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**[SUMMARY]**

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One of these fields was aviation. The Russians have been interested in flying for several centuries, and this interest culminated in Lunin's designing the first helicopter, Mendeleev's valuable contributions to the theory of flight, Mozhayski's first practical and operational heavier than air machine and many more.

Another important contributor to the Soviet field of aviation is S. A. Chaplygin who studied under Zhukovskiy and assisted him in developing the theory of the wing.

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Lenin and Stalin realized the possibilities of air power and so, during the early days of the Republic, they organized the Council for Labor and Defense (STO) and assigned to it the task of planning the restoration and development of the aviation industry.

The early days were hectic indeed. New factories had to be built, machinery had to be supplied to equip the factories, but above all there was the need for a large army of trained operating personnel. Zhukovskiy almost singlehandedly managed to fill the latter need by organizing the Moscow Aviation Lecture Institute, and late in 1919 graduated his first class of qualified aircraft workers. In the spring of 1922 the Academy of the Air Fleet was organized and was named in honor of the man most responsible for today's Soviet prominence in the field of aviation, N. Ye. Zhukovskiy.

With cessation of civil war, the aviation industry went into high gear. The Academy of the Air Fleet was ready to graduate its first class of Soviet aviation engineers, construction work on the new laboratory for TsAGI (Central Aero-Hydrodynamic Institute) was almost completed, and the Construction Bureau under the guidance of Grigorovich and Polikarpov, and another under the leadership of Tupolev, were developing new and original plane designs.

In 1922 a flying fad gripped the peoples of the Soviet Union. The light plane industry made great strides. Such designers as Il'yushin, Yakovlev, Bolkhovitinov, Antonov, Gribovskiy got their start at this time. Later on they were to make important contributions to military aviation.

Many different types of planes were built from 1925 to 1930. Photographs show the I-5 fighter, developed by Grigorovich and Polikarpov, the TB-3 bomber, developed by Tupolev and which served as the model for the US Boeing bomber, the PO-2 (originally classed the U-2) trainer, developed by Polikarpov in 1927 and still being utilized. [Not reproduced.]

Since 1930 aviation has come a long way. The First Five-Year Plan called for an expanded aircraft production program both for commercial as well as military requirements. The technician who designed a plane was sure that it would fly, as every detail of the design was checked and double-checked to insure perfect operation.

Many events intervened between the period from the end of the First Five-Year Plan to the beginning of World War II. Polikarpov designed the I-16 fighter, which had incorporated into its construction many radical new features. Tupolev and Arkhangel'skiy developed the SB bomber. These two planes were followed by many more: the TsAGI-25, a plane with wing tanks and a potential radius of 15,000 kilometers; the I-153 fighter developed by Polikarpov; the DB-3f medium bomber developed by Il'yushin and the aerial giant the "Maksim Gorkiy" developed by Petlyakov.

Stalin had remarkable insight into aviation requirements, and even Maj Gen Stefanovskiy, Air Force, remarked that, but for the foresight of Stalin, the Yak-1 fighter would never have been developed. It was Stalin who urged that greater emphasis be placed on production of military aircraft the moment that hostilities began in Western Europe. As a result, Soviet air power was greatly strengthened by designs submitted by Mikoyan, Gurevich, Lavochkina, Gorbunov, Gudkov, Yakovlev, Petlyakov, and Il'yushin when the Fascists invaded the Soviet homeland. (Photographs of the MIG-3 fighter, IAGG-3 fighter, Yak-1 fighter and the Il-2 pursuit and ground troops support plane. [Not reproduced.] )

At present, the Soviet Aircraft Industry is being guided by Tsolkovskiy's words, "After the era of the propeller-driven plane will come the era of the jet-powered plane." Chaplygin, as early as 1902, stated the basic theories of jet propulsion and his work has been furthered by able men like Khristianovich, Keldysh, Pokrasov and others.

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Much has yet to be done. However, if we take into account the wonderful achievements of the past 30 years, there can be no doubt that all new problems will be rapidly solved.

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