

Present day activities of the Ilawa experimental centre

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Abstract

Paper presents activities of the GUT Experimental Centre in Ilawa in the recent years. Its main tasks have been organizing international student scientific camps and sailing courses for GUT students. For that purpose the laboratory and hotel facilities of the Centre have been modernized and new measurement techniques implemented. The conclusions outline possibilities of future use of the Centre.

Keywords: Gansk University of Technology, Faculty of Ocean Engineering and ShipTechnology, experimental centre, Foundation for Safety of Navigation and Enviroment

At the beginning of the 1990s, administration of the Ilawa Centre was taken over by the Foundation for Navigation Safety and Environment Protection, established on 10 May 1990 by the Gdansk University of Technology, Maritime Academy in Gdynia and Town of Ilawa. That was caused by moving the ship master training courses to lake Silm (September 1990) and by shortage of research orders from the industry due to generally bad financial situation of the shipbuilding industry. In the following years some limited business activity was carried out in the Centre. Formal takeover of the Centre by the Foundation took place on 30 April 1993 and was based on an agreement with the Gdansk University of Technology, where 25% of the Centre capacity was put free of charge at the University's disposal. That was quite sufficient for the Ship Hydromechanics Division. At that time model tests were performed of fast craft, financed from the Scientific Research Committee grants won by prof. M. Krzelewski and assist. prof. W. Welnicki. At the same time the Centre business activity consisted mainly in constructing platforms on Jeziorak lake, carrying out technical work for the lake Silm Ship Handling Centre as well as hauling ashore, winter harbouring and summer mooring of private yachts.

In 1997, on the initiative of the then Dean of the Faculty of Ocean Engineering and Ship Technology prof. K. Rosochowicz, an International Ship Research Student Centre (ISRSC) was created in Ilawa, whose task was to run international scientific training camps for the shipbuilding faculty students from all over the world. It should be mentioned here that scientific training camps for the GUT Shipbuilding Faculty students were organized in Ilawa as early as the second half of the 1960s. In order to popularize the international student centre, an intensive information campaign was organized among the technical universities with ship technology faculties, coordinated by dr. M. Gerigk. The efforts of the Faculty were crowned by two international meetings in Ilawa in July and September 1998 - Ilawa-ISRSC-Workshop'98, presenting the Centre to the foreign partners. The participants were representatives of WEGEMT, ABS, VBD Duisburg, TU Berlin, TU Denmark. Also a leaflet was prepared and issued describing the Centre's facilities and a programme of possible practical training. It included also manoeuvring exercises in the lake Silm Ship Handling Centre run by the Foundation for Navigation Safety and Environment Protection.

Thanks to the very positive opinions about setting up the International Ship Research Student Centre received from foreign universities, liquidation of the Centre, looming at the end of 1990s, could be avoided. Its area was to be taken over by the town of Ilawa for recreation purposes. But a measurable effect of those meetings was obtaining financial means from

the American Bureau of Shipping for procurement of the measurement equipment.

In the same year two scientific camps were organized for the GUT Faculty students and the second one coincided with the above mentioned July Workshop. One of their tasks was to prepare the Centre for student training, which included setting everything in order, preliminary preparation of models and presentation of the Ilawa Centre potential to the foreign observers. In practice, there were no critical opinions about the laboratory facilities - unique in the world - but there were some problems at that time with social amenities in the Centre. For that reason the maximum number of students in one course was limited to eight persons.

In July 1999 the Centre was taken over by the Gdansk University of Technology. Three scientific courses for the GUT students were organized from June to August of that year with a similar objective - preparing the Centre and working out a practical model of the international training courses.

In 2000 the international student courses started. Four courses were organized with participation, among others, 4 students from DTU in Lyngby.



Fig. 1. Preparing a model for tests

At the end of that year a complex restructuring of the Centre social part was begun. The Dean's representative for the Ilawa Centre development was appointed Mr. J. Świątek. Workshop and motor store were liquidated and modern lavatories installed for students, employees and guests, including those for disabled persons. That part of work was finished in June 2001. A high capacity central heating boiler was installed, which allowed to liquidate the bathroom and kitchen water heaters

and a separate hotel and boatswain's lodge central heating systems. Another major change made in 2001 and 2002 was rebuilding of the former joiner's shop. It was divided into two parts. One was made a store of the fast craft small models and the other - a store of measurement apparatus and a computer room where test results may be processed. In 2002 the hotel part was modernized. Small single-bed rooms were combined into two larger dormitories. Now the Centre can lodge twelve persons in a decent standard conditions. In the spring of 2005 the old roof of the social building was replaced by a new light roof with thermal insulation. At the same time replaced were all windows as well as the central heating, gas and electrical installation, and also the kitchen equipment - cookers, fume hoods etc..

Some time at the turn of the century a student practical training programme was shaped. Students of our Faculty had the practical training after the third year of the MSc studies. It was decided that the training would be concentrated on testing non-conventional units, in accordance with the Centre's tradition, and on manoeuvrability exercises on the Silm lake Ship Handling Centre facilities. Four standard models were prepared: a skimmer unit, SWATH type catamaran and two hydrofoils: single hull and twin-hull units. The models are towed by the „Badacz-2” towing platform. The number of trainees should not exceed eight persons. This is in order to maintain the necessary safety conditions on the relatively small „Badacz-2” catamaran.

The first days are devoted to learning the measurement technique used and operating the measurement apparatus and also the gauge calibration. Besides, instruction is given on the industrial safety requirements and general behaviour during the exercises. Simultaneously lectures are presented on the fast craft problems and the manoeuvring qualities of modern ships. During a two-week stay students visit the town of Ilawa and its surroundings on a full day trip by the „Konrad” motorboat around Jeziorak lake.

Standard tests consist of the measurements of resistance, towing speed and position of the unit in relation to water. An extension of those tests is testing of the transverse and longitudinal standstill stability and stability as a function of speed. Besides, dynamical stability at the operational speed is also tested. All the test results are subject to real time computer recording, which allows to analyse and interpret them later in full scope.

Another objective of those exercises is practical learning of the manoeuvring qualities of contemporary ships. Therefore, students perform personally a cycle of manoeuvring tests, in accordance with the IMO requirements, on a selected model from the Ship Handling Centre fleet on Slim lake. During the manoeuvres the model motion trajectory and other characteristic values are currently recorded. Then students analyse the results and compare them with the IMO manoeuvring standards. One course comprises approximately 60 teaching hours (40 hours of lectures and 20 hours of laboratory work).

In the years 1998 to 2005, the student scientific camps in Ilawa received 203 students, including 45 students from foreign universities, mainly from DTU Lyngby, TU Berlin and TH Bremen. Details are given in Table 1.



Fig. 2. Hydrofoil model during tests

In 2002 Rector of the Gdansk University of Technology, prof. J. Rachoń, put forward an idea that each student of our University should have a yachtsman certificate, which is to underline the maritime character of the University. The sailing courses were to be organized in the Ilawa Centre. The „UniSail” programme was started to put the idea into practice. The hotel facilities needed extension and the former hovercraft hangar H1 was converted into two four-bed dormitories and a lecture and recreation room. Also a small kitchen was arranged there. The former measurement equipment store was transformed into living compartments for six persons. Today, 22 persons may be lodged in two camping huts and in the above mentioned additional compartments. After all those extensions of the Centre hotel facilities, altogether 34 beds are available.

The Centre was prepared in 2003 for the sailing courses. However, the courses started in 2004 and 60 students were trained in that year. In 2004/2005 two Micro Polo type yachts were built within the „UniSail” programme for the sailing courses. In 2005, in four courses some 70 students were trained for the lowest yachtsman rank. This year four training courses are planned, organized by the Gdansk University of Technology Yachting Section of the Academic Sports Association (AZS).

The Centre is partly financed from its own activity. The network of yacht mooring jetties has been developed in recent years and now up to 25 bigger yachts can be moored there. The users pay for stay, hauling ashore and winter harbouring and considerable sums of money support the Centre budget. Worth mentioning here is the contribution of Mr. S. Urbański, who was personally involved in the development of jetties in the Centre in Ilawa.

Finally, I would like to underline the uniqueness of our Centre. Nowhere in Europe (and, I presume, in the world) are there such student training facilities available. This has been confirmed by numerous very positive opinions from the Shipbuilding Faculties which sent their students to those training camps. This is also a place and opportunity of cooperation between Polish and foreign students, which may prove fruitful and profitable in the future.

Year	1998	1999	2000	2001	2002	2003	2004	2005
Number of camps	2	3	4	4	4	4	3	3
Number of participants	16	20	32	32	32	31	23	17
Foreign participants	-	-	5	7	6	8	7	12

Table 1 This year (2006) four camps are planned with many foreign students participating.