

Model Airplane Flight at it's Highest Level

Before anyone would be objecting of the title, I hasten to define, that the expression does not designate the quality but the location. Certainly, those who are touched by the enterprise to be introduced in the following, are (yet) far from the level of technical expertise that is required for competing at the highest level, however, even beginners are found among them. The highest level in this case refers to: the highest level of education. That specific location is the University of Obuda Banki Donat Mechanical – and Safety Technology Engineering Department, formerly the Technical College of Budapest, where since 2010 – to the best of our knowledge in Hungary (perhaps even in Europe) it is first - that the curriculum of airplane modeling is introduced.

But how did the boot get on the table?

The expression of airplane modeling conjures up the image, in the mind of the general public, of some bright faced children running after their little models, and in some cases – with some level of understanding – view this as the hobbies of some grown men who have too much free time on their hands; and only the dedicated few claim that it is a sport, competitive; and moreover if it were to be judged by the



olympic standards, it would be realized that airplane modeling, perhaps, is one of our most accomplished sports.

More then sport

For some it is even more then sport. Those who tried modeling realized the pleasure of creating, the event of the flight, the requirement of raising performance and the success of implementation, for this person it quickly becomes an obsession – if I may use a macro economics analogy: modeling becomes a primary event int the daily activities. Modeling is, all at once, knowledge of materials (the latest of hi-tech); knowledge of manufacturing technology (hi-tech as well), after all the models have to be assembled from those modern materials; meteorology, the models have to be able to overcome all types of weather conditions; then skills, physical training, dedication and dealing

The Dean (with neck tie) did not only provide the necessities, he came along for the flight

with set backs (this is not being thought anywhere in today's environment, although this is much needed...) and last, but not least, social interaction - nowadays the families are included in the competitive events.

The do it yourself approach

It is easy to see that the above list of attributes of airplane modeling is primarily an addition to and a listing of the shortcomings of today's younger generation's acquired abilities and potentials. Recognizing that while the significance of modeling is growing, on the contrary, the practical education of the youth is diminishing and along with this their abilities as well. The



The first model is made of DEPRON (MANO) – ideal for closed book exam for a crowd



Work method: „Imagine that you are working on a submarine – there is no room to expand!“



It is great if there is some space next to a person



The two professors: Istvan Baranyi and Dr. Andras Jancso

universally acclaimed effect of the computer is the virtualization of the world of the younger generation. Today the applicants for higher technical education are, for the most part, short of basic practical experiences and abilities resulting in short changing the „do it yourself approach“ (that has questionable values in some cases).

Theory becomes understandable and unforgettable

The generation growing up exclusively in front of the computer screen is becoming, sooner or later, incapable to operate the social-technological environment that has been developed over a long period of time. There are basic connections as well. Take for example the scary, foreign expression anizotropia. The introduction of this concept as a curriculum on the computer screen and the memorization of this theory – understandably – is a very dry subject. However, it becomes understandable, even unforgettable, and applicable when the event of multidirectional breaking of a piece wood is observed and experienced, as well as the unique (azinotrop) behavior of hi-tech composit materials. There are consequences beyond the simple, common wisdom, that are extending to economical, or even environmental protection. The individual who does not understand or utilizes the mechanics of the inherited environment, produces rejects and wastes resources – without reason.

The practice of teaching theory was instituted

At one point in time (1983) airplane modeling was thought in public education. Unfortunately for a short time only. In 2010

the University of Obuda - in a pioneering mode at home (as well as in Europe) instituted the practice of teaching the theory, the building of the airplane model and mechanics of practical flight of airplane models. The course titled Aviatika is a three year curriculum leading the student to a comprehensive understanding of the science. During the on hand education the student is getting a first hand overview, from the construction of a paper model to the electrical sailplane model, of the progression from the theoretical to the practical. By the end of the curriculum the student will progress to using the materials and parts in the airplane models that are being used today in the hi-tech industry.

Described as technical seminar

It is noteworthy that there is a much greater interest toward practical work by the student generation, initially described as grown up in front of the computer screen, than we assumed at the beginning. We sent the information regarding the airplane modeling course to apprimately a thousand students – initially described as a technical seminar. The announcement was a resounding success: resulted in about a hundred responses. The school could not accomodate this many applicants, we had to screen the applicants and reduced the starting class size to 43. Past experience indicated that this was an acceptable class size, based past experiences that about 25 percent will not show for the first hour and half of the remainder will be lost to attrition. Here the past experience turned out to be misleading, this is not how it happened. True, some did not show. Three. And there was attrition as well. But the class size never dropped below 25 even when some were recorded absent.



The small F1Q model is finished – we are testing the operation of the clock

First flight in minus 11 degrees

The enthusiasm – as the faculty reasoned – has to be recognized. The decision was that the second half of the course will be accredited with 3 credit points. The expanded and upgraded course dictated a smaller class size. This is how the Aviatika II. was started in the fall with 14 headcount. (Perhaps it is worth invoking some statistics: there was not an hour with less than 13 headcount and 13 received accreditation). The completed model – which qualifies as an F1Q airplane model – is attended to by the students even after hours. The first flight was conducted on December 27, in

minus 11 degrees temperature and ankle deep snow and according to the traditions of model airplane enthusiasts – 10 of the 14 students showed up, some even brought their girl friends, thus it is self explanatory that airplane modeling, not in the least, is a family event as well.

From history of airplane modeling to composite systems

Aviatika III. will start in the spring semester. Simultaneously the next Aviatika I. The later is based on the true and tried Sziriusz balsa model, and the former is based on a more sophisticated FH1 model as practical hands on requirements. The theoretical contents of the first two courses are the flight and history of airplane modeling; the laws of physics of flight of bodies heavier than air; the

balance of glider and powered flights; the stability and steering of the airplane; the structural elements of the airplane and their functions and constructions; materials and technology of the airplane manufacturing and airplane modeling; hi-tech materials and composite systems; natural influencing elements of flight, geographical and weather; flying the airplane model, rules of competition and the use of the airplane models in the economy. The contents of the third semester highlights the theories and practices that are coming into utilization, along with hi-tech materials.



The inside of the fuselage of the small F1Q



The last mutual review before grading

There should be no misunderstanding! We are not educating airplanemodelers, instead airplane-maintenance engineers, in cooperation with Lufthansa, partially within the parameters of the German language airplane-maintenance specialized mechanical engineering program. Perhaps, a little different then it is happening elsewhere.



Low budget – the materials and the instruments that are required for construction and flight of the models are provided by the school – and for the time being this pioneering enterprise of the university is limited in scope. We hope that we can make a contribution so that, the graduates of the Banki, will have received and are supported by a more effective and practical education, and that this education will be usable to gaining employment in the airline industry (if not, then anywhere in the arena of technical services). And in the future, the warm feeling we would experience in our hearts, would not be only because seeing the youngsters running after their airplane models.



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