

The doctoral dissertation's (PhD) abstract of thesis

The fight of the fighters, dive bombers
and ground attack aircrafts
of the Forțele Aeriene Regale ale României
(Romanian Royal Air Force)
in side of the axis in world war two

Zoltán Novák

Academic Supervisor: Dr. Levente Püski



University of Debrecen

Historical and Ethnographical Doctoral School

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Reasons for the chosen theme, research objectives and questions

After the world war two in Romania - in the communist era - the participation of the Romanian Royal Air Force in the big conflict was unspoken. The most of the research made in this period told only the small part of the story, and always spoke only from the fight against the germans in the side of allied forces, especially the soviets. The campaigns against the Soviet Union between 1941 and 1944, seems like never happened. One exception is exist, the USAAF bombing attacks against Ploesti oilfields was exceedingly adopted to soviet propaganda machine in the cold war era. In resume works can be reading the data of the romanian aeroplane industry. This studies use only romanian archives and ideologically overheated.

After the 1989 revolution in Romania became a big demand for the society to retrace the romanian participation in world war two, what was hushed up in the cold war era, when only in family, at home was advisable to speak about it. After the revolution the romanian national archives became researchable, and new facts became known about the romanian past in world war two.

In Hungary only a very few studies were made in this theme, in turn to understand our history in world war two is inevitable to know our neighborhoods past, especially those, who was in the axis side in the war. My work try to supply this absence.

When I started the research, I wanted to write a dissection about role of the fighters, dive bombers and ground attack aircrafts of the romanian airforce in world war two. To understand this role we must understand the beginnings, the structure of the romanian airforce and the romanian air industry behind it. My goal was to render the training, the hardware and the fighting methods of the romanian airforce too. I wanted to use all accessible resources of the nations, which ones took part in the fights, to make the full picture of the numbers of used forces, the achieved aerial victories and the real aerial battle casualties.

In my research I wanted to find the answer for the following important questions:

1. How was borne the romanian airforce and became the strongest airforce in the region?
What was the beginning of the romanian air industry? Which kind of warplanes could order the romanian airforce right before the beginning of the war? What kind of role played the romanian oil industry in the armament of the country? What was the influence of the german military mission in Romania?
2. How fought the romanian airforce in his first campaign, in 1941 at eastern front? How could they use their warplanes, what learned from it? Could the romanian airforce master an independent campaign, without the germans? Could they made the proper maintenance of the warplanes? Could they preserve their fighting potential until the end of the campaign?
3. What kind of role played the romanian airforce in the campaign of 1942 in southern sector of the eastern front. How could they learn from the mistakes of first campaign in 1941? How was able to succeed with their own build warplanes? What was their performance in mirror of the german performance?
4. The 1st romanian airdivision in the ukrainian campaign in 1943 how could use the german loan warplanes. Was its performance better than the previous two campaigns?
5. How tried to destroy the ploesti oilrefineries the soviet and the american air attacks between 1941 and 1943? How could defend the targets the germans and romanians?
6. How could prepare the romanian airforce to the soviet invasion and american airraids in 1944? What was the targets of the american strategic bombings? What was the amount of the damage made by bombers? How could defend the targets the romanians?

7. What was the role of the Romanian Air Force when the Romanians were changing sides?
How could they fight against the Luftwaffe in side of the Soviet Air Force?

Sources, applied methods and the structure of the dissertation

The primary resources of the dissertation were the documents of the Romanian state and military archives, unit war logs, reminiscences and biographies, memoirs. The secondary resources were the Romanian and English technical literatures. The documents of the Romanian state and military archives give detailed data of the structure of the Romanian Air Force. Its efficiency and its losses too. We can also read from them the details of the air war above Romania. The Romanian resources are not punctual in air victories, that was not above Romanian territory, also not punctual in applying the number of the attacking forces and some times made wrong identifications of the types of the attacking warplanes, but have detailed information about the air war. The American official reports – which ones I can find in English technical literature – was cosmetic. Only those airplanes booked as loss, that ones fall from sky above the target. The planes crashed in other territory or flew home damaged, but were irreparable booked different way. For this reason not reliable the AAF Combat Lost and Missing List. Only after 1946 wrote another 1400 warplanes to the losses, but the original document had never been modified. With the help of the unit war logs we can read detailed documents about one Group or Squadron role in a campaign. For that reason we get to know not only a ground campaign support, but the whole story. The memoirs are helping to know the details, with their help the big picture are more colorful. The secondary resources consist the part of the theme. A part of the English technical literatures are telling the story of the Romanian's enemies, with their help we can be more punctual when applying the real number of aerial victories.

The Romanian technical literatures made in the cold war era show an unilateral picture. They tell the story only after the Romanian Air Force fight in side of the Soviet Air Force. The campaigns in the east front seems like never happened. One exception is exist, the USAAF bombing attacks against Ploesti oilfields was exceedingly adopted to Soviet propaganda machine in the cold war era. In resume works can be reading the data of the Romanian aeroplane industry. This studies use only Romanian archives and ideologically overheated.

The English and American technical studies made in the cold war era firstly tell the story of the stories of the American and British flyers, their combat missions against Romanian targets. They using their own archives resources and American and British memoirs, don't using the Romanian resources, because in that period the Romanian archives was inaccessible. The Romanian memoirs and studies was ignored. After the Romanian changing side for a short period was an American and British mission in Romania, to examine the ground built air defence, this report used in some studies. The American raid against the Ploesti oilfields in August 1st 1943 – which was one of the most interesting action of the USAAF – has the biggest biography. From the Tidal Wave the USAAF made an official report in 1944 too. This report is very useful for research. The Mediterranean Allied Forces in 1945 April made a combat report from the period 1943 December and 1944 September, but in this report the Romanian targets mostly was ignored. Patrick Macdonald's book, *Through the Darkness to Light* tell the story of the RAF 205th Bomber Group. The Group attacked Romanian targets at night. The structurally well-proportioned book contains the MTO official reports. The work uses some Romanian researches, but here we can see a poor resource criticism. The Romanian researches – handled in the cold war era - have a lot of agitations against the Germans. Some English studies tell the story of the German warplanes, and have a short mentions their use in Romania. Other studies tell the stories of the different German units, a mention their role in

airwar over romanian territories. These studies did not mention the cooperations of the german and romanian flying units.

After the romanian revolution in 1989, the state archives opened and new facts has been made available to the public, and this we can catch out in the new studies. In the last twenty years and specifically nowadays more and more studies turn up in this theme, which are telling the story of one romanian flying unit or a pilot career, and those ones are very popular in Romania, especially in among the youngs. This studies used romanian archives documents, war logbooks and veteran pilots memoirs as source. Some books are not a deep studies, they consisted only pictures, but those ones are good to make the theme more popular.

One of the best deep study in the theme of the romanian participation in the world war two is the work of Mark Axworthy - Cristian Craciunoiu - Cornel Scafeş. It role up in 1995 and used state archives. It tells only in brief the story of the romanian airforce, but consist a good résumé from its organizational structure and its materials. In some chapters we can read a little bit agitation.

Dénes Bernát books, which ones tuned up under care of Osprey Publication and Squadron/Signal are encompassing the romanian air units and their pilots stories. Those was path breker works in the international theathre. Bernát started his resourches in 1983, in the Ceausescu era, when he studied in Brasov (Brassó) at the university. Brasov had a airoplane factory in the wartimes. Here he meet with romanian veterans, and spoke with them about war in the eastern front. He started the resourche when it was not licensed by the government in the cold war era. The two book, that contains the story of romanian aces and the story of romanian airforce in the world war two, are good résumés. Most of his books are part of a big sequence, for that reason the books subject –matters are well limited. The books which ones are published in Hungary, are not mentioned in my work, because their subjects are almost the same that the english ones.

There is also worth to mention the Barbarossa to Odessa two volumes books by Bernád D.– Karlenko, D.– L. Roba, which contains the airwar story of the southern part of eastern front in 1941. The work uses all the state resources of the countries, which ones had taken part in the conflict.

The airplane names occurrent in the dissertation I used the terminology of Kenneth Munson's Aircrafts of the world war two, if I found it in the book. If didnt I used the original german factory names, where there is not dash between the name and the number, only after the number at the variants. For example Bf 109F-2 or He 111H-14. At the soviet warplanes have a part the short name of the Design Bureau (Tu, MiG, Il, Jak, Pe, Po, SzB, Ar, Szu, Jer, DB, TB, in hungarian language). At the romanian warplanes I used the original factory names. The dissertation consist a large number of romanian military ranks, those are written of in hungarian when they are firstly appear and in original romanian too in brackets. After this I used only the hungarian form. The original romanian and the translated hungarian form can be found in appendix too. I used the same method for the organizational structure. The occurrent english, russian, bulgarian and german terms I used the same methods. The datas of all important warplanes comparative schedules I tried to gather and use the most trustable datas. To use corectly the hungarian militaric terms, I used the Hungary in the world war 2 lexikon.

The official name of the romanian airforce was Forțele Aeriene Regale ale României (FARR). Although this was the official name, in the war time documents it didnt used. They used consistently the name of Aeronautica Regală Română (ARR). The official government tabloid the Monitorul Oficial used the same terminology.

In the second chapter I give a rewiev about the histography of the theme. In the third chapter man can familiarizate with the air organizational structure of the involved nations. I wrote the dissertation in chronological order. Firstly in the fourth chapter i wrote about the

beginnings of the ARR, about the first battle in the second balkan war and about its role in the first world war. I mentioned the beginnings of the romanian air industry and I wrote about how became the ARR after the war the most stronger airforce in the region, with big airindustry capacity without armament limitations. I wrote about the modernisation plans in the eve of the second world war, the changing of the organizational structure, about the staggered expansion plans. Just before the war Romanian succeeded to buy foreing warplanes, thanks to their own big oil and wheat reserve and their geopolitical status. I wrote in this chater about the polish warplanes, which ones after the german attack flied to Romania, about the territory looses in the year of 1940, about the realignment after this, about the soviet and hungarian border conflicts, about the alliance with the germans, about the romanian oil export and the influence of the german military mission. After this I examed the come of alliance with the germans and the preparations before the attack of the Soviet Union.

In the chapter five we can read about the first campaign of the ARR in the eastern front, introducing the forces that faces each other, their tactics, efficiency, talents, settings of objectives and achievments too. I display how they could see each other. I wrote about the only strategic bombing offensive made by soviet airforce against romanian targets and about the romanian and german defence. I told the story of the first stage of the campaign in Bessarabia and the second stage the siege of Odessa. This chapter is endig with conclusions.

The chapter six contains the regrouping of the ARR in 1941-1942 winter, than I analyze the second campign. I wrote about significant role of the romanian army in the soviet encirclement of the german sixth army at Stalingrad. I wrote about the withdrawal of the ARR too. This chapter is endig with conclusions.

In the chapter seventh I wrote the campaign of the romanian assault, dive bomber and fighter units in Ukraine in 1943. About the german re arming and re training of the romanian units and their combat history. This chapter is endig also with conclusions.

In the chapter eighth I told the story of the soviet, american and british bombing attackes against oilfields of ploesti.

In the chapter ninth I made the review of last year war of the ARR in the axis side. I wrote the romanian and german preparations to the american strategic bombing offensive in 1944. The soviet attack in Bessarabia and the german and romanian defence. Than I told the story of the american strategic bombing attacks in Romania and the soviet offensive in august. And at last a told the story of the romanian changing side and the figths between the romanian and german figthers. In short I introduce the romanian fights in side of the allies.

The tenth chapter consist of the final conclusions.

Scientific outcomes of the dissertation, results

In early ' 30s arms program of Romania – wich had rich oil an grain reserves – the air industry had a priority. The romanian goverment wanted to lear from the mistakes that they made in the first world war, with little success. They have maintinance problems with the warplanes bought from abroad. In the ' 30s they tried to buy the best foreing warplanes and warplane engines licences. The run up the romanian air industry not gone easy, they have only a few skilled enginers, and the expansion of the production capacity also not gone easy, due to organisation and corruptional problems. The warplanes produced before the second world war could keep the step with the modern warplanes built worldwide, but only in small numbers was able to produce them. To put them in the mass production needed a lot of time. That warplane, that in the time when the licence bought was modern, when went to mass production was only a mid category warplane. The planed mass production capacity was able to made only in 1942, far later than they originaly wanted to, and when the warplanes was

already obsolete. At that time the most of the ARR warplanes was already romanian built aircraft. Probably the ARR was the smallest air force wich could that achieve. But in that time they only was able to refill their combat units, wich ones worn-out in the Odessa siege, and only until the end of 1942 summer was able to do that. From 1941 to 1944 buit 67 J.R.S. 79B two engines bomber not a big amaunt, and this type in 1940 was already obsolete. The most successfull romanian air industry product was the I.A.R. 80/81 fighter plane, wich was cut edge technology in 1939, in 1941 was already 119 made, and this productivity capacity was able to mantain until 1944, but after 1942 they could not make the proper modernization of the fighter, it became obsolete. The romanian air industry could not to start the mass production of the Bf 109G-4 neither. In 1944 built only 6 of them.

Romania's success to buy suffice number of foreingh modern warplanes in the eve of the war is noteworthy. Romania's rich oil and grainreservs gave a big flexibility to Bucharest, which managed to offset the shortcomings of the Romanian aircraft industry. However, in 1939 and 1940 they have lost their earlier warplane sellers (british, french and poles). It also contributed to that foreign aircraft types at the beginning of the war became component failure, and set up an insurmountable task.

The small romanian air industry could not keep the step with the tempo f the big powers air industry, it lagged bihind. Still, it would have been a time of grace if they buy the german engines licences in 1942, but that not happened. After 1942 the romanian built warplanes became obsolete, but those could be effectively used in the eastern front until summer of 1944. Since the romanian pilots was available in a sufficient number of the ARR, and they are equiped with romanian built warplanes, the ARR has been able to preserve his strike efficiency. In 1943, when the ARR recived modern warplanes from the germans, they was able to put in them a bunch of veteran skilled pilots, with two years wartime experience.

Nevertheless the romanian built warplanes efficiency was more and more weaker than their opponents, their fabrication was able to keep the ARR's strike capacity. In 1943 and 1944 the ARR flied by germans loaned warplanes, and after this they flied with only own built warplanes in the side of the allies.

The pilot training was good, because they had no restrictions by any peace packt. Until 1943 the ARR pilots was a little bit experienced than their soviet counterparts. This most of the time helped to ballance the soviet overwhelming odds and the better performnce soviet warplanes. The leading romanian aces achieved victories against soviet warplanes in 1943 proved this too. In time of the war the ARR always have enough pilots, only in 1944, when the americans strategic bombing went on, was already abcense of good pilots.

The ARR was able to organise the biggest air combat force from the allies of germans in the attack against Sovietunion, an airdivision, wich one's fighting tactics can be feel the german influence. In the first stage of the campaign, in Bessarabia the romanian warplanes took of from their home base and can coorporate with the germans efficiently, exopt that the first day of the attack the ARR was enormous looses. The romanian two engies bombers supported the romanian surface armies or attacked soviet airfields or the port of Odessa. Luckily for the ARR bombers the soviet fighters not attacked them most of the time, because they had other missions, like low level attacks. But when the ARR fighters was regrouped to defende the romanian targets attacked by soviet bombers, the ARR bombers did not have the proper fighter cover, their combat loseees are growing. During the campaign never had the sufficient number of the ARR bombers. In this stage of war the ARR fighters could handle their tasks, the bigest threat to them was the soviet ground airdefence. In that time was their morale in the highest level.

The ARR fighter regrouped to defending the targets of the soviet strategic bomber attack, could handle the situation, but only with german help. In the daylight attacking soviet

bombers was shot down by German and Romanian fighters as in the other sectors in the eastern front, only the Soviet fighter-bombers achieved little success.

In 10th of August 1941 Odessa siege has begun. The ARR 118 days first campaign was 70 days in Odessa, and showed the incompleteness of the ARR, that until end of September operated without the help of Germans. The Romanian maintenance and mechanic groups, with their heavy equipment could not follow the air units to the detached airfield, because the ARR before the war not prepared a conflict like that. The proper maintenance of the warplanes in the field airports, already in Bessarabia could not be done, especially in winter cold. For that reason the most of the ARR warplanes made combat flights from the home bases in Romania, and not from the detached field bases, near the front. And for that reason the Romanian warplanes flew from greater distance to their destination than the Soviet warplanes operating from airfields near Odessa, and the Soviet warplanes could master bigger number of combat sorties, and after the sorties could do the proper maintenance in their warplanes too.

On account of the component failure in ARR and the slow warplane repair procedure, the ARR combat ready warplane number was slowly decreasing, at the end of Odessa siege the ARR potential had been reduced to minimum. Because of the emerging difficulties the air dominance above Odessa one time was in the ARR's hands and one time in the V-VS' hands. No one could achieve the complete air supremacy. Therefore neither the fighters, nor the bombers and the recon planes neither could fly successful missions. The bombers could only attack the harbor of Odessa with great casualties, because the Soviet ground air defence was very effective. After a while the bombers attacked only the centre of the city, where they killed or wounded three thousand civilians without any tangible results. The bombers had a few point blank hits, for example they achieved by chance to blow up and destroy the main ammo store of the city, with an emergency bombing by a Romanian two engine bomber, which was attacked by the Soviet air defence. But the bombers were available always only in small number and could not exploit the mistakes of the V-VS. The ability of the Romanian medium bombers to support the ground army - despite all the initial effort - remained limited, not to mention its capacity to hit naval targets. The Soviet warships and cargos docked in harbour of Odessa when they wanted.

The achieved air victories were overestimated in the Romanian and the Soviet side too. Under the campaign became clear the absence of proper ground support warplane in ARR. The medium bombers could not hit a moving tank, the fighters with their machine guns also could not destroy one.

The ARR lost his potency of 56 % in 1941. Next time appears in the eastern front only in the autumn of 1942.

At September 6th 1942 the GAL was formed - with its HQ in Rostov - which was consisted of 2 fighter and 2 bomber and 1 reconnaissance group, altogether with 272 warplanes. The GAL fell under the command of 4th German air division. Their most of the warplanes were Romanian built planes in the year of 1941. For that reason their maintenance was much easier than the year before, however the relative performances have improved only a little, because in that time new generations of Soviet warplanes became available. The logistical supplies had to be solved in a much larger range than before, therefore the performance level of the ARR remained below the 1941 level. Their most important duty was to support the German and Romanian armies to conquer Stalingrad. The ARR's warplanes flew daily 70-80 combat missions until the end of October. The fighters achieved the most of their air victories during this time of the campaign. After October there was no air fights, because of the bad weather.

In October of 1942 the GAL principal task was to keep up the air supremacy in its operational area, achieved by Luftwaffe, attack the targets in the north western sector of Stalingrad and support the fight of the third Romanian army. At the end of October was increasing threat of one Soviet attack in the area of third Romanian army. The Soviet front of

the Don concentrated 790 soviet warplane in the area until november 20th. With flying a fewer combat mission, the V-VS achieved, that 82 percent of its warplanes was combat ready, in front of the average 50 percent. The Luftwaffe could master combat ready only 60 percent of its warplanes, because of continuous combat deployments, the romanians even fewer.

The soviet encirclement attacks in november of 1942 forced the GAL to support the ground armies. The soviets encircled all two romanian armies, and this has affected a bunch of GAL airfields. At Karpovka the retreating 7th romanian fighter group left behind 12 Bf 109E fighter. In december the ARR could still support the german discharge experiment on outskirts of Stalingrad. During two days flied 123 combat missions. But after this the most of the romanian flying units was evacuated, only a few squadrons stayed to fight.

During the campaign the romanian pilots destroyed 61 soviet warplanes, only 39 in dogfight. The ARR was after a hard but not glorious campaign. Only with a small force was participated with little efficiency.

In the year of 1943 the german war industry was trained, they built more fighter planes that they needed. The romanians have enough pilots, but had modern airplanes only in few numbers. The cause of the two state agreements the germans loaned the most modern fighters, divebombers and ground attack airplanes to the romanians, but they must use them in the eastern front, to support the fights of the romanian and german ground forces. The 1st romanian airdivision consisted of a fighter wing, of a medium bomber group and of a divebomber group. In the end of spring in 1943 they begun their combat in the southern sector of the eastern front. The romanian flyers was trained by germans, and later often flied combat missions together. At this time the romanian flyers achieved excellent results. If they had material losses, the germans remedied them, and made the maintenance too. Until the end of the year, the romanian combat capacity remained at the appropriate level, and often saved the ground forces out of tight situations. Many romanian fighter pilot became ace at this period. At the end of the year the air units became exhausted, should have been included back in the hinterland regions to upload them and rested, but this luxury is not able to afford so by spring 1944 the 1st romanian airdivision was greatly depleted.

In 1943 the 1st airdivision had already a mobile logistics, and was able to move to one ground airfield to another, but it should be added that at this point already moved to well developed airfields and when they retreated back, their logistic distances was decreasing, but we must say they handled the logistics problems well.

The ploesti oilfields was always very important to the german leaders. The oil gained here made able to germans to operate mechanised units in large numbers. For that reason they protected the area of Bucharest and ploesti with ground air defence in well coordinated fire system. In the year of 1943 they had one thousand anti aircraft guns in the region, at the year of 1944 they increased that number to two thousand.

The ploesti oil refineries was attacked the first time in july 13th 1941 by soviet bombers. For 14 times attacked on that day. The refineries was repaired in two to four month. The attack was a big succes to the soviet long range bomber forces. They proved that even the ground and air defence they was able to hit the targets. This succes was a big surprise to the german and romanian leaders, they send fighter units to the region from the eastern front, after this they could protect the refineries properly.

In june 11th of 1942 13 B-24 Liberator leaded by Colonel Halverson took off from their airbase in Fayd and attacked the ploesti targets with little succes. 4 B-24 landed in Turkey. The attack proved to americans that even from a great distance was able to hit the target. 24 hours after Colonel Halverson's attack the germans founded an air unit, the Ölschutzstaffel task was exclusively to protect the refineries.

On august 1st of 1943 on the black sunday of Liberators, 178 B-24D took off from their african airfields to attack in low level the targets of ploesti. The german Freya

radarsystem detected the approaching american armada in time, so the ground air defence and the fighter units waited them prepared. The american bombers have little succes, the damages repaired in two month. Above the target the americans loosed 54 bombers, 5 above Bulgaria, 3 forcedlanded on water at mediterranean sea, 7 forcedlanded at Turkey, the crewmans was internated by the turkish government (73 persons), 23 bomber forcedlanded in british airbases (Malta, Sicily and Cyprus), most of them crashed, only 88 bombers turned back to their airfields, 55 of them was badly damaged. In the world war two the americans gave in this mission the biggest number of the medal of Honour to the airforce crew. Even the chatastrophic causalities the american and british leaders tought the mission succes. After two month the refineries working in full capacity. It was a Pyrrhic victory. The germans discovered that only the ground air defence is not enough to protect the oilfields.

In the spring of 1944 the romanians meet the facts, that the soviet groundforces was prepared to attack them, waiting in the frontiers of the country and the americans wanted to start a strategic bombing offensive against romanian targets. To face the new challenge, they prepared two airdivisions, but only one was filled with airplanes and pilots properly.

With the soviet spring offensive, the soviet leaders wanted to knock out Romania from the war, but the germans and the romanians was able to repel the attack. The german and romanian fighters shoted down a big amount of soviet warplanes, and their ground attack aircrafts destroyed many soviet tanks.

The american Fifteenth Air Force begun the strategic offensive on april 4th, attacked the main railway station in Bucharest. Their main targets first was the railway stations and the aircraft industry than they switched to the targets of oil industry. The american four engine strategic bombers was defended by the american long range fighter planes. The german and romanian fightes, wich was attacking the american bombers in one time was never more than one hundred planes, but the effecive radar system helped them to attack properly, and the air defence around ploesti and Bucharest was well coordinated too. The attacking american bombers was bigger looses that above Germany. Even bigger looses had the american fighters, when they was making low level attacks, to keep the defence fighters under pressure. After june to decrease the bomber looses three times more fighters defended the attacking american bombers than previously. One Fighter Group to the target, one above target and one to home base made the bombers defence. In the middle of the summer in ploesti worked two thousand smoke generator to cover the targets of the bombers. The americans used Pathfinder planes to able to attack the targets covered by smoke, and send before the attack a recosiance plane to aply the amount of smoke above the targets.

The defence fighters and ground air defence made big looses to the attacking american bombers, but could not prevent the further raids. The american attacked what they wanted, made seriuos damage in the targets and big looses to the greman and romanian defence warplanes. After july the romanian I.A.R. 80/81 fighters was didnt used in combat against american bombers, they could not to cope with the much more and much better american fighters. More and more romanian veteran pilot killed by americans. The last romanian sorties against american bombers flied in august, after this the romanian goverment not allowed further sorties, to keep the combat capacity to the soviet attack. The british night attacks was not so big than against Germany, the bombers layed mines in Danube river, in the begining made big looses in river cargos of the axis. The american attack lowered the refineres capacity to 20 percent at the end of summer. In august the romanian made more combat missions against attacking soviet forces, but could not cop with much more and much better soviet warplanes.

The ARR in the time of changing side firstly was not active., but attacked the german bombers, when they targeted Bucharest, and the german cargo planes too. The romanians ocupied the german used airfields, winning a lot of german warplanes and engines. After the

changing side the american and british POWs evacuated succesfully by the 15th AAF. The ARR begun their fight in side of allies.

After the Luftwaffe the ARR was the most powerfull airforce, that fight against soviets in eastern front. The ARR destroyed 1500 soviet, 270 allies and 350 german warplane during the war.

The author's previous publications on the topic of the dissertation

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Bombing raid against Ploesti between 1941 and 1943 (A Ploesti elleni bombatámadások 1941 – 1943) In: Seregszemle (A MAGYAR HONVÉDSÉG ÖSZHADERŐNEMI PARANCSNOKSÁG SZAKMAI-TUDOMÁNYOS FÓLYÓIRATA) HU ISSN 2060-3924, X. évfolyam 2. szám 2012. april-june 27 pages

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