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Author: Mrs. Iryna Fedorenko
The National Aerospace Educational Centre of Youth, Ukraine, firena@ua.fm

Mr. Oleksii Kulyk
The National Aerospace Educational Centre of Youth, Ukraine, alvk@meta.ua
Mr. Dmytro Faizullin
National Aerospace educational center of Youth named after A.M. Makarov, Japan,
Faizullin.Dmytro@mail.ru

UKRAINIAN SCIENTIFIC-TECHNICAL SCHOOLS IN ROCKET AND SPACE ENGINEERING

Abstract

In 2014 the famous Yuzhnoye State Design Office is celebrating its 60th anniversary. The anniversary is always a reason for summing-up and analysis of work, and evaluating prospects of development.

One of fundamental results of Yuzhnoye SDO activity is creation of scientific, scientific-technical and scientific-designing schools in Ukraine. Exactly these schools formed by scientific and technical communities with a common purpose and mission are capable of keeping and developing the scientific methodology and traditions. This is the key to their long-term existence and effective work of scientific teams in the definite areas.

In this regard, rocket-and-space industry of Ukraine successfully functioning for more than 60 years is of great interest. This branch of industry dates back to early 1950-ies of the XX century. Its creation was dictated by the necessity to strengthen the defense capacity of the USSR. For the above purposes, rocket and space center was founded in Dnipropetrovsk in 1950-ies. It was the origin of a number of scientific and technical schools: of practical rocket science, rocket propulsion engineering, strength problems, missile flight theory. The Dnipropetrovsk center gave the big boost to development of instrument engineering with the result that the rocket and space instrument-making scientific-technical school was created. All those schools were formed owing to hard task-oriented work of huge teams and specialized subdivisions thereof. Work of the above four teams resulted in four generations of strategic missiles (the "Satan" missile among them), four types of launch vehicles for space objects' launching (including so far unsurpassed Zenith launch vehicle, the basis of Sea Launch International Project), and dozens of types of space vehicles for military and commercial applications. From the standpoint of public utility, results of activities of members of the team of Ukrainian rocket-and-space center should be briefly formulated as follows: they created the efficient nuclear-rocket shield of the country ensuring long-lasting peace on our planet. Therefore, the fruitful work of Ukrainian rocket scientists is an object of research of scientific-technical schools' formation and development.

The paper analyzes the history of five Ukrainian scientific-technical schools; shows their structure, interaction of links (production-research, academic, educational, and coordinating links), describes the main achievements of each school imparting high international prestige to them. Continuously improving image of Ukrainian schools ensures their competitiveness and importance in the global space community.