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ROMANIAN AVIATION IN THE FIRST WORLD WAR

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Romanians are among the pioneers of heavier-than-air flight, being also among the first in the world to use aircraft for military purposes. However, the efforts and creativity of Romanian aviation pioneers were not properly appreciated by the political and military leaders of their time.

At the outbreak of the war the Romanian Crown Council decided to keep the country neutral.

Romania signed a treaty with the Entente because the Alliance pledged support to the unification of all Romanians into a single state. Counting on the Entente's promises to launch offensive operations in Thessaloniki and in Bucovina, the Great General Headquarters of the Romanian Armed Forces developed a risky concept of operations in order to enter the war by launching offensive in two divergent directions. This risky strategy implemented alongside the unfavourable evolution of the strategic situation of the Entente on both Eastern and Western fronts resulted in defeat for the Romanian Armed Forces in 1916. The additional effect of the defeats was the occupation of two thirds of the Romanian territory by German troops. Having a new organisational structure and better equipment and training, the Romanian aviation contributed to the successes in the battles of Mărăști, Mărășești and Oituz in July and August 1917. Russia's decision to exit the war contributed to the decision of the Romanian Council of Ministers to sign the Peace Treaty with the Central Powers in May 1918. The treaty was neither approved by the Parliament nor ratified by the King. Therefore, in November 1918, Romania reentered the war against the Central Powers.

Keywords: neutrality, military aeronautics, the First World War, land forces, combat aircraft.

1. Introduction¹

The Romanians are among the pioneers of heavier-than-air flight, being also among the first in the world to use aircraft for military purposes. However, the efforts and creativity of the Romanian aviation pioneers were not properly appreciated by the political and military leaders of their time.

At the end of the 19th and the beginning of the 20th centuries, it was quite common for Romanian students to complete their university studies in France, Great Britain, Germany or Italy. Therefore, they were well-informed with the evolution tendencies of science and art. Thus, some of them became pioneers of science and art of their time, tending to push human knowledge to new limits.

The flight was a dream for many people and this dream came true just for a few of them. Aviation history features the name of some Romanians with open and brilliant minds and innovative spirit who have managed to design, built, and fly their flying machines. Unfortunately, only those Romanians who worked, registered their inventions in Western countries or participated in international air shows got international recognition. Romanians such as Traian Vuia², Henri Coandă³, Rodrig Goliescu⁴, Aurel Vlaicu⁵ and Grigore Briscu⁶ can be placed among the world aviation pioneers.

¹ The dates are marked according to the Gregorian calendar.

² E. Angelucci et P. Matricardi, *Les avions des origins a la premiere guerre mondiale*, Edition par Elsevier Sequoia, Paris-Brusselles, 1978, p. 42 (*"L'aeroplane de Traian Vuia, premiere vol a 3 mars 1906, a Montesson"*); see also Bill Gunston, *Chronicle of Aviation*, Jacques Legrand International Publishing, Paris, 1992, pp. 48-51 (*"Trajan Vuia in his monoplane, the first full-sized tractor monoplane, Montesson, 18 March 1906"*).

³ Edmond Petit, *Nouvelle histoire mondiale de l'aviation*, Hachette, Paris, 1973, p. 80 (*"L'avion a réaction de Coandă, au Salon Aéronautique Internationale de Paris, 1910 esseyer en December 16, 1910, a Issy-Les-Moulineaux"*).

⁴ Florin Zăgănescu, *Mici enciclopedii și dicționare ilustrate. Aviația (Small Encyclopedias and Illustrated Dictionaries. Aviation)*, Editura Științifică și Enciclopedică, București, 1985, p. 47, (In 1909, Rodrig Goliescu patented, in France, one of the first curved wing aircraft in the world – the coleopteron -, naming it *avioplan*); see also Valeriu Avram, *Istoria aeronauticii militare române 1910-1916 (History of Romanian Military Aeronautics 1910-1916)*, TIPARG Press, Pitești, 2003, p. 23.

⁵ Nicolae Balotescu, Dumitru Burlacu, Jean Dăscălescu, Dumitru Dediu, Constantin Gheorghiu, Corneliu Ionescu, Vasile Mocanu, Constantin Nicolau, Ion Popescu-Roseti, Dumitru Prunariu, Stelian Tudose, Constantin Ucrain, Gheorghe Zărnescu, *Istoria Aviației Române (History of Romanian Aviation)*, Editura Științifică și Enciclopedică, București, 1984, pp. 43-44.

⁶ Valeriu Avram, *op.cit.*, p. 23 (In 1909, Grigore Briscu, a lawyer from Iași, invented one of the first helicopters in the world. He successfully tested the helicopter using a small-scale model. His achievement was acknowledged by French researcher P. Cornu in an article published in *La France automobile* review in November 2009).



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One of the few who managed to obtain funds from the Ministry of War to build a new aircraft was Aurel Vlaicu. The new aircraft – Vlaicu III – had an innovative metal structure, but the deal was not closed because of the inventor's death during a flight from București to Orăștie, over the Carpathian Mountains, on 13 September 1913.

Romania is also one of the first countries in the world to use aircraft in military operations. Although a civilian engineer, Aurel Vlaicu completed a reconnaissance mission with an airplane build by him during the field training exercises in 1910, as part of a contract with Romanian Ministry of War⁷. Next year, in 1911, during the annual field training exercise, Major Ioan Macri, Captain Fotache Ionescu, Lieutenant Stelian Boiangiu and 1st Lieutenants Gheorghe Negrescu and Ștefan Protopescu carried out surveillance and reconnaissance missions⁸. Romanian military pilots carried out their first real military missions during the Second Balkan War, in 1913⁹. Despite the achievements of Romanian inventors, the government did not foster the development of local aviation. That attitude showed the officials' mistrust and even hostility. One of the few who managed to obtain funds from the Ministry of War to build a new aircraft was Aurel Vlaicu. The new aircraft – Vlaicu III – had an innovative metal structure, but the deal was not closed because of the inventor's death during a flight from București to Orăștie¹⁰, over the Carpathian Mountains, on 13 September 1913.

The reluctance towards aviation shown by some political and military leaders was not a characteristic of only Romania. The French General Ferdinand Foch is said to have thought, at the beginning of the war, that aviation was a good sport but it was useless for the army¹¹. In 1912, when the US Aviation Branch, which was subordinated to the US Army Signal Corps, submitted budget proposals, the Chief of the US Army, Major General Leonard Wood, reduced the allocation of funds for aviation, saying that his service needed guns and rifles not airplanes¹².

⁷ *Arhivele Militare Române (Romanian Military Archives)*, the 4th Engineer Directorate Collection, file 339, pp. 11 and 113.

⁸ Gheorghe Negrescu, *Amintiri necenzurate (Uncensored Memories)*, Editura Elisavaroș, București, 2011, p. 8.

⁹ AMR, the 4th Engineer Directorate Collection, file 404, pp. 74, 107, 200; file 426 pp. 371, 545, file 476, file 594, p. 440, file 450, p. 725 *apud* Valeriu Avram, *op. cit.*, pp. 99-104; see also Benjamin Franklin Cooling – editor, *Case Studies in the Achievement of Air Superiority*, Center for Air Forces History, Washington D.C., 1994, p. 1.

¹⁰ Nicolae Balotescu et al, *op. cit.*, p. 50.

¹¹ <http://www.firstworldwar.com/airwar/observation.htm>, retrieved on 20 June 2013.

¹² Warren A. Trest, *Air Force Roles and Missions: A History*, Air Force History and Museums Program, Washington D.C., 1998, p. 5.

2. Organisation and Main Assets of the Aviation before Entering the First World War

Some political and military leaders showed mistrust and even hostility to aviation through the decisions made, such as the one of subordinating the new branch to the Engineer Inspectorate. The increasing number of aircraft and military aviation schools entailed issuing the law on the organisation of aeronautics. With the likelihood of war increasing in Europe, the Romanian Aviation Corps was established.

The first aerostation unit of the Romanian Army was established in 1893 as part of the first Telegraph Company in the 1st Engineer Regiment, deployed in Bucureşti. The aerostation unit was equipped with a French spherical captive balloon, which was replaced with a German kite balloon in 1900. In the beginning, the captive balloon was used for aerial surveillance in support of the artillery that defended the fortifications of Bucureşti. Then, the aerostation was used in the field training exercises from 1907-1911. The positive results encouraged the officials to acquire 3 more kite balloons and the necessary mobile devices to produce and store hydrogen, used to inflate the balloons, and to transport the equipment into operational theatres. In 1913, following those acquisitions, the first Aerostation Company was established¹³.

In 1911, the first flight school in Romania was established in Chitila (near Bucureşti) at the initiative of a company organised by lawyer Mihail Cerchez. The school comprised 5 hangars, workshops for manufacturing the Farman III aircraft under French license, administrative buildings, a runway and even grandstands. The school trained both civilian and military (usually commissioned officers) pilots¹⁴. On 1 April 1912, the first military flight training school was established in Cotroceni (Bucureşti) and was equipped with Farman and Bleriot planes¹⁵.

Prince George Valentin Bibescu, a pilot licensed in France – and a retired Captain too –, took the initiative to establish the National Air League, on 5 May 1912, which was located in Băneasa (Bucureşti). The purpose of the League was “to acquire airplanes for the Romanian Armed Forces” using public subscriptions. The League had also a flight



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¹³ Colonel Costică Popa, PhD – editor, *Curs de Istoria Artei Militare (Course on Military Art History)*, Volume II, Editura Academiei Militare, Bucureşti, 1990, p. 16.

¹⁴ Nicolae Balotescu et al, *op. cit.*, pp. 66-69.

¹⁵ *Monitorul Oastei (Armed Forces Monitor)*, no. 20, 1912, p. 282.



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As a result of the rapid development of aviation, it was necessary to regulate its status within the military organisation. A law on the organisation of military aeronautics was issued on 1 April 1913 and military aeronautics was organised into two branches – the aviation and the aerostation –, both subordinated to the Engineer Inspectorate.

training school equipped with 4 Bleriot, 2 Farman and 1 Penguin type airplanes. Using air shows and flights around towns and cities, the members of the League convinced many people to donate money to purchase airplanes for the military aviation. The money donated was enough to buy 10 airplanes that were immediately transferred. As a sign of gratitude towards the generosity shown by the donors, the League organised air shows for the localities that donated large sums of money and named the purchased airplanes after the names of those localities¹⁶.

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The very likely participation of the country in the ongoing war that had broken out in August 1914 led to issuing a new regulatory document – Decree 305 on 23 August 1915 – by which the Romanian Aviation Corps (R.A.C.) was established. The first Corp's commander was Major Gheorghe Rujinschi. According to its table of organisation and equipment (T.O.E.), the R.A.C. would have 4 Aviation Groups, an Independent Aviation Squadron, an Aerostation Company, and a logistic structure including the aviation schools. Every Aviation Group would have 3 aviation squadrons: one reconnaissance, one for artillery spotting and one fighter. The Independent Aviation Squadron would be equipped with bombers. The Aerostation Company would have 4 sections, each equipped with one captive balloon¹⁸. The R.A.C.'s T.O.E. was intended to address the envisioned war missions. Unfortunately, when it was created, the R.A.C. had only 47 unarmed reconnaissance airplanes used for training, and 3 aerostation units with 3 captive balloons¹⁹.

3. Neutrality (12 August 1914 – 28 August 1916)

At the outbreak of the war, the Romanian Crown Council decided that the country should maintain its neutrality. As a consequence of political pressure from both the Entente and the Central Powers, the chance

¹⁶ Valeriu Avram, *op. cit.*, p. 67.

¹⁷ *Monitorul Oastei (Armed Forces Monitor)*, no. 15, 20.04.1913.

¹⁸ AMR, 949 Collection, file 406, pp. 1, 19, 39-40.

¹⁹ AMR, 4th Engineer Directorate Collection, file 524, p. 535, *Aeronautics Directorate Collection*, file 12, p. 113.

of entering the war became more and more likely. The government increased military expenditures in order to reduce the armaments gap between the Romanian Armed Forces and the other powers' armed forces. Unfortunately, the financial, material and training efforts were not enough to address the imbalances.

The outbreak of the war and the existence of the secret treaty between Romania and the Triple Alliance since 1883²⁰, which was renewed in 1892, 1896, 1902 and 1913²¹, placed the political leadership in a dilemma of choosing between the two belligerent sides. German Emperor Wilhelm II asked King Carol I of Romania to respect the treaty with Germany, Austria-Hungary and Italy²². Carol I decided to convene the Crown Council on 3 August 1914, arguing that Romania had to obey the provisions of the alliance treaty with the Central Powers. However, the majority of the Council members, headed by Prime Minister Ion I. C. Brătianu, were in favour of the neutrality. The Prime Minister asserted, *"The Treaty does not oblige us. Germany and Austria-Hungary prepared the war and declared it"*²³. His position was based on the provisions of the treaty that it *"was a purely defensive agreement"*²⁴. Also, some foreign historians noted that *"Since there was no Serbian attack on Austria-Hungary ... there was no cause to invoke the 1883 Treaty in Romania's case"*²⁵. Thus, the Crown Council chose neutrality for Romania. Soon after this decision, King Carol I died and was succeeded by Ferdinand I to the throne²⁶.

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²⁰ Rudolf Dinu, *Studi Italo-Romeni. Diplomazia et societa 1879-1914*, Editura Militară, București, 2009, pp. 77-79 (Prussia's Chancellor, Prince Bismarck, invited Romania to join the "Peace League", another name for Triple Alliance, on 03/15 August 1883, in order to guarantee its security. He said that the road to Berlin went mandatory through Vienna).

²¹ Pierre Milza and Serge Berstein, *Istoria secolului XX (History of the 20th Century)*, volume 1, Editura All, București, 1998, p. 64, see also Petre Otu, *Mareșalul Alexandru Averescu – militarul, omul politic, legenda (Marshall Alexandru Averescu – the Military, the Politician, the Legend)*, Editura Militară, București, 2009, p. 92.

²² Colonel Ion Giurcă, PhD, Dorel Dumitraș, *Alianțele și coalițiile politico-militare garant al securității statelor membre (Alliances and Political-Military Coalitions – Guarantor of Member States' Security)*, Editura Universității Naționale de Apărare "Carol I", București, 2004, p. 95.

²³ Gheorghe I. Duca, *Memorii (Memoires)*, volume 1, Editura Express, București, 1992, pp. 59-60 (The 2nd article of the treaty states that signatory states were required to help each other only when one of them was under attack).

²⁴ Alfred Franzis Pribram – editor, *The Secret Treaties of Austria-Hungary 1879-1914*, New York, 1967, volume 1, pp. 25-31.

²⁵ Richard Hamilton and Holger H. Herwig – editors, *The Origins of World War I*, Cambridge University Press, 2003, pp. 17-18, <http://www.catdir.loc.gov/catdir/samples/cam033/2002067092.pdf>, retrieved on 1 July 2013.

²⁶ Călin Hentea, *Brief Romanian Military History*, The Scarecrow Press, Inc., Lanham, Maryland, USA, 2007, pp. 101-102, see also Virgil Alexandru Dragalina, *Viața tatălui meu, generalul Ion Dragalina (Life of my Father, General Ion Dragalina)*, Editura Militară, București, 2009, p. 242.



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The effort to equip the armed forces started late and it could not be supported by a defence industry that produced only 1 artillery shell per day for the army's 2,000 cannons and 1-2 rounds per day for 800,000 rifles and machine guns.

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During the neutrality period, Romania invested in reorganising, equipping and training its armed forces, allocating 17-22% of the country's budget for defence. However, the money spent for defence was insufficient to acquire all the necessary equipment to modernise the entire military. In comparing the combat capability of Romanian military units with those of the Great Powers' armed forces, a Romanian infantry battalion had only 1-2 machine guns and only 70% of the battalions had light artillery batteries. In contrast, each German or Austrian battalion had 5-6 machine guns, 9 light machine guns and an artillery battery. The Romanian Headquarters had fewer commissioned and non-commissioned officers than the number stipulated in the T.O.E. and many in the staff and command had little experience in leading their large units. The effort to equip the armed forces started late and it could not be supported by a defence industry that produced only 1 artillery shell per day for the army's 2,000 cannons and 1-2 rounds per day for 800,000 rifles and machine guns²⁷.

Although Romania had the facilities to manufacture Farman and Bristol-Coandă airplanes under French and British license, the Ministry of War preferred to import airplanes. In 1915, Romania sent delegations to France, Germany, Russia, Italy, USA, Switzerland and Japan aiming to purchase armaments. The most fruitful negotiations were those with France and Great Britain. Following those negotiations, Romania imported 40 aircraft, 600,000 75 mm artillery shells, and 50 million 6.5 mm bullets²⁸.

After Turkey (1914) and Bulgaria (1915) signed the treaty with the Central Powers²⁹ and Serbia was defeated (1915), the aircraft and military equipment imported from France and Great Britain were transported by ship in the Russian Port of Archangelsk and from there by train to Romania, at Iași, to be assembled, checked and repaired, often because the equipment suffered damage in transit.

Romanian pilots, as other airmen, believed that politicians did not understand the role of military aviation in setting policies³⁰. Therefore, between 1914 and 1916, some enthusiastic pilots along with some experts from the Armed Forces Arsenal decided to experiment

²⁷ Colonel Costică Popa, PhD, *op. cit.*, volume II, pp. 165, 234-235.

²⁸ Colonel Petre Otu, PhD, *Statul Major General și reformele organismului military (The General Staff and the Military Body Reforms)*, in Major General Mihail Orzeată, PhD – editor, *Statul Major General 1859-2004. Istorie și transformare (The General Staff 1859-2004. History and Transformation)*, Editura Centrului Tehnic-Editorial al Armatei, București, 2004, p. 61.

²⁹ Pierre Milza, Serge Berstein, *op. cit.*, volume 1, p. 73.

³⁰ Benjamin Franklin Cooling – editor, *op. cit.*, p. 2.



with dropping Romanian-designed bombs and practiced attacking ground targets from the air. Hearing of this, some political and military leaders were upset as such activities were the artillery's domain and besides, attacking targets from the air was too expensive³¹.

Such attitudes were challenged by the Romanian military attachés reporting on the war operations in their reports to București, along with tactics, manuals, instructions, and procedures for using aviation in war. Also, more and more political and military leaders from belligerent states changed their views about aviation roles and missions³². As a result of the effective service of the aviation force in combat operations, the leadership of the belligerents invested more money to improve airplane performances and to extend aircraft mission capabilities. Thus, new aviation categories such as bombardment and fighter ones appeared.

Despite many drawbacks, airmen developed the programmes for training and for using air units in combat operations, being driven by the experience of operations on the Western and Eastern fronts. Moreover, airmen and the staff officers from other services developed and updated regulations for all the new military assets in service in military units³³.

4. Romania Enters the War

Romania signed a treaty with the Entente because the Alliance pledged support to the unification of all Romanians into a single state. Counting on the Entente's promises to launch offensive operations in Thessaloniki and in Bucovina, the Great General Headquarters of the Romanian Armed Forces (G. G. H.) devised a risky concept of operations (CONOPS) to enter the war by launching the offensive in two divergent directions. This risky strategy implemented alongside the unfavourable evolution of the strategic situation for the Entente on both Eastern and Western fronts resulted in defeat for the Romanian Armed Forces

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³¹ AMR, 4th Engineer Directorate Collection, file 471, p. 479, *apud* Valeriu Avram, *op. cit.*, pp. 133-134.

³² Colonel Phillip Meilinger – editor, *The Path to Heaven. The Evolution of Airpower Theory*, Air University Press, Maxwell Air Force Base, Alabama, USA, 1997, pp. 15-16 (after the battle of Verdun, Marshall Petain informed the Minister of War that aviation became one of the indispensable factors of success); see also *The War in the Air. Observation and Reconnaissance*, <http://www.firsworldwar.com/airwar/observation.htm>, retrieved on 20 June 2013 (after the Tannenberg Battle, General Paul Hindenburg declared that without aviation he could not win the victory).

³³ AMR, G.G.H. Collection, Section 2, file 301, pp. 45-92.



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Right after signing the treaty, Prime Minister Brătianu declared: "We did not enter the war as unwelcome applicants. We entered the war as desired and needed allies!".

in 1916. The additional effect of the defeats was the occupation of two thirds of the Romanian territory by German troops. Having a new organisational structure and better equipment and training, Romanian aviation contributed to the limited successes in the battles of Mărăști, Mărășești and Oituz in July and August 1917. Russia's decision to exit the war contributed to the decision of the Romanian Council of Ministers to sign the Peace Treaty with the Central Powers in May 1918. The treaty was neither approved by the Parliament nor ratified by the King. Therefore, in November 1918, Romania re-entered the war against the Central Powers.

Central Powers pushed Romania to join their alliance by initiating aggressive measures, especially after Serbia was defeated. Austria-Hungary gathered troops in the Banat region, and Bulgaria mobilised forces in the southern part of the Danube River. Faced with this situation, the Romanian political leadership intensified the diplomatic contacts with the Entente states and signed the treaty with the Alliance on 17 August 1916, in București. Given the ongoing military operations, the treaty was signed by Romanian Prime Minister Ion I. C. Brătianu and by the ambassadors and military attachés from France, Great Britain, Russia and Italy. According to the treaty, Romania had to enter the war no later than 28 August 1916. The allies pledged to recognise the unification of Transylvania, Banat and a part of Bucovina with Romania; Russia had to launch offensive in the southern part of Galicia and Bucovina against the Austro-Hungarian troops as well as to send two infantry divisions and one cavalry division in Dobrudja to prevent the Central Powers from debarking and seizing the Port of Constanța. In the meantime, the French-British expeditionary corps had to launch an offensive from Thessaloniki to prevent the Central Powers from focusing their forces against Romania. The allies also agreed to deliver daily 300 tons of military materials as well as medicines and rubber to the Romanian Armed Forces³⁴. Right after signing the treaty, Prime Minister Brătianu declared: "We did not enter the war as unwelcome applicants. We entered the war as desired and needed allies!"³⁵.

³⁴ AMR, *România în Primul Război Mondial (Romania in World War I)*, volume 1 – *Documente (Documents)*, documents 2 and 3.

³⁵ Gheorghe I. Duca, *Amintiri politice (Political Memories)*, volume 1, Munchen, 1981, p. 72, *apud* Ion Giurcă and Dorel Dumitraș, *op. cit.*, p. 98.

4.1. The Romanian Great General Headquarters Operation Plan (OPLAN) for the 1916 Campaign



On the night of 27/28 August 1916, the Romanian Council of Ministers issued the decree for general mobilisation at the same time with the declaration of war against Austria-Hungary. The Romanian Armed Forces consisted of 833,601 troops, of whom 19,843 were commissioned officers, non-commissioned officers and undergraduate cadets. The troops were organised into 4 field armies (7 army corps; 23 infantry and 2 cavalry divisions; 5 light cavalry brigades, 2 heavy artillery brigades; 1 frontier guard brigade; 1 mountain artillery regiment; 1 railroads and bridges building regiment; 1 pontoon regiment); 1 battalion of specialists; 4 unarmed aviation squadrons; 1 Danube flotilla; the garrisons of București, Tutrakan, Silistra, Cernavodă, Focșani, Nămolosa and Galați fortifications, as well as logistic formations³⁶.

The moment of entering the war was unfavourable for Romania. On both Western and Eastern fronts, the Central Powers had the advantage and the freedom of manoeuvre to concentrate the troops against Romania because the allies failed to launch offensive operations as they had pledged under the treaty.

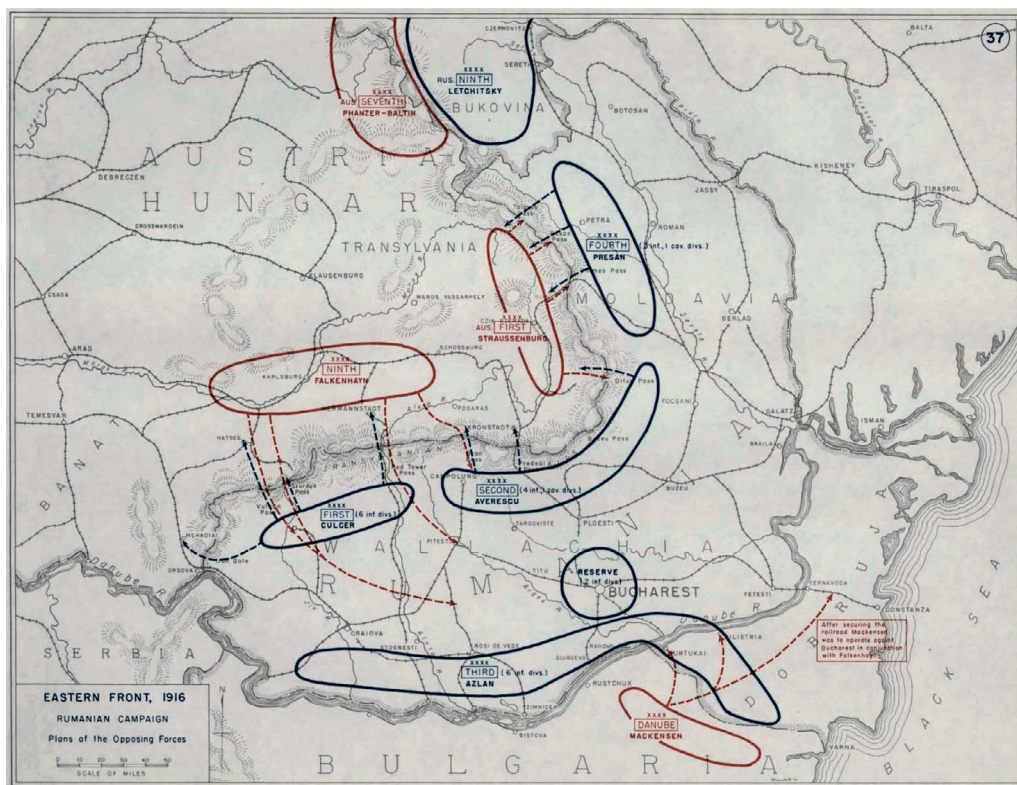
Relying on the allies' pledges under the treaty, the Romanian G.G.H. OPLAN for the 1916 campaign was aimed at launching offensive operations in Transylvania with the 1st, 2nd and 4th Armies, and a limited offensive in the south with the 3rd Army (details in *annex 1*³⁷). The 4th Army, commanded by General Constantin Prezan, would launch an offensive operation between the northern border and the Oituz River Valley, with the goal to get to the Tisza Plain in 30-40 days. The 2nd Army, commanded by General Alexandru Averescu, would launch offensive operation between the Oituz River Valley and the Argeș River Valley, aiming to join the 4th Army forces in Tîrgu-Mureș-Cluj area and then to conduct common offensive operations up to the Tisza Plain.

The 1st Army, commanded by General Ioan Culcer, launched offensive operation between the Argeș River Valley and the Danube, aiming to join the 4th and 2nd armies' forces to the west of Alba-Iulia. The 3rd Army, commanded by General Mihail Aslan, had a defensive posture, with all its forces placed along the north bank of the Danube

*On the night
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³⁶ Colonel Costică Popa, PhD – editor, *op. cit.*, volume II, p. 233.

³⁷ Source: http://www.firstworldwar.com/maps/graphics/maps_37_easternfront_rumania-1_1600, retrieved 20 June 2013.



Annex 1: Romanian Supreme Headquarters' Operation Plan for entering the war against Central Powers

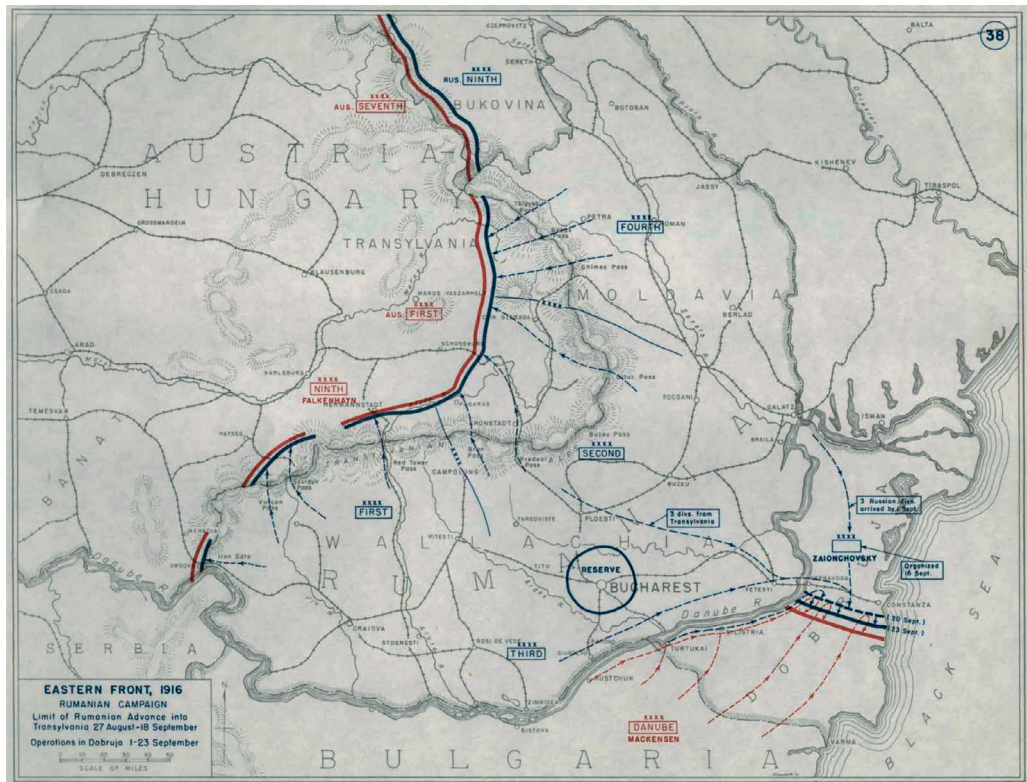
River. Its forces from Dobrudja had to secure the 47th Russian Army Corps debarkation and then to advance into the Bulgarian territory up to the Rusciuk-Varna alignment. The 5th Romanian Army Corps, commanded by General Gheorghe Georgescu, was deployed around București as Strategic Reserve³⁸.

The G.G.H. OPLAN was very risky and it had little chances to succeed because the Romanian forces had to fight alone on a 1,400-km long front. Indeed, the Romanian forces were less numerous and much more poorly equipped than their enemies – the German-Bulgarian-Turkish forces on the Southern front, and the German-Austro-Hungarian forces on the Transylvanian front (details in *annexes 2³⁹ and 3⁴⁰*).

³⁸ *Ibid*, pp. 236-239.

³⁹ Source: [http://www.firstworldwar.com/maps/graphics/maps_38_easternfront_rumania-2_\(1600\)](http://www.firstworldwar.com/maps/graphics/maps_38_easternfront_rumania-2_(1600)), retrieved on 20 June 2013.

⁴⁰ Source: [http://www.firstworldwar.com/maps/graphics/maps_39_easternfront_rumania-3_\(1600\)](http://www.firstworldwar.com/maps/graphics/maps_39_easternfront_rumania-3_(1600)), retrieved on 20 June 2013.



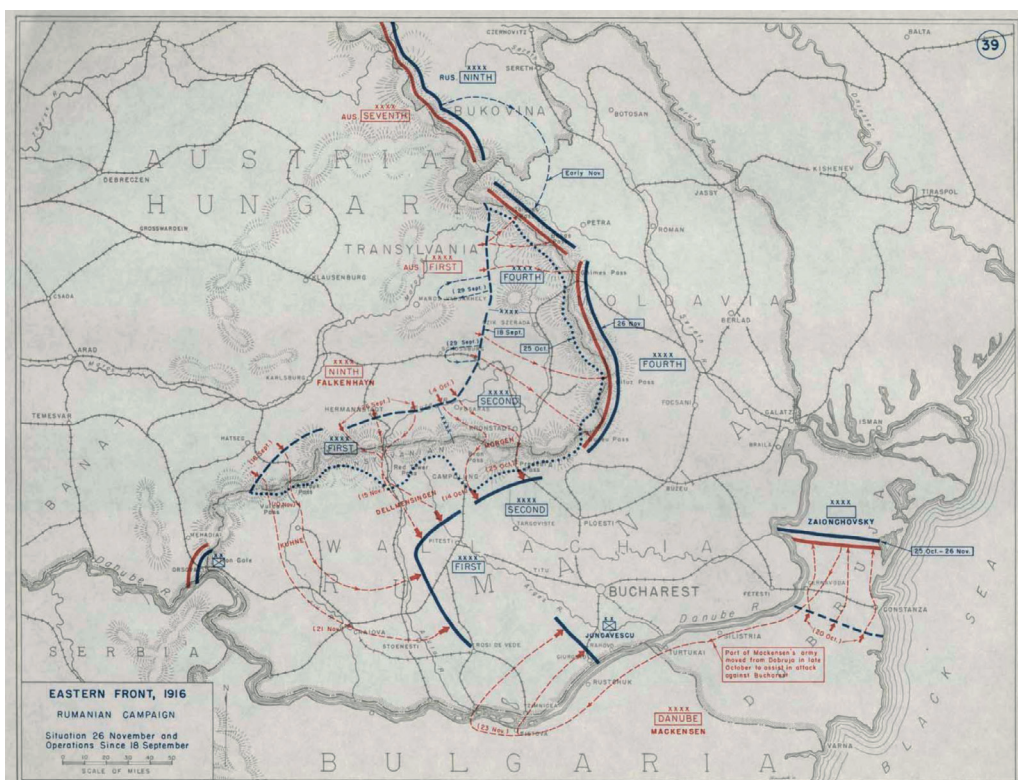
Annex 2: Romanian offensive in Transylvania
(27 August-15 September 1916) and Dobruja (1-23 September 1916)

4.1.1. Concept of Operations for Aviation

The G.G.H. planned the air groups to be used exclusively in support of the land forces. According to this concept, one aviation group and one aerostation section were assigned to each field army, and each cavalry division was supported by one reconnaissance aviation squadron. The independent bombardment squadron was to be the G.G.H. reserve.

The concept could not be applied as planned because the R.A.C. did not have all the necessary forces. Only 24 out of the 44 aircraft that had been imported and assembled in Iași by the Aeronautical General Reserve during the autumn of 1915 (12 Maurice-Farman 7, 12 Caudron G-3, 6 Morane-Saulnier, 8 Voisin 8 and 6 Bleriot) were “ready to carry out missions in the first day of mobilisation”. But they were also unarmed⁴¹. Another seventeen airplanes had been destroyed or damaged during training flights and most needed repair.

⁴¹ AMR, Aeronautics Directorate Collection, file 12, p. 113.



Annex 3: Romanian campaign. 16 September-26 November 1916

The 1st Aviation Group, Commander Captain Sturza, was located at Tâlmăciu (Sibiu) airfield with the mission to support the 1st Army operations with two squadrons – one having 2 Farman and the other 8 Voisin airplanes.

The 2nd Aviation Group, Commander Lieutenant Pascanu, followed by Lieutenant Negrescu, was located at Ghimbav (Brasov) airfield with the mission to support the 2nd Army operations with one squadron having 3 Maurice Farman and 1 Morane Saulnier airplane. The 3rd Aviation Group, Commander Captain Beroniade, was located at Băneasa (București) airfield with the mission to support the 1st Army operations with three squadrons: “București” with 8 airplanes (2 Maurice Farman, 2 Morane Saulnier, and 4 Voisin); “Alexandria” and “Budești”⁴² with 2 airplanes each (1 Maurice Farman and 1 Henri Farman).

⁴² “București”, “Alexandria” and “Budești” were the name of the localities that donated enough money for buying aircraft for military aviation, at the initiative of the National Air League.



The 4th Aviation Group, commanded by Captain Giossanu, was located at Piatra Neamț airfield with the mission to support the 4th Army operations with 1 Maurice Farman airplane. In September, the Group received 2 more airplanes (1 Maurice Farman and 1 Farman-40)⁴³.

The Balloon Detachment had one section to support each field army. Each section was equipped with one German captive balloon for aerial surveillance. Along with the Romanian aviation, the Russians committed units with 40 aircraft – Farman-40 and Anatra for reconnaissance; Nieuport XI, XVII and Spad VII as fighters⁴⁴.

In the period August-September 1916, Austria-Hungary deployed 12 reconnaissance and bombardment squadrons, on the Romanian front, totalling 150 aircraft (Oeffag C.II, Lloyd C.III and Hansa Brandenburg C.I.), located at Târgu Secuiesc, Covasna, Miercurea-Ciuc, Vermești, Brașov, Bistrița and Sanmiclăuș airfields⁴⁵. The Bulgarians had two balloons companies and the Germans deployed 9 air squadrons, equipped with Taube, L.V.G, D.F.W, A.E.G, Gotha reconnaissance and bomber aircraft, Fokker E. III, Albatros D. II fighter aircraft, and 5 Zeppelins (Z.81, Z.85, Z.86, Z.97, L.59). The German aviation units were deployed at Bulgarian airfields Rusciuk, Razgrad, Tetovo, Sistov, Nikopol, Iambol and a hydro-aviation squadron was stationed in the Port of Varna⁴⁶.

On 15 August 1916, the Romanian Antiaircraft Defence Corps was established, with the mission to protect the important civil and military objectives against enemy aerial attacks. The Corps had 113 antiaircraft guns and some machine guns and searchlights. București was protected by the Antiaircraft Defence Branch of the Capital City, which was equipped with twenty 75 mm guns adapted for antiaircraft use, two “Negrei” system 57 mm guns, 16 antiaircraft machine guns and 8 sections of 60 and 90 cm searchlights.

4.1.2. Primary Air Missions of the 1916 Campaign

At the beginning of the 1916 campaign, the Romanian aviation carried out surveillance and photographic reconnaissance missions to support the land forces. In the southern theatre of operations, Romanian airplanes discovered German, Turkish and Bulgarian troop

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⁴³ AMR, *Aeronautics Directorate Collection*, file 36, pp. 58-59.

⁴⁴ AMR, *1704 Collection*, file 57, pp. 2-4.

⁴⁵ AMR, *Aeronautics Directorate Collection*, file 60, p. 633.

⁴⁶ Valeriu Avram, “Crucile negre”. *Aviația Puterilor Centrale deasupra României 1916-1917* (“Black Crosses”. *Central Powers’ Aviation over Romania in 1916-1917*) Editura Pro-Historia, București, 2001, pp. 29-32.



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At the beginning of October 1916, the French Military Mission, led by General Mathias Berthelot, arrived in Romania. The mission was composed of 500 commissioned officers and 1,150 non-commissioned officers, corporals, soldiers and civilians having different specialties. The aviation component consisted of 42 commissioned officers, 45 non-commissioned officers, 36 corporals and 162 soldiers and civilians (pilots, aerial observers, specialists in aerostation, communications and wireless telegraphy etc.).

movements and informed the commanders of the 3rd Army, via thrown messages. This helped to prevent the troops from Dobruja and the forces deployed south of the Danube River from being surrounded. In order to improve support for the land forces, the airmen decided to extend their missions by dropping bombs on enemy targets by hand in the absence of proper bomb dropping equipment. They threw 10 and 12 kg Romanian designed “Drosescu” bombs against enemy troop concentrations at Lepnic and Gogolia, against Sistov railroad station, the fuel depot in Rusciuk, on the Southern front. Troops and command centres at field army and army corps level, along the Northern front, were also targeted.

During the operations from August to September, Romanian aviation paid its blood tribute, with the loss of two aircraft and crews, shot down by the enemy’s anti-aircraft artillery.

Between 1 October 1916 and 1 January 1917, Romanian aviation received 152 aircraft from France: 11 Breguet V, 12 Breguet-Michelin-8s for bombardment, equipped with 37 mm guns, 10 Caudron G.4s for long distance reconnaissance and bombardment, 18 Nieuport XI Bebes, 10 Nieuport XXI, fighters, 91 Farman-40s, 42s and 60s for reconnaissance and light bombardment, and a few thousands 10 and 12 kg “Gros” and “Michelin” bombs. Some of the reconnaissance and light bombardment aircraft were equipped with devices for launching bombs and vision sighting. For night bombing, France’s “Herard” bomb launchers were used, as well as French night instruments with electric lamps, compasses, “Eteve”-type speedometers and navigation maps. In addition, Romania purchased from France “Le Prieur” rockets for dogfights, to attack captive balloons, zeppelins, as well as terrestrial targets⁴⁷.

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⁴⁷ AMR, *Aeronautics Directorate Collection*, file 6, p. 28.

⁴⁸ AMR, *G.G.H. Collection*, file 430, p. 178.

⁴⁹ AMR, *G.G.H. Collection*, file 311, p. 116.

⁵⁰ Constantin Kirițescu, *Istoria reîntregirii României 1916-1919 (History of Romania’s Reunification)*, 2nd edition, Editura Casa Școalelor, București, pp. 389-390.



main aim was to transfer France's knowledge and experience to the Romanian allies. The French Mission worked to improve command and organisational structure, equipment and the training level of both leaders and combat personnel. In order to meet the objective, the members of the Mission became directly involved and assumed command and execution positions within the Romanian Military Aviation commands. In this regard, Major De Malherbe was appointed as Commander of the Romanian Military Aviation through the High Order no. 11 on 17 October 1916, and Romanian Major Gheorghe Rujinski, the R.A.C.'s Commander, became his deputy.

At the beginning of November 1916, a British air squadron landed at Pipera (București) airfield. The aircraft were part of the contract signed by the Romanian representatives with their British counterparts and the squadron was manned by Romanian pilots and observers. The British trained the Romanian pilots until January 1917, when they left the country⁵¹.

As Romanian personnel completed training on the new planes, and were instructed in the lessons learned from other theatres of operations, the Romanian organisational structure and the locations of aviation units were adapted to the new reality of the battlefield (details in *annex 4*⁵²). At the end of the 1916 campaign, the entire Romanian aviation force was deployed in Moldavia region and the government and the Royal House moved to Iași.

At the end of 1916, General Constantin Prezan, the new Chief of the G.G.H., advised by the Chief of the French Military Mission, decided to reorganise the Romanian aviation. The first step was to make it more independent by renouncing the tutelage of the Engineer Inspectorate and ordering the aviation commander to report directly to the Chief of the G.G.H. The new aviation structure was the Aeronautics Directorate, led by French Lieutenant Colonel De Vergnette De Lamotte. It was composed of aviation, balloons, photo, meteorology, and training branches. The training branch included flight and observer training schools.

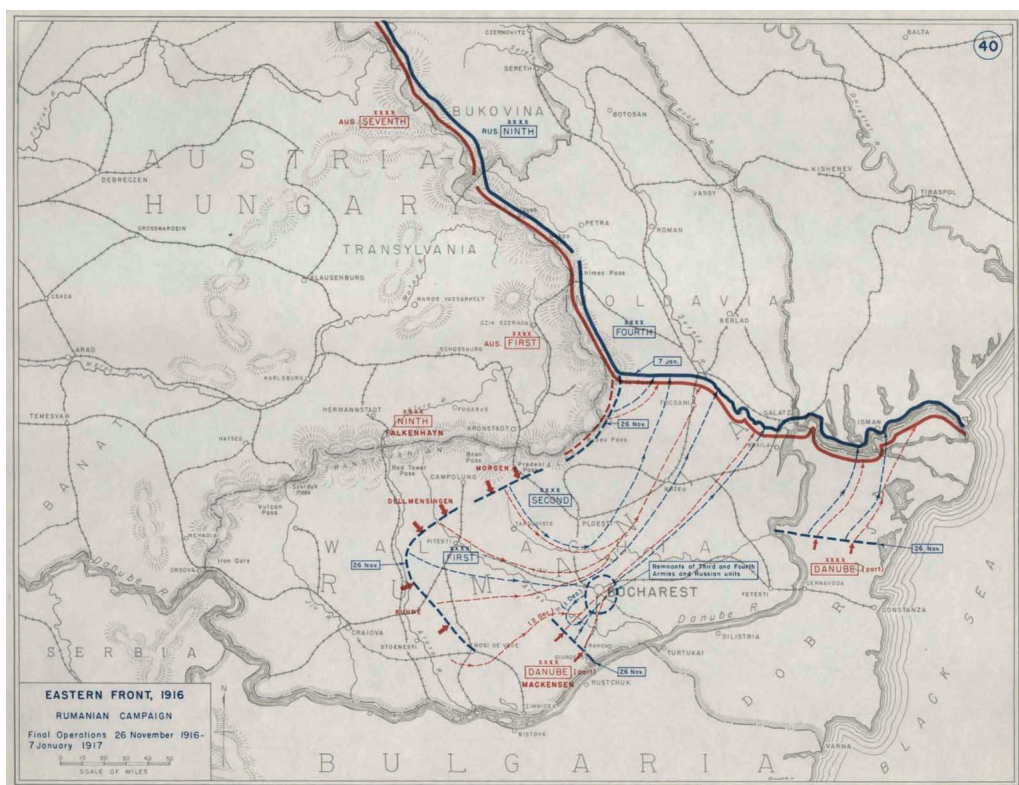
The Commander of the Aviation Branch was Major Constantin Fotescu. The Branch consisted of:

- 3 Aviation Groups with 3 squadrons each – two reconnaissance and bombardment squadrons and one fighter squadron;

At the end of 1916, General Constantin Prezan, the new Chief of the G.G.H., advised by the Chief of the French Military Mission, decided to reorganise the Romanian aviation. The first step was to make it more independent by renouncing the tutelage of the Engineer Inspectorate and ordering the aviation commander to report directly to the Chief of the G.G.H. The new aviation structure was the Aeronautics Directorate, led by French Lieutenant Colonel De Vergnette De Lamotte.

⁵¹ AMR, G.G.H. Collection, Intelligence Section, file 530, p. 207.

⁵² Source: [http://www.firstworldwar.com/maps/graphics/maps_4o_easternfront_rumania-4_\(1600\)](http://www.firstworldwar.com/maps/graphics/maps_4o_easternfront_rumania-4_(1600)), retrieved on 20 June 2013.



Annex 4: Romanian Campaign. 26 November 1916-7 January 1917

- the Aviation General Reserve, composed of two squadrons – one for reconnaissance and one for bombardment;
- the Aviation Fleet Technical Maintenance.

The Balloon Branch was commanded by Major Ion Iarca. It was composed of 5 balloon companies, each with: 1 French Caquot captive balloon, 3 anti-aircraft machine guns and a light machine gun for defence against enemy aircraft, and one wireless telegraphy station for transmitting messages to the land forces.

At the end of 1916, the R.A.C. had in its inventory: 15 Nieuport Bebe aircraft of which 12 were operational, 11 operational Farman-40s and 9 in the process of being assembled; 6 Breguet 5s, 6 Breguet-Michelin-8s, and 3 two-seat Nieuport-Bebe aircraft for training⁵³. By the end of the 1916 campaign, the aviation force lost 12 aircraft, 12 pilots, and 2 pilots were killed in training flights.

⁵³ AMR, 945 Collection, file 289, p. 109.

Between November 1916 and January 1917, there were intense negotiations among political and military leaders from Romania and Russia in order to finalise the OPLAN for the 1917 campaign. The Russian G.G.H. wanted to gain control over the Romanian railroads and to see the Romanian Armed Forces withdrawn east of the Dniester River to recover. The Romanian authorities, with the help of General Mathias Berthelot, succeeded in convincing Russia's leadership that the Romanian Armed Forces could be reorganised, supplemented with personnel and equipped by successively withdrawing units from the battlefield and redeploying them after the reorganisation and re-equipment process.

In order to improve cooperation between the Romanian and the Russian troops, King Ferdinand I agreed to take the supreme command of the Russian-Romanian troops. The Russian High Command held the operational command through a staff led by a Romanian general, but the chief of staff was a Russian general⁵⁴.

4.2. The Romanian-Russian Allied Command Operation Plan for the 1917 Campaign

By the end of 1916, Romania suffered great human, territorial and material losses. Out of the initial 833,601 soldiers, only 300,000 were available for the 1917 campaign. The others died, were captured or wounded during the 1916 campaign. The country's territory was reduced by 1/3 and an important part of the major equipment was destroyed or captured by the enemy.

In order to increase Romania's combat capability, based on the previous acquisition contracts, the Romanian Armed Forces received from the allies 150,000 rifles, 2,736 light machine guns, 1,957 machine guns, 1,300,000 grenades, 355 guns, mortars and howitzers, 50 aircraft, helmets, gas masks, communication devices⁵⁵ and other equipments.

The Romanian G.G.H. decided to mobilise 80,000 recruits and transfer 130,000 soldiers from logistic to combat units. Following those decisions, the Romanian armed forces strength was 460,000 combat troops and 240,000 soldiers in logistics structures. They were reorganised in two field armies (6 army corps, 1 cavalry corps, 15 infantry divisions, two cavalry divisions, 4 light cavalry brigades, 1 border guard brigade, 1 heavy artillery brigade) and the aeronautics⁵⁶.

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⁵⁴ AMR, *Microfilms Collection*, roll P. II 5.170, frames 456 and 457.

⁵⁵ Victor Atanasiu – editor, *România în primul război mondial (Romania in World War I)*, Editura Politică, Bucureşti, 1979, p. 273.

⁵⁶ Colonel Costică Popa, PhD – editor, *op. cit.*, volume II, pp. 297-299.



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The reorganisation of aviation in the winter of 1916/1917 was meant to increase aviation unit efficiency; to improve command and cooperation during operations; and to better allocate airspace between aviation groups; as well as to provide better technical maintenance for aircraft.

Both the Entente and the Central Powers wanted to win the war through a decisive victory. On the Romanian front, the Romanian-Russian Allied Command's objective was to liberate Muntenia Province from German occupation using the 1st and 2nd Romanian Armies, the 4th, 6th and 9th Russian Armies, supported by 72 Romanian and 40 Russian aircraft. The OPLAN stipulated an offensive operation with the effort focused on the Mărășești-Buzău direction, using the 4th Russian and the 1st Romanian Armies. Also, it planned a limited offensive with the 2nd Romanian and some troops from the 4th Russian Armies focusing on the Mărăști-Târgu-Secuiesc direction⁵⁷.

The German-Austro-Hungarian-Bulgarian Command planned to take Romania out of the war. To that end, it had the 1st, 3rd and 7th Austro-Hungarian Armies in Bucovina and Eastern Transylvania, the 9th German Army in the southern part of the front and the 3rd Bulgarian Army in Dobrudja. The Land Forces were supported by 12 Austro-Hungarian and 9 German aviation squadrons.

The Central Powers' OPLAN envisioned an offensive operation by the German 9th Army from south to north along the Siret River Valley which would join the 3rd and the 7th Austro-Hungarian Armies that were to conduct offensive operations from Bucovina to South Moldavia region, along the course of the Siret River. The 3rd Bulgarian Army had the mission to prevent the 6th Russian Army from developing offensively in Dobrudja.

4.2.1. Concept of Operations for Aviation

The aviation reorganisation in the winter of 1916/1917 was based on 3 principles: 1) the main mission was to support the land forces; 2) each field army had to have one aviation group at its disposal and each army corps had to have one reconnaissance aviation squadron available; 3) all aviation squadrons had to have homogenous equipment. The reorganisation of aviation in the winter of 1916/1917 was meant to increase aviation unit efficiency; to improve command and cooperation during operations; and to better allocate airspace between aviation groups; as well as to provide better technical maintenance for aircraft.

At the beginning of 1917, the aviation was composed of 3 Aeronautical Groups with 6 reconnaissance squadrons (6 Farman 40, 42, 60 aircraft each), 4 fighter squadrons (7 Nieuport XI, XVII, XIX, XXIV aircraft

⁵⁷ AMR, G.G.H. Collection, file 806, pp. 11-12.

each), 1 long-distance reconnaissance squadron with 4 Caudron G.4 aircraft, 1 bombardment squadron with 4 Breguet-Michelin-8 aircraft, and 5 aerostation companies with 1 Caquot balloon each⁵⁸.

According to OPLAN, the aviation was assigned as follows:

- the 1st Aeronautical Group was deployed at Răcăciuni (Bacău) airfield, with two reconnaissance squadrons and a fighter one to support the 2nd Romanian Army;
- the 2nd Aeronautical Group was deployed at Tecuci airfield, with two reconnaissance squadrons and a fighter one to support the 4th Russian Army;
- the 3rd Aeronautical Group was deployed at Galați airfield, with two reconnaissance and two fighter squadrons to support the 1st Romanian Army;
- the Aviation Reserve, with one long-distance reconnaissance squadron deployed at Tecuci and one bombardment squadron deployed at Galați airfields, was at the G.G.H.'s disposal⁵⁹.

In the campaign preparation, the air force contributed significantly to timely and accurately provide information to military leaders about enemy troop locations, movement and strength through air surveillance and photographic missions. Fighter aviation protected reconnaissance aircraft from enemy fighters. Fighter aviation flew combat air patrols over friendly airspace to prevent enemy aircraft from conducting reconnaissance and bombardment missions against Romanian and Russian forces.

From February 1917, the Romanian and French specialists of the 2nd Aeronautical Group were able to intercept and decrypt the German radio messages⁶⁰, which contributed to completing the commanders' big picture of the enemy's strength, deployments and intentions obtained through surveillance and photography.

In parallel with reconnaissance and combat missions, the aviation bombed enemy military and transport facilities. One of the most important bombing missions was done by the 3rd Aeronautical Group on 31 March 1917, with 19 aircraft. The Romanian and French crews destroyed the railroad between Brăila and Romanul, wrecked the docks

⁵⁸ Gheorghe A. Dabija, *Armata română în războiul mondial 1916-1918 (Romanian Armed Forces in World War I)*, volume 4, Editura I. G. Hertz, București, pp. 20-25.

⁵⁹ AMR, *G.G.H. Collection*, file 1175, p. 93.

⁶⁰ AMR, *Aeronautics Directorate Collection*, file 81, p. 38.



The Romanian-Russian forces initiated offensive operations on July 24 with the 2nd Romanian Army focusing on the Mărăști-Târgu-Secuiesc axis. The offensive was begun with a two-day artillery preparation with the aviation support to adjust its fire.

and facilities in the Port of Brăila, and sank two German military ships⁶¹. The effects of the mission were important because the transport of troops and supplies for the 9th German Army was severely affected for a few weeks.

From May 1917 onwards, the aviation started night bombings using Farman-40 and Breguet-Michelin-8 bombers against the important enemy targets: Port of Brăila; Brașov's plants; Focșani, Covasna, Miercurea-Ciuc and Tîrgu-Secuiesc airbases; Buzău-Rîmnicu-Sărat-Focșani and Buzău-Făurei-Ianca-Brăila railroads; Romanul, Latinul, Traian and Focșani and other railroad stations.

4.2.2. The Most Important Missions Accomplished by the Aviation during the 1917 Campaign

The Romanian-Russian forces initiated offensive operations on July 24 with the 2nd Romanian Army focusing on the Mărăști-Târgu-Secuiesc axis. The offensive was begun with a two-day artillery preparation with the aviation support to adjust its fire. When the offensive was launched, the Romanian-Russian forces had 50 infantry divisions (15 Romanian and 35 Russian) and 10 cavalry divisions (3 Romanian and 7 Russian), against 30 German and Austro-Hungarian infantry and 9 cavalry divisions⁶². Allied aviation was composed of 72 Romanian – 36 reconnaissance and light bomber planes, 28 fighters, and 8 bombers –, and 40 Russian planes against approximately 200 German and Austro-Hungarian aircraft.

By 30 July, the 2nd Romanian Army had won a 35-km wide and about 20-km deep bridgehead into the 1st Austro-Hungarian Army's front. The offensive was stopped because the Allied Command had to adjust its initial OPLAN. The new OPLAN moved the 9th Russian Army from the Western Moldavian front to the Northern front to stop the successful offensive of the 3rd and the 7th Austro-Hungarian Armies from Bucovina, which started on 19 July. Moreover, the 1st and 2nd Romanian Army, along with the 4th Russian Army, had to expand their area of responsibility to compensate for the withdrawal of the 9th Russian Army. The main cause of the Austro-Hungarian Armies success was the gradual decrease in combat capability of the Russian

⁶¹ AMR, *Aeronautics Directorate Collection*, file 56, p. 195.

⁶² Lt. Col. Alexandru Ioanițiu, *Războiul pentru reîntregirea României 1916-1917 (The War for Romania's Reunification)*, volume 2, București, 1928, pp. 295-296.

forces under the negative influence of the Bolshevik ideas widespread among the troops⁶³.

The unfolding of events made the military leaders of both belligerent parties change their plans. The Romanian-Russian forces changed their posture from offensive to defensive and the Central Powers from defensive to offensive, although with less ambitious goals than the initial plans. The German and Austro-Hungarian Command took advantage of the successful offensive of the 3rd and the 7th Austro-Hungarian Armies in Southern Bucovina. That offensive, in conjunction with the cessation of the 2nd Romanian Army's offensive and the withdrawal of the 9th Russian Army from the Eastern Moldavian front, provided the Central Powers with the opportunity to plan a limited offensive with the 9th German Army in the direction of Focșani – Mărășești – Adjud and with the 1st Austro-Hungarian Army in the direction Oituz – Târgu-Ocna – Adjud. The aim was to surround and oust the 4th Russian and the 2nd Romanian Armies from the region.

The 9th German Army's offensive occurred between 6 August and 3 September 1917 and had little success, namely gaining a 30-km wide and 8-km deep territory into the 1st Romanian Field Army area of operation. The Romanian-Russian forces defence was focused on Mărășești and its neighbourhood with a strong support from the 2nd Aeronautical Group, consisting of 6 squadrons. The aviation helped the land forces with data collected during many surveillance, photographic reconnaissance missions, in all-weather conditions, protected by fighter aircraft. All intelligence data about enemy troop locations were sent to armies, army corps and divisions. Based on intelligence data, the 1st Army Commander conducted a counteroffensive with the 5th and the 9th Infantry Divisions⁶⁴. Reconnaissance aircraft carried out some special missions to drop leaflets in the enemy's rear. Fighter aviation protected the allied airspace to prevent the enemy from conducting reconnaissance and bombardment missions. Romanian bombers hit important targets in the German 9th Army area of operations⁶⁵.

The 1st Austro-Hungarian Army's offensive operation along Oituz mountain pass took place between 8 and 22 August 1917. The action started with an artillery bombardment using poison gas. The result



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⁶³ Jennifer Rosenberg, *History of World War I*, <http://www.history1900s.about.com/od/worldwari/p/world-war-1.htm>, retrieved on 25 June 2013.

⁶⁴ AMR, G.G.H. Collection, *Operations Section*, file 17/4/a/1917, pp. 226, 244.

⁶⁵ Nicolae Balotescu et al, *op. cit.*, pp. 315-316; see also Colonel Costică Popa, PhD – editor, *op. cit.*, pp. 316-330, 346.



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The decision of the Russian Government to sign an armistice put the Romanian Armed Forces in the difficult position of fighting alone against an enemy that had more than its double combat capability. The Romanian Council of Ministers decided to start negotiations with the Central Powers and to sign an armistice agreement under force majeure circumstances, which was supposed to have only military and no political consequences.

was an advance into the 2nd Romanian Army's front of 18-20 km in width and 2-6 km in depth. Owing to the fierce resistance of the Romanian defence forces and their counterattacks, the Gerock Group, which was on the main direction of the offensive, enjoyed relatively little success⁶⁶. The 1st Aeronautical Group also supported the defence operations of the 2nd Romanian Army and carried out an average of 9 aircraft sorties a day in surveillance and photographic reconnaissance missions protected by fighter aircraft. Some reconnaissance aircraft did not have radios so they used the old procedure of dropping messages on army division headquarters. In addition, the aviation helped the artillery to adjust fire and prevented enemy air reconnaissance and attacks against Romanian land forces⁶⁷.

As the operations in Mărăști, Mărășești and Oituz came to an end, both belligerent forces became engaged in trench warfare. The situation on the front was a stalemate until 3 December 1917, when the new Russian Bolshevik Government signed an armistice agreement with Germany, followed by a peace treaty on 3 March 1918, at Brest-Litovsk⁶⁸.

The decision of the Russian Government to sign an armistice put the Romanian Armed Forces in the difficult position of fighting alone against an enemy that had more than its double combat capability. The Romanian Council of Ministers decided to start negotiations with the Central Powers and to sign an armistice agreement under force majeure circumstances, which was supposed to have only military and no political consequences⁶⁹. The armistice was signed on 10 December 1917, and the peace treaty on 7 May 1918, in Focsani. The peace treaty was neither approved by the Parliament nor sanctioned by King Ferdinand I, because its provisions were very harsh for Romania. According to the treaty, the Romanian Armed Forces were demobilised, except for the aviation.

At the end of October 1918, Romania again mobilised its Armed Forces and, in November, it reentered the war against the Central Powers. In a few weeks, Romania's national territory was freed from the Central Powers' forces.

⁶⁶ AMR, G.G.H. Collection, file C. 4/1917, no. 4, p. 223, file 55, annex f, p. 8.

⁶⁷ AMR, G.G.H. Collection, file 17/4/a, p. 46; file 19/1-4/d, pp. 17, 34.

⁶⁸ Richard Normes – editor, *Atlas historic de la guerre. Les armes et les batailles qui ont change le cours de l'histoire*, Edition Hachette, Paris, 1989, pp. 147, 155.

⁶⁹ AMR, G.G.H. Collection, Section 3, Operations, file 3/1917, p. 3.

5. Conclusions

Romania's defeat in the 1916 campaign was caused mainly by the political and military leadership failure. The political class was divided among supporters of Entente and politicians who wanted Romania to join the Central Powers side. From the strategic point of view, neutrality was a good decision for the country, because the armed forces were not prepared for war. Politically, this decision showed the reluctance of both parties involved in the war. The Entente and the Central Powers did not seem very interested in sending military equipment to Romania as a precaution measure because they did not know which side its leadership would decide to join eventually.

The moment Romania entered the war was wrongly chosen. The Russians suffered defeats at Tannenberg and Mazurian Lakes, Serbia was defeated and Central Powers were in a little advantage on both Western and Eastern Fronts. The result of this situation brought future enemies – the Central Powers – on South, West and North of Romania's borders. The Romanian Great General Headquarters concept of operations was completely unrealistic in entering the war with offensive on two divergent directions while its armed forces were inferior the German-Austro-Hungarian-Turkish-Bulgarian ones.

The heavy Romanian losses from 1916 campaign were the result of the many mistakes its armed forces leadership made prior to and during battles. Mistrust and even hostility against aviation along with rivalry among high military ranking from armed forces leadership caused the inconceivable situation of entering the war with unarmed aircraft, after two years of neutrality and the highly likelihood of going to war. Both politicians and military leaders did not support the development of national defence industry and the country depended heavily on imports. Most military commanders did not have enough experience in leading and conducting real operations and the Second Balkan War, in which some of them participated, had little relevance for the reality of operations in the First World War.

Fortunately, the spirit of sacrifice from all soldiers in the Romanian Armed Forces and their morale were what kept them strong during battles. The allied help with military equipment and trainers had a huge importance in reorganising, re-equipping and improving the level of training for all military units of Romanian Armed Forces. The





result meant a good combat capability proved in the 1917 battles from Mărăști, Mărășești and Oituz.

Although initially unarmed, the Romanian aviation gradually increased its combat capability as a result of the innovative spirit of the airmen and, from November 1916 onwards, with allied help. Overall, aviation contributed to the positive results of the operation campaigns, especially the 1917 ones from Mărăști, Mărășești and Oituz, conducting missions in all-weather conditions, night included, since May 1917. Surveillance and reconnaissance aircraft contributed significantly to provide timely and accurate information to military commanders about enemy troops' locations, manoeuvres and strength. Fighters protected surveillance and reconnaissance aviation as well as Romanian and Russian land forces from enemy's aviation attacks. Light bombardment aviation conducted bombing missions against important enemy targets such as troops, command centres, depots, ports, ships and transport facilities. The bravery of the airmen and their innovative spirit made up for a part of inferiority in number and performances of their aircraft while they were engaged in air fights and other type of missions.

During the campaigns of the First World War, Romanian airmen flew about 10,000 flight hours, had about 550 aerial fights, winning 51 victories (Second Lieutenant Dumitru Bădulescu 8 victories, 5 confirmed; Lieutenant Gheorghe Mihăilescu and Second Lieutenant (ret.) Marin Popescu 4 victories each, Captain Vasile Craiu 3; Second Lieutenant (ret.) Marcel Drăgușanu and N.C.O. Ioan Muntenescu 2 victories etc.). The French pilots who fought alongside the Romanians had 28 victories in dogfights, and the antiaircraft artillery shot down 55 enemy aircraft. The bombardment aircraft dropped about 79 tons of bombs on enemy targets.

Twenty-two Romanian pilots and six air observers were killed in air combats and 9 more were shot down by enemy antiaircraft artillery. Twenty pilots, air observers and technical personnel died in training flights and eleven airmen were decorated with "*Mihai Viteazul*" Order, 3rd class, the highest decoration given for special actions during war⁷⁰.

⁷⁰ Nicolae Balotescu et al, *op. cit.*, pp. 115-126; see also Valeriu Avram, *op. cit.*, Editura Militară, București, 2012, p. 83.

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