



**DNIPROPETROVSK NATIONAL UNIVERSITY OF
RAILWAY TRANSPORT
NAMED AFTER ACADEMICIAN V. LAZARYAN**

INTERNATIONAL SCIENTIFIC SYMPOSIUM

**PROFESSIONAL TRAINING
OF TRANSPORT PERSONNEL
IN ACCORDANCE WITH
THE EUROPEAN STANDARDS**



PROCEEDINGS

**with participation of representatives from
Bosnia and Herzegovina, Bulgaria, Croatia,
Czech, France, Hungary, Poland,
Romania, Russia,
Serbia, Slovakia, Slovenia, Ukraine**

April, 23 - 24, 2009

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Under the auspices of

Ministry of Transport and Communication of Ukraine

State Administration of Ukrainian Railways (Ukrzaliznytsya)

Ministry of Science and Education of Ukraine

Mayor of Dnipropetrovsk

Rector of Dnipropetrovsk National University of Railway Transport

PROCEEDINGS

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INTERNATIONAL COOPERATION IN THE TRANSPORT FACULTY OF SILESIA UNIVERSITY OF TECHNOLOGY

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The studies in the field of transport began at the Silesian University of Technology in 1969. Originally, they were carried out in Transport and Communication Unit of Mechanical and Power Engineering Faculty. In 1974 the Institute of Transport and Communication, operating as a faculty, was established. In 1984 the Institute of Transport was organized. In 1992 the University structure was reorganized which resulted in combining the Institute with the Faculty of Materials Science, Metallurgy, Transport and Management that was newly established in Katowice. Due to the fast development of teaching and scientific base as well as enlarging number of teaching staff, on the 1st of September 2002 the Institute of Transport was turned into the Faculty of Transport following the resolution of the Senate.

Recently there was a considerable development of pedagogical, scientific base of faculty, and also increase in number of its personnel structure. It has allowed to expand a number of teaching disciplines at the faculty, and also to increase possibilities of the enrolment of students. Besides the basic faculty which is in Katowice, in 2000 its branch in Tychy was opened and in 2002 the faculty branch in Bytom started to function.

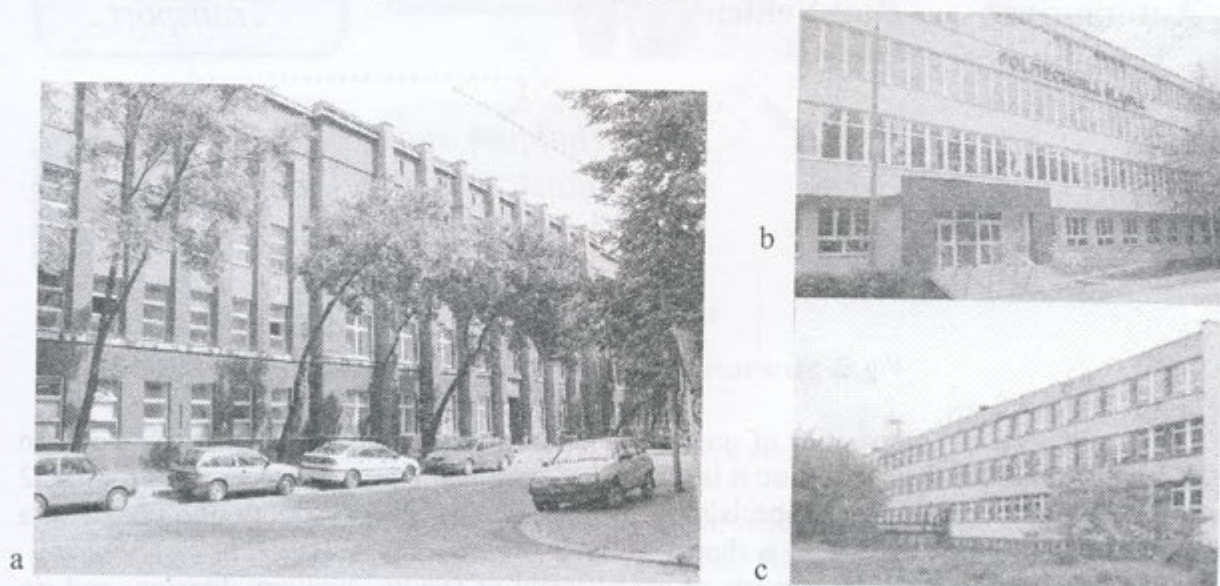


Fig. 1. Faculty of Transport (a) and its branches in Bytom (b) and Tychy (c)

Now at the faculty there are 70 teachers with scientific degrees, including 16 professors working. Some, rather small, part of subjects are taught by teachers and experts who are part-time workers. Such personnel structure allows to be trained annually on different courses nearly 2 thousand students. Specified above are the number of teachers, it is quite enough for carrying out employment with students according to the Polish standard documents. And nevertheless, the faculty is engaged intensively in development of the pedagogical and scientific base. With that end in view the part of financial resources is spent for development of educational and scientific

laboratories, carrying out scientific researches, one of the purposes is the protection of dissertations by postgraduate students, which not only are engaged in research work, but also actively participating in training process. Now 25 postgraduate students work over the termination of their doctoral thesis.

One more direction of development of scientific and pedagogical shots is sponsoring doctoral candidacy researches. Only for the last 3 years by employees of faculty have been protected 5 advanced doctoral thesis. In many respects to it are promoted allocated advanced doctoral grants, and also other financial assets, target image allocated for carrying out scientific researches by leading experts of the faculty.

For training of students full-time and part-time forms on which students can choose, some possibilities are used.

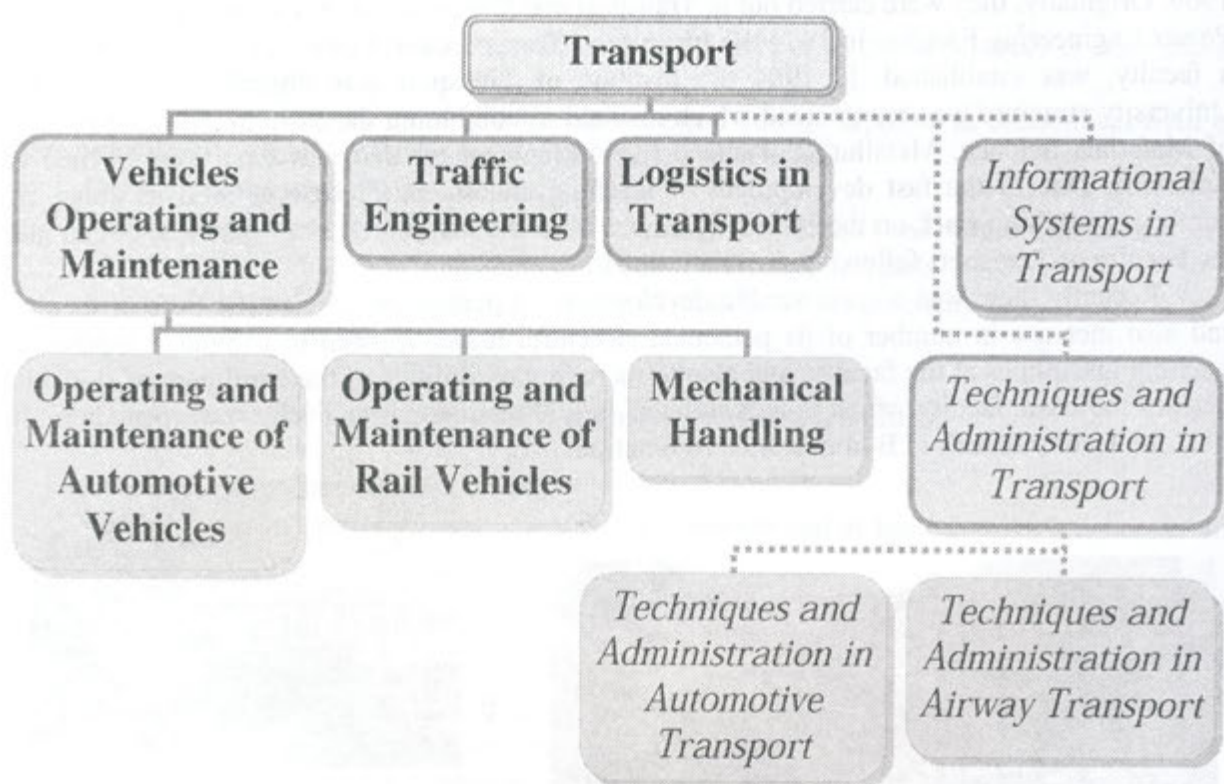


Fig. 2. Structure of specialities at the faculty

Now at the faculty preparation of students is on three basic specialities, which are shown in fig. 2 by thick lines. In the near future it is planned to open two more new specialities (on fig. 2 are shown by italics). The part of specialities gives the student the possibility of a choice of a direction diploma works, which also is shown on fig. 2.

The faculty organizational consists of management of faculty, auxiliary divisions and six departments. The organizational diagram of faculty is shown on fig. 3.

The summary of possibilities of pedagogical and scientific activity of the faculty is necessary for the understanding of its possibilities in respect of the international cooperation. Such cooperation occurs in all spheres of activity of the faculty: in study, in scientific and organizational activity. The international activity of the faculty is extensive and proceeds for many years. In this given short article we will stop only on the international cooperation of the faculty within the last 5 years.

One of the directions of such cooperation is the mutual exchange of students between various universities. As an example, we will mention the following facts. The faculty sends the

students and postgraduate students on practice, specialised lectures or laboratory works within the limits of the contracts concluded with Ostrava Technical University (Vysoka Skola Bańska) Czech Republic or with Žilina Technical University, Slovakia. The contract in cooperation with Cologne University of Applied Science, Institute of Automotive Engineering, Germany allows us to carry out an exchange of students 3rd – 4th years of training. Similar contract is signed at the level of rectors with East Ukrainian National University, Faculty of Logistics, Lugank. This contract allows us carrying out an exchange of students for predegree practice and degree works. The contract with Vilnius Technical College, Lithuania, on the contrary, allows us to exchange students of the first years. These specified examples are resulted only as the most typical, operating on enough regular basis. At the same time contracts on cooperation are concluded and there are exchanges with universities of other states Central and the Eastern Europe (Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, Romania, Serbia, Latvia, Slovenia).

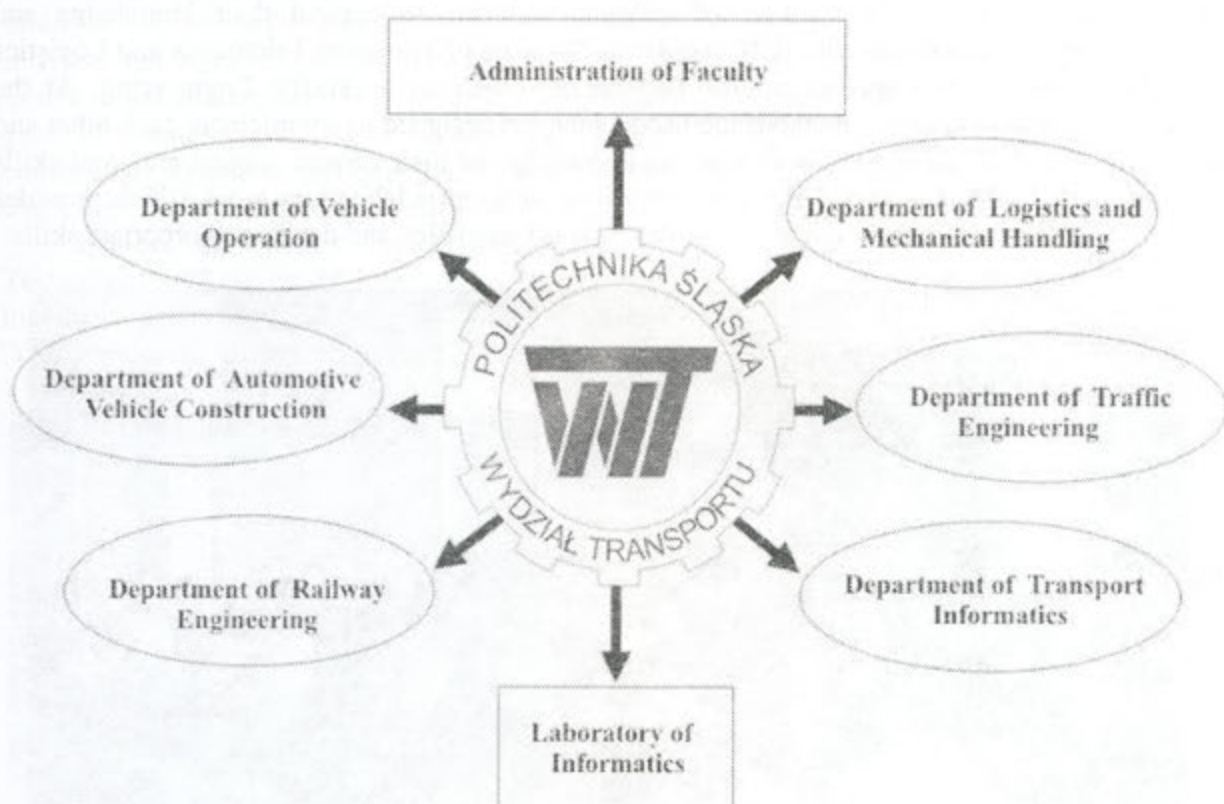


Fig. 3. The faculty block diagram

Financing of the specified activity is carried out within the limits of mutual offsets or with use of financial assets of various European programs. An example of such programs can be Socrates or Erasmus. For example, thanks to financial support of the specified programs some students of faculty were trained during the 8th semester in universities of Germany and Portugal.

The great value gives faculty for practical preparation of the students not only at foreign universities, but also in leading foreign firms. For example, within the limits of program Leonardo da Vinci „Practical placement for University students” 6 students participated in four-monthly degree practices in the firm TECOSIM, in Cologne, Germany.

The faculty promotes international contacts of students at level of student's scientific organisations. Practically annually there are such exchanges between the Polish and Russian students from the Moscow Mining University. Students from other countries participate in

traditional student's scientific sessions which are usually carried out at the end of an academic year. Teachers and students during such scientific session are shown on fig. 4.

The faculty offers full-time 2-year MSc courses (4th and 5th years of education) in Transport Telematics and Logistics. The logistics and computer science (telematics) are one of the most interesting and perspective directions of development of modern transport. Students who chooses these specialities are in great demand in national economy. The faculty of transport has highly skilled teachers and necessary laboratory base for training of students on their given speciality. A large number of the Faculty academic staff are members of home and foreign scientific organizations (among others: Polish Academy of Sciences, International Institute of Acoustic and Vibration, CEN - The European Committee for Standardization). The Faculty possesses Polish and foreign certificates for official certification tests of automotive vehicles. The Faculty is also entitled to conduct certification tests of machines and vehicles being in operation in Polish railway transport. The Faculty was granted permission to carry out post-graduate studies to enable teachers of technical subjects to expand their knowledge and qualifications in accordance with IGIP standards. Students of Transport Telematics and Logistics can choose one of two specializations: Logistic in Transport or Traffic Engineering. At the Faculty a variety of teaching methods are used which are designed to complement each other and to ensure that students acquire both a sound knowledge of their chosen subject area and skills relevant to future employment. The most important of them is laboratory work which provides students with an opportunity to apply their theoretical knowledge and develop appropriate skills.



Fig. 4. Teachers and students during student's scientific session

The special place in the activity of the transport faculty is occupied with the scientific work carrying together with the foreign scientific, research organisations and universities. As examples of such joint scientific projects it is possible to result such projects as: SPURT - Seamless Public Urban Rail Transport (contract no TST3-CT-2003-506401); EURONEX - European Rail; Research Network of Excellence, (contract no TNE3-CT-2003-506513); ERA-NET TRANSPORT, "Working out of the forecast of development of scientific researches on transport in Poland" (contract no ERAC-CT-2003-510223) - partner; the Polish-Portuguese project "Analysis of inclusions in metal weld deposit" which is carried out within the limits of

the international program "Executive Programme of Scientific and Technological Cooperation between the Republic of Poland and the Portuguese Republic". Part of projects are financed within the limits of Seventh Research Framework Programme (FP7). Such fact can testify about the amount of scientific researches at the faculty that in 2005 - 2007 the faculty has executed 293 research works, which were partially financed from the European funds or international firms.

Among various kinds of organizational activity of faculty connected with the international cooperation the organisation of various conferences, symposiums and seminars has the greatest value. In the majority of them, even in what had none in the word name "international", representatives of different countries participated. The part of such actions has cyclic character. We will give the result of some examples of conferences and the seminars of the international level organised by the faculty.

During these last years seminars "Diagnostics of Machines", the international conferences "Telematics of Transport Systems TST", "Telematics and Safety on Transport", V and VI international scientific and technical conference "The Drive of Transport Machines", the international scientific and technical conference "Brakes and Braking on Transport", III - V international conference „TRANSMEC", anniversary conference of the Faculty of Transport "60 years of Silesian University of Technology, 35 Years of Training on a Speciality of Transport", conference "Transport Systems, the Theory and Practice", conference "The Science, Education and Cooperation", conference "Tooth Gearings" have been organised.

Besides the faculty has organised together with AGH University of Science and Technology in Krakow the international conference "Telematics and Safety of Traffic" and also together with Warsaw University of Technology international scientific symposium "Cooperation of Transport Scientific Faculties in FP7 European Projects".



Fig. 5. The report of the dean B. Lazarz during the international conference "Telematics and Safety on Transport"

In October 2008 in Katowice and Cieszyn will take place next VIIIth Scientific Conference "Telematics, Logistics and Transport Safety" in which scientific committee included leading scientists from 16 countries of the world.

Publishing at the faculty also is closely connected with the international cooperation. For many years the faculty published the proceedings "Transport" in which articles of leading experts from different countries of the world were regularly published. Now the faculty became

the organizer and the main sponsor of the international scientific journal "Transport Problems" which is published by the editorial board where most part of employees works in the faculty. The given magazine is published in English and its subscribers are experts in the field of transport from many countries of the world.

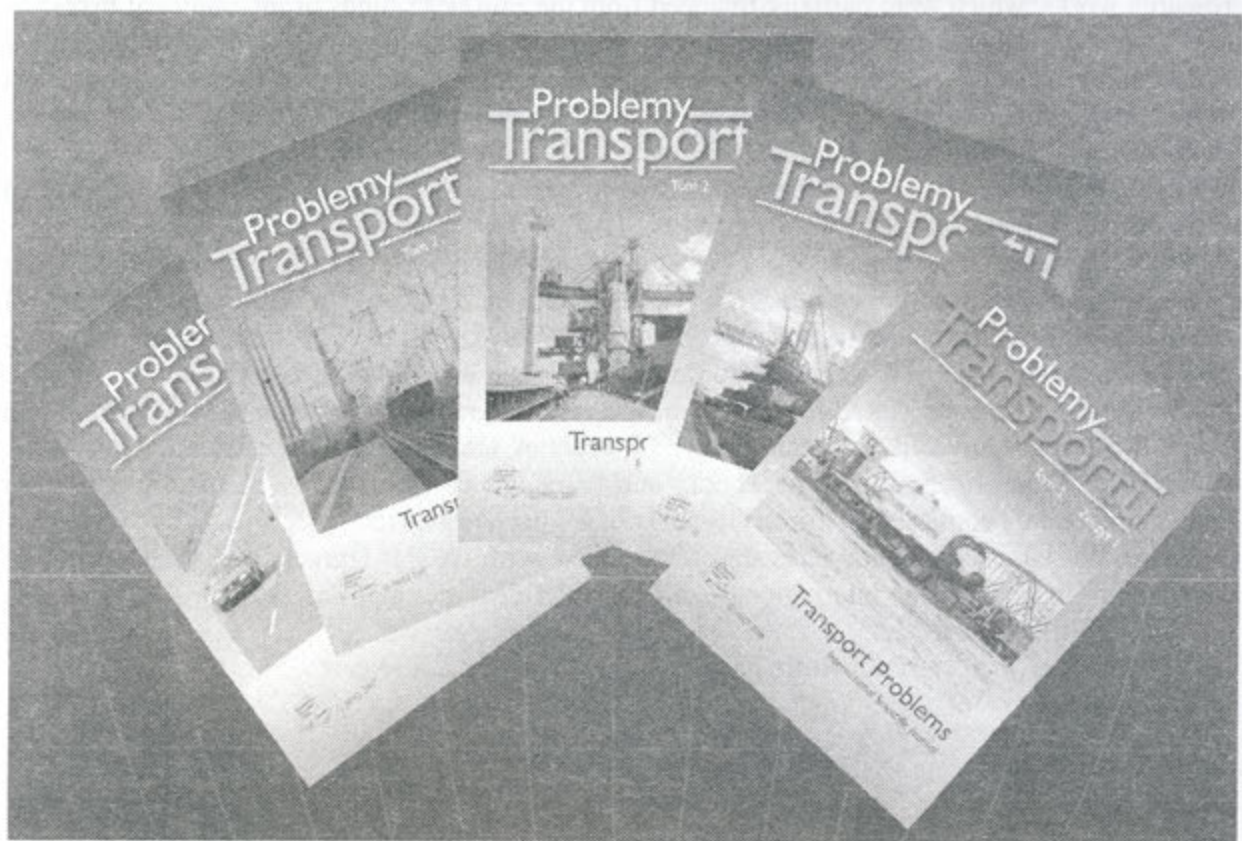


Fig. 6. International Scientific Journal "Transport Problems"

Summing it is necessary to notice, that the faculty has a big pedagogical and scientific potential and using it to carry out big international activities. The faculty is opened for further cooperation with universities, scientific organisations and firms from different countries of the world.