

HISTORY OF THE AIR FORCE OF THE CZECH REPUBLIC AND ITS STATUS IN THE 21ST CENTURY

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Abstract

Aircraft producers of the Czech Republic are well-known all over the world. The history of Czech aircraft production started at the end of the 19th century and it has continued into the present. During this time the construction of the aircraft and their production has been changed a lot; however nowadays there is a big question about the future cooperation between the Czech army and Czech aircraft producers and what is the future of the Czech Air Force.

Key words: aircraft producer, development of the Czech aircrafts, types of the aircrafts

History of the military aviation

The story of military aviation began immediately with the creation of Czechoslovakia. Several Czechoslovakian aircraft were confiscated after the collapse of the Austria-Hungary. This seizure of these aircrafts was not without its conflicts with the defeated troops of the Triple Alliance, mostly Germans and Austrians, who remained in the country after losing to the countries of the victorious powers.

At the beginning of the Air Force Czechoslovak volunteers and soldiers, who returned back to the territory of the Czechoslovak Republic, ensured the military's survival. But there were not an organizational structure and infrastructure in that

time. At the beginning of the Czech Republic the Air Force was involved in the fighting with the Poland, that claimed the area of the Těšínsko, and Hungary, that claimed the area of the southern part of Slovakia. The number and the type of aircrafts were dissimilar. The most common type of aircraft was the Brandenburg, which was used only for observation and touring flights.

The main position in the first part of the 20th century was taken by the France that helped the Czechoslovakian Air Force with reorganization and the formation. So this is the reason why was the Czechoslovak Air Force developed according the French model. Soon after France delivered 115 aircrafts for free. These aircrafts were already used, machines from a surplus of the supplies from the end of the First World War, especially SPAD fighter planes shows on *Figure 1-1* and the Salmson biplane long range reconnaissance aircraft shown on *Figure 1-2*.



Figure 1-1. SPAD fighter



Figure 1-2. Salmson 2A2

The other part of the delivered aircraft was represented by the surplus of the defeated armies of the Triple Alliance. These countries had to abandon their Air Force.

In February 1921 the Czechoslovakian Air Force had 253 aircraft in service. Of those machines only 7 were fighting-fit and 127 partially fighting-fit.

Local aircraft producers concentrated on the development of the Czechoslovak Air Force. At the beginning of their production producers focused on the foreign market and then they focused on the development of their own design of the aircraft. In the 20's there were mostly constructions designed by Czechoslovakian engineers Smolík, Beneš and Hajn. The quality of Czechoslovakian pilots was really at a high level and their knowledge and skills were demonstrated mainly at foreign exhibitions. Particularly acrobatic pilot Staff Captain Malkovsky was one of the best pilots of the Avia BH-21 Czechoslovakian aircraft of the late 1920s. That time was the beginning of the Czech aerobatics.

In the following years, domestic production dominated over foreign production of aircraft construction. In the 20's to 30's the Air Force was gradually widened to 6 air regiments. However, the most numerous types of the aircraft were outdated B-534 biplanes (shown in *Figure 1-3*) that were produced during the period between the First and Second World War and that was designed by the Czechoslovak constructor F. Novotný.

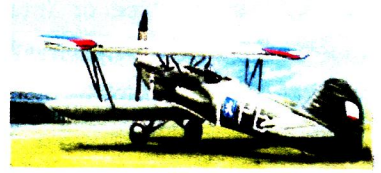


Figure 1-3. B-534

In the second part of the 30's it became obvious that the peaceful situation was threatened by Nazi Germany. The number of aircraft of the Czechoslovak Air Force was able to be equivalent with the Germany Air Force. But in that time Fascists introduced into service aircraft of the type BF-109 shown on *Figure 1-4*, which was unequalled by the B-534 biplane. At the same time Czechoslovakian engineers were inventing the B-35 aircraft, but it was still in the productive phase of the prototype.



Figure 1-4. BF-109

In March 1938, at the end of the free democratic Czechoslovakia, the Air Force owned 1630 aircraft of aviation technology with the largest representation being of the type B-534.

The period of huge development started After the World War II and with the help of the Soviet Union. In that time when all resolutions were made by politicians, Czechoslovakian engineers were on the top of the avionic branch with the jet training aircraft L-29 Dolphin shown on *Figure 1-5*, which was made by engineers Z. Rublič and K. Tomáš.



Figure 1-5. L-29 Dolphin

The first flight of the prototype of this aircraft was on 5 April 1959. It was the first aircraft with the turbojet engine which was constructed and made by the Czechoslovak producer AERO Vodochody. This type of the aircraft was the best made product in the competition environment, where states of the Warsaw Pact took part. The civil version of this aircraft is still flying up to this day. The fact that 3500 examples of this aircraft were produced is the mirror of its high quality.

The next linked type of aircraft L-39 Albatros, shown in *Figure 1-6*, which was made by constructor Vlček, first took off in the year 1968. This type of aircraft was very progressive in comparison with L-29. The biggest innovation and progress was that in the construction of the L-39 was used the soviet engine from the airplane JAK-40.



Figure 1-6. L-39 Albatros

It was a AI-25TL by-pass turbojet engine. This aircraft was high-qualified and significantly states of the Warsaw Pact used it as a training and combat aircraft. The production of this type continued until 1990´s.

At this time Czechoslovak engineers were some of the best in the avionic branch. Czechoslovakian industry produced and constructed engines, whole airframes and systems. This production was comparable with the production in either the USA, France, Great Britain, or USSR. These states also developed ejection system, which could safely remove a pilot during extraordinary situations and flight regime from the aircraft.

Different versions followed (C, ZO, ZA, V, MS) and 60 L-59 aircrafts were sold to states of north Africa in the 1990´s. 2800 L-39 aircraft were made.

In the second part of the 1990´s the production of this type was reduced. AERO Vodochody responded to this situation by the innovation of the L-39/59 to aircraft L-159A shown in *Figure 1-7*. There were produced only 72 L-159 aircrafts. Alas, this low production did not cover the cost for development.



Figure 1-7. L-159 Alca

The other important types of aircraft are the series of the Zlín and L-410. Even after the dissolution of Czechoslovakia, Czech industry continued to develop.

Current status of the Czech Air Force

The biggest problem of these days is noncooperation with the states of the North Atlantic Treaty Organisation (NATO) that could help with the development of the new technology and aircraft. The development of the aircraft was financed by the aircraft factory or in another case by the Ministry of Defence. Nowadays, it is impossible to develop a modern structure of aircraft and modern Air Force without the deeper cooperation of the world powers. Aero Vodochody is the main producer of aircraft and the further development without the cooperation of the other states is improbable.

The Air Force has been deeply under financed. In this sector, we are faced with a lack of suitable spare parts, because there are not available new ones and old ones in warehouses are have been used. It is also strange that a democratic army draws from stocks that were made by the former regime.

The tradition of the education and upbringing in schools has been continuously declining. In the Aero Vodochody vocational school less and less professionals have been educated. This situation belongs with the gradual attenuation of production and the decreasing development of aviation experts. These professionals are replaced by computer specialists. The tradition of the aviation industry and transmission of the invaluable experience is the most important. The Ministry of Defence responded to the lack of aviation specialists by the reduction of the aviation branches and thereby impedes the development of prospective aviation specialists. The Air Service Engineering of the Czech Army is at a very high technical level, which is sometimes superior to the technical maintenance of the NATO states. In these states one person is usually doing one limited operation and does not know the whole process of the work. We can see it in international exercises and air shows, when around foreign aircrafts moves a large number of people. In the Czech Army these operations are carried out by a minimum number of employees.

The Concept of the Air Force points to the fact that the constant uncertainty and lack of concept resorts eventually in an outflow of experienced human resources. A decrease of allocation means that the raid hours of each aircraft is also decreased.

There are also new threats from states that profess Islam, which directly threatens states recognizing democratic principles. Although, for the Czech Republic there is no primary threat from these countries, the Czech Republic is none-the-less a member of NATO and it is obligated to give assistance to other states in the case of a threat. Here we have the fundamental problem that we are still dependent on a third party in the area of transportation, because the Czech Republic has not secured the global transport of the forces and resources.

The Czech Republic almost makes the same mistakes as perhaps did democratic regimes in the 1930^s. At that time funds for research and construction of the Air Force were being continuously reduced. Then there was a rapid occupation of almost the whole of Europe. However, that time Czech Republic owned a huge Air Force.

Currently Czech Republic owns 70 L-159 ALCA aircraft, including those that are stored in Aero Vodochody storage, it is about 48 aircrafts, 14 JAS-39 GRIPEN aircrafts that are not owned by the Czech Republic, and 4 airworthy L-39 ALBATROS ZA and a smaller number of helicopters: Mi-24, Mi-171 etc. Is it possible to compare this number with the last era of aviation?

Conclusion

There is still a question: "What can we expect from the future?" The future of the Czech Air Forces is uncertain, aircraft leasing agreements are about to expire and the question of whether modern supersonic aircraft will fly in the Czech sky is really unpredictable. Aircraft such as the L-159 A and T1 have enough time to repair so their existence is guaranteed. Although, this type is based on the proven design its operational capabilities are limited, because it is a subsonic aircraft, which cannot be compared with modern supersonic aircraft. Further development of the L-39 and L-159 series is unlikely. The future operation of the Mi-24 helicopters series is uncertain as well.

It seems that the future of the Czech Air Force is similar to the future of the Baltic States, where their sovereignty is guarded by other members of NATO. We are witnesses of the slow destruction of the Czech Air Force. Maybe we can see its end or maybe can we expect a better tomorrow?

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