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### ***Food and other strategic deliveries to the Soviet Union under the Lend-Lease Act, 1941-1945***

In this article, the authors set themselves a task, on the basis of documents and facts, to present still insufficiently covered in domestic and foreign historiography, true dimensions of lend-lease food and a number of other strategic deliveries, which played an important role in saving the peoples of the USSR from the threat of fascist enslavement.

First of all, it should be noted that in the period of the Great Patriotic War the agricultural sector of the Soviet economy suffered severe damage. To estimate measures of food production in the eastern regions of the country and the urgent need for food supplies under Lend-Lease, one should imagine the real situation that prevailed in Soviet agriculture after only a few months as a result of deep

invasion by enemy troops in Soviet territory.

Due to the forced retreat of the Red Army in 1941-1942, the total sown area of USSR reduced by 41.9%, while the number of collective and state farms dropped by almost 40%. First Deputy Chairman of the Soviet Council of Ministers, chairman of State Planning Committee, Nikolay Voznesenskiy, in his book «The War Economy of the USSR during World War II» wrote: «On the Soviet territory, under occupation, 7 million of 11.6 million horses that were in these areas before the occupation were exterminated or stolen by invaders; 17 million heads of cattle from the total number of 31 million were exterminated; 20 million pigs of the total 23.6 million; 27 million sheep and goats of the total number of 43 million. The material basis of mechanization of agriculture was undermined: in occupied areas of the USSR 137 thousand tractors and 49 thousand combines, 46 thousand grain drills, 35 thousand complex and semi-complex threshers were destroyed or stolen by invaders. 285 thousand livestock buildings belonging to the collective farms, 505 thousand hectares of fruit plantations and 153 thousand hectares of vineyards were destroyed and ruined.»<sup>8</sup>

Material and technical facilities of the agricultural sector were almost destroyed. The main part of the machines that served collective and state farms had to be transferred to the front. Powerful crawler tractors, about 85% of the vehicle fleet, more than 60% of working horses were almost completely withdrawn from the village. In total, agriculture lost more than 54% of its energy capacity, of which 21.8% were based in the occupied territory and 32.6% were handed to the Red Army.

Sown area of all crops cultivated in the USSR in 1940 amounted to 150,414 thousand hectares, in 1941 to 108,124 thousand. During this same period of progressing fascist aggression, sown areas of grain crops decreased from 110,571 thousand hectares in 1940 to 81,423 thousand hectares in 1941 and to 67,289 thousand hectares in 1942.<sup>9</sup>

Since the war began, the number of working-age population in the villages started rapidly declining. At least 19.5 million men - farmers, mechanics and technicians were called up for military service and industrial sector in 1941-1945. Mainly women, old people and adolescents continued working on farms and fields.

Such a situation in the agricultural sector of the economy, when the enemy was able to occupy most of the Soviet land, could not help affecting the supply of food of our people. This was bitterly stated by Supreme Commander, who was also the People's Commissar of Defense of the USSR, Joseph Stalin, in the order number 227 from July 1942:

«The territory of the Soviet state - he noted - is not a desert, and the people

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<sup>8</sup> N. Voznesenskiy, Selected Works. 1931-1947, Moscow, 1979, pp. 582-583

<sup>9</sup> The national economy of the USSR in the Great Patriotic War of 1941-1945. Statistical compilation. (Supplement to the weekly Statistical Bulletin of Central Statistical Administration of the USSR № 41 (540) from November 11, 1959. p. 302.

are workers, peasants, professionals, our fathers, mothers, wives, brothers and children. The territory of the USSR, which the enemy captured and aims to capture, provides bread and other products for the army and the rear; metal and fuel - for industry, factories supply the army with weaponry and ammunition, railroads.

After the loss of Ukraine, Belarus, the Baltic States, the Donetsk Basin and other areas, consequently, we have much smaller area, therefore, much less people, bread, metal, plants, factories. We have lost more than 70 million people, more than 800 million tons of grain per year and more than 10 million tons of steel per year. We do not even have supremacy over the Germans either in human reserves, or in reserves of bread. To retreat further means to kill ourselves and ruin our country at the same time. Each new piece of surrendered territory will fully enhance the enemy in every way and, therefore, weaken our defense, our motherland.»<sup>10</sup>

Each day of work in the field during the war was marked by the self-sacrificing labor of rural workers. In 1941, during the period of first wartime harvest, often under enemy fire, farmers managed to remove 65% of grains manually and with horse machines, and 13% at state farms<sup>11</sup>.

During the war, the gross output of individual food industry sectors as a whole declined throughout the Soviet Union from 20 to 90%, or even more, by 1940<sup>12</sup>. This factor greatly exacerbated the situation in the matter of supplying the population with food products. The areas, liberated from the Nazi invaders, were completely devastated, and people needed to be fed. The necessity of meeting the needs of the population, at least to a limited extent, demanded the organization of normalized supply of workers and employees. The introduction of the card system was a necessary step due to the reduction of food production and the lack of opportunities to piece out the shortage of food products imports.

Much attention was paid to supplying children. Products of best quality were supplied by ration cards for children. For infants under the age of one year special nutrition from dairy kitchens was provided. They received relevant products: milk, fat, semolina, rice, sugar and flour.

Children of 1 to 3 years old were provided with food from children's food stations.

Many workers and employees of organizations and factories organized households for the possibility of improving nutrition. The number of these people in 1945 was 18 million.<sup>13</sup> Individual and collective gardening became widely practiced. All this has become an important tool in providing population with food.

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<sup>10</sup> See: The Great Patriotic War of 1941-1945. Moscow, 2012 vol. 3, Fights and battles that changed the course of the war. p. 822.

<sup>11</sup> The Soviet Union during the Great Patriotic War. Moscow, 1985, p. 92.

<sup>12</sup> The national economy of the USSR in the Great Patriotic War of 1941-1945. Statistical compilation, p. 253

<sup>13</sup> Ibid., p. 310

A rather difficult situation developed in rural areas. As about 20 million healthy, able-bodied men were mobilized in the army and in industry, the village was kept by women, adolescents and the elderly people. The amount of grain and potatoes, issued for one workday during the whole time, decreased 2-3 times.

Thus, due to the social economy, a farmer could not provide the nutrition of his family, even at the level of the lowest supply according to card standards. So everyone, who was able to work, focused mainly on household farming as a major food base of peasant family.

Analyzing the state of affairs in in the issue of nutrition during the Great Patriotic War, we can firmly say that no country, no people suffered as much sacrifice and deprivation as the Soviet people in their fight against German fascism.

The Soviet leadership was perfectly aware of the complexity of the situation. There were not enough resources even for a modest level of nutrition of the urban population, especially in 1943-1944, when the Red Army liberated the vast territory inhabited by millions of people. They also needed to be fed. The situation was complicated by drought that broke out in parts of Siberia, the Volga region and the North Caucasus in 1943.

There was a need for allied assistance in food supply. Already in December 1941, talks of Soviet representatives and the USDA about the delivery of the USSR began. The talks were attended by the representatives of grocery departments of England and Canada, as the Soviet Union needed wheat and agricultural products from Canada and other parts of the British Commonwealth.

In the first months of 1942 food supplies to the USSR almost entirely reduced to flour, wheat, sugar. But the Soviet Purchasing Commission in the United States made a request for more canned meat, fats and oils. Significant food supplies from the United States began in October 1942, when the enemy seized a rich agricultural region of the North Caucasus, and stood at the walls of Stalingrad. The increase in these deliveries grew rapidly, and in December they were given priority over other strategic industrial products<sup>14</sup>.

Grocery deliveries under Lend-Lease not only had an impact on food production in the United States in 1941-1942, but also revolutionized the field of food processing. The technology of food processing and preserving nutritional value of dehydrated products was quickly mastered. This primarily led to the development of egg powder, milk powder production, the processing of dried vegetables and different concentrates.

Most of food products came to the Soviet Union in the form of such products as: concentrates, egg powder, condensed milk and milk powder. Such form of food products supply was valuable precisely for the USSR, when the routes of their transportation covered almost half of the world.

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<sup>14</sup>Nikolay Ryzhkov The Great Patriotic War: Lend-Lease. Moscow, 2012 p. 312.

Edward Stettinius, Head of Department of the Law on the Lend-Lease, wrote in his book «Lend-Lease, Weapon for Victory»:

« Like the British, the Russians have taken special care of their children. Adults not contributing to the war effort get next to nothing, and they have suffered terribly from malnutrition. Everything has been sacrificed for the soldiers. They do not have anywhere near the variety of food that American soldiers have, but the men in the Red Army get almost as nourishing rations as the men in our own Army.»

And then the author of the book noted:

“Meats for the Soviet have been mostly canned and frozen pork and mutton. One special product is called «Tushonka.» Chunks of pork seasoned with bay leaves and other spices are canned with lard; the result is good hot or served cold right from the can, at least so the Soviet soldiers say.»<sup>15</sup>

By the way, we would like to add: our soldiers called American canned meat «a Second Front». This irony was caused by the constant postponement of the opening of the Second Front by the allies.

Despite the acute shortage of fats in the USSR, the United States could not send sufficient amount of butter under Lend-Lease, delivering instead lard, edible linseed oil, peanut oil - such substitutes like margarine. By June 30, 1943, a total of only 12,000 tons of butter, or less than 1% of our production was sent to the Soviet Union. The Soviet side had asked for it specifically for the wounded, to restore their power in hospitals.

In 1943, that kind of deliveries faced problems, which were reported to the American side. They replied that the butter was packed in barrels and boxes, and that each box contains 60 bar, a pound each. Butter in barrels and boxes usually came moldy and musty, the one in barrels came in satisfactory condition.

American officials involved in the supply of butter, twice considered this issue and eventually reported to the Soviets that due to the lack of containers for butter packaging, Ministry of Agriculture of the United States refused to allow unprepacked butter, at the same time pointing out that of all the amount of the reserved butter, 50-60% was packaged.

Thus the negotiations on this issue ended. However, in most cases, the Allies found a common language, which ensured a very large-scale world-class operation.

Food supplies under Lend-Lease had a very wide range, which should never be forgotten when assessing military and economic aid of the United States to its Russian ally. The data of Tables 1 and 2 are stated as an example:<sup>16</sup>

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<sup>15</sup> Edward Stettinius, Lend-Lease, Weapon for Victory

<sup>16</sup> Nikolay Ryzhkov, The Great Patriotic War: Lend-Lease. Moscow, 2012 p. 318-319

Table 1

**Food supplies under the Lend-Lease Act from  
the United States to the Soviet Union on January 1, 1945**

Product list	Volume tonnage-wise	Price in USD
Wheat	49 490	2 663 7783
Wheat and rye flour	510 656	34 597 865
Rice	52 615	8 059 961
Oats	8055	431 628
Barley	5322	222 327
Bran	202	12 458
Soya flour	35 091	3 324 222
Sugar	483 932	57 684 678
Chocolate	307	129 772
Various crops	86 236	8 050 136
Macaroni	157	32 858
Dried beans	167 694	26 576 782
Other beans (peas)	17 874	2 509 804
Canned meat	519 218	462 314 037
Pickled and smoked meat	61 688	32 382 825
Fish and canned fish	131	42 609
Back fat	162 519	68 956 392
Lard	180 759	63 809 946
Mutton and beef tallow	39 426,6	13 719 998
Margarine	40 653	19 008 140
Milk powder	48 067	21 009 914
Condensed milk	17 494	7 449 286
Cheese	22 325	14 847 188
Butter	81 004,5	85 309 028
Spices	–	562 101
Condensed soups and meat extracts	6431	4 801 218
Dried meat	13 004	39 998 730
Dried and fresh fruit	1422	612 044
Salt	1911,2	83 971

Tea	993,8	1 635 924
Coffee and chicory	6279,3	2 784 178
Vitamins	167,4	14 974 537
Cod liver oil	204,2	4 873 171
Riboflavin	0,1	53 199
Egg powder	69 099	185 665 423
Saccharine	477,1	1 171 818
Vanillin	14,6	73 026
Lemon acid	0026,9	1 160 169
Vegetable oil	327 592,9	101 900 154
Linseed oil	16 938,7	5 553 131
Cottonseed oil	273,2	783 128
Maize oil	942,6	246 116
Shortening	25 623	11 191 074
Olive oil	155,8	43 448
Soybean oil	1587,5	788 320
Canned vegetables and tomatoes	7533	3 313 555
Fresh vegetables	1556	176 839
Dried vegetables	4554	5 084 312
Soy sauce	10	1618
Fruit extract	1927	2 311 976
Oilcakes	190	6852
Yeasts	826,4	3 139 262
Nuts	–	2 631 246

The volumes of delivery of basic foodstuffs to the USSR are given in Table 2.

**Food supply under Lend-Lease to the USSR  
for the period from October 1941 to September 15, 1945, thousand tons**

<b>Product list</b>	<b>Supply volume, thousand tons</b>
All food products including:	3983
Cereal products	1044
Meat products	787
Animal fat	625
Vegetable fat	465
Sugar	624
Concentrates	330
Seeds	34

During the supplies under Lend-Lease, the Soviet Union received 238 million kg of frozen beef and pork, 218 million kg of canned meats (including 75 million kg of stew), 33 million kg of sausages and bacon, 1,089 million kg of chicken meat, 110 million kg of egg powder, 359 million kg of vegetable oil and margarine, 99 million kg of butter, 36 million kg of cheese 72 million kg of milk powder.<sup>17</sup>

Various sources determine that the general volume of supplies was up to 4 or 5 million tons. The difference is due to the variety of methods to determine the volume, the difference between metric and short tones and a number of other reasons. Reporting data of the Soviet Purchasing Commission in the United States contain a lot of accurate information.<sup>18</sup>

Some foods have played a huge role for recovering soldiers, the number of which reached 22 million people during war.

Average annual imports of grain, cereals, flour (in terms of grain) made 2.8% of average annual grain stocks in the USSR.

The need of the army for bread and grain forage at that time, not to mention potatoes and vegetables, was mainly satisfied by local funds. And for all other domestic food, centralized supply continued to keep a leading position, accounting for 90% or more of total deliveries.<sup>19</sup>

<sup>17</sup> Ibid., p. 319

<sup>18</sup> Ibid., p. 317

<sup>19</sup> «Sown areas of the USSR. Gourds and potatoes. (Millions of hectares)»; «The structure of the sown areas of the USSR (as a percentage of the total sown area)» // Economy of the USSR in the Great Patriotic War of 1941-1945. Statistical compilation. pp. 300-301.



Another important fact: we are talking about war-prisoners from Germany and its allies. According to the General Staff of the Armed Forces of the USSR, our troops have taken 4,377,300 thousand enemy soldiers, of whom about 600,000 were released directly at the front after checking. The majority of them were persons of non-German nationality who were forcibly drafted into the Army of Wehrmacht and its allies (Poles, Czechs, Slovaks, Romanians, Bulgarians, Moldovans, Volksdeutsche, etc.), as well as partially transportable disabled soldiers. These people weren't sent to the Soviet rear

camps for war-prisoners, neither were their credentials included in account data.

The majority of the war prisoners (3,777,300) were sent to the rear NKVD camps from front-line collection points, including about 752,500 from German ally states.

On the whole, the country, especially the civilian population, as can be seen from the above data, experienced the greatest difficulties during the war. It would seem that the Nazis atrocities against civilians, Soviet prisoners of war, were to provoke a certain feedback so that appropriate adequate measures were applied to prisoners from Nazi Germany and its satellites. In fact, the «man-hating Stalinist regime», as some authors now write in their «historical works», the attitude towards prisoners of war in the USSR was, on the contrary, humane.

According to military statistics, the percentage of German prisoners of war returned from captivity is 85.1%, and of all recorded Nazi prisoners of war, 14.9% died in captivity.

There is no comparison between these data and the number of prisoners of war who died in German captivity. Of 4,559,000 Soviet soldiers missing and taken into German captivity, only 1,836,000, or 40% returned home, and about 2.5 million people (55%) were killed and died in captivity.

What helped Nazi prisoners of war survive in Soviet prison camps? Firstly, the features of the Russian character: Soviet soldier hated the enemy, but did not avenge the defeated. Second, the Soviet people didn't starve and bully prisoners of war. In accordance with the Order № 001282 of the People's Commissariat of Internal Affairs of the USSR, dated October 18, 1944, i.e., at a time when the number of prisoners began rapidly growing, the terms of food supply for prisoners of war were set. Their daily diet consisted of products of 21 categories.

Summing up all, we get 2,200 calories per day per prisoner. Later these standards were improved. The energy value of this first post-war diet was 2,542 kcal. The norms of daily ration of Nazi prisoners of war in 1945, in conditions of destruction, were higher than a so-called minimum consumer basket of a Muscovite.

As for Soviet prisoners of war, it's well known how they were treated and in which conditions they were kept. They not only died from hunger, cold and lack of medical care. They were buried without compliance with elementary civil,

not to mention the church, ethics, without indicating burial sites and data about who was lying in a strange land.

Barbarous treatment of war prisoners has led to the fact that millions of Soviet citizens experienced all the hardships of staying in Nazi captivity, and more than 55% of those who were captured, did not experience marital happiness, did not become fathers and grandfathers, as opposed to those who safely returned to their European homes from the Soviet camps. However, few descendants of former Nazi prisoners experience grateful attitude towards the country that had shown humanity.

Summarizing, we can surely say that the food supplies under the Lend-Lease Act were of great importance for the Soviet Union. They have made one-fifth of the total supply of the Allies in the last years of the war. And yet, despite the difficult situation in the issue of food security of the Soviet people, instead of 10% of food of the total U.S. production, promised by Roosevelt in 1943, unfortunately, there were only 3%.<sup>20</sup>

Anastas Mikoyan highly appreciated the role of Lend-Lease and, during the war he was responsible for the work of the seven allied Commissariats (of trade, procurement, food, fish, meat and dairy industry, maritime and river vessels) worked as Commissar for Foreign Trade of the country since 1942, and headed the reception of the Ally supplies under Lend-Lease.

During our next meeting, Mikoyan was asked how he evaluated lend-lease deliveries to the Soviet Union during the war. Mikoyan said: «I rate military-economic supplies from our Western allies, mostly under American Lend-Lease, very highly, although not as highly as some Western authors. Imagine, for example, the army, equipped with all necessary weapons, well-trained, but its soldiers are undernourished, or worse. What will happen to these warriors? And when we began to receive American stew, shortenings, egg powder, flour, and other products, imagine what extra calories are our soldiers got! And not only the soldiers: something was given to the rear.»<sup>21</sup>

Now it is impossible to accurately estimate the role of food supplies from the United States Britain and Canada in the defeat of the armies of Nazi, but it is clear that this aid has played a significant role in achieving victory over the common enemy.

From the first days of the Great Patriotic War, the main challenge of the battling the country was to increase the release of military equipment and weapons. In the first place it required mobilization of all resources and material to establish the production of metal.

In the list of supplied metals, an extremely important place was occupied by non-ferrous metals. A significant part of the information on their production in the Soviet Union remained classified for many years.

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<sup>20</sup> Nikolay Ryzhkov, p. 323

<sup>21</sup> G. Kumanev, Stalin's commissars speak: Meetings, discussions, interviews, and documents. Smolensk, 2005, p. 70

Of the non-ferrous metals supplied under Lend-Lease, it's worth highlight aluminum. It was the main material for the production of aircraft, tank engines, etc., and at the beginning of the war there was a lack of it the USSR. This was evidenced in the words of Joseph Stalin to Harry Hopkins, personal representative of the U.S. President Franklin D. Roosevelt, in August 1941: «Give us aluminum in the right quantity, and we will be able to fight for another four years.»

Anastas Mikoyan had a same opinion. In his memoirs, he noted that «Due to evacuation of the Dnepropetrovsk plant that produced 150 tons of aluminum per day, and small plants on the river Volkhov and Kandalaksha on the Kola Peninsula, we were actually left without aluminum. We needed 4,000 tons per month and, in addition, required 500 tons of duralumin monthly.» Indeed, the real situation in the field of aluminum production and in meeting the demand for it was very difficult.

The main suppliers of aluminum were the USA, UK and, since 1943, Canada. So, in 1943, Mikoyan reported to Stalin that Canada takes supply of aluminum in the amount of 20 tons per year. As a result, over the war years Canada, delivered 35.4 tons of the metal to the Soviet Union, and the UK delivered 36.3 tons.<sup>22</sup>

Thus, in view of this situation, we can conclude that Lend-Lease provided substantial assistance to the Soviet Union. To a large extent, the country managed to organize the work of its aviation industry thanks to the aid.

According to Soviet specialists, the total supply of aluminum from the United States, Britain and Canada under Lend-lease during the war amounted to 301 tons, and its total production in the USSR over the same period, including silumin – to 350.9 tons.

Copper was an equally scarce nonferrous metal in military production of the country. It was supplied in large quantities for the production of military equipment, ammunition, communications equipment, nonferrous alloys, etc.

There are many uncertainties in the production of aluminum, as well as in copper production in the USSR, due to the closure of official data for many years.

According to the post-war statistics, the production of copper during the war amounted to 534 tons. Lend-lease from the United States is estimated at 404 tons, or at 76% of production in the Soviet Union.

Moreover, copper deficiency in our country decreased largely due to the imports of communications equipment from the United States. For example, the USSR received 956.7 thousand miles of field telephone cable, 2.1 thousand miles of marine cable and 1.1 thousand miles of underwater cable. A lot of radio stations, receivers and radars, produced from copper, were also stationed.

In addition to aluminum and copper, the Soviet Union received a considerable amount of other non-ferrous metals and alloys. For example, Allied supply of

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<sup>22</sup> The national economy of the USSR in the Great Patriotic War of 1941-1945. Statistical compilation

tin amounted to 29 tons, while its production in the Soviet Union during World War II amounted to 15.5 tons.<sup>23</sup>

Only 436.4 tons<sup>24</sup> of cobalt in metal and hydroxide were produced during the war period, and the allies delivered 470 tons.

In the same period 54.8 tons of zinc and 20.2 tons of lead were received. According to the Purchase Committee of the United States, the supply of other non-ferrous metals and alloys under Lend-Lease on January 1, 1945, amounted to (see Table 3)<sup>25</sup>:

Table 3

**Lend-lease supplies of some non-ferrous metals and their alloys to the USSR on January 1, 1945**

Product list	Supplied to the USSR (tons)	Price, USD
Nickel	12 719	9.6 million
Cadmium	347	714.6 thousand
Mercury	818,6	4.5 million
Magnesium	7838	3.54 million
Other nonferrous metals	10 462	1.6 million
Duralumin	59 904	52.5 million
Latten	265 892	111.8 million
Copper and brass-wear	31 091	28.5 million
Foil	283	260 thousand
Bimetal	33 242	13.3 million
Babbitt	195	195,1 thousand
Various alloys of nonferrous metals	908,9	1,033 million
Resistance alloys	152,1	657,4 thousand
Nichrome	2061	3,097 million

Apart from listed above, we have received chrome, zirconium, beryllium, cesium, and sodium from allies. In total 797.7 tons of non-ferrous metals and their alloys were supplied under Lend-Lease to the Soviet Union during the war.

<sup>23</sup> Ibid.

<sup>24</sup> Ibid.

<sup>25</sup> Nikolay Ryzhkov, p. 270

Supply of ferrous metals and metal products from them was of great importance for the tank industry, as well as in the manufacture of other military equipment, ammunition, shipbuilding, for technological processes at defense enterprises, etc.

There was deficiency of iron or steel due to a sharp decline of their production. For example, steel production in the Soviet Union in 1942 fell by more than twice compared with 1940, from 18.3 to 8.1 million tons. It happened, as we know, due to the loss of steelmaking capacity in Ukraine and southern Russia.

Naturally, with such a situation in the USSR, since the early days of Western aid, the question of the supply of ferrous metals and especially its heavy-duty varieties was raised. «We sent all the types of steel: instrumental, in bars, billets, sheets, strips» - Edward Stettinius said.

Armor steel had a special place in these shipments, especially in the production of tanks, self-propelled guns and other equipment. Mobilization reserve of armored steel in the Soviet Union before the war was small and did not cover even 6-month industry needs. According to some data, 525.4 thousand tons of rolled steel of all types was delivered to the USSR under Lend-Lease. Every month, the country received about half of average amount of Soviet production of armored steel. Special steel for gun barrel drifting was also delivered.

The list of ferrous metals and metal products is given in Table 4. It also shows the data of the Soviet Purchasing Commission on supplies of this group of materials only from the United States on January 1, 1945.<sup>26</sup>

Table 4

**Lend-Lease from the USA to the USSR: ferrous metals and their alloys,  
January 1, 1945**

<b>Product list</b>	<b>Supplied to the USSR, Thousand tons</b>	<b>Price in USD</b>
Cast iron	6 927 000	188,8million
Armor sheets	5 949 000	2,8 billion
Hot-rolled steel	173 035	40,6 million
Cold-rolled steel	121 480	19,5 million
Tool steel	34 652	15,0 million
Rapid steel	10 006	14,5 million
Cold-rolled steel sheet	73 946	6,0 million
Hot-rolled steel sheet	208 620	13,3 million

<sup>26</sup> Ibid., p. 272

Hot-rolled steel strip	20 439	1,5 million
Cold-rolled steel strip	58 477	11,0 million
Cold-drawn drill steel	1044	1,2 million
Chromium-silicon-manganese steel	77 383	12,7 million
Tin-plate	108 600	12,9 million
Steel wire	82 537	22,3 million
Barbed-wire	33 720	3,0 million
Stainless steel wire	905,7	1,13 million
Resistance wire	3473	946,4 million
Steel alloy wires	151	1,2 million
Steel ropes and cables	28 252	18,0 million
Steel alloy pipes	41 173	15,6 million
Steel pipes	121 455	17,6 million
Steel bolts, nails and screws	20 595	3,9 million

A large number of railway rails were required for providing the operation of the country's railways, for laying new ones to the front and for restoring the destroyed ones.

During the war, 622 thousand tons of rails were delivered under Lend-Lease. This represents about 56.5% of the total domestic production of rails from mid-1941 to the end of 1945. If excluding narrow gauge rails that were not supplied under lend-lease, then the American supplies made 83.3% of the total production of the Soviet broad gauge rails. Thus, more than half of rails used on Soviet railways during the war came from the United States. The sharp decline in the production of rails in Soviet industry allowed to send extra power and resources of steel to produce weapons (in 1945, rails production made 13% from the 1940 level, and in 1944 - only 5.4%).

Lend-Lease supplied not only the rails with armature, but also rolled railway wheels and axles. At that time the USSR did not have technology and capacity to fabricate them, so it had to produce them of cast iron or steel.

The list given in Table 4 shows only a general picture of the supply chain. Each item was specified in accordance with characteristics, as well as with the needs of customers in the Soviet Union.

Marshal Zhukov gave an assessment of metal supply in the USSR. His remarks given in 1963, which were stored in the Central Archives of the Russian Defense Ministry, are listed below:

«Right now they say that the Allies never helped us... But you cannot deny that Americans drove many materials, without which we would not be

able to form our reserves and could not continue the war ... And how much steel they supplied! Could we quickly establish the production of tanks, if not for American aid? And now they show it in a way that we had plenty of sources.»

The final part of this work on Lend-lease proved to be quite difficult for the authors of this work.

Numerous domestic and foreign researchers of this topic summarize this unique project of the twentieth century in different ways. Many of them feel the need to reflect the role of Lend-Lease to the Soviet Union during the war. In this case, the points of view are often opposite – from a complete denial of its role in the victory to a large, unrealistic exaggeration. Exaggeration, of course, comes especially from Hitler's generals and their memoirs of the postwar period.

Some authors believe that the results of Lend-Lease should be presented in figures for all shipments - weapons, materials, etc. Most researchers limit their position to arguments about the share of lend-lease supplies in relation to Soviet production. The values here are discussed in the range from 4% given by N. Voznesensky to 12% asserted by some authors.

When considering the results of Lend-Lease, we can come across pretty interesting ideas and analysis that actually reflect the questions of scientific and technological development in the Soviet Union during World War II and the postwar period, the creation of basic facilities of some domestic production in the modern technological base of the USA and UK, etc.

Postwar decades, especially during the «cold war», of course, left their mark on the true picture of lend-lease supplies. Therefore, the researchers of the Second World War have to overcome many obstacles in the form of omissions, fabrications and conclusions that were made in favor of the political forces of the time. In this regard, it is impossible not to join the next methodological «discourse» made during the discussion:

«Any backdating assessment of the role of Lend-Lease is always questioning and problematic. Any attempt to establish exactly how crucial this role was, how it shortened the path to the final triumph leads researchers to a shaky ground of endless speculation, as well as discussions and debates. In the course of discussion they come closer close to the truth, but this path is long, and the end cannot be seen.»

This is certainly true. And we wish to see good, smart and truthful publications on this way to the truth.

Taking into account the situation in the beginning of the war, Stalin was forced to suppress his personal antipathy to western powers and establish an alliance with them.

On July 12, 1941, Molotov and British Ambassador Cripps signed in Moscow the Agreement between the Governments of the USSR and Great Britain on joint actions in the war against Germany. It obliges both sides, firstly, to help each other and provide support of all kinds, and, secondly, not to negotiate with Germany without mutual consent. The scope and content of mutual assistance,

as before, wasn't determined. For all that the agreement of July 12 was the first intergovernmental document which secured the beginning of formation of the anti-Hitler coalition with the USSR.

So, is not even necessary to talk about the financial aid of future allies in the summer and autumn of 1941. There simply wasn't any: the Soviet Union remained with its problems alone, and Soviet losses were enormous.

But in the course of strategic defense the Red Army inflicted tremendous damage to the enemy. Only ground troops of the Wehrmacht lost 750 thousand on the Soviet-German front killed, wounded and missing from June to November 1941. The loss of the German Air Force from June 22 to November 10 amounted to about 5180 airplanes. Nazis plan to end the war before winter was disrupted.

The Americans and British became convinced that the support to the Soviet Union was necessary and justified. «I want to inform you once again - Roosevelt addressed Stalin on December 16, 1941, - about the universal enthusiasm in the United States over the success of your armies in the defense of your great nation.»<sup>27</sup>

At the same time, there was practically no material aid from the allies in this battle. The only exception was the appearance of the 126th Fighter Wing of the P-40 «Tomahawks» in the Moscow sky in October 1941.

The defeat of the German fascist troops in the Battle of Moscow marked the collapse of Blitzkrieg. However, the strategic initiative was wrested from the Wehrmacht only temporarily.

In the summer of 1942 the enemy, concentrating its efforts on the southern flank of the front (over 90 divisions), launched a new strategic offensive. The great Battle of Stalingrad (July 17, 1942 - February 2, 1943) then unfolded. At the same time the battle for the Caucasus (July 25 1942 - October 9, 1943) began.

The Battle of Stalingrad of November 1942, in which over 2 million warred on both sides, covered an area of 100 thousand square km and lasted 200 days and nights. Enemy forces led offensive by efforts of the 6th Field and the 4th Panzer Army, with the participation of Romanian, Hungarian and Italian troops, and soon reached the outskirts of Stalingrad.

Fighting in the battle on the Volga was brutal. In August, they were deployed directly in the city.

In the counteroffensive at Stalingrad, which began on November 19, 1942, Soviet troops inflicted crushing blows. The remnants of the 6th German Army, led by commander General-Field Marshal Paulus, surrendered on February 2, 1943. The total losses of the enemy - killed, wounded, prisoners and missing -

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<sup>27</sup> Correspondence of Chairman of the Council of Ministers of the USSR and the Presidents of the United States and the Prime Ministers of Great Britain during the Great Patriotic War of 1941-1945. Correspondence with Franklin D. Roosevelt and Harry S. Truman. vol. 2 (August 1941 - December 1945). Moscow, 1976, p. 12.



amounted to about 1.5 million soldiers and officers, including more than 800 thousand from November 19, 1942 to February 2, 1943, as well as up to 2 thousand tanks and assault guns, more than 10 thousand guns and mortars, about 3 thousand combat and transport aircraft. During this same time, irrevocable and sanitation losses of the Red Army amounted to more than 1.1 million people.<sup>28</sup>

The victory of the Soviet troops in the battle made a decisive contribution to the start of a radical turn in the war.

Touching upon the iconic battles of the Great Patriotic War, the authors sought to avoid repeating already known facts. We faced another task: to reflect the role of Lend-Lease in these battles. If we talk about the Battle of Stalingrad, it should be noted that it occurred at the junction of the implementation of the First and Second Protocols. The first protocol in its volume was minimal and made approximately 8% of deliveries in all four protocols. The Battle of Stalingrad took place in the initial period of the Second Protocol, which was also carried out in only 75%, while by the volume of deliveries it was larger than the first.

Thus, Lend-Lease played practically no role in the Battle of Stalingrad. The third and fourth protocols which were more significant than the first two, were ahead and were performed almost entirely. That's why all subsequent major battles of World War II already had substantial help of the allies.

Analyzing the strategic battles of the Great Patriotic War, we conclude that with each stage of the war great opportunities for their conduct emerged. They determined the turning point in the war, and then superiority over Nazi Germany. Of course, the main merit in providing the Soviet army belongs to the Soviet military-industrial complex, through which balance in production was achieved in incredibly difficult conditions, and since 1943 - superiority over the industry of the enemy.

At the same time it would be biased to remain silent about the role of arms supply and of providing other military equipment under Lend-Lease.

It was important to analyze the dynamics of supply and its volumes, and most importantly, the time factor through the major battles of the Great Patriotic War and the participation of lend-lease weapons. Yet, apparently generalizing numbers cannot be avoided, despite the fact that they were «calculated» in the preceding sections of the material.

In order not to accuse domestic researchers of bias approach, we present a memorandum of the U.S. Administration of foreign economy on supplies to the Soviet Union under Lend-Lease. Let us recall that on October 25, 1941, U.S. President Franklin D. Roosevelt established the Lend-Lease Administration, headed by a big businessman E. Stettinius (Secretary of State since 1944). In September 1943, it was transformed into the Administration of foreign economy

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<sup>28</sup> G. Kumanev, Problems of military history of the country (1938-1945.), Moscow, 2007, p. 240

headed by L. Crawley. It exercised control over the Lend-Lease program, over conducting economic war and providing foreign aid programs.

On February 9, 1945, Crawley's administration made the following statement regarding the assistance provided to the Soviet Union under Lend-Lease:

«The Soviet army continued to grind the Nazi forces on the Eastern Front, using millions of tons of military equipment and supplies produced in the United States and delivered to the USSR under Lend-Lease. Soviet officials have repeatedly stressed the importance of aid under Lend-Lease for the military success of the Red Army. Of course, it is difficult to compare the total amount of supplies us with the total needs of the Soviet Union. However, some categories of products were important for the Red Army, for example, trucks, locomotives, etc. Transport equipment now has a special meaning, as the lines of Soviet communications expand further to the West - in the depth of enemy's territory.

Since the inception of the Lend-Lease program on December 1, 1944, more than 331 thousand cars, including 45 thousand «Jeeps» were delivered to the Soviet Union. On some fronts of the Red Army, the number of our vehicles exceeds 50%. About 29 thousand motorcycles were delivered under Lend-Lease. Since January 1944, the program of supplying the USSR with railway equipment began. After Stalingrad, the Nazis systematically destroyed the Soviet railroad tracks, transport equipment, locomotives. The products of Soviet enterprises could not make up for the resulting loss. By November 1944, we provided the USSR with 1,045 locomotives, 7,164 wagons, 1,000 loading platforms and 100 tanks. The number of supplies peaked in November 1944: only during this month we delivered 1,367 cars to the USSR. The problem of replacing rails was one of the major. By November 1944, the USSR was supplied with 2,120,000 tons of steel, of which 478,000 tons were allocated for rails replacement, and 110,000 tons of railway wheels and axles. We have also supplied 253 tons of aluminum, 314 tons of brass and 65 tons of other metals containing copper.

By November 30, 1944, the Soviet Union was supplied with the following number of arms and equipment: 12,200 aircraft (the largest number in comparison with other countries), 135,000 machine guns, 294,000 tons of explosives, 6,000 tanks, 1,800 self-propelled guns, 13,000 pistols, 3,300 armored personnel carriers, 8,200 guns of different calibers (including anti-tank), 5,500 artillery tractors. In addition, the USSR received 1,300,300 tons of oil and 638,000 tons of chemicals. With the help of Lend-Lease, the problem of uniform for Soviet troops was solved. It earlier emerged as a result of the loss and destruction of many factories. By November 1944, 11 million pairs of combat boots, 97 million yards of cotton fabric, and 50 million yards of woolen goods were delivered to the Soviet Union.»<sup>29</sup>

That is the assessment of lend-lease made by the official representative of

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<sup>29</sup> Nikolay Ryzhkov, *The Great Patriotic War: Lend-lease*, pp. 414-415

the United States at the end of the war. It differs from our data, but in general, provides a comprehensive picture.

Speaking on the supply of arms and military equipment, and their role during the war, we should not forget about such important direction in the lend-lease deliveries, as shipments of material resources to the Soviet Union. Of course, each plane or tank produced in the USSR contains part of the resources of allies. In billions of bullets and projectiles, there is a particle of lend-lease powders and chemicals.

It is necessary to once again stress the role of food supply, especially the United States. Being pretty weakened in material and human resources, the village could not provide adequate food to the multimillion army, employees of enterprises of the military-industrial complex, and the entire population of the Soviet Union. Under these conditions, the food supply to the Soviet Union was very much appreciated. It is difficult to imagine a situation in the country without such assistance.

Once, during a conversation with Mikoyan, we again raised the topic of strategic lend-lease supplies to the USSR. «Take, for example, the supply of vehicles» - he said. «We received, as far as I remember, about 400 thousand first-class machines such as «Studebakers», «Fords», jeeps and amphibians. All our army was actually on wheels and what wheels!

Well... - Mikoyan mused. Without Lend-Lease, we would probably war another year or two...»<sup>30</sup>

Finally, the «integral» role of Lend-Lease during the Great Patriotic War and its contribution to the Great Victory in general, to the unity of its economic, political and military components. Of course, that victory was firstly provided by the Red Army and home front workers, all those who forged the sword of Victory and who smote the black heart of fascism with it.

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<sup>30</sup> G. Kumanev, Next to Stalin: frank evidence, meetings, discussions, interviews, and documents. Moscow., 1999, p. 38.