



ON THE HISTORY OF THE SPANISH ACOUSTICAL SOCIETY (SEA)

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ABSTRACT

The Spanish Acoustical Society (Sociedad Española de Acústica, SEA) was founded in 1969 as a non-profit scientific and technical association whose primary goal is to promote the development of Acoustics in Spain.

Since its foundation, the SEA has maintained an intense activity aimed at promoting continuous progress in all fields of Acoustics, fostering Research and Development in the Science and Technology of Acoustics and its applications, and supporting and contributing with scientific and technical advice to the activities of the Administration, Companies, and Associations, seeking the improvement on acoustic environment, its control, and its influence on the welfare of the citizens.

This communication reviews the main milestones in the history of the SEA, its current situation, and its prospects..

Keywords: *Acoustical Associations, History of Acoustics, Sound.*

1. INTRODUCTION

The Spanish Acoustic Society -SEA- was officially registered on April 11, 1969, as a non-profit scientific and technical association in the Registry of Associations of the Ministry of the Interior of Spain. Throughout its more than fifty years, the SEA has been consolidating the exciting project born from the futuristic vision of a group of people who believed that Acoustics should have a great development in the society of future times and that with

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their activities Over the years the SEA has contributed to the development of Acoustics in Spain. Now is the time to recognize the work carried out by those enthusiastic founders in those early years, some of whom are still active in the SEA at this time, but, among all of them, it is necessary to highlight the figure of Andrés Lara, the first Spanish scientist who took a keen interest in Acoustics, and who, with his enthusiasm and dedication, forged what would be the future of the SEA. His contribution was essential for the rapid implementation and foreign recognition, because thanks to the prestige that Andrés Lara already had in the international acoustic fields, the trust of supranational organizations was achieved in a very short time for the organization of international events, such as the ICA congress in 1977 in Madrid, exactly eight years after the foundation of the SEA, a congress that would be held 30 years later, in 2007. Along with the figure of Andrés Lara, named Honorary President of the SEA in 1996 after 27 years as President, it is necessary to have an emotional memory for all those who throughout these years have made their efforts and efforts available to the SEA dedication, both from their positions as members of society or as members of the Governing Council. The progressive development of the SEA has been marked by the recognition of international organizations, from the extinct FASE to the ICA, EAA, FIA and I-INCE, which have relied on the SEA for the organization, on several occasions, of events of international congresses.

The SEA is a founding member of the Ibero-American Acoustics Federation -FIA- and the European Acoustics Association -EAA-, associations that together with the International Commission for Acoustics -ICA- are registered officially in Spain and with the social address in the SEA address.

The activities of the SEA have been reinforced in recent years with the development of actions of a diverse nature, such as congresses, conferences, symposiums, courses, etc.,



highlighting among them the TECNIACÚSTICAS have been maintained permanently since the first years of the associative journey. From these first moments comes the identifying symbol of the SEA, the "Caracola" designed during a Board meeting on a napkin by the famous architect Miguel Fisac, Vice President of SEA, who later also designed the figure of the "Caracola SEA" the maximum distinction granted by the SEA.

In the history of SEA, the relationship of the SEA with the Sociedade Portuguesa de Acústica -SPA- has a very special relevance since a mutual collaboration agreement was signed in the 90s, which made it possible for the TECNIACÚSTICAS to be held every four years in a Portuguese city, and to include the annual Luso-Spanish acoustic congresses and symposiums. This has allowed very fluid relations between Spanish and Portuguese acousticians, which has fostered both the presence of acousticians from both nations at each year's congresses, as well as the development of joint work between researchers from the acoustic departments of Portuguese and Spanish universities.

SEA has regularly published *Revista de Acústica*, the only acoustics magazine in Spanish, since the beginning, contributing to the dissemination of works by authors, both Spanish and foreign, in aspects that have to do with research, technology and the application of Acoustic science. Also, the online library, hosted on the SEA website www.sea-acustica.es, has incorporated lectures and papers from the different congresses held since the eighties of the last century, in which the SEA has been the organizer or co-organizer, and from the articles published in the *Revista de Acústica* since those same years, currently reaching a figure very close to 5,000 articles.

The contribution of the SEA to the improvement of the acoustic environment has materialized, among other actions, with the Noise Awareness Campaigns that we have promoted and, on many occasions developed directly, in schools, both primary and secondary schools, secondary and high school, with an estimated number of more than 200 centers benefiting from such campaigns, which has undoubtedly helped the new generations to learn ways to be more respectful of the sound environment. These actions have been complemented by the annual celebrations of International Noise Awareness Day, assuming by SEA from the very beginning, the promotion of that day in Spain with programs that have evolved over time, to establish themselves in the last 15 years. the celebration of this day in a secondary school, where its students are the protagonists of the activities of the commemorative act.

On the fiftieth anniversary of the SEA, it published the book "50 Years SEA 1969-2019" (*) developed and

composed by Antonio Calvo-Manzano, General Secretary of the SEA, this publication summarizes the history of these 50 years, also serving as a tribute to all the people who in various ways have contributed to building this history with their dedication to the SEA.

(*) The book "50 Years SEA 1969-2019" can be found on the SEA website www.sea-acustica.es.

2. THE EARLY TIMES

On the occasion of the First International Colloquium on Noise Control held in Madrid in 1967 and gathering the interest aroused among the participants of the Colloquium, it was decided to establish an Acoustics Association. The main promoters of this initiative were Andrés Lara, Director of the CSIC's "Leonardo Torres Quevedo" Center for Physical Research, later Institute of Acoustics, and Antonio Pérez-López of the Department of Acoustics "Torres Quevedo". Throughout the year 1968, the constitutional act of the Spanish Acoustic Society -SEA- was signed and the statutes were drawn up, later, once the administrative procedures for non-profit associations had been completed, the Spanish Ministry of the Interior approved the official registration of SEA in the Registry of Associations on April 11, 1969.

From the moment of its constitution, the Society has integrated a wide group of professionals related to the different fields of Acoustics, engineers, physicists, architects, doctors, audiologists, musicians, etc., and institutions, research centers, town halls, schools professionals, building and power generation companies, etc. Given the close relationship of the SEA with the CSIC's "Leonardo Torres Quevedo" the SEA's registered office was established in the "Torres Quevedo" address, which is still maintained today, and which is also the registered office of EAA, ICA and FIA.

The first colloquiums organized by the SEA were "The Acoustics of Rooms in Hearing and Sound Reproduction" in July 1969, and "Social Urban Noise Problem" in January 1970. That same year, in September 1970, the "First Spanish-British Symposium on Acoustic Environment", was chaired by Professors Stephens from Imperial College London and Lara from "Torres Quevedo".

In July 1970 it was held the "2nd Anglo-Spanish-Netherlands Symposium" at the Imperial College London. As a curious fact in this Symposium J. Pfitzschner and A. Calvo-Manzano presented the paper "The acoustics of the castanets", a typical Spanish musical instrument, the paper that was illustrated live by the famous soloist Lucero Tena.

3. 50 YEARS OF SEA

The decade of the 90s marked a new stage for the SEA with the celebration in 1994 of the 25th anniversary of SEA and the active participation of the SEA as a founding partner in the constitution of the Ibero-American Federation of Acoustics -FIA-, a federation that It brings together the acoustic societies of Latin American countries and Spain and Portugal, the Federation was officially registered in Spain.

Possibly due to the development of Acoustics in various Spanish universities and the appearance of working groups that would later give rise to the creation of various acoustic departments and laboratories, the SEA had a significant increase in members and activities.

In 1990, the Conference on Environmental Noise in the Urban Environment was held in Barcelona, organized by the SEA, and sponsored by the Barcelona Provincial Council and the City Council. In April 1991, the International Conference “Noise in large cities” was held in Madrid, organized by the Madrid City Council and SEA, with the participation of leading specialists from various countries. The Proceedings of the Conference were published in the book “Noise in the City: Management and Control”.

3.1 TECNIACÚSTICAS

Every year the SEA celebrates the Spanish Congress of Acoustics "TECNIACUSTICA" in different cities in Spain and from 1998 by agreement with the SPA every four years in a Portuguese city.

We list some locations of these TECNIACUSTICA congresses: Pamplona 1992; Valladolid 1993; Valencia 1994; A Coruña 1995; Barcelona 1996; Oviedo 1997; Lisbon 1998 together with the First Iberian Congress of Acoustics of SPA and SEA; Avila 1999.; etc.

Recently the TECNIACUSTICAS were in Cadiz 2018; Madrid 2019; Elche 2022, and this year 2023 will be held in Cuenca.

In parallel with the TECNIACUSTICAS, the corresponding EXPOACUSTICA exhibition was held.

4. EUROPEAN AND INTERNATIONAL CONGRESSES T

4.1 ICA

The first international congress organized by the SEA and the Institute of Acoustics, CSIC, was the 9th INTERNATIONAL CONGRESS ON ACOUSTICS ICA'77 held in July 1977 with the participation of 1,480

acousticians from 40 countries who presented a total of 855 papers and 10 conferences. guests. The Congress was opened by H.M. The King of Spain Juan Carlos de Borbón, Honorary President of the Congress, Dr. Edgar A. G. Shaw, President of ICA, and Dr. Andrés Lara, President of SEA.

During the days of the congress, an exhibition of acoustic and vibration products and services was held in which 22 companies from the sector participated, occupying an area of 450 m2. Two satellite symposiums were held on ICA'77, one in Barcelona on “Sound Recording and Reproduction” and another in Seville on “Hearing and Industrial Noise Environments”.

During the ICA'77, twinning and fraternization ties were strengthened with the Portuguese acousticians who generated the following year in the First Luso-Spanish Symposium on Environmental Acoustics held at the National Civil Engineering Laboratory -LNEC - in Lisbon chaired by professors Pedro Martins da Silva and Andrés Lara. This twinning continues today with events and congresses organized jointly by the SEA and the Sociedade Portuguesa de Acústica SPA, highlighting the close relations that are maintained with the President of the -SPA- Prof. Jorge Patricio, the Board of Directors, and Portuguese colleagues.

Exactly 30 years after ICA'77, the 19th INTERNATIONAL CONGRESS ON ACOUSTICS ICA 2007 was held in Madrid in September 2007 with the motto “Acoustics for the 21st Century”. The Honorary Presidency of the Congress was held by H.M. King Juan Carlos I and the inaugural ceremony was attended by, among others, Prof. Philip A. Nelson, President of ICA, Dr. Carlos Martínez Alonso, President of the CSIC, Prof. Juan Antonio Gallego, President of the Congress. During the ceremony, the "CARACOLA SEA " was delivered to the CSIC for the support it has always provided to SEA, likewise, Prof. Andrés Lara, Honorary President of SEA, presented the "CARACOLA SEA " to Prof. Leo L. Beranek in recognition of his great contribution to Acoustics.

The participation in the Congress ICA'07 was 1,473 that have presented 1,078 oral communications and 219 posters in the 14 structured sessions. During the congress a Workshop on “Education in Noise Control Engineering” took place. Twenty-six firms participated in the EXPOACUSTICA'07 exhibition, presenting their most recent achievements in products, equipment, materials, and services related to acoustic technologies.

As part of ICA'07, two Specialized Symposiums were held, the ISMA 2007 – “International Symposium on Musical Acoustics” in Barcelona with the participation of 214 attendees from 25 countries, and the ISRA 2007

“International Symposium on Room Acoustics” in Seville, with 160 attendees from 35 countries.

4.2 FASE

In the 1980s, the European Acoustics Federation -FASE- that was the forerunner of the current EAA, maintained a very important activity by holding congresses, symposiums, and specialized conferences, thus in 1987 the SEA and the Institute of Acoustics, CSIC, organized the FASE Second Specialized Conference on “Acoustics and Ocean Bottom” with the participation of 49 experts, the Proceeding of the Conference was edited by Andrés Lara, then President of FASE. Subsequently, in June 1987, the Lisbon organized by SPA and SEA held the FASE Congress with the title “Advances in Physical Acoustics”.

In 1989, organized by SEA with the collaboration of various institutions, the "8th Symposium FASE on Environmental Acoustics" was held in Zaragoza and, in parallel, the TECNIACÚSTICA'89 Congress.

In October 2018, the X Ibero-American Acoustics Congress organized by the SEA, the University of Cadiz, and SPA was held at the School of Engineering of the University of Cadiz, as well as the 49th Spanish Congress on Acoustics -TECNIACUSTICA'18-. Throughout the three days of the congress, which was attended by 210 congressmen, 216 papers by 720 authors were presented, and presentations were distributed in 22 Structured Sessions. At the EXPOACUSTICA technical exhibition, 15 firms from the acoustics and vibrations sector were present. As is always customary in TECNIACÚSTICAS, at the end of the congress dinner, the traditional lottery of gifts donated by the exhibiting institutions and firms was held.

4.3 EAA

An important event at the beginning of the 21st century was the celebration in Seville of the EAA FORUM ACUSTICUM in September 2002, organized by SEA on behalf of the EAA and with the collaboration of the School of Architecture of Seville, the Institute of Construction of the University of Seville, the Institute of Acoustics, CSIC, and the Portuguese Society of Acoustics -SPA-. The Honorary Presidency of the Congress was the “Prince of Asturias Don Felipe de Borbón”. This event included the 3rd Iberian Congress on Acoustics, TECNIACÚSTICA 2002, and the European and Japanese Symposium on Acoustics.

In the FORUM 1,380 attendees participated, presenting a total of 660 conferences and papers in 17 technical sessions throughout the five days of the congress, and in and 22 exhibitors in the EXPOACUSTICA.

4.4 I-INCE

By agreement of the Board of the International Institute of Noise Control Engineering -I-INCE- the organization of the INTERNOISE 2019 congress was entrusted to the SEA and the congress was held in June 2019 at the Palacio Municipal de Congresos de Madrid, with the motto " Noise Control to improve the Environment". In IN'19, 1,188 experts from 50 countries participated, of which 278 were students and 894 papers were presented, 815 in oral format and 79 posters, work distributed in 17 technical sessions. 55 international firms participated in the technical exhibition. At the opening ceremony, the "CARACOLA SEA" was delivered to I-INCE, its President Marion Burgess and Past-President Joachim Schueren. Within the framework of IN'19, on the afternoon of June 18, the celebration of the "50th Anniversary of SEA" took place, an event that marks the long history of the Association since its creation in 1969. The "Andres Lara" that the SEA has established for young researchers, and the Prize of the "Luis de Camoens Chair" of the Carlos III University. The "Esencia Iberica" Ballet with its spectacular presentation put the finishing touch to the emotional act of celebrating the "5th Anniversary" of SEA.

5. FUTURE

After reaching fifty years of existence, the Spanish Acoustical Society -SEA- continues its journey and faces the development of new challenges to "Promote the progress of Acoustics" in accordance with Article 1 of its Statutes, promoting knowledge and promoting the dissemination of Acoustics in Spain with both scientific and technical activities, such as the Spanish Acoustics congresses -TECNIACUSTICAS-, Noise Awareness Campaigns in schools, International Noise Awareness Day, Word Hearing Day by WHO, conferences and colloquiums on specific topics.

In the strategic plan of SEA for the future, in addition to the activities at the national and Iberian levels with SPA, stand out in importance the relations with European and international institutions, EAA, ICA, FIA, I-INCE, IIAV.

6. MISCELLANY

6.1 SEA Awards

6.1.1 Caracola SEA

The highest distinction of the SEA to recognize the outstanding activities of personalities and institutions for

contribution to Acoustics is the "CARACOLA SEA", which was established in 1994 on the 25th Anniversary of the foundation of the SEA. The design "CARACOLA SEA" is a figure designed by the famous architect Miguel Fisac, SEA Vice President, who also designed the SEA logo.

6.1.2 *Andrés Lara Award*

In 2003, the SEA established the annual Andres Lara Award for young researchers who present a paper at the TECNIACUSTICA congress. The endowment of the Prize of 2,000 Euros is to collaborate so that the winner can participate in a national or international congress.

6.1.3 *Luis de Camoens Award*

Recently, the Luis Camoens Chair of the Carlos III University of Madrid awards the "LUIS DE CAMOENS" prize to young researchers who present their work at the TECNIACUSTICAS.

6.2 Publications

6.2.1 *Revista de Acústica*

The official publication of SEA is REVISTA DE ACUSTICA, the only journal in Spanish on acoustic. La Revista is currently published on paper and digitally and includes articles and news from the SEA, institutions, members, etc. The Magazine can be consulted on the SEA website: www.sea-acustica.es.

6.2.2 *Books*

To make current issues in acoustic science and technology available to the acoustic community throughout its long associative life, SEA has published several books, that it can be consulted on the SEA website: www.sea-acoustic.es.

6.3 Noise Awareness

The association has always been interested in Noise Control and, in addition to symposiums, congresses, and conferences, SEA dedicates part of its resources to Noise Awareness Campaigns in Primary and Secondary School Centers. The main activities in these Campaigns are the organization and development of the INTERNATIONAL NOISE AWARENESS DAY, conferences, theatrical performances of comics "Silin and Ruidon", theatrical performances, etc., in more than 200 schools over the years.

6.4 SEA Grants

SEA annually awards five grants to facilitate university graduate students to specialize in Acoustics and Noise Control in postgraduate and master's courses, the grants are 1,500 euros each. Likewise, SEA annually convenes five travel grants for participants in the TECNIACUSTICA congresses, these grants include the congress fees and 300 euros for travel expenses.

7. REFERENCES

- [1] A. Calvo-Manzano: *50 Años SEA. 1969-2019*. Madrid: Edited by Sociedad Española de Acústica, 2019.