

# SOME ISSUES ABOUT AIR DEFENCE IN HUNGARY AFTER THE WORLD WAR I

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## Abstract

After the World War I Hungary got into a difficult situation politically and militarily, too. The European great powers with the help of Trianon Peace Treaty hurdled and prohibited to develop a powerful and modern armed forces. The political and military leadership decided not to comply some parts of the decisions. Accordingly, the forbidden air defence artillery was organized as well. This article describes the first steps of how the Hungarian anti-aircraft artillery was supplied with cannons for air defence until 1929.

**Keywords:** World War I, air defence, Hungarian military history, history of air defence, air defence artillery

## 1. INTRODUCTION

After the World War I no state could plan and organize their homeland's defence without air defence capabilities. The aircraft did not only do reconnaissance during the war accompanied by a courier service and fire command tasks but increasingly, the bombing of troops and objects as well. It became clear to all individuals and organizations dealing with military issues that the heartland was just as vulnerable as the front. It only depended on the development of their aircraft and armaments.

The future of the winners' will about air defence was evident. On the one hand, their own armed forces were equipped with these weapons, on the other hand, the losers were not only prohibited to manufacture air warfare system and compliance but the ban was also imposed on deploying eliminating weapons. Thus, the losers were not allowed to produce nor to acquire anti-aircraft artillery.

## 2. ESTABLISHMENT OF AIR DEFENCE ARTILLERY

After the losses of the "Great War" and because of the *Decisions I of the Hungarian Peace Treaty*, Hungary faced great difficulties. The latter deprived the country of the possibility of an active air defence, the former left a very poor legacy in the field of anti-aircraft artillery and aircraft equipment. Yet the experience of World War clearly demonstrated that the air operations will take priority over the next armed conflict.

The Hungarian idea solving air defence problem included the followings:

1. Passive defence from the land.
2. Active defence from the land.
3. Defensive protection/blocking by the shooter forces.
4. Counter offensive, by attacking and retaliatory bombing of the hostile air forces.<sup>2</sup>

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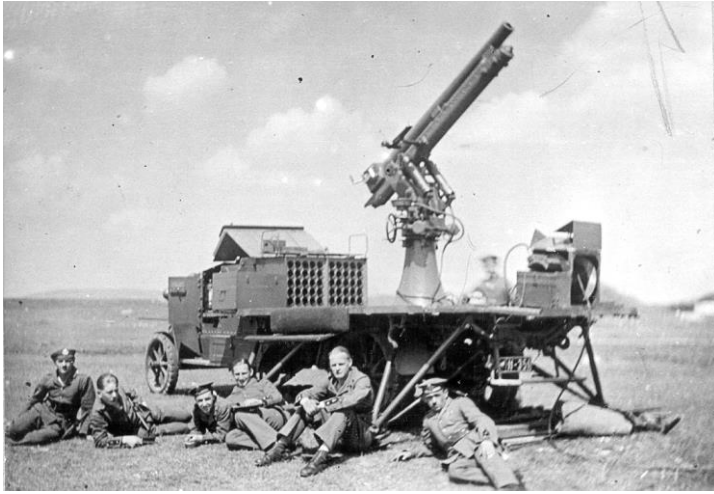
<sup>1</sup> The V<sup>th</sup> part of the Hungarian Peace Treaty – Military, military shipping and ballooning provision - signed 4<sup>th</sup> June 1920 prohibited to deploy an air force. As the V<sup>th</sup> part 1<sup>st</sup> chapter 108<sup>th</sup> article stated that 'It is prohibited to use any troops which is not mentioned in the above annexed tables.', neither air force nor air defence cannons could be „kept” by Hungary.

<sup>2</sup> Magyar Katonai Szemle 1932. Ivi II. évfolyamának II. évnegyedéhez 5. Füzet, vitéz Szentnémedy Ferenc: A honi légvédelem problémái és korszerű légvédelmi gyakorlatok 110. oldal

The making of the 1st point happened continuously but very slowly, because it cost a lot. For point 4, very strong bomber forces were needed, and Hungary neither then, nor later had them. For us, the 2nd and the 3rd points seemed to be the most appropriate to implement. Truly enough they were also expensive but at least they had the fastest results. The fighters in the

anti-aircraft system were effective tools with high agility and also had the power to win a decision.

However, until 1939, they failed to organize a monitoring system which was necessary for their activities and alert in time. It would have been difficult to protect the whole country by fighters because of the size of the area as well. The frontier problem also highlighted the issue of which armament could and should be used: *"Because of the reconnaissance, the fighters cannot operate successfully in 60-80km range. But the protection of a district requires a huge amount of cannon."*<sup>3</sup>



*Picture 1 5/8M air defence cannon*  
(From Archives of Institute of Military History, Budapest)

The anti-aircraft artillery, however, had a number of advantages over the hunters:

1. Quick readiness to fight.
2. Permanent readiness to fight in any weather conditions. (If you have the necessary optical and beam materials.)
3. The ability of the long engagement.
4. The greater clarity of reviewing fight.<sup>4</sup>

Naturally, the monitoring and forecasting service was necessary for their work as well, but it was not as crucial as for the fighters. The two arms were equally important for the protection of the country, but in the field of national air-defence the anti-aircraft artillery clearly had to be prioritized.

Their work was defined as follows:

1. Making the aerial reconnaissance job difficult.
2. Destroying the bomber aircraft.
3. Supporting their own aircraft in an air battle.<sup>5</sup>

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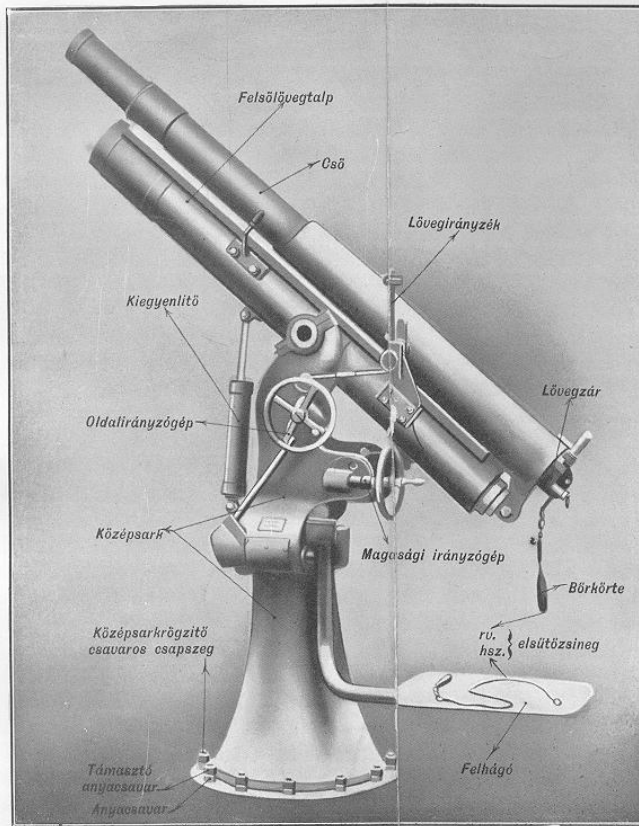
<sup>3</sup> Magyar Katonai Szemle 1933. évi III. évfolyamának II. évfolyamához 6. Füzet, Rákosi Béla ezredes: A földről ható aktív légvédelem jelentősége 98. – 99. oldal

<sup>4</sup> same

<sup>5</sup> Sípos Béla: Honi légoltalom, 25. oldal, 1936. Békéscsaba

14 o. m. 8 cm lje-ágyu (középsarkkal) 50° emelkedésre.  
(Tűzélésre készen.)

1a. tábla.



Picture 2 O.M 14 anti-aircraft gun  
(From former artillery cadet's textbook)

The statement of one of the soldiers of those times, major József Bálint, indicates the recognized significance of the weapon: "... there is no air defence, nor home defence without anti-aircraft artillery."<sup>6</sup> Of course he also added that the tasks must be solved by the two arms together and none of them should be overestimated at the expense of the other. In terms of military applications a "Bombardier Code of Practice" got accepted (air defence booklet setting out the principles). In this booklet the idea of placing the weapons in an even order was abandoned, and also stated that it is no use applying anti-aircraft artillery without making the centre of gravity – "it is pointless and a priori inefficient." The mixed use of tools also became a principle. There was another argument for strengthening the air de-

fence with cannons and later with defence guns: *the money!* The acquisition of air defence artillery assets and the operation was significantly cheaper than the fighter forces. Truly enough, their efficiency and mobility were significantly lower as well.

The calculations and analysis of Laszlo Captain Frederick in 1940 also showed an acceptable rate for the 20s.<sup>7</sup>

- The set up cost of a gun battery: 1.2 mP<sup>8</sup>
- 8000 shots for 4 shot guns: 1.2 mP
- Four barrel replacements: 0.16 mP
- Total: 2.56 mP

Captain Laszlo calculated about 0.5 million pengős for a plane, including thee tools and personal preparations. This was generally acceptable to the average, because an HE-111 cost 800 000 pengős, an ME-109 400,000 pengős, an Ar-96 / B, 175,263 pengős in 1941.<sup>9</sup> The

<sup>6</sup> Magyar Katonai Szemle 1933. évi III. évfolyamának II. évfolyamához 4. Füzet, Bálint József őrnagy: A földről ható aktív légvédelem jelentősége 116. oldal

<sup>7</sup> Magyar Katonai Szemle 1941. évi X. évfolyam 9. Füzet, László Frigyes százados: Gondolatok a légvédelem köréből, 762. oldal

<sup>8</sup> "million Pengős"

<sup>9</sup> Szabó Miklós: A Magyar Királyi Légierő technikai és szervezeti fejlődése (1938-1944) 1981., 148. oldal

prices above may be related to the prices in the 20's as well, as the production and maintenance money in the armament did not change significantly. In his writing he calculated with 1% efficiency (which turned out generally lower in the later military experience), so the damage caused to the enemy could be 40 million pengős. The own expense of spent material and amortized guns was about 0.36 million pengős. This, of course is purely a theoretical calculation, however, when compared with the known data on this forecast, it turned out that it was not totally unfounded. In the battles of the 2nd Hungarian Army the 3 per thousand efficiency of the 29M type anti-aircraft guns was still very good.

In 1920, the General Staff forecast that in a future war the air strikes would have a significant role, and therefore they would have major implications for air defence from the ground as well. The military leadership therefore decided that - in contrast to the peace agreement – they would not give up their anti-aircraft artillery arms, but make it hidden.

### 3. THE EARLY HUNGARIAN AIR DEFENCE ARTILLERY

Hungary didn't have the necessary extent of professional subject matter for her own air defence artillery. Only 2-bit and 10-bit 14 5/8M O.M. gun was available for the Army. In addition, the 14 O.M. tools were basically not air defence artillery weapons, they were only used in need for this task and they had low efficiency in it. The main part of the 14 O. M. gun were the tube, the breechblock, the middle-corner, the pedestal ring, the upper cannon pedestal and the gunner. The back funicular-tube device was able to elevate 50, and 70 degrees depending on the applied middle-corner.

The most important technical parameters of the gun are illustrated on Table1.

**Table 1**

Type Typical	14 O.M.	5/8M
Calibre (mm)	76,5	76,5
Total pipe length (mm)	2284	2298
Projectile initial velocity (m / s)	500	520
Elevation (degrees)	-7 (-10) ÷ 50 (75)	-7 ÷ 75 (85)
Range (m)	7300	9360
Range of high (m)	5000	4800
Rate of fire (rounds per minute)	10 ÷ 15	15
Transport	Towed	automobile, rail
The danger radius around the detonation point (m)		25
Bullet weights (kg)	6,5 ÷ 6,6	6,68

So the Army leadership decided, that despite the prohibitions they would set up and maintain one - at least minimally - operational anti-aircraft artillery of tools. Accordingly, in 1922, the Ministry of Defence decided to continue the production of the gun 5/8M, and they ordered 20 pieces from Diósgyőr Gépgyár, which was later raised to 23. The guns were no longer modern, and they were very slow and difficult to move, however, the decision was motivated by the conceptual design possessed. This anti-aircraft gun consisted of a tube with cannon cradle, a upper cannon pedestal, a lower cannon pedestal and a pedestal ring.

The 5/8M was a middle-cornered tool. In 1923, in the Military Major Group Chief Section it was decided that the guns would be applied on automobiles. The ordered material was produced by 1924. The technical parameters of the asset are in Table1., its limit of power is in Draft1.

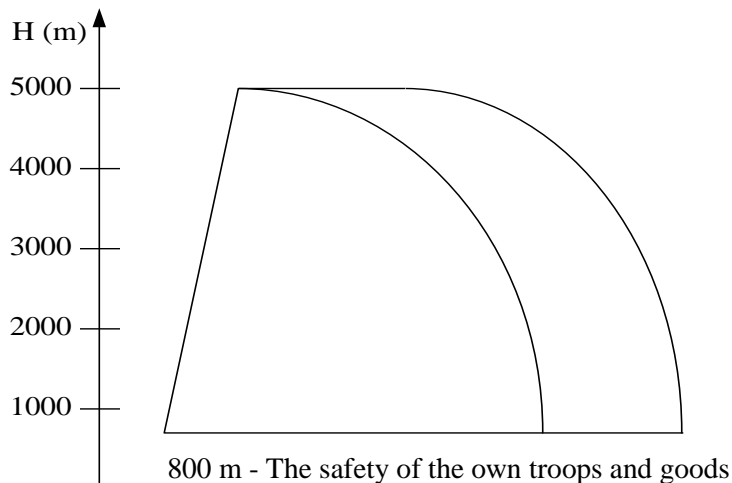
Several solutions were experimented to modernize the gun and the additional instruments. The Technical Research Institute increased the elevation angle from 75 ° to 85 °. Later, a new cannon sighting was attached to the anti-aircraft gun, because the original one was outdated and had low efficiency.

#### 4. DECIDING FOR A NEW WEAPON

In 1928 it finally became clear that the national production of cannons did not bring the expected results. New problems occurred with 5/8M. The cannon barrels burned out quickly, mainly due to the poor quality of raw materials. The experiments on air defence artillery cannons of Technical Research Institute of Experimental neither brought the expected results. The 8.8 cm, 8.35 cm, 8 cm, 7 cm and 6.6 cm calibre guns in fact - except for the 6.6 cm - only existed on the drawing table. In the latter case an experimental piece was constructed in 1927, but its production failed because of the technical difficulties and the opposition of the Chief of Army Staff, because the lowest limit of the calibre was specified as 8cm!<sup>10</sup>

Thus, the military was forced to seek for new solutions. According to the regulations of the Peace Treaty we were not allowed to buy military material, so a decision was made to obtain an authorization (license) for manufacturing.

Out of the options, a Swedish 8 cm L/50 model was chosen, the later Hungarian 29M anti-aircraft gun.



*Picture 3 The range area of 5/8 M air defence cannon*

(Légvédelmi Tüzérségi Szabályzat 3. füzet: Lőutasítás, Budapest, 1938. Attila nyomda részvénytársaság)

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<sup>10</sup> Hadtörténeti Levéltár, VKF 1.o. 5381/T 1928.

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