

**PROFESSOR ZBIGNIEW SMALKO FOR THE 21ST CENTURY
SCIENCE OF RELIABILITY, SAFETY AND TRANSPORT
(BIRTHDAY FESTSCHRIFT)**

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Abstract

Prof. Zbigniew Smalko is a creator of the Polish school of reliability, also in the literal sense, because he organized 34 Winter Schools of Reliability under the auspices of Polish Academy Sciences. The Schools were devoted to different problems. Schools Reliabilities concerning machines and vehicles concentrate outstanding scientists and in this domain the Polish science places itself in the world first ranks. In the last period Prof. Smalko actively attends in the International Scientific Congresses of European KONES. Prof. Z. Smalko, outstanding scientist has about 200 papers and the monograph. In many scientific domains he is a pioneer and leader. Prof. Smalko concentrated round himself the society of outstanding co-workers, who along with him, but also independently, continue his work and then independently develop it. Prof. Smalko is a member of a lot of domestic and world Scientific Associations and Societies, in this elitist ones such as European KONES, where he acts functions from the elections. Beside the scientific activity expressed in his novel papers, Prof. Smalko actively participates in domestic and international symposia, conferences and Congresses not only as an author and chairman, but also as a very careful listener and discussion participant, as well as an attraction explorer of the culture and art of remote countries. Prof. Smalko has a great scientific authority, he is a member of many organizations and Scientific Societies domestic and foreign. Superlative is an election of Prof. Smalko to the State Committee for Scientific Research as a Member (2 times). The scientific activity of Prof. Smalko mainly concentrates in Polish Academy of Sciences, Faculty of Transport of the Warsaw University of Technology, and the Air Force Institute of Technology.

Professor Zbigniew Smalko was born in Gdynia in 1930. He obtained a high-school certificate from the Grammar school and Lyceum under the name of Tadeusz Kosciuszko in Turek, the Poznan province in 1950. In 1955 he graduated from the Mechanical Engineering Faculty of the Dniepropietrowsk Technical University, Ukraine, obtaining, after the nostrification, the professional degree of the master engineer of mechanical engineering.



Fig. 1. Professor Zbigniew Smalko

He undertook the professional job in the technical supply base of the construction industry and transport directly after completing of his higher education, acting inter alia different ranks (a master mechanical engineer, transport department manager, assistant director for matters technical base of the transport company). The on-going professional job of the young engineer inspires him for considerations and creative activities, what expression were publications, on pages of scientific-technical periodicals, of several contributions concerning mechanizations of technological operations in construction and transport industries. Researches on the use of mathematical reliability models in decision processes and their implementation for the operating and maintenance practice fruited with the obtainment of the Doctor of Philosophy degree from the Faculty of Mechanical Engineering of the Czestochowa University of Technology in 1969, on the basis of the dissertation entitled *"An appointment of optimum parameters for the process restoration of builder's machines"*. His promotor was Professor Stefan Ziemia, a Member of Polish Academy of Sciences.



Fig. 2. Prof. Zbigniew Smalko receives congratulations from Prof. Stefan Ziemia (Polish Academy of Sciences Member) and a diploma of recognition for work in the organization of the fifteen Winter School of Reliability

The 1969-1972 years were very distinctive in the life of the Celebrator of a Jubilee, wherein he took activity marking out in the future professional career and became formed his profile as a scientific worker.

Following facts affected on that:

- the obtainment (1969) of the Philosophy Doctor Degree of the on-the-job in the State Board of Quality and Measures,
- the appointment (1970) on a rank of the Independent Scientific Worker (Associate Professor) in the Institute of Mechanization and Electrification of Agriculture,
- the consignment (1970) rank in the State Committee for Science and Technology of the Secretary of the Team of Problem-Methodical for Reliability of Machines and Devices to which was in a chair Prof. Antoni Kilinski,
- the edition (1972) by State Scientific Publishers of the monograph *"Bases of designing of reliable machines and mechanical devices"*- the first book in the country devoted reliability of mechanical objects,
- the organizing (1972) the 1st Winter School of Reliability under title "Chosen problems of reliability of machines and mechanical devices". Altogether the 34 Winter Schools of Reliability were held until now. The 35th Jubilee Winter Schools of Reliability will be held in 2007.



High School Student



University Student



Habilitation PhD Student



Elzbieta Smalko

Fig. 3. Professor Zbigniew Smalko and his wife Elzbieta

At that time he connected for keeps with the scientific society of rendezvoused people in the Section of Operating and Maintenance Bases of the Mechanical Engineering Committee of Polish Academy of Sciences, what determined his area of interests and scientific works as widely comprehended operation and maintenance of machines and vehicles.

In the next years in the Mechanical Engineering Committee of Polish Academy of Sciences he prosecuted many ranks:

- the Scientific Secretary of the Section of Operating and Maintenance Bases (1973-1975),
- the Committee Member, and the Scientific Secretary of the Committee (1976-1978),
- the Deputy Chairman of the Section of Operating and Maintenance Bases (1991-1997).

At the last years, independently from his own professional duties, Prof. Zbigniew Smalko sat in on an updating process of the engineer personnel knowledge.

In 1969 Professor Smalko (with Leslaw Wasilewski) worked out his own first lecture on the subject of a research of reliability systems: *"Instruction materials - Modern Methods of Quality Inspections"*, Centre for Technological Progress, Issue 2, Katowice 1969.



Fig. 4. Professor Zbigniew Smalko with his grandson Wojtek at a computer



Fig 5. Elzbieta Smalko (Professor's wife) and her grandson Wojtek

In 1971 Professor Smalko programmed in essence and was in an office the Scientific Director of the Class Updating of Engineer's Knowledge, within a range of machine reliability, devices and systems, in the Team of Centres of Improvement Staff (ZODOK).

He worked out several mimeographed lectures on the research subject of technical objects reliability for the Team of Centres of the Improvement Staff (ZODOK) of Polish Society of Mechanical Engineers (SIMP) in Warsaw, and the Scientific Society of Organization and

Management in Bydgoszcz, in that:

- Lecture Books - *"A theory and technology of reliability in designing"*, Issue. 2 (with Eugeniusz Fidelis), the Team of Centres of the Improvement Staff (ZODOK), Warsaw 1971;
- Instruction Materials - *"Methods of reliability research of machines and technological devices"*,
- Bookcase of Quality, Issue 11, Polish Committee of Normalizations and Measures (PKNiM-TNOiK), Bydgoszcz 1974 (the second edition in 1981).

In 1970-1975, as a director of the Department of Operational Research Methods in the Institute of Agriculture Mechanization and Electrification, he managed and coordinated scientific works concerning modern methods of reliability research and implementation of research results in designing and operating of mechanical objects.

"Material engineering in the machines reliability problems", State Scientific Publishers (PWN) (1976),

"Accelerated researches of agricultural machines", State Agricultural and Forest Publishers (PWRiL) (1977).

A result of those research works was derivation in 1974 of Habilitated Philosophy Doctor degree in the area of bases of design machines in the Mechanical and Technological Engineering Faculty of the Poznan University of Technology, on the ground dissertations entitled:

"An estimation of the reliability of unique mechanical objects". The researches also fructified with book-publications whose Prof. Zbigniew Smalko is a co-author:

In 1976-1982, as a manager the Department of Economics of Fuel and Energy in the Institute of Organization, Managements and Economics of Construction Industry, he concerned on research of energy efficiency of machine-systems, and energy-consuming engineering and operating processes. That fruited with the monograph entitled:

"Manners and directions decreasing of energy-consuming in construction industry materials", COIB (1983).



Fig. 6. From left: Dr. Leszek Loroach (former ITWL Assistant Director), Dr. Zbigniew Zmudzinski (former ITWL General Director), Prof. Zbigniew Smalko, Prof. Jerzy Lewitowicz, Prof. Maciej Woropay, Prof. Jozef Zurek

In 1980 during the 1st Country Colloquium of Reliability, in the lecture *"Research problems of reliability of machines and mechanical devices"*, he formulated a lot postulates concerning the content of enlargement and increased knowledge of the reliability research of mechanical objects. That caused among other things that the reliability problems of technical objects had found their own stable place in the most domestic science and research programs, centrally controlled, Research and Development Central Projects and Science and Research Central Projects (CPBP and CPBR).

In 1982 Prof. Smalko undertook as an Assistant Professor employment in the Institute of Transport of the Warsaw University of Technology, acting also in 1984 - 1990 a rank of the Assistant Director of the Institute for science, and, in 1986 - 2001, a rank of the Director Department of Operation and Maintenance of Vehicles. From here interests of the Celebrator of a Jubilee began to concentrate all around the technical operation of transport means, and particularly of methods of the maintenance of the required technical state of vehicles.



Fig. 7. The Scientific Council of the Air Force Institute of Technology - ITWL (2005 - 2009). In the first row - from the left: third - General Director of the Air Force Institute of Technology - Prof. Ryszard Szczepanik; fifth - the President of the Scientific Council - Prof. Jozef Zurek; from the right side: second - Prof. Jerzy Jazwinski, third - Prof. Zbigniew Smalko, fourth - Prof Tadeusz Niezgoda

In 1983 he programmed in essence and organized discussion session on the subject *"Problems of the maintenance of machines on the move"* under the auspices of Section of Operating and Maintenance Bases of the Mechanical Engineering Committee of Polish Academy of Sciences. Hence he became a spokesperson of a theory and practice development of maintenance of machines on a run (interview of *"Movement for movement"* - Zycie Warszawy newspaper of 12 March 1984).



Fig. 8. From left: Prof. Jerzy Jazwinski, Prof. Zbigniew Smalko, Prof. Dariusz Rosati



Fig. 9. Prof. Zbigniew Smalko (in the middle) as a Chairman of the Plenary Session at the Exploship International Scientific Conference in Swinoujscie, from left Vice-rector of Maritime Academy in Szczecin Prof. Janusz Grabian, from right Prof. Lech Kobylinski - a Member of Polish Academy of Sciences

In 1987 he edited an innovative script entitled: *"Bases of the technical operation of vehicles"* which reached the second, supplementing edition in 1998.

A creative anxiety of the Celebrator of a Jubilee brings out with a permanent exploration of following areas of research and scientific investigations, undertakes recent, always brain teasers. Shifts and considerations inspire him and, so typical for a true scientist, a convincement that in the given area still remained many makable. An uncompromising attitude in scientific discussions, an essential aggressiveness, a conformity lack of scientific humility for Great Authorities, are those

marks of his spirit which caused that for the attainment of the scientific Professor title he had to wait until 1989. He obtained it on an application of the Council of Institute of Transport of the Warsaw University of Technology.



Fig. 10. Prof. Zbigniew Smalko as a Chairman of Plenary Session at the European Congress KONES2004, the paper is presented by Dr. Timothy Johnson (U.S.A.)

He still actively sat in on a realization of research works from an area of the operating of technical transport means, and particularly of implementation of mathematical models in researches of reliability and safety and simulation of operating processes. In 1996 it bore fruit with the monograph entitled *"Modelling of operating transport systems"*.



Fig. 11. Prof. Zbigniew Smalko as a hard-working listener of a presentation at the European KONES Congress2004, in the second row, from left Dr. Alexander Sandel (U.S.A.), the President Roger Rogowski (U.S.A.) with his wife Marie, and Prof. Tadashige Kawakami (Japan), in the third row Prof. Andrzej Kowalewicz

In 1995 he undertook employment in the Air Force Institute of Technology as a Professor.

From here his interests concentrate on the reliability and safety relationships of transport systems.

Except the many years'- energetic activity in the Section of Operating and Maintenance Bases of the Mechanical Engineering Committee of Polish Academy of Sciences, in 1996 he became a Member of the Committee of Transport of Polish Academy of Sciences. At present he is a Presidium Member of the Committee of Transport and a Chairman of Section of the Technical Means of Transport.



Fig. 12. Prof. Zbigniew Smalko (third from left) during the break of debates of European KONES Congress 2004, from right respectively: Dr. X. Hu (China), Prof. Andrzej Sobiesiak (Canada), Prof. Mirosław L. Wyszynski (UK), Prof. Cezary Szczepaniak, Dr. Tad Jaroszczyk (U.S.A.), Dir. Byron A. Pardue (U.S.A.), Prof. Zbigniew Smalko, Dir of Federal Mogul Jerzy Nykiel, Prof. Antoni Jankowski



Fig. 13. Prof. Zbigniew Smalko presents a paper at the VETOMAC - ACSIM2004 International Conference (New Delhi, India 2004)

Since 1999 Prof. Smalko has prosecuted a rank of the editor-in-chief of *Archives of the Transport* - the quarterly of the Committee of Transport of Polish Academy of Sciences. From 1992 to 2000 he was an Editorial Office Member of Scientific Issues of the Warsaw University of Technology - the series of *the Transport*.

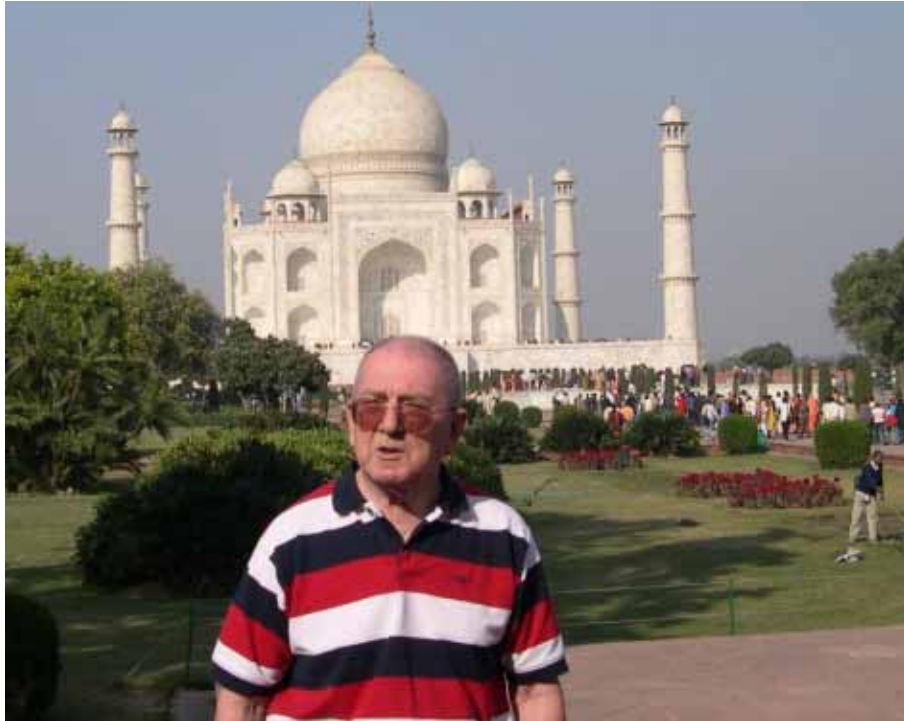


Fig. 14. Prof. Zbigniew Smalko as an expert and fan of the culture and customs of eastern countries in front of the Taj Mahal Temple, (Agra, India 2004)



Fig. 15. Prof. Z. Smalko as a Chairman of the 10th Congress of Maintenance (Stare Jablonki 2005)

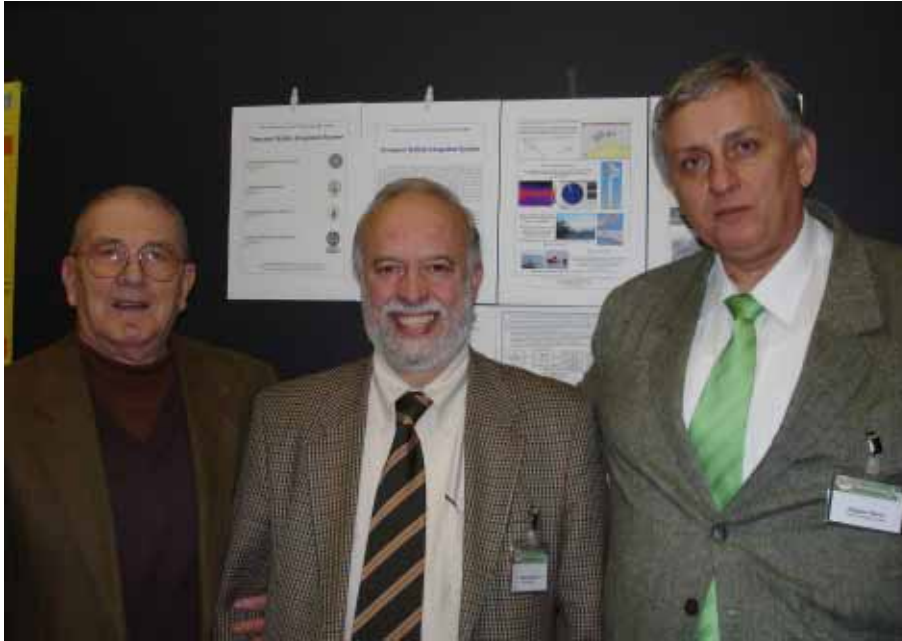


Fig. 16. Prof. Z. Smalko (from left) Prof. Carlos Guedes Soaraes (Portugal) a President of the European Safety & Reliability Association and Prof. Zbigniew Burciu during the Sharing Knowledge and Vision in Industrial Safety Seminar (Milan, Italy 2005)

Initiating and co-creation (the scientific manager, then the Chairman of the Programmed Council) of the 33 Winter Schools of Reliability, under the auspices of the Section of Operating and Maintenance Bases of Mechanical Engineering Committee (KBM) of Polish Academy of Sciences are particular successes of Professor Smalko. In annual school-meetings together several thousand attendants participated which pronounced several hundred lectures and papers. Those meetings constitute still a forum of exchange ideas on current problems of the engineering and the theory of the reliability, with underlining of the special attention on aspects of the safety of technical systems. The scientific biography of Professor Smalko interlaces with the Winter Schools of Reliability whose the subject matter (repeated periodically) is a determinant of interests and the area of the research work of the Celebrator of a Jubilee. His Jubilee comes together also with 34th edition of Winter School of Reliability and the 32nd International Science Congress of Powertrain and Transport Means European KONES2006. An expression of Confidence and Appreciation for Professor Smalko is his election in 2000, and the re-election in 2004, by scientific society connected with the transport scientific discipline on a Member of State Committee for Scientific Research.

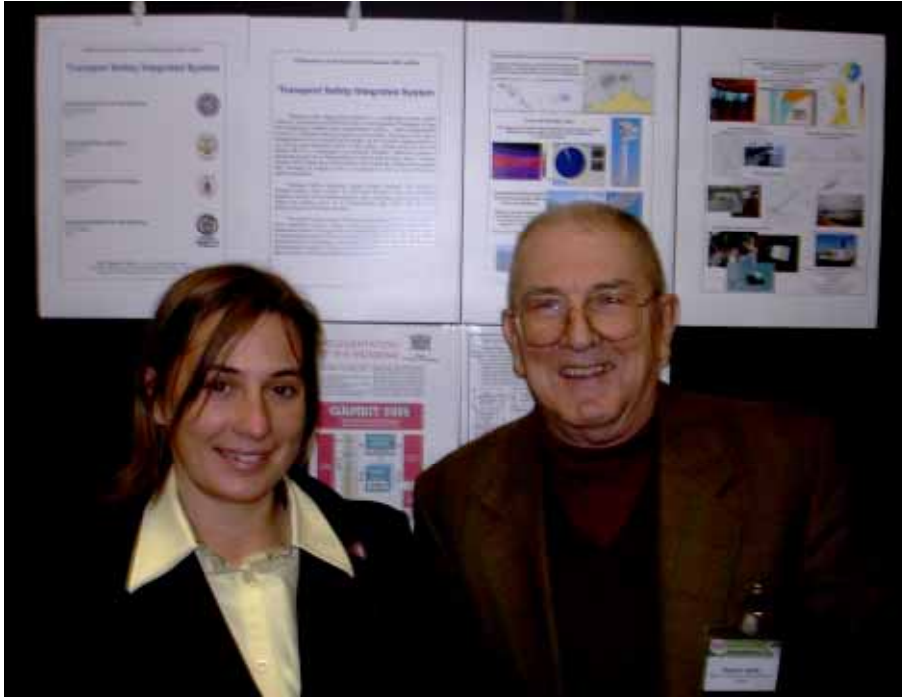


Fig. 17. Prof. Z. Smalko and Ms Elisabetta Noce from the D'APPOLONIA S.P.A Enterprise (Italy) interested of the project presented by Prof. Z. Smalko at the Sharing Knowledge and Vision in Industrial Safety Seminar (Milan, Italy 2005)



Prof 18. Z. Smalko and Prof. Burciu at the 34th Winter School of Reliability (Szczyrk 2006)

In the year of his own beautiful Jubilee, Professor Smalko devotes a lot of time on the essential preparation of the 32nd International Science Congress on Powertrain and Transport Means European KONES2006, and the 4th International Conference of the Safety and Reliability "KONBiN" 2006 whose he is a president. The conference takes place under the auspices of these corporate organizations in which he always has actively participated: The Committee of Mechanical Engineering of Polish Academy of Sciences, the Committee of Transport of Polish

Academy of Sciences and Polish Society of Safety and Reliability.



Fig. 19. Prof. Z. Smalko as a President and a Member of the International Advisory Board of the 4th International Conference on Safety and Reliability KONBIN2006 during the Opening Ceremony (Krakow 2006)



Fig. 20. Prof. Z. Smalko (left) and Prof. Tadeusz Niezgodza as authors at the 14th International Conference on the Strength of Materials ICSMA14 (Xi'an, China 2006)

Resuming, in the educational - scientific biography of Professor Smalko it is possible to underline four periods.

The first study period, beginning from secret complete sets of teaching in Lodz during the

Second World War and German occupation - to the completion of higher education in Dniepropietrowsk in Ukraine.

The second working period from the order for a job in the Enterprise of Railway-Works in Poznan to the prosecution of a rank of deputy director of Warsaw Transport Enterprise of Building Industry.



Fig. 21. Prof. R. Szczepanik presentation during the Scientific Seminar on Science - Industry of Transport Means European KONES under chairmanships of Prof. Z. Smalko, from left - round: Prof. S. Kruczynski Prof. Z. Nagorski, Dir. M. Slezak, Prof. R. Szczepanik, Prof. J. Zurek, Prof. J. Walentyowicz, Prof. W. Wisniowski, Prof. M. Dziubinski, Prof. Z. Slawinski (Naleczow 2006)

The third period can be called a period of the leadership research organization and development works, where Professor Smalko three times organizes and directs ingoing departments in scientific institutes of Mechanisation of Construction Industry, Model Manufacture Design, and Organization and Management.



Fig. 21. Prof. Zbigniew. Smalko inspects the Maritime University of Szczecin, from right: Prof. Zbigniew. Smalko, Prof. Jerzy Hajduk (former Rector the University), Prof. Stanislaw Guca (former Rector the University), Dir. Marek Slezak (Division of Technology Sciences of Department of Scientific Research of Ministry of Science and Higher Education)

The fourth period, educational - scientific, concerns the Warsaw University of Technology, where Prof. Smalko is an institute director and department director in the Institute of Transport, and later in Faculty of Transport.



Fig. 22. Anniversary of the Air Force Institute of Technology - Delegation of the Ministry of Science and Higher Education, from right: Dir. Tomasz Korza and Dir. Leszek Staniszewski (Department of Research in the interest of the Safety and State Defence of the Ministry of Science and Higher Education), Dir. Marek Slezak (Division of Technology Sciences of Department of Scientific Research of the Ministry of Science and Higher Education), Dir. Jozefa Elzbieta Szumanska (Economic Department of the Ministry of Science and Higher Education), Prof. Zbigniew Smalko, Dr. Zbigniew Zmudzinski (former General Director of the Air Force Institute of Technology)

From the time of the collection the job in the Air Force Institute of Technology he began the next, extraordinarily fruitful in regard of scientifically - to cognitive period of the cooperation with Professor Jerzy Jazwinski.



Fig. 23. Opening Ceremony of the 4th ExploDiesel2005 Conference, from left: Prof. Jerzy Girtler (Gdansk University of Technology - Chairman of the Conference, Prof. Boleslaw Wojciechowicz (Poznan University of Technology, Member of Polish Academy of Sciences), Prof. Zbigniew Smalko, Dir Marek Slezak (Division of Technology Sciences of Department of Scientific Research of the Ministry of Science Higher Education), Prof. Antoni Jankowski (Institute of Aeronautics, President of European Science Society of Powertrain and Transport KONES) Prof. Marian Zablocki (Krakow University of Technology) (Miedzyzdroje 2005)

The many years' friendship links Professor Zbigniew Smalko and Professor Jerzy Jazwinski. They met in 1969 during an activity in the Reliability Team of the State Committee of Science and Technology (KniT). Many times together they have worked out prognoses of development of the science on reliability, and lately also the development recent science on safety in technology. The same day, in sequence they performed their own colloquia habilitation in the Poznan University of Technology. They worked out together many contributions and papers on domestic and foreign conferences.



Fig. 24. A meeting on the future of winter schools after lectures of the 34 Winter School of Reliability - Prof. Z. Smalko and his co-workers (from left round): Prof. M. Woropay (Technical and Agricultural Academy in Bydgoszcz), Prof. J. Zurek (President of Scientific Council of Air Force Institute of Technology), Prof. R. Szczepanik (General Director of Air Force Institute of Technology), Prof. Z. Smalko, Ms. Elzbieta Smalko, Ms. H. Slezak, Dir. M. Slezak (Division of Technology Sciences of Department of Scientific Research of Ministry of Science and Higher Education), Mr. R. Kaleta (Air Force Institute of Technology), Dr A. Stelmach, Prof. A. Chudzikiewicz (Dean of the Faculty of Transport of Warsaw University of Technology) Prof. S. Uhl (AGH Krakow University of Science and Technology)

The year 2005 came upon Professor Zbigniew Smalko at acting following important ranks:

- Professor Smalko in the Air Force Institute of Technology, the Scientific Council Member of the Institute;
- Professor Smalko in the Faculty of Transport of the Warsaw University of Technology, the Council Member of the Faculty of Transport;
- The Editor-In-Chief *Archives of the Transport* - the quarterly of the Committee of Transport of Polish Academy of Sciences;
- The Presidium Member of the Committee of Transport of Polish Academy of Sciences, the Chairman of the Section of Technical Transport Means;
- The Member of the Research Board in the Interest of the Development Economics of Science Council at the Minister of Science and Higher Education (previously the election Member - the Team of Mining, Geodesy and Transport of the State Committee for Scientific Research);
- The Member of the SAFERLENET International Scientific Network in the European Union on the subject matter: "The safety and reliability industrial products, systems and economic sectors";



Fig. 25. Prof. Z. Smalko with his wife and friends (from right), Ms. Elzbieta Smalko, Ms. Stanislaw Zurek, Prof. Jozef Zurek, and Ms. Barbara Sieminska



Fig. 26. Prof. Z. Smalko (left) and Dir. Marek Slezak (right - Division of Technology Sciences of Department of Scientific Research of the Ministry of Science Higher Education) and Ms. Hanna Slezak in the Air Force Institute of Technology

- The Vice-president of the European Science Society of Powertrain and Transport Means;
- The Vice-Chairman of the Problem-Committee responsible for the Reliability of Polish Committee of Normalization;
- The Fellow of the European Science Society of Powertrain and Transport Means;
- The Member of Honorary Committee of the 32nd International Science Congress on Powertrain and Transport Means European KONES2006;
- The Honorary Member of Polish Society of the Safety and the Reliability;

- The Honorary Chairman the Programmed Committee of Winter School of Reliability;
- The President of the International Conference of the Safety and the Reliability KONBIN2006.

Prof. Zbigniew Smalko and his wife Elzbieta invite always guests with pleasure. At home the charming and beautiful Professor's Wife Elzbieta well stocked the buffet and magnificently spread table wait for the guests.

In the last period a greatest joy of the Grandfather of Zbigniew and his Wife Elzbieta is Wojtek, their lovely grandson. Professor Smalko small free moments in his busy life devotes to his own grandson. He finds always time for him between various activities in the Research Board in the Interest of the Development Economics of Science Council at the Minister of Science and Higher Education, the Air Force Institute of Technology and the Warsaw University of Technology, the Committee of Transport of Polish Academy Sciences, Polish Committee of Normalization, committees of programmed of domestic and international congresses and conferences, with the 34th Winter School of Reliability of Polish Academy of Sciences, the 4th International Conference KONBiN2006, the 32nd International Science Congress on Powertrain and Transport Means European KONES2006 - inclusive.

Prof. Zbigniew Smalko together with Prof. Jerzy Jazwinski in the last five years worked out over 50 papers which are devoted to such problems as:

- conventional and unconventional methods of reliability prognosing on influence of the human factor on the system reliability the man-the machine,
- assumptive reliability structures,
- reliability and safety autonomous systems,
- models causally consecutive in reliability and safety,
- problems of on both sides limited durability dispersion,
- keeping up with systems of the safety,
- proposals and forecasts regarding the further development of scientific research.



Fig. 27. Prof. Z. Smalko (in the middle), Prof. R. Szczepanik (General Director of the Air Force Institute of Technology - left), and Prof. W. Wisniowski (General Director of the Institute of Aeronautics)

Prof. Z. Smalko, outstanding scientist has about 200 papers and monographs. In many scientific domains he is a pioneer and leader. Prof. Smalko concentrated round himself bunch of

outstanding co-workers, who along with him, but also independently, continue his work and then independently develop it. Alongside the scientific activity expressed in his novel publications, Prof. Smalko attends actively in domestic and international Scientific Symposia, Conferences and Congresses not only as an author and chairman, but also as a very careful listener and discussion participant as well as an attraction explorer of the culture and art of remote countries. A lot of time Prof. Smalko devotes to the family life. In the last period beside his wife Elzbieta an apple of one's eye is Wojtek, his grandson. One ought to underline that Prof. Smalko in his professional career has a period of a job in industry confirmed with successes, what distinguishes him from other scientists only carrying the pure science. The list one here and there of papers and the monographs of Prof. Z. Smalko are given below.

Personal Reminiscences

A. Mazurkiewicz (General Director of the Institute of Maintenance Technology):

"An engagement, efficiency, resoluteness and uncompromising attitude", "an outstanding scientific achievements"

M. Slezak (Director, of the Division of Technology Sciences of Department of Scientific Research of Ministry of Science and Higher Education):

"an outstanding scientist of domestic and world scientific authority and achievements", "well-known from explorations of new spaces of knowledge, where he makes out both analytic enquiries, as and synthetic art generalizations, where through results of his scientific works have application in land, maritime and air-transport", "an experience not only in areas of sciences, but in the industry, what causes that results of his scientific works have exceeding practical aspects", "only two scientific events can be accepted to the world leaders - the 34 Winter Schools of Reliability and the 32 European KONES Congresses, and in both he has leading place"

W. Kurnik (Rector of the Warsaw University of Technology):

"a person actively engaged of economics, brilliant didactician and science populariser", "expressions of the highest appreciation"

J. Bajkowski (Dean of the Faculty of Automobiles and Heavy Machinery Engineering of the Warsaw University of Technology):

"an outstanding expert", "scientist and academic teacher of great contributions for science development in Poland", "a friendly advice and the care in scientific development"

K. Santarek (Dean of Faculty of Production Engineering of the Warsaw University of Technology):

"Prof. Z. Smalko is an excellent example of an academic teacher, tutor of many generations of engineers, an outstanding scientist and excellent science organizer", "Prof. Z. Smalko belongs to corps of the most outstanding scientists", "we express admiration and congratulate", "we are grateful for shown sympathy from him", "we bow foreheads in for the achievements"

H. Komsta (Rector of the Lublin University of Technology):

"Prof. Z. Smalko is a known and esteemed person as an outstanding and excellent scientist, invaluable academic teacher, tutor of many generations of scientific staff and academic students"

R. Szczepanik (General Director of the Air Force Institute of Technology):

"with a great respect and appreciation we underline his kindness, but also scientific adherence to principles", "many employees met the helping hand of Professor Smalko"

S. Slupczynski:

"Safety of devices, being an object of pioneer research and creative scientific passion, is one of the most important domains of transport engineering, links inseparably with yours name and thanks to you attracts young research workers", "I express the highest acknowledgement for yours achievements"

A. Jankowski (President of the European Science Society of Powertrain and Transport):

"an excellent scientist of national and world authority and achievements, and an excellent example for learning", "the original scientific creation in domains of reliability, safety, and transport"

J. Dyduch (Chairman of the Committee of Transport of Polish Academy of Sciences):

"many years'- scientific activity and an uncompromising attitude in search of alternating research fields"

A. Tajdus (Rector of the AGH Krakow University of Science and Technology):

"this great holy day also for scientific society which you devoted your own abilities and knowledge for", "but scientific work is not only the own development but promotion for the development humankind", "I am very sorry that I will personally not be able to make the congratulation"

J. Lisowski (Rector of the Maritime University of Gdynia):

"an extensive knowledge, excellent professional experience, impressive scientific research achievement - earned you the general regard employees and students of Polish and foreign scientific societies"

W. Wisniowski (General Director of the Institute of Aeronautics):

"we find you as a friend, adviser and tutor", "great knowledge and inspiring activities"

B. Kuzniewski (Rector of the Maritime University of Szczecin):

"undeniable contributions in education and tutoring of young people is generally known and appreciated", "the highest acknowledgement, respect and admiration for extraordinary diligence, great individual engagement and indefatigable, worthy of envy of energy"

E. Rusinski (Dean of Mechanical Engineering Faculty of the Wroclaw University of Technology):

"his scientific and organizational activities are very respected, known and honourable in the Wroclaw society, in Poland, and also outside borders"

B. Sendyka (Director of the Institute of Vehicles and Combustion Engines of Krakow University of Technology):

"outstanding scientist, and charming and friendly man of exceptional charisma" "his science works are well-known and esteemed in the country and the world"

J. Szala (Chairman of the Committee of the Mechanical Engineering of Polish Academy of Sciences):

"congratulations for great scientific and didactic achievements in the last fifty years", "many happy returns of further successes in all domains of outstanding scientist activities"

M. Zablocki (Vice-President of the European Science Society of Powertrain and Transport KONES):

"Prof. Z. Smalko belongs to the most outstanding creators of new ideas in science", "the comprehensive knowledge and high personal culture"

M. Idzior (Dean of the Faculty of Heavy Machinery Engineering and Transport of Poznan University of Technology):

"for all kindness which we received from Professor Smalko till now, we heartily thank for the beautiful years of fruitful cooperation with numerous successes", "Professor Smalko was always and will be a man who integrates our society"

W. Kiernozycki (Rector of the Szczecin University of Technology):

"many years'- creative work of Professor Smalko in subject field of so important as reliability and safety contributed for constructing of bases of education of many generations of young people and development of scientific staff of Polish technological colleges in this field of science", "Szczecin University of Technology appreciates your contribution for development of the Faculty of Maritime Technology"

L. Powierza (Section of the Agricultural Technique Agriculture Committee of Polish Academy of Sciences):

"conscious of size of put effort and achievements, being result of half age of Professor Smalko charges on wide-spread science surfaces"

J. Girtler:

"retaining great contributions of Professor Smalko for our scientific society"

J. Hansel:

"we congratulate you for your exceptional successes both on scientific as and didactic field"

P. Tarkowski:

"Professor Smalko is so as an exceptional person", "Prof. Z. Smalko surrendered to recognize as an outstanding scientist and excellent organizer", "words of acknowledgement for achievements which enrolled on cards of the Polish science", "with your own practical philosophy you determine realization of the motto "words teach, examples soar""

S. Kruczynski (Director of the Combustion Engines Department of Faculty of Automobiles and Heavy Machinery Engineering of the Warsaw University of Technology):

"outstanding scientist of world achievements and excellent tutor of young people", "he has charisma and introduces excessively friendly atmosphere causing that work with him gives great satisfaction"

W. Batko:

"expressions of a great appreciation for professional successes of Professor Smalko on a lot of fields of scientific, didactic and tutorial activities which can be an inspiring example on a job of the next generations of scientists"

W. Bocheński:

"I did really not expect that, in so an important imperial moment for you, you would find time for me unworthy to remind, but it is a honour for me - a Podlasie rustic gentleman of the Winter Schools "clumsy" organization adept"

Elzbieta Smalko (Prof. Smalko's Wife):

"Zbyszek is a gentle, patient, protective, charming, generous, appreciating family life, brilliant man and husband"

Wojtek (Prof. Smalko's Grandson):

"I love my Grandfather Zbyszek"

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