup>th</sup> held at this location.

The abbreviated name of the symposium SHA, used up to today first appeared during the VI symposium in 1989.

Wishing to show the beauty and tourist attraction of our region to symposium participants we arrange tours of the region. We sailed thrice on board the sailing ship ORP „Iskra', and once on a navy vessel. We have organised sightseeing tours of Gdańsk, Malbork and Frombork. We have admired fish in the Oceanographic Museum in Gdynia and seals in the seal reserve centre in Hel. The President of Gdańsk has hosted us in Arthur's Court and the Mayor of Puck showed us around his picaresque town. Not only guests from outside the TriCity but also some of its permanent residents participate with pleasure in these excursions.

Symposium on Hydroacoustics has its own website since 1999, thanks to which we are currently advised on any amendments in the symposia organisational process, with Andrzej Partyka, MSc. Eng., faithfully remaining their author.

#### ORGANIZERS

During the twenty-year period 20 persons participated in the works of the Symposia organising committee. Two persons Prof. Eugeniusz Kozaczka and Prof. Roman Salamon were involved in preparing all the symposia. The following persons also belong to those closely involved in organising the event: Prof. Andrzej Stepnowski (17), Dr. Grażyna Grelowska (16), Dr. Lech Kilian (16), Dr. Jerzy Dobrzeniecki (14), Prof. Zenon Jagodziński (12) and Dr. Stanisław Kubica (11).