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### PRECONDITION OF SUSTAINABLE SECURITY: GENESIS OF THE LITHUANIAN AVIATION INSTITUTIONS

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**Abstract.** The article deals with the inter-war Lithuanian aviation in the period of 1919-1940. By using all available historical and literature resources, the author aims to analyze the inter-war aviation cooperation and perform historical analysis of aviation institutions. Having reviewed the historical development of these institutions, it can be concluded that since their establishment the main purpose has been the country's defence in case of armed attack. Military aviation has become the core of aviation. The cooperation of the aviation institutions during the Soviet occupation is not analyzed. The authors claim that processes of development of strengthening of Lithuanian aviation institutions are interrelated to sustainable security phenomenon.

**Keywords:** sustainable security; Lithuanian Armed Forces, inter-war aviation, Lithuanian Aero Club

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## 1. Introduction

Since the ancient times, all big successes and achievements in various fields were based on cooperation policy and joint coordination. All great military, scientific and social successes were achieved using shared experience and coordinated actions. Security of a country is a complex phenomenon, comprised of a set of constituents (Balkytė, Tvaronavičienė 2010; Vosylius et. al. 2013; Vasiliūnaitė 2014). Undoubtedly one of constituents is aviation, hence indepth analysis of Lithuanian aviation institutions formation allows to ground and suggest sequent further policy implications in this particular area.

The Lithuanian Armed Forces started developing after the World War I. Military aviation became an integral part of the armed forces. The Engineering Company led by Juozas Narakas was established on 30 January 1919. The company also involved an aviation squad. When the independent state of Lithuania was restored, the military air force started developing (Liekis 1999, p. 9).

The Lithuanian Aero Club (LAC) was founded on 28 April 1927. Since then, it has very closely and willingly cooperated with military aviation institutions regarding any defence issues, hosting competitions or pilot training. Military aviation representatives were considered the founders of the LAC. In case of a military attack or war, a close cooperation and coordinated plan of actions were developed within the country's defence policies. Another example of cooperation was a new branch of aviation, i.e. the Riflemen's Aviation Union. This patriotic union was founded under the 6th Anti-aircraft Protection Riflemen's Company together with the Gliding Section. The Riflemen's Aviation Union cooperated closely with military aviation institutions and LAC. The purpose of the union was to prepare parachutists and train reserve pilots.

The article starts with the analysis of the inter-war Lithuanian aviation institutions' cooperation, i.e. an overview of the inter-war Lithuanian aviation units' importance to the country's defence policy during this period. The activities of aviation authorities and aviation-related institutions (Riflemen's Aviation Union and LAC) and their support for national security and defence are investigated as well. When military functions were restored, creation and expansion of existing aviation capacity and aviation industry started.

The article deals with the initial stage of cooperation among aviation institutions as separate units. It also presents a brief overview of the Lithuanian aviation development and cooperation among institutions since 30 January 1919 when the aviation part was founded; aviation importance and discussion about the aviation authorities of those days; a comparison of institutional functions and areas of responsibilities.

**Research object:** a review of the inter-war Lithuanian aviation authorities' inter-agency cooperation.

**Research objective:** a review of the Lithuanian aviation inter-war institutions and their collaboration.

**Research tasks:**

- 1) To discuss the aviation capacities in the inter-war Lithuania;
- 2) To review the historical evolution of aviation institutions;
- 3) To investigate the reasons and means of collaboration among Lithuanian aviation bodies.

**Research methodologies:** critical review of scientific literature, historical review and retrospective methods of military aviation, analysis of case studies.

## 2. Historical Review of the Lithuanian Inter-war Aviation

Before analyzing the evolution and development of the Lithuanian aviation functions, it is important to mention that aviation as a separate means of transportation and as a new thing came into use in ancient times already. It can be illustrated by Leonardo da Vinci's projects and the following inventions: parachute by Fausto Veranzio, aircraft by Fernando Lanos and bird by George Borel. These projects evidence that a desire to fly, facilitate and expand human capabilities has existed for centuries. 'The interest in conquering space has been and still is a human desire with changing reign of the realm and limitations' (Liekis 1999, p. 9). Conquering the space has become no longer unachievable. Montgolfier brothers and Robertas Adolfas Chodasevičius showed the world the power of air balloons and started a new way of the aviation development. These inventions laid solid foundations for other instructors' fruits of creativity. The Lithuanian pioneer of rocketry Kazimieras Semenavičius described multistage rockets in his book *The Great Art of Artillery*, while the first air balloon flight was demonstrated in Lithuania in 1809 by J. Kuparentka (Liekis 1999, p. 9). It proves that Lithuania was not out of step with the aviation progress.

The author of the first Lithuanian airplane project *Žemaitis garlekys* was Aleksandras Griškevičius. An interesting fact was that Steponas Vilkaitis received his piloting license from Orville Wright. Juozas Kraucevičius was the first pilot of Lithuanian origin who became a qualified pilot after graduating in Tsarist Russia. In 1919, he started leading the Lithuanian Air Force of the restored Lithuania putting the steering wheel of the air force into reliable and experienced hands. The Lithuanian officers Jurgis Dobkevičius and Antanas Gustaitis contrib-

uted to the development of the Lithuanian Air Force and Lithuanian aircraft by their flawless service. These Lithuanians can be considered as national heroes because they proved to the world that Lithuania can create and advance the development of aviation. In 1919, Europe began developing commercial and passenger aviation, since a lot of military pilots became unemployed and there was a demand for technological development. Lithuania was still in full swing of military conflict when Europe started thinking about the development of commercial aviation. As military aviation laid the foundations for commercial aviation, there was a split in aviation followed by division of certain functions. A conclusion can be drawn that cooperation and common interests are important and inseparable. In 1921, the Lithuanian Armed Forces started delivering military mail to various places in Lithuania. It is possible to draw a conclusion that the functions of aviation and collaboration started expanding not only through military actions but also through execution of tasks during peacetime. A new route Kaliningrad–Moscow (yielding to Kaunas) was opened in 1922. Thus, a young state, the Republic of Lithuania, did not stay aside but closely cooperated with foreign countries with regard to civil aviation matters. Jurgis Dobkevičius created the first aircraft design referring to global media about aviation improvements and achievements. The analysis of pilots' notes and documents proved that countries, including Lithuania, collaborated consistently especially when engines, assemblies and individual parts were purchased as the Lithuanian industry were not producing them at the time. 'The aviation workshops in addition to routine repairs began producing aircrafts, copying existing German structures. The acquired German aero engines and other aircraft parts and devices were used, while wings, fuselages, plane tails were manufactured' (Ašmenskas 2007, p. 30).

Steponas Darius was the first pilot who mentioned the necessity for civil aviation. He knew how the USA dealt with it and had the knowledge of aero clubs in other countries. He was aware of the International Federation of Aeronautics encouraging sportive aviation activities. Other pilots also spoke about them. S. Darius' idea was backed by the pilots Antanas Gustaitis, Juozas Narakas, etc. An aero club was necessary for promoting aviation and attracting interest and people. Military aviation was not able to do it due to restrictions of military discipline, subordination and confidentiality. It is possible to state that both sides aimed to cooperate but due to the mentioned reasons functions and scope of activities were divided. Today we consider that aviation includes both fields, only activities differ.

The Lithuanian Aero Club (LAC) was established in 1927. Its tasks and functions are defined bellow, while the objectives were to prepare aviation specialists of various fields, improve their training, foster air sports and stimulate public interest in aeronautics. These objectives show that collaboration among Lithuanian aviation institutions with regard to defence issues included society's introduction to self-defence through air attacks and preparation of the club members for country's defence. It indicates that national defence policy played a great role in civil aviation. The LAC was responsible for civil aviation pilots and transport aviation pilots' training. It was also in charge of air mail deliveries and passenger air transportation. It is possible to state that functional separation among aviation authorities and close cooperation aiming at achieving best results were very important. The Honorary Chairman of the LAC President Antanas Smetona said: 'The stronger the nation's aviation, the more advanced the nation is'. Followed by the close cooperation between the Lithuanian Air Force and LAC, the anti-aircraft protection laws were adopted, the Air Service Office was established and air service line Kaunas–Palanga was opened. It suggests that these aerial structures had close cooperation ties due to which the functions and scope of activities of these institutions were determined. The foundation of the LAC encouraged active cooperation with foreign clubs and international organizations regarding aviation matters. During the general meeting of the LAC in 1935, it was decided that civil aviation pilots carry out military pilots' functions in case of war. This topic was addressed by the LAC authorities when cooperating with military aviation. It is important to emphasize that the founders of the LAC and the majority of club members were Lithuanian officers. Thus, the collaboration became closer and more effective. The military aviation supplied the LAC with planes and was engaged in pilot training.

Encouraged by the president of the LAC, the Riflemen's Aviation Detachment was established in 1936. The main reasons for establishing this union were to take better care of access by air when training parachutists and reserve pilots so that they do not lose their skills. Other objectives, i.e. fulfilling intelligence and communication tasks, emerged during the war and led to strong relationships among all three aviation institutions in the

inter-war Lithuania. All the structures linked tasks and objectives related to national defence policy and pilot training. The cooperation increased aviation pace and development in Lithuania. Another example of close cooperation between the Riflemen's Aviation Union and LAC was the fact that the Union used the LAC's aircraft hangars and entire aviation assets. Also, we should not forget the Air Scout Society was established in 1939 just before the Soviet occupation. However, the scouts had only one meeting during which a couple of young people were trained how to fly and passed the exams.

The Air Scout Society was created on the basis of the Riflemen's Aviation Union. Scouts were intended to form a branch of the Union and teach young people how to fly and attract them to aviation. The main purpose, again, was the cooperation with the military forces for the country's defence. During peacetime, the Society had to promote aviation and its traditions. The Ministry of Transport of the Republic of Lithuania was established in 1918. It was in charge of railways, navy, civil aviation, road transportation, mail and landline and had to provide all the mentioned institutions with the guidelines for their activities. The role of civil aviation increased globally during the WWI. The extended military aviation was quickly adapted for civil use. The ministries of civil aviation were in charge of civil aviation matters in many European countries. The Ministry of Transport was assigned to coordinate civil aviation in Lithuania. Initially, it was in charge of mail, landline and telegraph as the Ministry of Civil Aviation was not existent until 1936. All the aviation-related issues were coordinated by military aviation. In order to regulate air connections on an international basis, the International Convention was signed in 1919. The main principle of the Convention was the recognition of each country's airspace sovereignty; however, Lithuania neither joined nor signed it presumably because it was not ready to cooperate with other European countries in the field of civil aviation. Apparently, Lithuania did not have many expectations for civil aviation at that time; however, it would not be possible to function without it in the future. Another assumption can be made that there was a lack of international cooperation experience even though internal cooperation among aviation institutions was very close. It should be remembered that this was a relatively early stage for a young state to start life from scratch during the years of recession. The Board of Post, Telegraph and Landline started administering civil aviation in 1921 with later recognition. Civil aviation was formed in 1934 marking the beginning of rapporteur's position at the Board. Civil aviation had to become a separate institution. The Lithuanian Air Force and Ministry of Transport were closely cooperating regarding this question. It is visible that the existing aviation forces had great impact over developing new aviation authorities in Lithuania. The Ministry of Air Inspectorate was established in 1936 under the Ministry of Transport. It became the cornerstone of current civil aviation in Lithuania. In 1940, the Inspection of Air Transport was reorganized into the Directorate of Air Transport. Considerable effort was put into civil aviation and other Lithuanian authorities contributed to it. A lot of issues were resolved as a result of cooperation among the Lithuanian aviation institutions. The initial objectives of the Inspection of Air Transport were as follows: to check pilots' qualifications, to monitor technical condition of aircrafts, to organize and regulate aircraft marking and to perform the maintenance of airfields. It was not a separate aviation branch with its own fleet, structure and pilots. It was assigned to control military air force and Riflemen's Aviation Union. The Ministry of Air Transport was assigned to collaborate with other Lithuanian aviation institutions. In 1936, the Air Transport Directorate of Civil Aviation started its activities. Officer Jonas Špokevičius was appointed the first inspector of this institution. He worked closely with the Lithuanian Air Force on purchasing new fighter aircrafts from Great Britain and Czechoslovakia.

During the inter-war period the Board of Air Transport collaborated with the Riflemen's Aviation Union and the Union of Air Sports. When the aviation institutions were split into civil and military ones, the distribution of functions and operational fields were divided as well. The cooperation started in various fields, including the acquisition of aircrafts and licensing and training personnel. The Air Transport Inspectorate took care of international communication through global management and regulation, thus cooperating with foreign countries and domestic aeronautical institutions. Nevertheless, international planes landed irregularly in Lithuania due to poor condition of aerodromes and inadequate infrastructure of airfields, not because of poor cooperation. Only in 1930 the Ministry of Defence extended Kaunas airfield in collaboration with the Ministry of Transport. Kaunas became an international air connection node. The activities of the Air Transport Inspection grew stronger when the LAC started supporting them. Since the establishment of these institutions, their activities increased and inter-agency cooperation relations expanded. All the Lithuanian institutions engaged closely in

aviation areas and cooperated willingly with each other because they were united by common interests and had similar activities. Transport aviation used widely the military aerodrome in Kaunas. The airfield was divided into two parts. The northern part was designed for transport aircraft, including a hangar with a 1 kW radio station. Military officers took care of the aerodrome along with the storage and transportation of aviation airfield, hangar and land area belonging to civil aviation. The collaboration concerning not only aerial issues but also infrastructure and security division of the area was evident. Even future planning of a new civilian airfield construction was scheduled for the purpose of military use 'since those aerodromes will be publicly used and without doubt will benefit from military aviation' (Algimantas Liekis, *Science of Lithuania*. Vilnius 1999, p. 370). The military aviation chief A. Gustaitis supported the integrated aeronautical development of the state by promoting model aircraft, gliding, parachuting and sports transport aviation. He stated that these were the same aviation components that could accelerate the progress of the country and its defence-related affairs. This shows that the aviation authorities had close ties regarding various issues. The most important objectives were as follows: to defend the country's sovereignty, to develop joint activities and to distribute tasks and activities by areas. A. Gustaitis stated that institutional cooperation must be as concise as possible and the country's defence should have enough trained specialists to perform necessary tasks. 'The more young people are lit with enthusiasm, the better aviation personnel can be selected and used for defence, the higher the quality of our aviation weapons' (Liekis, 1999, p. 372).

In 1938, the Ministry of Transport ordered two passenger airplanes *Percival* from England. However, they were missing a 'pitot' tube (aircraft position in space tool) heating. This caused problems when using routes to other countries, so military support was requested once again. However, the respond was negative. 'I have the honour to request you, Dear General, if possible, to lend the Ministry 2 heated 'pitot' tubes, 4 leather fur jackets and 4 pairs of warm shoes till the Ministry purchases them' (Liekis, 1999, p. 375). After reviewing, it is possible to say that the cooperation existed not only for borrowing aviation parts or transfer issues; the inter-agency cooperation enabled the Ministry to borrow material assets or transmission issues. The Union of Air Sports was established in 1939. An officer was appointed to mentor it for closer and more responsible cooperation among the institutions. The Union of Air Sports maintained close relationship with military aviation and had big ambitions for the Union of Air Sports to take charge over the LAC and Riflemen's Aviation Union and other organizations in the future. It leads to a conclusion that when the number of aircraft structures in Lithuania increased, more attempts were made to combine them into a single system and to identify their areas of expertise. The main function of all the organizations was to defend Lithuania in case of war.

## Conclusions

Since the ancient times, all the big successes and achievements in various fields were based on cooperation policy and joint coordination success. All the great military, scientific and social successes have been achieved on the basis of the experience of others and coordinating their actions.

The article deals with the inter-war Lithuanian aviation in 1919-1940. By using all available historical and literature resources, the author aims to analyze the inter-war aviation department cooperation and perform historical analysis of aviation authorities.

Lithuanian military forces started developing after WWI and military aviation has become an integral part of the army. An engineering company has been established in the army of Lithuania on the 30<sup>th</sup> January, 1919. It was being led by Juozas Narako. There was also an aviation squad in the company. Once the independent state of Lithuania was restored, military air forces started developing (Liekis, 1999, p. 86 – 139).

In case of attack or war, a close cooperation and coordinated plan of actions has been considered within the country's defence policies. Another example of cooperation within the young state of Lithuania was the new branch of aviation – the riflemen aviation unit. This patriotic organization was founded near the 6<sup>th</sup> anti-aircraft protection riflemen company. The gliding section has also been founded in Lithuania then. The purpose of Riflemen Union has been preparing parachutists and developing reserve pilots.

After reviewing the historical development of these institutions, it can be concluded that since the foundation of the aviation authorities the main purpose has been the defence of the country should an armed attack occur. Military aviation has become the core of aviation.

To conclude, it is possible to state that the Lithuanian aviation was relatively strong and developed compared to other European countries during the inter-war period. Military aviation and airfields became 'the mother and cradle' to other aviation agencies in Lithuania, such as the Lithuanian Aero Club, Riflemen's Aviation Union, civil aviation and air scouts.

Many Lithuanian aircrafts could have been compared to the European ones of adequate classes in terms of technical and tactical characteristics. Lithuanian gliders and aviation modellers were considered as one of the best worldwide.

President Antanas Smetona once said: "The stronger the nation's aviation, the better the people". Having analyzed the historical collaboration of the Lithuanian aviation institutions, it can be concluded that until the Soviet occupation the aviation development was of a relatively high level. During those times the overall objective of the Lithuanian aviation institutions was to defend the state in case of war. It is apparent that although the nature of activities was different, the main objective of the aviation institutions (Riflemen's Aviation Union, air scouts, civil aviation and LAC) was the protection of national airspace.

To summarize, it can be said that all the Lithuanian inter-war aviation branches and agencies were aiming for a common goal, i.e. to defend the country should an armed attack occur. Aviation institutions are perceived as one of the major pillars of security; sustainable development of aviation institutions would lead towards more sustainable security, therefore has to be sequentially supported and fostered by state.

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