

## ICBEN – 50 years

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### 1 The foundation of ICBEN

#### 1.1 The cause of founding ICBEN

In 1968 the American Speech and Hearing Association organized a conference on Noise as a Public Health Hazard in Washington, DC to sum up the state of the art on the Effects of noise 'on hearing threshold, on speech intelligibility, the psychological and physiological state'. One of the organizers was **Dix Ward**, a physicist from South Dakota who then studied psychological acoustics at Harvard and later founded the Clinical Psychoacoustics Laboratory at the University of Minnesota. He worked on NIHL, physiological and psychological effects of noise.

**Dix Ward** felt that the presented knowledge was substantially insufficient. To tackle this problem he convinced three colleagues to collaborate with him.

#### 1.2 The founders

**Jerry V. Tobias**, a psychologist, worked at the FAA in Oklahoma and then at the Naval Submarine Med Lab in Connecticut on speech intelligibility, distorted speech and underwater acoustics. He was a highly productive writer and editor. Most cited were the 'Foundations of Modern Auditory Theory' with 26 editions and 'L Frank Baum & the Wizard of Oz'. The latter sounds strange but Jerry had at that time the 3<sup>rd</sup> largest collection of fairy tales in the US and he was editor-in-chief of a journal on fairy tales.

**Gerd Jansen**, a physician and psychologist worked on the physiological effects of noise at the University and was simultaneously a state-certified occupational physician who oversaw the implementation and application of safety rules and the evaluation of occupational diseases, a job that took the better part of his time.

**Henning von Gierke** was an engineer who soon after his graduation joined the Armstrong Aerospace Med Res Lab at Wright Field Air Force Base in Ohio where he finally led the division of Biodynamics and Bioengineering. His research covered the effects of the whole range of mechanical waves from vibration up to ultrasound. And he focused on standards for the correct and timely application of scientific results.

#### 1.3 The outlines of ICBEN Congresses and of the Commission

The founders agreed that the most effective way to gain more knowledge would be

- to organize a congress with experts from abroad and

- to build a commission to initiate and to encourage international co-operations.

It was absolutely crucial that congress and commission must be unique and not just another congress/commission on acoustics. Thus the founders focused strictly on the effects of noise on health where they identified 6 areas.

1. Noise-Induced Hearing Loss
2. Speech and communication
3. Physiological Effects of Noise
4. Performance and Behavior
5. Noise-induced Sleep Disturbances
6. Community response to Noise

This concept convinced the EPA 'to finance a congress and fund the attendance of researchers from abroad'.

#### **1.4 The structure and the constitution**

The commission bases on 3 groups:

**Four officers** There are four officers, the chair and the secretary, the past chair and the co-chair. When elections are due, the secretary usually follows the chair, as he or she then has the most profound knowledge of ICBEN. The chair then becomes past chair. The co-chair follows the chair if the latter is unable to serve any longer.

**INT** Most important are the working groups, the **International Noise Teams** that focus on defined noise effects. The chairpersons observe the progress in their area, they present the state of the art at the congress and summarize papers and posters presented at the congress. They lead team sessions where co-operations and further developments are discussed and where new team leaders are proposed.

The **Executive Committee** consists of the officers, all past chairs, the Team chairs and the members at large. During the business meetings they elect the officers and they confirm the proposed team chairs.

## **2 Congresses and Proceedings**

### **2.1 Regular Congresses and proceedings**

The **purpose** of ICBEN is to run regular congresses and to publish proceedings.

Concerning finances the constitution authorizes the executive committee to solicit funds for ICBEN. This actually means that ICBEN is poor and has even no money to fulfil its purpose. This depends on persons who volunteer to organize a congress, to spend countless hours on this strenuous and financially risky event. ICBEN itself is responsible for the quality as the team chairs evaluate, accept or refuse submitted

papers which is a convincing argument to run a congress under the auspices of ICBEN. Thanks to courageous colleagues this goal was successfully achieved until now. The same is true for the proceedings. This was a real challenge as long as we printed costly volumes. Now we produce CDs, which is much easier and cheaper.

## **2.2 ICBEN during the last decades**

**ICBEN-congresses changed** considerably during the last 5 decades. The first and the second congress had only invited and oral presentations in the plenary. 1983 began an increasing deviation from the original concept along with an increasing similarity to other congresses. Speakers were less often invited, parallel and poster sessions were implemented and congresses became more luxurious and expensive. The initially established 6 topics were never disputed but two of them now seem to be in danger. 'Standards and regulations', was occasionally misused by adding less suitable papers. Effects on animals attracted only a few researchers who themselves suggested to abandon it. The topic 'combined agents' was from at the beginning disputed as it deviates from ICBEN's concept to focus on the effects and not on the cause. Moreover, discussions were considered as more profound in sessions that focus on similar effects. The same applies to Low Frequency Noise. Topics such as 'exposure assessment' and the increasing assignment of papers to 'other topics' indicate that they do not fully fit into the scope of ICBEN.

**The commission changed as well.** The 2021 revised constitution elevates the officers to presidents. The International Noise Teams, the very soul of ICBEN, that made us ICBEN were degraded simply to teams. That must be reversed.

### **The congresses - a brief reminder of the previous congresses**

**1973** The first Congress in Dubrovnik had only 64 speakers, six of them were then or became later chairs of ICBEN.

**1978** The second congress under the auspices of ICBEN was announced as the third and we kept this odd numbering further on. Since then we have our name and our logo and Truls Gjestland who then attended all further congresses.

**1983** Two highly valued colleagues joined us in Turine. Staffan Hygge unfortunately passed away last year. He was a highly respected researcher and we miss him badly. Steven Stansfeld, the expert in cardiovascular effects and noise sensitivity and one of our past chairs honours us now – though retired – with his presence.

**1988** The Stockholm Congress was opened by King Karl Gustav, who invited the executive committee to an audience with coffee and cake from which he

escaped after 20 minutes. Then, we had a very formal dinner, where Karl, our Californian colleague and Kitty, his wife, wore Viking helmets and thanked with a concert, for which they used nose flutes. Finally we carried home 5 heavy volumes of the proceedings, that caused those who travelled by plane to pay for the overweight. This applied to Takahashi Yano from Japan and Lex Brown from Australia. This thankfully didn't prevent them from becoming regular attendees.

**1993** In Nice we welcomed Goran Belojevic, the organizer of this congress, also Peter Lercher from Austria and Kerstin Persson Waye from Sweden both of whom are involved in extended international co-operations.

**1998** Sydney was for most of us furthest away. Apart from the congress we enjoyed the opportunity to visit Australia's most spectacular noisy facility, the Opera House and we enjoyed the appearance of Irene van Kamp who since then maintained strong scientific co-operations with Australia.

**2003** The Rotterdam Congress started as a noisy event thanks to a group of excellent drummers who welcomed Elise van Kempen from The Netherlands and 3 of the current officers, Mathias Basner, Mark Brink and Charlotte Clark.

**2008** took place in Foxwoods, a location without airport or railway station. So, we travelled by bus through endless woods in Connecticut with no houses to the left and no houses to the right. But suddenly – out of the blue – occurred a huge complex of buildings that turned out to be a casino. The remote location prevented us from escaping, except to the casino hall. Finally, we feared to survive the 12-course Banquet meal, during which we learned everything about the Effects of environmental sounds on bat sonar.

**2011** The London Congress was co-organized by the then Chair Steven Stansfeld who unfortunately failed to convince the late Queen to open the congress.

**2014** The congress in Nara was organized by Takahashi Yano and

**2017** the Zurich Congress by Mark Brink.

**2021** Stockholm was due to corona delayed to 2021 and carried out as an excellently mastered virtual event. Though we had less participants, this congress was concerning the rate of nations the most diverse.

**2023** The congress here in Belgrade is up to now a Black Box. But it ranks with respect the rate of nations on the second place.

### 3 International contribution

Central to ICBEN are international co-operations. The total number of nations contributing to all ICBEN-congresses is now 65 (Fig. 1). They are distributed over the world, with, however, huge differences. Nearly two thirds are from Europe, a fifth from America, one eighth from Asia and 5 % from Australia, New Zealand and Africa.

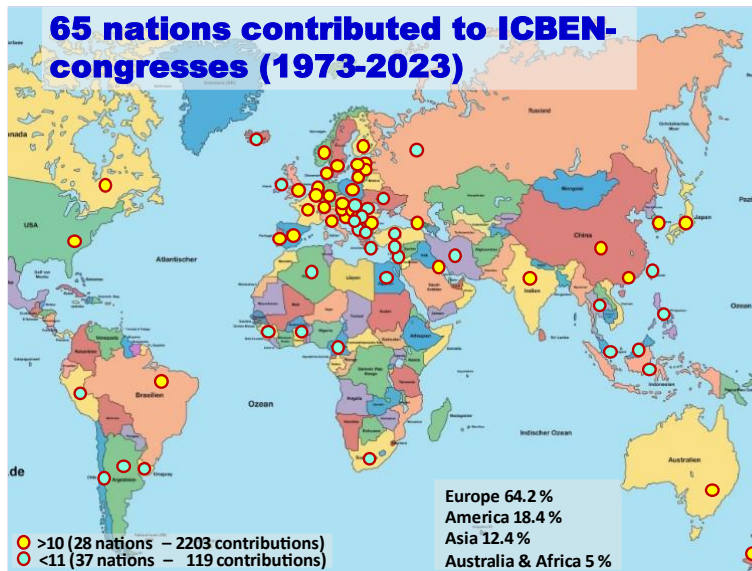


Figure 1: Distribution of countries that contributed to ICBEN-congresses

80 % of all contributions are from 20 % of the countries. When related to the population of the respective countries Sweden, Norway and the Netherlands are most productive, followed by Finland and Switzerland.

### 4 International co-operation



Figure 2: The network of international co-operations within Europe for the Physiological effects of noise.

40 nations were involved in at least binational co-operations. They are widely spread over the world, with a strong concentration to Europe. Figures 2 and 3 show examples of the rather extended co-operations for the working group focused on the physiological effects of noise, separately for Europe and for Intercontinental co-operations.

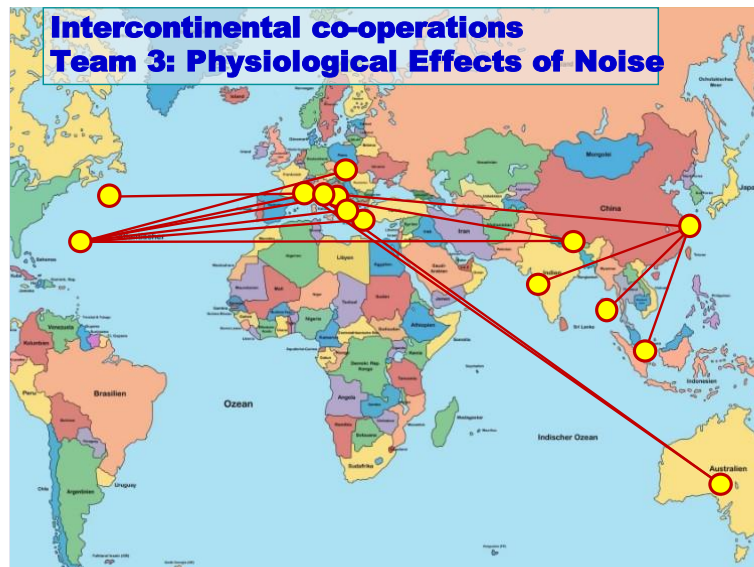


Figure 3: The network of inter-continental co-operations for the Physiological effects of noise

Co-operations depend primarily on individuals and 4 centers were identified with most extended co-operations. These are the University of Graz in Austria with Peter Lercher, the University of Gothenburg in Sweden with Kerstin Persson Waye, the Rijksinstituut voor Volksgezondheid en Milieu in The Netherlands with Irene van Kamp and Elise van Kempen, and the University of Kumamoto in Japan with Takahashi Yano.

## 5 Conclusion

This paper focused mainly on the positive aspects. But, with respect to the future of ICBEN, it must be acknowledged that ICBEN is at risk in some areas and that this requires to take action.

ICBEN is small. To survive it must

- remain unique,
- not follow every hype and
- be attractive for young scientists.

The founders would have enjoyed the findings on international co-operations. But this results from a long-term and even decades-long development. This success must be maintained.

It is therefore essential to re-establish ICBEN's very soul, the International Noise Teams.