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Sources of Development of Aviation bases in Ukraine: 1xx-Xxc. Personalities and Memorable Places

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Summary- The article deals with the problem of determination, maintenance and inventor activity of world aviation developers. They were born in Ukraine, as real cradle of aviation specialists having trained thousands of experts, which have been working in Ukraine and in almost 90 countries over the world. Planes and gliders, developed in Ukraine set *world* records.

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I. Introduction

Although Ukrainehas a long difficult history of existence though historical way and everyday problems it is the country that develops and produces aircraft and space technology, as well as preparing qualified professionals for the world aviation. Ukraine always tried to support and carry about its sons, especially those who wished to lift humanity by the wing, which makes us proud.

One of the Ukrainian ingenious philosopher Volodymyr Verna sky (1843–1945),considereda person as the high value of the system evolution of the Universe, wrote in the main scientific essay of his life "Scientific thought as a planetary phenomenon" (1943): "We can see as a permanent the same discovery the same idea again emerging in different parts of the globe, in different ages, without any possibility to take over". The main goal of this short assay was to test this opinion.

Looking at the map of Ukraine help us to find the marked places of birth and creative activity of the famous aviation figuresboth theoretic and practices, namely, the first aviators, engineers and pilots, creators of aircraft for flying to both the Earth atmosphere and space. There is a large number and dispersion of the places of the coryphaeus, founders, and leaders of aviation in Ukraine. They arecities, towns and villages, namely: Kyiv, Zhytomyr, Poltava, Kharkiv, Odessa, Feodosia, Yalta, Voronovytshi, Chervone and others.The famous aviators of the XIX–XX centuries such as O. Mozhaiskiy, I. Sikorskiy, P. Nesterov, F. Tereshchenko, S. Utochkin, O. Franko, K. Artseulov, S. Korolov, O. Antonov and others were born and worked in Ukraine.

Studying the ways of their life as the developers of world aviation, we can mark their close relationship with the native people, culture, and high level of civilization in Ukraine, which corresponded at the same time with simultaneous efforts of humanity in the implementation of the global industrial revolution.

Alexander Mozhaiskiy(1825–1890) is the descendant of the Russian Navy Admiral family after 35-years experience of the marine life circus. When Mozhaiskiy was 40 years old, he began to work for the dream of all his life. It was to make the aircraft heavier than air. During all the years of service in Navy he perfected his project, which was planned in 1876.At the same time in France, the construction of vapour-planes was worked out by Du Temple, Kliment Ader and Samuel Henson. In October 1890, when Ader'svapour-plane took off, it was titled as the beginning of aviation era. We could read in the monograph by N.V.Spitsyn "Ballooning in 100 years" (1884) following opinion: "The aeronautic shell created by Mozhaiskyis one of the first in the world that was build in real size and lifted from the land with person on board". This famous event took place at the Mozhaisky' sestate in Voronovytsi (Podillya). Nowadays there is the Mozhaisky's estate, the park, the palace with 45 rooms (2500 m2). The paintings drawn by Alexander, Mozhaisky were alsokept. The most valuable monument of culture are two airplanewagon shop where Mozhaisky were developing kites, which were using for own flying and later he developed the aeronautic shell with steam engine. In Voronovytsi Mozhaiskylived and worked for eight years. He carefully managed his estate, which belonged teenager, who was his nephew. According to the rights of inheritance Mozhaisky was his guardian. He had never sold or hypothecated this estate any way, when he needed money to build a "flying vapour-train" when he sold all own property and sold the marriage ring and even the officer uniform. The genius of Mozhaisky, as leader of aeronautics is that before him all inventors were using natural ornithological analogues, and Mozhaisky used

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another way of flying mechanical devices development. Our generation, which the independence of Ukraine has allowed to review and evaluate the aristocratic families sons' contribution and all the national elite to the world aviation, must reconstruct the Mozhayskiys' estate.

The U.S.A. president still is flying by helicopter, developed by the resident of Ukraine inhabitant of Kyiv IhorIvanovych Sikorskyi (1889–1972). He was born in a large family of a doctor and a noblewoman on the corner of Ivan Franko and Yaroslaviv Val streets. He made his first helicopter at the age of twelve years old in family estate, in the workshops, in the park. Ihor Sikorskiy had gotten the encyclopedic education; he could virtuously play the piano and was fond of theater and visual arts that have played a fateful role in his life and work. Sikorskiy had leaved Petersburg Cadet Corps.

When he was twenty he visited Paris and could work with Louis Blerio to create a flying machine and flew over the La Manche in June 1909. In 1911 he returned to Russia and got a diploma of pilot. He developed giant airplanes "Vityaz", "Ilya Muromets", and flew by them. It was settinga world speed record when he flew from St. Petersburg to Kyiv. He made PR flights and promoted aviation. In 1912Sikorskiy's sister became the first woman in the world who flew in the sky. He had gotten the prizes of the military aircraft competitions. All Kyiv residents admired him. The First World War and the Revolution began. In February 1918 Ihor Sikorskiy flew from Arkhangelsk to London and Paris and later in March, with a small amount of money, he immigrated to the United States. His fate leaded him,as a music fan, to visit the concert of Sergei Rachmaninoff. The Sergei Rachmaninoff made a contribution to the restructuring of roost into air workshop, but also allowed to give his name as a brand "Rachmaninoff Aero Engineering Corporation". Superior intelligence, kindness, which was laid in childhood and allowed Ihor to become not only the president of a successful company, but also to rally around himself the minded people. He was married and had four sons. 15 types of aircraft were developed by the Sikorskiy's company till 1939. That yearhe returned to his Kyiv childhood dream, to develop helicopters "Vought – Sikorsky". Nowadays the civil and military helicopters with single screw and automatic bias circuit are flying all around the world. Ihor's descendants come to Kyiv and visit National Aviation University, to his parents' homestead, where the blind childhood home of our famous countryman looks at them by walled windows. The wagon house in the yard of Yaroslav's Val street number 15 needs our protection.

Ukrainian land hascherished in its cradlea lot of talented, multi-faceted genius. There are a lot of extraordinary things, and mysteries in the life of this man, so it is difficult to open even hundredth part of his achievements and sufferings in this brief essay. His name was Alexander Shamray, but he was hidden by pseudonym "Yuri Kondratyuk" andspenthis life in exile. His name has written by golden letters in the fame hall of the space museum in Alamahordi and on one of the Moon side there ishis name too. His mother was the teacher of Kyiv-Pechersk school. She was born in the family of Von Schlippen bach, her name was Ludmila Shamray. Because of the Bolshevik repression, as the royal army officer, he should get the pseudonym Yuri Kondratyuk. In 1916 he graduated gymnasium with a silver medal in Poltava and entered to the Petersburg University. And in 1918 hebe came an officer of the Russian army, then as white officer was forced to change name and surname. In 1925–26 Kondratyuk was working on Krylovskiy elevator. And he wrote the book "The conquest of interplanetary space", which became the main scientific work of his life and direction for the space exploration in the world. The author developed the theory of intermediate space stations (rocket bases) in the form of satellites, the theory of these issues. Y. Kondratyuk' scalculations were used by Americans in the development of theMoon improving programs. Y. Kondratyu kregardless of K. Tsiolkovskiy developed problems of aerodynamics, put the basic equation of rocket flight, presented his theory of multistage rockets, and the most importantly offered to provide rockets of solar fuel. During global crisis in 1927 in Novosibirsk the Ukrainian genius built the famous elevator "Mastodon", its capacity 13 tons, and it was from wood without any nails.

The genius vision has clearly been seen in the ability to think strategically, globally, foresee future energy crisis of XXI century and the need to switch on to alternative energy sources. Together with P. Horchakov and M. Nikitin he designed the powerful wind farm to the Crimea. He volunteered to the front, and was killed in 1942. Only now humanity comprehends, understands and uses his ideas.

Aerofoil "Poltava" highly appreciated the role of his friend: Poltava Space Museum is named by his surname; his monument is installed in Komsomolsk. The famous aviators' cohort included the name of pilot from Odessa Sergey Isaevich Utochkin (1876–1916). The first aviator from Odessa, versatile athlete in the early twentieth century was the perfect pilot, who made over 150 flights to 70 cities over the country. He was born in Odessa in the family of a merchant. His childhood was harsh, teenager was full of enthusiasm in going for different kinds of sports, especially bicycle bike, and ocean yacht racing. He attached to his car the wings and tried to fly. Sergei Utochkin and Josef J. Drevnyt sky made their first flight on the balloon in 1901, over Odessa. In 1902Sergei Utochkin began to build his private plane. He flew to Egypt on balloon. He left Egypt for Paris to learn piloting by Wright and Blerio and returned to his native Odessa with a desire to build an airplane.

In the Russian Empire the first pilot, who took off in the sky, was M. Yefimov. He flew on the French device.In March 1910 Sergei Utochkin became the next one. By the end of the year the pilots group consisted of 30 people. Utochkin became tester pilot, set the records, received prizes and awards, his flights were national public holidays. The life of the pilot ended tragically in 1916 in a psychiatric hospital. He was buried in St. Petersburg. His merit is popularization of the piloting art, he aroused among young people interest to aviation, inspiring to transform the military aviation into civil one. The monument with inscription «Famousand favourite personfrom Odessa, balloonist and dreamer Sergei Utochkin" stayedin the Derybasivska Street on the steps of his house. Streets and squares were namedby his name. Kyiv was rightly considered a center of aviation in the late nineteenth and early twentieth century's. There was Aeronautics Company, which was headed by student of M. Zhukov sky, professor of KPI M. Delaunay.

E.G. Adler, F. Anero, D. Grygorovych, K. Kalinin, O. Karpeka, three brothers Kasyanenko, O. Kudashev, P. Nesterov, I. Sikorsky, F. Tereshchenko began their pilot activities in the city on the Dnieper.

At Pechers'k house number 5 was remained in the Moscows' ka street. The family of the famous pilot Petro Mykolayovych Nesterov (1887–1914) lived in this house, the memorial plaque is posted on one of the house's wall. The elite of society took part in aviation, literature, theater and music discussions. Participants were heard from the gramophone. In this house of Kyiv Syretsky airport Petro Nesterov with G.M. Neklyudov worked to develope of their airplane without a vertical plumage. Petro Nesterov flew by the airplane "Newport – IV» and carried out his first "loop" well-known in the world. And in 1914 he together with his mechanic S. Rudenko flew to Odessa, Sevastopol, Moscow, St. Petersburg. Kyiv Governor presented him the golden token with which Mr. Nesterov did not part until his death. And he met his death in the Western Ukraine in 1914, during I World War near the village of Vola-Volots' ka, he was shoot down with battering ram "back again" the plane of Austrian baron-pilot. There were not parachutes at that time and as result four pilots were dead. He was posthumously awarded the Order of St. George of IV degree. His children Margaret and Petro grew up in Kyiv. His remains were moved from Askoldova Mohyla to the Lukianivka cemetery in 1939, where tombstone was found on the money of O. K. Antonov. F. Tereshchenko from the family of famous oligarchs.

F. Tereshchenko came from Hlukhov on Slobozhanshchyna, was the member of the Kyiv Society of Aeronautics, which was headed by Petro Nesterov. He studied at KPI,the Mechanical Faculty and admired the construction of aircraft. In 1909 the family acquired the estate in Chervone village on Podill'a. Tsar Nicholas II visited this estate to learn the building experience of the vehicles for aeronautics in the workshops of Tereshchenko for military purposes. Here in the heart of Ukraine in 1916–1917 aircraft series 1.7 "Tereshchenko" were constructed and flown. Fedir Tereshchenko has received a number of global patents, personally led the aircraft. Tillnowa days the palace, the park, the avia workshops are preserved in Chervone. And strange it seems that these monuments of Ukrainian culture moved to the Moscow Patriarchate and nunnery was developed in the estate.

The pilot Kostyantyn Kostyantynovych Artseulov (1891–1980) was the member of the Kyiv Aeronautics Society. He was born in Yalta in the family of the engineer-shipbuilder; he studied drawing; graduated St. Petersburg Marine Corps, Kacza aviation military school; received the military pilot title. In the summer 1916 at Kacza airport, for the first time the" mad warrant officer" performed a flight of prohibited dangerous forms of "spin"three times in a row.He became a glider pilot, tested aircraft, and was the first pilot of civil aircraft in aerial photography from 1927 to 1933 under the Soviet government. At the same time, this multi-faceted personality attended so glorious high art such as book graphics, and he was a member of the Artists' Union. He survived the exile and died in 1980, he was 90 years old.

Oleh Kostyantynovych Antonov (1906–1984) was born in Troitsy village in Podilskyi district in the family of thebuilding engineer. He made his first glider in the children's club and took part in Koktebel gliding competitions. Where he received high awards. Hewas 24 years old, when he headed the design bureau of Tushynskiy airport. Then Oleg Antonov headed the Yakovlev constructor bureau Novosibirsk branch. In 1952 he started to work first in GCOCB-473, thenat Kyiv mechanical factory, which was transformed Constructor Bureau named by O.K. Antonova after his death in 1984. Gliders, multi-transport and passenger planes, including AN-2, AN-22 Antaeus, AN-122 Ruslan were developed with the guidance of Antonov. Some of them constructs and operates today. Oleh Antonov's high merit were honored by many awards. Over 30 years Oleh Antonov lived in Kyiv, but memorial places must be more significant and have more architectural expression; in the Museum of NAU students and visitors should be able to see his personal things, paintings, sketches and drawings. As long the heirs have been living this must be done!

Serhiy Pavlovych Korolov (1906–1966) started his life in same year that Antonov in the Zhytomyr region in the family of the teachers. In the age of three years old he lived in Nizhyn, and in 1914 the family moved to Kyiv. He received two diplomas: one in Germany and one at the KPI, as well as diploma at the Odessa professional school. When Serhiy Korolov was 17 years old hereceived a diploma for the project of glider K5. In

1926 Serhiy Korolov entered and later successfully finished the aeromechanical faculty of Bauman Institute (Moscow).He was the student of A. Tupol'ev. Korolov was hard working in the business aircraft building. In1931, he started to work with F. Tsander. In 1937 he became the head of the rocket devices office… and then was sent goto exile in Kolyma. He as the constructor had gone from making of glider aircraft to missiles. He was a world-class organizer. From1946 he was appointed chief designer in NDI KB (Ballistic Missile Institute).

In October, 1957 humanity applauded to the message about the withdrawal to the orbit ofthe Earth artificial satellite by this CB, and in 1961 about Haharin's flight. Korolov was still quite young when hedied in 1966 in Moscow.

II. Conclusion

Ukraine is proud of itsson, and his merits are marked by descendants: he was buried in the Kremlin walls, his monuments adorn cities, there is his museum in Zhytomyr, many streets and schools were named by his surname. This short essay does not allow adequately and fully describe the depth, talent, global significance, historical heritage and value of Ukrainian world aviation leadersand most accurate expression was phrase from academic Volodymyr Vernadsky's diary: «You , howas for me Ukraine is very native and the Ukrainian revival is as deeply as it gets to my national and own world view... I believe in the future. » (1945).

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