

ON THE MEMORY OF R. W. B. STEPHENS

On 28-th August 1990 passed away Raymond William Barrow Stephens, outstanding person in acoustical community and great friend of Poland and Polish acousticians.

He was born in England in 1902. When he was nineteen, he entered Imperial College, London, where he studied, received his B.Sc., than the Diploma of Imperial College, and in 1934 Ph.D.; all degrees in physics. He was closely linked with the Imperial College for most part of his life until his retirement in 1970. After that time he continued his belonging to the Acoustic Group at Chelsea College, London where he was Special Lecturer in Acoustics for twenty years and actively worked until last years of his life.

After World War II Stephens was well established as a university teacher and his Acoustics Research Group begun to take shape. He was initiator and a supervisor of numerous degrees (more than 50 of them have been Ph.D. and D.Sc.) of students from U. K. and abroad. A great number of visiting scientists spent a shorter or longer periods of time working at his group. A number of Polish acousticians were among them and Stephens, along with his long life, always took care of them. Many other Polish acousticians visited Stephens Group during their scientific stays in U.K. On many occasions he had paid visits to Poland and was guest of Polish acousticians. Little known is the fact that his contacts with Polish Scientists date as far back as the World War II. During the war and just after the War he helped many Polish students studying at London University. During that time he was befriended with prof. Józef Mazur (Professor of Polish University College in London) who belonged to the staff of Imperial College until he came back to Poland in 1959 to guide the Institute of Low Temperatures in Wrocław.

In appreciation of his friendship and scientific achievements Dr R. W. B. Stephens was awarded a Honorary Membership of the Polish Acoustical Society in 1983.

Also, he was honored with numerous awards and distinctions of other acoustical societies around the world. He was the first foreigner honored by the highest american award: the Gold Medal by American Acoustical Society in 1977. He received also the Rayleigh Gold Medal of the British Acoustical Society, the Silver Medal of de Groupement des Acousticiens de Langue Francaise in France and the honorary doctorate from the University of Cordoba in Argentina, as well as several honorary memberships in a number of other acoustical Societies.

He has been the author or co-author of six books and more than fifteen papers on acoustics and relative topics.

Raymond W. B. Stephens was active until last year of his life. He will be remembered by many of Polish acousticians as an outstanding scientist a sincere friend and a nice person. He passed away in his 88-th year of life.

Jerzy K. Zieniuk, Antoni S. Śliwiński

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The XXXVII OSA'90 Report

The annual conferences of Polish acousticians sponsored by the Committee on Acoustics of the Polish Academy of Sciences and by the Polish Acoustical Society, have been organized for thirty seven years, under a traditional name of the Open Seminar on Acoustics (OSA), actually by the seven regional branches of the Society, subsequently. This year the site of the OSA'90 was Gdańsk, and particularly its largest academic institution, widely known over the world for over eighty years, namely the Technical University of Gdańsk.

Thanks to the patronage of the Rector of the Technical University the debates were located in a well outfitted auditoria of the Shipbuilding Institute building, and all the participants were accomodated and boarded in a newly built students-hostel and students-restaurant nearby.

The OSA debates are annually the most important acoustical event in Poland, because, besides scientific discussions covering all the branches of the largely interpreted field of acoustics, vital organizatory activities take place therein. This time, a day before the official opening of the OSA debates, the General Assembly of the Polish Acoustical Society took place, including elections of the Governing Bodies for the next three years term. The following colleagues have been elected:

President — Antoni Śliwiński (University of Gdańsk)

Vice-President — Aleksander Opilski (University of Silesia)

General Secretary — Tomasz Hornowski (University of Poznań)

General Treasurer — Mikołaj Łabowski (University of Poznań)

Body-Member — Marianna Sankiewicz (Techn. Univ. of Gdańsk)

Body-Member — Jerzy Ranachowski (Pol. Ac. of Sci. Warszawa)

Body-Member — Andrzej Gołaś — (Inst. of Vibroacoust. Kraków)

Body-Member — Henryk Idczak — (Techn. University of Wrocław)

Audit Chairman — Gustaw Budzyński (Techn. Univ. of Gdańsk)

Auditor — Zenon Jagodziński (Techn. Univ. of Gdańsk)

Auditor — Eugeniusz Soczkiewicz (Gliwice T. Univ.)

Dep. Auditor — Maria Leśniak (Techn. Univers. of Rzeszów)

Fellow Jury Chairman — Zygmunt Kleszczewski (Gliwice T.U.)

Fellow Jury Member — Andrzej Muszyński (Naval Acad. Gdynia)

Fellow Jury Member — Edmund Talarczyk (Techn. Univ. Wrocław)

On Tuesday, September 11, the OSA'90 debates started with the Opening Session. Marianna Sankiewicz, Chairman of the Organizing Committee, welcomed all and

introduced the Deputy Rector of the Technical University, Professor Wojciech Sobczak, who delivered an inaugural address to the participants.

The first plenary lecture was delivered by Professor Ignacy Malecki, Honorary Chairman of the OSA Scientific Committee. His lecture was devoted to the history of development of acoustics in the Gdańsk region. In the second plenary lecture, professor Jerzy Sadowski presented problems connected with acoustical planning of town areas.

There were five plenary sessions and fourteen technical sessions, where debates ran in two sections, in parallel. Technical sessions were devoted to several branches of acoustics: Acoustics of Speech, Environmental Acoustics, Noise Abatement, Physical Acoustics, Room Acoustics, Acoustical Measurements, Electroacoustics, Musical Acoustics, Psychological Acoustics, Sound Engineering, etc.

A specially structured session, named Practicum, was devoted to practical demonstrations of laboratory hardware and software in sound engineering. This session gained a vivid interest among the participants and aroused interesting discussions.

The late arrived papers were presented as posters; some of them were read during pauses due to some absent authors of contributed papers.

The exhibitors took advantage of the large foyer area foreseen for the exhibition. Bruel and Kjaer, as at every OSA Seminar, presented their latest achievements, "0,1 dB" from France and Elsinco from Warsaw exhibited their equipments.

The total number of papers presented during the OSA'90 debates was 78, including 5 plenary lectures, 68 contributed papers, 4 poster reports, and 1 Practicum lecture. The total number of participants was 110, including 56 authors from ten cities of Poland, 9 authors from seven cities from abroad, 38 participants and guests from Poland and 7 from abroad.

The Proceedings of the XXXVII Open Seminar on Acoustics edited and distributed among participants, prior to the debates opening, include in a two volume edition all the papers submitted by authors and approved by the Scientific Committee reviewers for publication. The edition contains texts of the 6 plenary lectures, 78 contributed papers, 6 poster reports, and an introduction to Practicum presentation, as well as subsidiary information concerning OSA organization. 124 authors and organizers are listed in the name index.

The executed program of the Seminar contained:

1st plenary session: Chairman A. ŚLIWIŃSKI (Univ. of Gdańsk)

- I. Malecki (Polish Academy of Sciences, Warszawa), *On the Opening of the XXXVII OSA'90 in Gdańsk.*
- J. SADOWSKI (Acoustical Dept. ITB, Warszawa), *Acoustical Designing of Urban Areas.*
- Session A1: Chairman H. HARAJDA (WSP Zielona Góra)
- A11 Z. BRACHMAŃSKI, W. MYŚLECKI, K. BAŚCIUK (Wrocław T. Univ.) *Relation between speech intelligibility and subjective scale of speech transmission quality for delta coding.*
- A12 J. ZALEWSKI (Wrocław Techn. Univ.), *Vowel recognition using connectionist network.*

- A13 J. ZALEWSKI (Wrocław T.U.), *Comparison in the effectiveness in speaker recognition experiments using statistical pattern classifier and connectionist classifier.*
Session B1: Chairman J. SADOWSKI (Acoust. Dept. ITB Warszawa)
- B11 G. ENGLER (TH Zwickau), *Berechnung von Massnahmen zur Einhaltung zukunftiger Gerauschgrenzwerte für Fahrzeuge und Fahrzeugbaugruppen.*
- B12 R. MAKAREWICZ, J. JARZEŃSKI (Poznań Univ.), *Prediction of train noise in open terrain.*
- B13 R. MAKAREWICZ, U. JORASZ, A. WŁOCH (Poznań Univ.), *Noise attenuation by barrier in terms of loudness level.*
Session A2: Chairman A. OPILSKI (Univ. of Silesia)
- A21 K. BAŚCIUK, S. BRACHMAŃSKI (Wrocław T.U.), *The linear filtering of the complex cepstrum.*
- A22 A. DOBRUCKI, C. SZMAL (Wrocław T.U.), *The influence of the geometry and material on the dynamic properties of loudspeaker spider and cone suspension.*
- A23 M. GŁOWACKI, J. STANCLIK, M. PIERZCHAŁA (Wrocław T.U. HILMAR Wrocław), *Influence of type of compensation on generation of transient intermodulation distortion in audio power amplifiers.*
- A24 J. BEDNAREK, T. GUDRA, E. TALARCZYK (Wrocław T.U.), *Airborne sandwich transducer.*
- A25 W. Zawieska (CIOP Warszawa), *Active noise attenuation system in a duct – the laboratory stand.*
Session B2: Chairman W. STRASZEWICZ (Warszawa T.U.)
- B21 R. MAKAREWICZ, I. KRASNOWSKA (Poznań Univ.), *Traffic noise propagation in a built-up area.*
- B22 B. BOGUSZ, A. JAROCH, M. RABIEGA, B. RUDNO-RUDZIŃSKA (Wrocław T.U.), *Noise level pattern around a source of discrete low frequency component.*
- B23 B. BOGUSZ, H. IDCZAK (Wrocław T.U.), *Random error determination by the confidence intervals method in sound power measurements using sound intensity measurements.*
- B24 B. BOGUSZ, H. IDCZAK (Wrocław T.U.), *Analysis of estimation random error in sound power measurements using sound intensity method.*
- B25 E. KOTARBIŃSKA, G. MAKAREWICZ (Warszawa T.U., – CIOP), *The pressure index – a basic parameter for acoustic estimation of industrial halls.*
- B26 D. PLEBAN (CIOP Warszawa), *Investigation on sound absorption properties of materials in frequency range from 4 to 20 kHz.*
Session A3: Chairman W. RDZANEK (WSP Rzeszów)
- A31 C. LEWA (Gdańsk Univ.), *NMR response in the presence of mechanical waves.*
- A32 Z. KACZKOWSKI (Pol. Ac. Sci. Warszawa), *Magnetomechanical coupling in As-quenched and annealed... metallic glasses.*
- A33 B. AUGUSTYNIAK, Z. KACZKOWSKI, L. MAŁKIŃSKI (Gdańsk T.U., Pol. Ac. Sci. Warszawa), *Relation between magnetomechanical Barkhausen effect and delta E effect in ... metallic glasses.*

- A34 A. SIKORSKA, A. ŚLIWIŃSKI, S. ZACHARA (Gdańsk Univ.), *Photoacoustic studies on Europium Chelate powder.*
- A35 A. SNAKOWSKA (WSP Rzeszów), *The acoustic field inside and outside the semi-infinite unbaffled cylindrical wave-guide.*
- A36 A. SNAKOWSKA (WSP Rzeszów), *The saddle point method applied to the problem of a far field outside the semi-infinite cylindrical wave-guide.*
- Session B3: Chairman J. ZALEWSKI (Wrocław T.U.)
- B31 E. HOJAN (Poznań Univ.), *Subjective and objective evaluation of acoustic properties of concert halls based on their impulse response.*
- B32 A. GOŁAŚ, J. WIERZBICKI (AGH Kraków), *Sound field modelling in rooms in various shapes using source image method.*
- B33 J. TARGOŃSKI (Wrocław T.U.), *Sound column.*
- B34 H. WINKLER (Bauakademie Berlin), *Influence on the reverberation time by slope of the side walls.*
- B35 Z. WĄSOWICZ (Wrocław T.U.), *Investigations of the sound reflections time structure of the Wrocław Operetta hall.*
- B36 H. IDCZAK, A. JAROCH, K. RUDNO-RUDZIŃSKI (Wrocław T.U.), *Properties of sound absorbing structure for anechoic chamber.*
- 2nd plenary session: Chairman E. SOCZKIEWICZ (Gliwice T.U.)
- R. PANUSZKA (AGH Kraków), *Applications of intensity methods in vibroacoustical investigations.*
- Session A 4: Chairman E. HOJAN (Poznań Univ.)
- A41 W. HIRSCH, G. UHLMANN (Nucl. Inst. Rossendorf), *Methods for acoustic emission transducer calibration.*
- A42 B. SMAGOWSKA, E. SUMOWSKA (CIOP Warszawa), *Testing the efficiency of vibration damping by protective gloves.*
- A43 D. RUSER (Rostock Univ.), *Co-operation of the operator with a SONAR imaging system.*
- B 4 Session: Chairman E. SOCZKIEWICZ (Gliwice T.U.)
- B41 L. LENIOWSKA, W. RDZANEK, P. WITKOWSKI (WSP Rzeszów), *Mutual acoustical interactions of circular sources with parabolic velocity distribution for high frequency.*
- B42 L. LENIOWSKA, W. RDZANEK, P. WITKOWSKI (WSP Rzeszów), *Mutual impedance of circular sources for high interference parameters.*
- B43 L. LENIOWSKA, W. RDZANEK (WSP Rzeszów), *The acoustical field of circular plate free vibrating in the planar finite baffle.*
- B44 W. RDZANEK, P. WITKOWSKI (WSP Rzeszów), *Mutual acoustical interactions of circular sources with regard to damping effect.*
- Session A5: Chairman R. PANUSZKA (AGH Kraków)
- A51 E. SOCZKIEWICZ (Gliwice T.U.), *Scattering of acoustic waves and statistical characteristics of randomly inhomogeneous media.*
- A52 H. GAWDA, H. TRĘBACZ (Med. Acad. Lublin), *Acoustical parameters of cancellous bone with different mineral content.*

- A53 B. KOSTEK, G. PAPANIKOLAOU (Gdańsk T.U., Thessaloniki Univ.), *Multi-purpose acoustic analyzer.*
- A54 D. GAFKA (IPPT PAN Warszawa), *Surface acoustic wave velocity on prestressed piezoelectric substrate.*
- A55 J. FORTUNA, S. PIETREK (WAT Warszawa), *Accuracy of the wind velocity measurements of the atmospheric boundary layer by a Doppler sodar.*
Session B5: Chairman G. PAPANIKOLAOU (Thessaloniki Univ.)
- B51 H. KUBIAK, J. BRĄGOSZEWSKI, S. WEYNA (Szczecin T.U.), *Computer aided presentation of results of acoustic field measurement, using sound intensity method.*
- B52 J. REGENT (Gdańsk Music Ac.), *Practical usage of the method of diffraction integrals in the research of the acoustic field in a room.*
- B53 A. ROZWADOWSKI ('0.1 dB' Villeurbanne), *PC based integrated acquisition and data processing system.*
- B54 N. RUMMLER, V. GROSSER, C. BOMBACH (Ac. Sci. Chemnitz), *RENO — a computer program to investigate the sound emission from engine components by means of holographic vibration analysis.*
- B55 A. KACZMARSKA, D. AUGUSTYŃSKA (CIOP Warszawa), *Some sources of infrasonic noise in steel plants and machine building industry.*
- B56 J. KOTON (CIOP Warszawa), *The simplified mathematical model of noise emission of ultrasonic cleaners.*
Session A6: Chairman A. GOŁAŚ (AGH Kraków)
- A61 S. BELOKON, E. VASILTSOV (Leningrad Res. Inst., Kiev T.U.), *Peculiarities of defining basic characteristics of acoustic field.*
- A62 E. VASILTSOV, Y. OVCHAROV (Kiev T.U. Cherkassy Branch), *Peculiarities of reflectance evaluation by phase method.*
- A63 E. BUDZYŃSKI (Gdańsk T.U.), *On sound-sources subjective localization theory.*
- A64 G. BUDZYŃSKI, M. SANKIEWICZ (Gdańsk T.U.) *Problem of the aggravating hearing-loss in young people.*
- A65 A. KULOWSKI (Gdańsk T.U.), *Modification of the ray method for modelling acoustic field in rooms.*
Session B6: Chairman J. CHWAŁEK (KUL Lublin)
- B61 M. ISZORA, M. SANKIEWICZ (Gdańsk T.U.), *Acoustical investigation of S' Catherine carillon bells.*
- B62 A. KACZMAREK (Gdańsk T.U.), *Comparative analysis of Gdańsk basilicas selected organ stops.*
- B63 Z. PERUCKI (Gdańsk T.U.), *The feedback in flue pipes.*
- B64 A. KACZMAREK (Gdańsk T.U.), *Methodology of organ stops analysis by means of multichannel sound registration system on IBM PC computer.*
- B65 A. KACZMAREK (Gdańsk T.U.), *Polynomial approximation of the envelope spectrum of steady state organ sounds.*
- B66 Z. PERUCKI (Gdańsk T.U.), *Investigations on the mechanism of sound generation in flue pipes.*

- B67 B. KOSTEK, A. CZYŻEWSKI (Gdańsk T.U.), *Computer controlled pipe-organ instrument.*
- 3rd plenary session:** Chairman M. SANKIEWICZ (Gdańsk T.U.)
- A. CZYŻEWSKI *Digital procedures of sound engineering.*
- B74 A. DYRO, A. CZYŻEWSKI (Gdańsk T.U.), *Implementation of digital filters for IBM.*
Session A7: Chairman M. SANKIEWICZ (Gdańsk T.U.)
- A71 H. TYGIELSKI (WSP Zielona Góra), *Acoustic potential of a point source in a region limited by two parallel planes.*
Session B7: Chairman G. BUDZYŃSKI (Gdańsk T.U.)
- B71 G. PAPANIKOLAOU, G. KALLIRIS (Thessaloniki Univ.), *Digital recovery of impulse noise affected signals.*
- B72 K. CISOWSKI (Gdańsk T.U.), *Implementation of smoothing filters for the restoration of musical recordings.*
- B73 W. KUCHARSKI, A. CZYŻEWSKI (Gdańsk T.U.), *Implementation of basic methods of sound synthesis for IBM-PC compatibles.*
- B74 A. DYRO, A. CZYŻEWSKI (Gdańsk T.U.) *Implementation of digital filters for IBM PC compatibles"*
- B75 M. IWANOWSKI, A. CZYŻEWSKI (Gdańsk T.U.), *Sound visualization using IBM PC compatibles.*
- B76 G. GRAJA, A. CZYŻEWSKI (Gdańsk T.U.), *Computer aided standard console.*
- B77 J. ZIAJKA, A. CZYŻEWSKI (Gdańsk T.U.), *Interfacing a digital tape recorder to a PC computer.*
- B78 P. MRÓZ, A. CZYŻEWSKI (Gdańsk T.U.), *Digital sound editing system.*
- 4th plenary session:** Chairman M. SANKIEWICZ (Gdańsk T.U.)
- H. LASOTA (Gdańsk T.U.), *Spherical waves in acoustics.*
- 5th plenary session:** Chairman M. SANKIEWICZ (Gdańsk T.U.) *Discussion and concluding debates*
- Poster presentation included the following reports:
- E. VASILTISOV, S. BELOKON (Kiev T.U., Leningrad Res. Ins.), *Combined acoustic receiver.*
- A. WOLNIEWICZ (STILON Gorzów), *Physical chemistry of the gamma Fe₂O₃ and the electroacoustic characteristics of magnetic tapes.*
- K. WÓJTOWICZ, W. GRUSZECKI, A. ORZECZOWSKI (Med. Ac. Lublin, MCS Univ. Lublin), *The application of ultrasonic velocity measurements in the observation of the liposomas phase transitions.*
- G. BRZÓZKA, J. DEGÓRSKI, Z. KOZŁOWSKI, P. AULS, G. HAACK, (AGROMET-PROJEKT Poznań, RATIOPROJEKT Berlin), *Comparative analysis of the noise exposure assessment methods obligatory in Poland and in GDR, in the light of own experience.*
- Soon after the closing of the Seminar the Jury of the competition dedicated to the memory of Marek Kwiek, made the decision concerning awards for young authors due to their best presented papers. Three awards have been assigned: the first one to Anna Snakowska (WSP Rzeszów), the second one to Henryk Tygielski (WSP Zielona Góra), the third one to Andrzej Kaczmarek (Gdańsk T.U.).

International congress on ultrasonics (ICU-90)

December 12-14, 1990, New Delhi, India

International Congress on Ultrasonics (ICU-90) was organised by National Physical Laboratory at New Delhi on December 12-14, 1990. The congress was sponsored by the Council of Scientific and Industrial Research, Indian Council of Medical Research, Central Scientific Instrument Organisation and Ultrasonic Society of India. This was second international conference being organised by National Physical Laboratory (NPL) in ultrasonics, after the one held in July 1980. The Chairman of the Advisory Board was Prof. Dr. S. K. Joshi, Director of NPL and the Secretary was Deputy Director of NPL, Dr. V. N. Bindal. The Chairman of Organising Committee was Dr. T. K. Saksena, Co-Chairman – Mr. S. C. Gupta and Secretary – Dr. Ashok Kumar. The Convenors of the Publication and Technical Programme Committee, Finance Committee and Reception Committee were Dr. S. K. Jain, Mr. Ved Singh, Dr. J. Singh and Dr. R. P. Tandon, respectively. The Chairman of the Souvenir and Exhibition Committee was Dr. S. P. Signal and Convenior – Dr. J. N. Som.

The ICU-90 was conducted in nine sessions (I. Ultrasound in Medicine (A), II. Underwater Acoustics (B), III. Ultrasonic Studies in Solids (C), IV. Non-Destructive Evaluation (D), V and VI. Ultrasonic Propagation in Liquids (E), VII, VIII and IX Ultrasonic Transducers, Instrumentation and Materials (F)

The congress was inaugurated by Prof. S. Z. Qasim, Vice-Chancellor of the Jamia Millia Islamia, New Delhi. A keynote address entitled "Acoustics-Infrasonics to Ultrasonics" was delivered by Dr. V. K. Aatres, Director of the Naval Physical and Oceanographic Laboratory, Cochin, during the Inaugural Session. The scientific programme included 9 invited contributions (3 was publishes as the abstracts and 1 as invited papers) and 56 research papers. The invited talks were presented by: Prof. V. R. Minicha (Lithotripsy – Issues and Perspective), Prof. Dubrovskii (Delphine acoustics), Prof. Z. Kaczowski (Ultrasonic studies in metallic glasses), Prof. P. K. Raju (Non-destructive evaluation of the composites using acousto-ultrasonics), Prof. L. M. Lyamshev (Radiation acoustics), Prof. V. P. Bhatnagar (Modern trends in acousto-optics diffraction), Dr. R. S. Khandpur (Challenges in ultrasound hyperthermia). The list of participants contained 171 names from India and abroad.

An exhibition had been organised by the Ultrasonic Society of India, which also brought out the Souvenir containing the programme, abstracts of the accepted papers and lists of participants and exhibitors. The Proceedings of the ICU-90, edited by the Publication Committee with Dr. T. K. Saksena as the Chairman, were given to the 102

participants during registration. These proceedings were dedicated to Dr. V. N. Bindal on his 60th birthday (25.12.1990). The proceedings contained 49 papers (1 invited and 48 contributed) from India (39), Egipt (3), Spain (1), Italy (1), Soviet Union (1), Great Britain (1), and Poland (3). On Ultrasound in Medicine were published 7 papers (35 pages), on Underwater Acoustics – 3 papers (26 pages), on Ultrasonic Studies in Solids – 7 papers (6 contributed and 1 invited, 45 pages), on Non-Destructive Evaluation – 5 papers (29 pp.), on Ultrasonic Propagation in Liquids – 14 papers (86 pp.) and on Ultrasonic Transducers Instrumentation and Materials – 13 papers (79 pp.). The index of the proceedings contained 115 author names. On the list of exhibitors were Accutrol Systems Pvt. Ltd. New Delhi, Blue Star Ltd., New Delhi, Electronics Corporation India Ltd., Hyderabad, L & T – Gould Ltd., Mysore, Mekaster Electronic Service Centre Pvt. Ltd. and Systronics (Agency Division), Ahmebabad. As the co-chairmen of the Round Table Session were invited Dr. V. N. Bindal, Dr. T. K. Saksena, Professors: Dubrovskii, Raju Kaczkowski. As the introduction to the discussion Prof. Dubrovskii has talk on ultrasonic research in Acoustical Institute of the Academy of Sciences of the USSR, prof. Raju spoke on the non-destructive investigation at the Auburn University (USA) and prof. Kaczkowski spoke on the current research status and opportunities in ultrasound in Poland. In the discussion the delegates presented their institutions, organisations and factories.

Zbigniew Kaczkowski

25–29 May 1992

Gdańsk, Poland

5th SPRING SCHOOL ON ACOUSTO-OPTICS AND ITS APPLICATIONS

GDAŃSK, POLAND

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Application dead line 31.03.92,
 fee US \$ 350 (full accomodation included)