



universität
wien

MASTERARBEIT

Titel der Masterarbeit

Western aid for the Soviet Union during World War II

Verfasser

Denis Havlat, BA

angestrebter akademischer Grad

Master of Arts (MA)

Wien, 2015

Studienkennzahl lt. Studienblatt:

A 066 689

Studienrichtung lt. Studienblatt:

Masterstudium Zeitgeschichte UG 2002

Betreut von:

Univ. Prof. Dr. Carsten Burhop

Contents

Introduction	4
1 The Origins of Lend-Lease: Cash and Carry and aid for Britain	9
Aid for Britain	11
2 The Eastern Front and Western aid 1941	14
The state of the Red Army at the start of the war	18
Lend-Lease	21
The air war	24
The Mediterranean	25
3 The Eastern Front and Western aid 1942	27
Lend-Lease	30
The air war	32
The Mediterranean	35
4 The Eastern Front and Western aid 1943	37
Lend-Lease	39
The air war	42
The Mediterranean	46
5 The Eastern Front and Western aid 1944-45	48
Lend-Lease	50
The air war	52
Italy	56
Western Europe	57
6 The impact of Western aid	60
German military effort used against the Soviet Union and the Western Allies	60
Disruption of German economy	64
Lend-Lease deliveries	66
7 The Russo-German war without Western intervention	71
8 Conclusion	76
Bibliography	79
Abstract	85

Introduction

It has been seventy years since the end of the Second World War. In the decades following this conflict, thousands of books and articles have been published, examining almost every aspect of the events which took place during this time period. Soldiers, politicians and ordinary civilians alike have composed countless accounts and memoirs, while historians have extensively studied the people, decisions and campaigns which were crucial to World War II. It can be said without exaggeration that the Second World War and the years preceding it, are among the most thoroughly investigated historical time periods in human history.

Despite the fact that the time from 1939-1945 has been investigated by thousands of scholars from dozens of nations, it is surprising to find that one of the most critical events of the war, the British-American Lend-Lease deliveries to the USSR, have seemingly been neglected. Compared to the vast literature available about topics like the Allied bomber offensive, the Eastern Front or the Battle of the Atlantic, very little can be found about Western deliveries to the USSR. Writings dealing exclusively with American aid given to the British Empire are even scarcer.¹ The main reason why this particular topic has received so little attention was the Cold War. During the Second World War Western deliveries were held in high regard by Soviet officials and even Stalin himself. In his memoirs Nikita Khrushchev remarks:

Britain and the United States did everything they could to provide us with material aid of all kinds, above all military aid in the form of arms and other materiel necessary for waging war. The aid we received was very substantial. [...] Stalin [...] stated bluntly that if the United States had not helped us, we would not have won the war. If we had had to fight Nazi Germany one on one, we could not have stood up against Germany's pressure, and we would have lost the war. [...] in conversations with me he noted that these were the actual circumstances. [...] In the given instance, I think, Stalin's conclusion was correct. When I listened to his remarks, I was fully in agreement with him, and today I am even more so.²

¹ Nearly all authors devote at most a few pages to this subject, two notable exceptions are: Alan P. Dobson, *US Wartime Aid to Britain: 1940-1946* (Croom Helm 1986) and H. Duncan Hall, *North American Supply* (Her Majesty's Office 1955)

² Nikita Khrushchev, *Memoirs of Nikita Khrushchev: Volume 1, Commissar 1918-1945* (Pennsylvania State University Press 2005), pp. 638-639

But most of these statements were made in private behind closed doors and once the war had been won, Soviet historiography was tasked with a campaign of minimizing the importance of Western aid: “Such propaganda was used as a ploy to influence domestic and world public opinion about the Soviet Union’s exclusive, great “single-handed” defeat of the Axis.”³

During the war the Soviets had claimed that they had engaged and destroyed the overwhelming majority of the German army, and in 1948 the head of the Soviet State Planning Centre, N.A. Voznesensky, stated that Western deliveries amounted to just 4 per cent of the Soviet Union’s total production in the years 1941-1943.⁴ In light of these numbers, Western aid was declared to have been trivial and not in the least decisive. Therefore the Red Army prided itself with winning the war against Germany almost single-handedly. This claim was enforced for several reasons:

Firstly it legitimized Communism. Because the USSR prevailed over Nazi Germany, it followed that it had to have a more competent, better, and superior political and economic system. Since the Soviets won the war on their own without any substantial help, something the Western democracies would not have been able to do, it meant that Communism was also superior to both democracy and free market economy. Secondly it consolidated Stalin’s position as the absolute and infallible leader of the Soviet Union and helped to erase all of his past blunders, crimes and mistakes, like the purging of the officer corps in the late 1930’s and the role he played in the catastrophic defeats of the Red Army in 1941/42. Thirdly, it gave meaning to all the people who were killed by the Stalinist regime.

During the 1920’s it became clear that the Communist world revolution had failed; as a result Stalin propagated “Socialism in One Country”. He saw the USSR encircled by capitalist and fascist enemies bent on its destruction. As a result he started the rapid industrialization of the Soviet Union, coupled with a gigantic military build-up, which resulted in a great loss of human lives. Based on the census of 1926 it was calculated that there should have been some 178 million people living in the Soviet Union by 1937, yet the actual number turned out to be only 162 million.⁵ Between 1929 and 1941 some 10 to 15 million people had lost their lives in the Gulags, through the famine known as the Holodomor, during the Great Terror, and through mass executions and deportations.⁶ During its entire rule, the Stalinist regime killed

³ Albert L. Weeks, *Russia’s Life-Saver: Lend-Lease Aid to the U.S.S.R in World War II* (Lexington Books 2010), p. 28

⁴ Joan Beaumont, *Comrades in Arms: British Aid to Russia 1941-1945* (Davis-Poynter 1980), p. 212

⁵ Bogdan Musial, *Kampfplatz Deutschland: Stalins Kriegspläne gegen den Westen* (Propyläen Verlag 2008), p. 286

⁶ Manfred Hildermeier, *Geschichte der Sowjetunion 1917-1991: Entstehung und Niedergang des ersten sozialistischen Staates* (Verlag C.H. Beck 1998), p. 510; Musial, *Kampfplatz Deutschland*, pp. 288-289; John Lewis Gaddis, *We Now Know: Rethinking Cold War History* (Oxford University Press 1997), p.8

some 22 to 25 million people.⁷ These dead could now be rationalized by claiming that they had been a necessary sacrifice that enabled the USSR to build up a sufficient industry and army to win the war. Had Soviet historiography admitted that Western aid was decisive, or even of great importance, it would have automatically conceded that the Soviet Union could not have won the war on its own. In addition, if the USSR needed help from the West to win the war, it would have meant that the Communist system is inferior, Stalin an incompetent leader, and that the millions of dead sacrificed for industrialization and military build-up had been pointless. Instead of legitimization there would have been critique, crisis and doubt: “World War II was the legitimizing test for the first socialist state. To admit that the Soviet Union needed capitalist aid from the United States was a memory too dangerous to be included in the Soviet narrative of World War II.”⁸

Because of these political and ideological reasons, Soviet and later Russian historiography maintained that Western aid had been meaningless, and barring a few exceptions like Russian historian Boris Sokolov, continues to do so to this very day. The task of examining the significance of British-American aid thus fell entirely on Western historians. One of the earliest works covering American deliveries to its future European allies was written during the war by the administrator of the Lend-Lease program Edward R. Stettinius, Jr.⁹ While providing a valuable primary source about the deliveries to the USSR, Stettinius had no way to assess how helpful these supplies were to the Soviets since he lacked both the figures for the output of Soviet industry and the figures for the materiel losses of the Red Army. He also failed to provide details about the quantity of Allied shipments to the USSR. It is conceivable that he had to be intentionally vague about the exact nature of these deliveries, in order to not reveal any crucial information to the Axis. The next relevant work appeared over two decades later at the height of the Cold War. Published in 1969, Robert Huhn Jones’ “The Roads to Russia” was the first book dealing exclusively with American deliveries to the Soviet Union during the war years.¹⁰ For the most part Jones depicted the history of Lend-Lease from the American side, describing how the policy to supply the USSR emerged and what routes were used by the Allies in order to deliver these supplies. Other aspects discussed were the diplomatic relations between the Western Allies and the Soviet Union, and the strain these

⁷ Dr. William Roger Townshend, *Axis Power: Could Nazi Germany and Imperial Japan have won World War Two?* (Amazon Create Space 2012), p. 261

⁸ Alexander G. Lovelace (2014) *Amnesia: How Russian History Has Viewed Lend-Lease*, *The Journal of Slavic Military Studies*, 27:4, 591-605, p. 592

⁹ Edward R. Stettinius Jr, *Lend-Lease: Weapon for Victory* (The Macmillian Company 1944)

¹⁰ Robert Huhn Jones, *The Roads to Russia: United States Lend-Lease to the Soviet Union* (University of Oklahoma Press 1969)

deliveries put on the United States and Great Britain. Jones was among the first who provided detailed numbers of the amount of materiel shipped to the USSR, refuting the Soviet claim that Western deliveries amounted to just 4% of Soviet production during the war. He concluded that these deliveries were more helpful to the Soviets than they admitted, however he still lacked the necessary sources to assess how helpful they actually were. The first writing dealing exclusively with the British deliveries was completed by Joan Beaumont and published in 1980.¹¹ Strongly resembling “The Roads to Russia”, this book covered the diplomatic history between Great Britain and the USSR, the burden which the aid for Russia represented to the British military and economy, and the challenges of transporting this aid. By the early 1980’s the topic of Allied Lend-Lease deliveries to the USSR was therefore examined moderately well. By this time it was exactly known what amount of materials had been delivered to the Soviet Union, by which route and by which means of transportation, as well as the political and logistical difficulties of this endeavour.

The question regarding the exact helpfulness of these deliveries however still remained unanswered. The first attempt to examine the military and economic value of Western deliveries was done by Hubert P. Van Tuyll in his book “Feeding the Bear”.¹² Making extensive use of the research done by the authors before him, Tuyll’s main focus was to answer the question of how much Western aid helped the USSR in its war with Nazi Germany. To do so, Tuyll compared Soviet wartime production with the amount of materiel delivered by the Allies, trying to assess if these shipments boosted the combat performance of the Red Army. He also examined the impact of Western aid on the Soviet economy and on the morale of both soldiers and civilians alike. At the end he came to a similar conclusion as Jones did: Western aid was more significant than the Soviet Union claimed it was. Still, Tuyll was in the same predicament as the authors before him. He did not have access to precise numbers on Soviet production and materiel losses and was forced to work with estimates, making his conclusion somewhat flawed. Despite its shortcomings, “Feeding the Bear” remains the most detailed paper regarding the military and economic impact of Western aid on the Soviet Union’s war effort to this date. This is mainly because since the end of the Cold War interest for this topic has been declining steadily. Besides a dozen journal articles published by the Journal of Slavic Military Studies, research concerning this topic has virtually ceased to exist. When writing about the Eastern Front, most authors rarely mention Lend-Lease at all. In Richard Overy’s “Russia’s war”, the author devotes a whole 4 out of 330

¹¹ Joan Beaumont, *Comrades in Arms: British aid to Russia 1941-1945* (Davis-Poynter 1980)

¹² Hubert P. Van Tuyll, *Feeding the Bear: American Aid to the Soviet Union 1941-1945* (Praeger 1989)

written pages to the topic of Lend-Lease, a staggering 1.2%.¹³ Similarly in “Absolute War”, Chris Bellamy concedes around 14 pages to Western aid, out of 690, barely 2%.¹⁴ The most recent work dealing solely with Western deliveries was originally published a decade ago and contributed no new insights on the topic.¹⁵ For the most part, the author focused on diplomatic relations between the Soviet Union and the West, and the routes by which the supplies were delivered.

Nowadays, the ruling consensus among historians is that Western aid was indeed more significant than claimed by the Soviet Union after the war, however the exact nature of its significance remains disputed. The goal of this thesis is to examine the importance of Western deliveries for the Soviet war effort. How crucial were the deliveries of military materials like tanks, aircraft, and guns? What impact did the delivery of trucks, jeeps, and motorcycles have on the mobility of the Red Army? In what way did the shipment of resources like steel and aluminium help the Soviet industry? Finally, in order to comprehend the entirety of aid given to the USSR, one also has to focus on the military burden of the Western Allies. Between 1941 and 1945, Great Britain and the United States were engaging a significant and ever-growing part of the German army. Was the amount of German troops and material kept away from the Eastern Front as valuable as the deliveries were for the Soviet economy? Was Western aid really as insignificant as portrayed by the Soviets after the war, or was it great enough to make a difference between victory and defeat?

¹³ Richard Overy, *Russia's war* (Penguin Books 1998), pp. 194-198

¹⁴ Chris Bellamy, *Absolute War: Soviet Russia in the Second World War* (Pan Books 2009); While Bellamy devotes the entire chapter 14 to the relations between the Soviet Union and the West, less than half deals directly with Lend-Lease, pp. 409-446

¹⁵ Albert L. Weeks, *Russia's Life-Saver: Lend-Lease aid to the USSR in World War II* (Lexington Books 2010)

1 The Origins of Lend-Lease: Cash and Carry and aid for Britain

When war broke out in Europe in September 1939, at first it seemed that the United States would not be affected by it. After the last Great War, the US had withdrawn from international affairs and adopted a policy of strict neutrality. The loss of tens of thousands of its soldiers in World War I made the American population unwilling to intervene in yet another European conflict. President Roosevelt was of different opinion. Preferring the Western democracies over the German dictatorship and fearing the power of a Nazi dominated Europe, Roosevelt did everything he could to remove the limitations bestowed upon him by the Neutrality Acts. By November 1939, after several failed attempts, the President had managed to convince congress to abandon strict neutrality as well as the embargo on the shipment of weapons.¹⁶ Under the “Cash and Carry” law, Roosevelt was now legally allowed to sell weapons to any belligerent power provided that these would pay for the materiel in cash, and transport (carry) it on their own ships.¹⁷ Shortly after this, Franco-British weapon orders skyrocketed, however only a small part of these orders were actually delivered before the German attack on Western Europe.¹⁸

Between January 1939 and June 1940, the combined French and British orders of military planes had amounted to 10 800 machines; yet from January to May 1940 Britain had received only 104 and France 557 aircraft.¹⁹ While these deliveries were certainly helpful for the Allies, they were not enough to stem the advance of the Germans into Western Europe. In fact, after the disaster at Dunkirk, where the British Expeditionary Force (BEF) narrowly escaped capture by the German army, the demand for American deliveries increased significantly. The soldiers evacuated from the beaches of Dunkirk had left behind vast amounts of materiel and equipment, which was impossible to quickly replace. BEF equipment abandoned in France included 120 000 vehicles, 600 tanks, 1000 field guns, 500 anti-aircraft guns, 850 anti-tank guns, 8000 Bren machine guns, 90 000 rifles, and half a million tons of stores and ammunition.²⁰ British Prime Minister Winston Churchill sent a desperate message to Roosevelt asking for more deliveries, a request Roosevelt made possible by exporting “outdated” weapons from US Army stocks.²¹ A dozen ships fully loaded with weapons and

¹⁶ Wolfgang Schlauch, *Rüstungshilfe der USA an die Verbündeten im Zweiten Weltkrieg* (Wehr und Wissen 1967), pp. 24-26

¹⁷ *Ibid.*, p. 26

¹⁸ Stettinius Jr, *Lend-Lease*, pp. 22-23

¹⁹ *Ibid.*, pp. 22-23

²⁰ Spencer C. Tucker, *The Second World War* (Palgrave Macmillan 2004), p. 67

²¹ Stettinius Jr, *Lend-Lease*, pp. 24-25

supplies sailed for Britain in June and a further 15 from July to early August.²² In total Britain received 500 000 rifles, 85 000 machine guns, nine hundred 75mm field guns, 25 000 automatic rifles, and 21 000 revolvers, including substantial amounts of ammunition.²³ In order to comprehend the value of these deliveries, one has to compare them to British production of these items which amounted to 193 712 rifles and 85 924 machine guns in the years 1939-1941.²⁴ Within eight weeks the US had delivered two and a half times as many rifles and the same amount of machine guns as British industry had managed to produce in three years.

But infantry weapons and guns were not the only items which Britain needed in order to survive. The nation needed aircraft to defend itself from the bombing raids conducted by the Luftwaffe, and warships for the escort of merchant vessel convoys. Both of these items were readily supplied by the Americans. Through the so called “Destroyers for Bases” agreement, Britain received 50 renewed World War I destroyers from American stocks. Of these, 9 were in service by the end of 1940 and a further 20 by May 1941.²⁵ These ships were of immense value, in view of the fact that by the end of 1940 fully 70% of the British destroyer fleet was laid up for repairs, and that domestic production had turned out just 88 of these vessels from 1939-1941.²⁶ By the summer of 1943, only five of these destroyers had been sunk while the other 45 were still providing escort duty.²⁷

With the Battle of Britain raging in the summer and autumn of 1940, British demand for aircraft reached new heights as well. By December 1st 1940, Britain had ordered a staggering 23 000 aircraft from the American industry of which only 2100 had been delivered to the beleaguered island.²⁸ Domestic production of aircraft for that year had been 15 049 aircraft.²⁹ While these shipments were invaluable for Britain’s survival, they came at great financial cost. In order to purchase the 50 destroyers offered by the United States, the British had to sell their possessions in the West Indies and Newfoundland, leasing them to the Americans for ninety nine years.³⁰ Even then, the strains of war were too great a burden for the British economy:

²² Stettinius Jr, Lend-Lease, p. 28

²³ R.A.C. Parker, *The Second World War: A Short History* (Oxford University Press 2002), p. 57; Clive Ponting, *1940: Myth and Reality* (Hamish Hamilton Ltf 1990), p. 199

²⁴ Peter Howlett, *Fighting with Figures* (Central Statistics Office 1995), p. 162

²⁵ Ponting, 1940, p. 204

²⁶ Weeks, *Russias Life-Saver*, p. 3; Howlett, *Fighting with figures*, p. 151

²⁷ Stettinius Jr, Lend-Lease, p. 34

²⁸ *Ibid*, p. 62

²⁹ John Ellis, *The World War II Data Book: The Essential Facts and Figures for all the Combatants* (Aurumn Press 1993), p. 278

³⁰ Parker, *The Second World War*, p. 57

British Industry was incapable of producing the range and quantity of armaments required to win the war. Even those items that could be manufactured domestically were heavily dependent on imports of raw materials and products such as steel. Most of these imports came from the United States and had to be paid for either in gold or dollars. [...] the day of reckoning was rapidly approaching. From a total of £775 million at the beginning of 1940, Britain's gold and dollar reserves [...] had fallen [by August 1940] by over a third to £490 Million. [...] they would last another three to four months at most. By the end of 1940, therefore, Britain would be unable to carry on the war by its own efforts.³¹

By September 1940, British orders in the United States amounted to 10 Billion dollars, of which only a fraction could be paid for.³² The country was nearing financial collapse: “[...] by the beginning of 1941 it had less than £ 3 million left in its gold and dollar reserves. This was as near to bankruptcy as it was possible to go without actual default.”³³ Realising that without American aid Britain would have to surrender or negotiate with Germany, Roosevelt devised the so called Lend-Lease law which took effect on March 11th 1941. This law gave the President the authority to supply any country which was considered vital for the defence of the United States.³⁴ For the duration of the war, Britain would receive supplies free of charge, which would be handed back or repaid once the war had ended.

Aid for Britain

Even with the deliveries received from the United States, Britain's military position in 1941 was close to hopeless. During the first half of this year the Luftwaffe continued its bombing raids against the island, Rommel's forces were steadily advancing in North Africa, British forces sustained yet again humiliating defeats in Greece and Crete, and the German U-boats were sinking ever increasing amounts of British shipping space. Luckily; the Americans were now supplying Britain for free. In 1941 the US delivered 4473 aircraft either directly to Britain, to British overseas commands; or to British colonies and dominions.³⁵ British production of aircraft in 1941 had been 20 094 units, whereas the colonies and dominions

³¹ Ponting, 1940, pp. 7-8

³² Ibid, p. 207

³³ Ibid, pp. 213-214

³⁴ Schlauch, Rüstungshilfe der USA an die Verbündeten im Zweiten Weltkrieg, p. 45

³⁵ Howlett, Fighting with Figures, pp. 174-175

produced around 15% of this number.³⁶ Other substantial military deliveries were tanks and trucks. Around 13 000 trucks and 1390 tanks were shipped to Britain and British overseas forces before the end of 1941.³⁷ Domestic production in 1941 had manufactured 4841 tanks and 88 161 military trucks.³⁸ Food represented the most crucial non-military supply. Before the war Britain had to import twice as many tons of food from overseas sources as raised on her own land.³⁹ However by the summer of 1940 Britain could no longer import food from continental Europe and had to cut down its food imports from other parts of the world in order to free shipping capacity for military supplies and resources. In combination with the many shiploads of food lost to the German U-boats, this created a situation where the British nation was close to starvation. Between the fall of France and the passing of the Lend-Lease act, the average British adult lost around 4.5 kilogram of weight due to the rapidly shrinking diet.⁴⁰ Between April 16th and December 25th 1941, the Americans supplied Britain with over one million tons of food, including millions of concentrated vitamin tablets to counter a vitamin shortage caused by strict rationing.⁴¹ Shipments continued to increase, delivering 1.427 million tons in 1942, 1.705 million tons in 1943, 1.28 million in 1944, and 709 000 tons in 1945.⁴² On average this amount of food was sufficient to feed over 4 million people during the years 1941-1945, around 10% of British population.⁴³

Besides the deliveries sustaining the British population and industry, American aid contributed decisively in stopping Rommel's advance in North Africa. By October 24th 1942, American deliveries to North Africa and the Middle East amounted to 900 medium tanks, including 300 Sherman tanks which were of better quality than anything the British had before, as well as ninety 105mm self propelled anti-tank guns, 800 light tanks, 25 000 trucks and jeeps, over 700 twin engine medium bombers, and nearly 1100 fighters.⁴⁴ The percentage of military equipment supplied to the British armed forces from American sources was 11.5% in 1941, 16.9% in 1942, 26.9% in 1943, and 28.7% in 1944.⁴⁵ Even these figures understate the full magnitude of American aid to the British Empire. In 1942 the US supplied 9253 tanks

³⁶ Ellis, *The World War II Data Book*, p. 278

³⁷ Stettinius Jr, *Lend-Lease*, p. 94; Howlett, *Fighting with Figures*, p. 166

³⁸ Ellis, *The World War II Data Book*, pp. 277-278

³⁹ Stettinius Jr, *Lend-Lease*, p. 97

⁴⁰ *Ibid*, p. 97

⁴¹ *Ibid*, pp. 97-98

⁴² Howlett, *Fighting with Figures*, p. 81

⁴³ The population of Great Britain in 1940 was 48.226 million, however because of the war millions of soldiers were abroad reducing the population by several million: Howlett, *Fighting with Figures*, p. 4

⁴⁴ Stettinius Jr, pp. 290-291

⁴⁵ John Keegan, *The Second World War* (Viking Penguin 1990), p. 218

and 5898 aircraft, while British industry had turned out just 8611 tanks and 23 672 aircraft.⁴⁶ In 1943 American supplies had increased to 15 933 tanks and 6710 aircraft, while British manufacture of tanks had decreased to 7476 and aircraft production increased only modestly to 26 263 machines.⁴⁷ In 1944, at the height of these deliveries, the US supplied the British Empire with a staggering 11 414 aircraft, while the British produced 26 461 during that year.⁴⁸ Total US deliveries of aircraft to the British Commonwealth amounted to nearly 34 000 units.⁴⁹ Throughout the years 1941-1944 the US delivered between one fifth and one third of total British Empire aircraft production. The share of American tanks was even greater, it increased from approximately 20% in 1941, to 100% in 1942, and to 200% of the total British Empire production in 1943. During the last two years of the war, Britain alone received, among other things, 76 737 Jeeps, 98 207 trucks, 12 431 tanks, and 6 715 000 tons of steel and iron.⁵⁰ By 1944 around 2/3 of the tanks and trucks in the British army came from the US.⁵¹ The total value of the aid delivered to the British Empire amounted to slightly more than 30 billion dollars.⁵²

By the summer of 1941, the island nation was fully dependent on American deliveries, having been transformed into a giant unsinkable aircraft carrier similar to the “Airstrip One” described in George Orwell’s Novel “1984”. Without American deliveries Britain would either have been starved into submission or collapsed financially. Even if these two scenarios could somehow have been avoided, the British industry would have produced fewer weapons than historically, since it was dependent on overseas deliveries of resources from the United States. The absence of these resources, combined with the lack of Lend-Lease tanks, aircraft, motor vehicles, small arms and artillery, would have meant a far weaker and far worse equipped British army, navy, and air force. British victory in North Africa would have thus become unlikely, a successful Bomber Offensive improbable, and an invasion of continental Europe impossible.

⁴⁶ Howlett, *Fighting with Figures*, pp. 166, 174-175; Ellis, *World War II Data Book*, pp. 277-278

⁴⁷ Howlett, *Fighting with Figures*, pp. 166, 174-175; Ellis, *World War II Data Book*, pp. 277-278

⁴⁸ Howlett, *Fighting with Figures*, pp. 174-175; Ellis, *World War II Data Book*, p. 278

⁴⁹ Phil Butler and Dan Hagedorn, *Air Arsenal North America: Aircraft for the Allies 1938-1945: Purchases and Lend Lease* (Midland Publishing 2004), p. 319

⁵⁰ Schlauch, *Rüstungshilfe der USA an die Verbündeten im Zweiten Weltkrieg*, p. 84

⁵¹ Ponting, 1940, p. 231

⁵² Howlett, *Fighting with Figures*, p. 225

2 The Eastern Front and Western aid 1941

With the fall of France, Hitler expected Britain to sue for peace. During the First World War it had taken a coalition of France, Britain, Italy, Russia, and the United States to defeat Germany and the Austro-Hungarian Empire. In the summer of 1940, France was defeated, Italy was a German ally and Russia was benevolently neutral. The only ally Britain had was a sympathetic but neutral United States, yet this sufficed to keep Britain in the war. With the defeat of the Luftwaffe in the Battle of Britain, it became clear that the British Islands would remain in the war for the foreseeable future. This represented a strategic dilemma for Hitler. He had hoped to come to a terms of understanding with the British, which would have given him a free hand to attack Soviet Russia, a nation he viewed as the personification of “Judeo-Bolshevism”, and therefore the greatest threat to the German domination of Europe. With Britain supplied by the United States, it was uncertain if the island could be knocked out of the war in the foreseeable future. Meanwhile, the Soviet Union would have had time to build up its strength, and would have had represented a serious threat to Germany by the summer of 1942. The German-Soviet pact of August 1939 had been an attempt by Stalin to redirect German aggression towards Western Europe in order to buy the Soviet Union time to rearm. While France, Britain, and Germany were devouring one another, the USSR was rearming undisturbed. By 1942 or 1943 at the latest, the build up of Soviet forces would have been complete, giving Stalin the opportunity to strike at the weakened fascist and capitalist powers in an attempt to conquer all of Europe.⁵³

Hitler’s decision to invade the USSR had therefore as many strategic reasons as it had ideological ones. The conquest of the European part of the USSR would not only have secured “Lebensraum” and the destruction of “Judeo-Bolshevism”, but also removed the only threat to Germany’s hegemony of Europe and secured vast resources for the German industry. With Britain reduced to a mere nuisance, only capable of performing small and ineffective bombing raids, and unable to hold on in Greece, Crete and North Africa, Hitler decided that this was the best time to deal with the Soviet Union. On June 22nd 1941 he unleashed “Barbarossa”, plunging Eastern Europe into the most deadly conflict the world has ever seen. For this task the German army was organized into three powerful Army Groups, each with a different objective. Army Group North was to advance on Leningrad, with the ultimate goal to erase from existence the city where the Bolshevik Revolution started. The mission of Army Group Centre was to advance towards and to capture Moscow, the capital of the Soviet Union

⁵³ Musial, *Kampfplatz Deutschland*, pp. 451, 456

and the main transportation hub of European Russia. Army Group South's task was to conquer the Ukraine, and to advance towards the Caucasus, securing the oilfields of Maikop, Grozny, and Baku. Before the onset of winter, the German Army was expected to conquer all territory west of the Arkhangelsk-Astrakhan Line, the areas of the USSR where the Germans believed that the majority of both Soviet population and industry resided. The ultimate goal was to reach the Ural Mountains, the geographic border between Europe and Asia.

The motivation behind each Army Groups' final objective was different. The attack in the north towards Leningrad was ideological; it was believed that the destruction of the birthplace of Bolshevism would represent a great blow to Soviet morale. The attack on Moscow was motivated by military logic. Moscow was not only the capital of the USSR, but a major production and transportation centre as well. Its fall would have meant a great political, psychological, and economical loss for Stalin, the Communist party, and the entire Soviet Union. Army Group South's thrust toward the Ukraine and the Caucasus was a result of economic deliberations. These regions would supply the Greater German Reich with never ending quantities of food, oil, and other vital resources, materials which not only would aid German industry but whose absence would greatly weaken the USSR.

Both the element of surprise and the skill of the German army allowed German units to advance as much as 60 kilometres in certain areas during the first day of the attack. Despite their numerical advantage, the Red Army had to retreat from the German onslaught. During the first day of the invasion the Soviet air forces had lost a total of 1811 aircraft, while the Germans had lost 35.⁵⁴ By the end of the month German troops had advanced as far as Minsk, where they managed to trap large parts of the Soviet Western Front. Meanwhile, German and Romanian troops were slowly advancing in Bessarabia and German troops supported by their Finish allies were advancing towards Murmansk in the Arctic north. From June 22nd to July 1st German forces had either captured or destroyed 5774 Soviet tanks, 2330 guns, and 4725 aircraft, additionally some 160 000 Soviet soldiers had been captured.⁵⁵ By July 9th Soviet troops which had been encircled at Minsk surrendered, leading to the capture of another 323 898 Red Army soldiers, 1809 guns, and 3332 tanks.⁵⁶ This victory had severely weakened the Soviet Central Front, allowing the Germans to advance almost unhindered towards the city of Smolensk which they reached by the middle of July. Here the Germans encircled and captured large Soviet forces, destabilizing the Soviet front even further. The German advance in the

⁵⁴ Cajus Bekker, *Angriffshöhe 4000: Die deutsche Luftwaffe im Zweiten Weltkrieg*, (Wilhelm Heyne Verlag 1985), p. 239

⁵⁵ *Die Wehrmachtsberichte 1939-1945: Band 1: 1. September 1939 bis 31. December 1941* (Gesellschaft für Literatur und Bildung mbH 1989) p. 603

⁵⁶ Janusz Piekalkiewicz, *Der Zweite Weltkrieg* (Komet Verlag 1986), p. 503

centre of the front had been so rapid that the troops in the south were unable to keep up. As a result Army Group Centre had an exposed flank which was vulnerable to counterattacks.

This motivated Hitler to issue order 33 on July 19th, which relocated all of Army Group Centres mechanized and tank divisions to Army Group's North and South, in order to support their attacks against Kiev and Leningrad. Army Group Centre was left only with infantry divisions, forcing it to stop the advance towards Moscow. This decision was confirmed on July 30th, on this day Army Group Centre was officially ordered to go onto the defensive. The focus of the campaign had shifted to the south, where German forces managed to score new successes. By August 22nd, the Germans reported the capture of 1.25 million Soviet soldiers, and claimed to have captured or destroyed 14 000 tanks, 15 000 guns, and 11 250 aircraft.⁵⁷ German losses, while far lower, were still larger than in all their previous campaigns. During six weeks of fighting in Western Europe, the German army had lost 27 074 dead and 18 384 missing soldiers.⁵⁸ By the end of August, after fighting on the Eastern Front for ten weeks, their losses amounted to 84 354 dead and 18 921 missing, while the Luftwaffe had lost 725 aircraft, 1542 dead, and 1378 missing personnel.⁵⁹

Despite these losses the Germans were still able to advance in the Ukraine, reaching Kiev by mid September, and encircling large parts of the Soviet Southwest Front. By the end of the month these encircled troops surrendered, resulting in one of the greatest victories in the history of military warfare. 665 000 soldiers were taken as prisoner, and 3718 guns and 884 tanks were either captured or destroyed.⁶⁰ After the victory at Kiev, Hitler believed that the Red Army in the south was decimated to a point where it no longer could represent any threat to Army Group Centre. With its southern flank secured, Hitler restarted the campaign to capture Moscow, which he believed could be sacked before the onset of winter. Army Group Centre was reinforced by mobile troops from the north and south and resumed its offensive against Moscow on October 2nd. During the past two months Soviet troops in this sector had been massively reinforced, forcing the Germans to fight large battles at Vyazma and Bryansk, which dragged until the end of October and resulted in the capture of 673 000 Soviet soldiers, 5412 guns, and 1242 tanks.⁶¹ After the destruction of these forces, the Germans were able to advance rapidly. By early November they were less than 100 kilometres from the capital. Soviet casualties were catastrophic. By mid October the Germans claimed to have captured

⁵⁷ Die Wehrmachtsberichte 1939-1945, Band 1, pp. 652- 653

⁵⁸ Ibid, p. 244

⁵⁹ Ibid, p. 674

⁶⁰ Piekalkiewicz, Der Zweite Weltkrieg, p. 518

⁶¹ Ibid, p. 524

over 3 million Soviet soldiers, this number had increased to 3 632 000 by November 10th.⁶² At the same time, Soviet material losses exceeded 16 500 tanks.⁶³ By this time the feared Russian winter was already beginning and forcefully slowed down the German advance. The first snow fell on October 7th, by the second half of October it started to rain, turning Western Russia into a giant mud field. Because of this development the Germans had to interrupt their advance towards Moscow.⁶⁴

This mud period took almost a month and was not over until November 15th when temperatures of -3°C at day and -7°C at night froze the ground and allowed the Germans to continue their advance.⁶⁵ From this point onwards weather conditions in Western Russia started to deteriorate rapidly. By late November the temperatures at the Eastern Front had fallen to -25 °C and were decreasing further.⁶⁶ The winter of 1941/42, while not the most severe in a century as later claimed by German propaganda, was harder than the average Russian winter, being the worst in 15 years.⁶⁷ The severe winter, in combination with long supply lines disrupted by partisan attacks, and an exhausted German army, made sure that the Germans were unable to capture Moscow. By December 5th, when the Germans were between 30 and 40 kilometres from the capital and had exhausted their last offensive capabilities, Stalin unleashed a carefully husbanded reserve army which pushed the Germans back and destroyed any prospect of ending the war in 1941.

While the Soviets had avoided total disaster, their casualties were massive and unprecedented, even when compared to the battles of the First World War. From June 22nd to December 31st the USSR had lost 5.55 million rifles and carbines, 4100 anti-aircraft guns, 12 100 anti-tank guns, 101 100 artillery guns and mortars, 20 500 tanks, 21 200 aircraft, and 159 000 motor vehicles.⁶⁸ Losses of personnel were equally horrifying. Soviet sources give a number of 2 335 482 captured and missing, and 802 191 killed, for a grand total of 3 137 673 during the same time period.⁶⁹ These numbers are substantially lower than German claims for captured Soviet soldiers alone, which were given as 3.632 million by November 1941. Fremde Heere Ost, a German military intelligence division specialized for Eastern Europe, analyzed all German army reports and came to the conclusion that by April 1st 1942 the German armies in

⁶² Die Wehrmachtsberichte 1939-1945, Band 1, pp. 698, 721

⁶³ Piekalkiewicz, *Der Zweite Weltkrieg*, p. 525

⁶⁴ *Ibid*, pp. 523-524

⁶⁵ *Ibid*, p. 525

⁶⁶ *Ibid*, p. 527

⁶⁷ Beaumont, *Comrades in Arms*, p. 100

⁶⁸ Colonel-General G.F. Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century* (Greenhill Books, 1997), pp. 246,248,250,252,254,257

⁶⁹ *Ibid*, p. 96

the East had captured 3.6 million Soviet soldiers and either killed or permanently disabled another 3.8 million.⁷⁰

Soviet data also contradicts the numbers given by Western historians. Mathew Cooper estimates that 3.5 million Red Army soldiers were captured and 4 million had died in battle by the end of 1941, David Glantz puts the number at nearly 3 million captured and missing and 4.3 million killed, while Richard Overy gives numbers of 2 663 000 killed and 3 350 000 captured Soviet soldiers.⁷¹ These numbers might be inflated but they indicate that Soviet numbers could have been possibly falsified and are lower than they actually were. From the data presented it seems far more likely that Soviet casualties in 1941 were over 3 million captured and at least 2 million killed, rather than the 2.335 million captured and 802 191 killed as claimed by Soviet sources. German casualties on the Eastern Front in 1941 were 174 000 dead and 36 000 missing, 2093 destroyed aircraft including 758 bombers and 568 fighters and 2735 tanks.⁷² The areas conquered by the Germans robbed the USSR of more than 1/3 of its pre-war population and of substantial amounts of industrial capacity and resources. The territory the Germans had occupied by November 1941 contained 63% of Soviet coal production, 58% of steel, and 38% of its grain production.⁷³ While the USSR did not collapse in 1941, it was severely weakened and in urgent need of help. This help materialized in form of Western military and economic aid.

The state of the Red Army at the start of the war

From the first days of the invasion it was claimed that the German attack took the USSR completely by surprise, that Soviet equipment was obsolete and inferior to German material and that the German army had a vast numerical superiority. Most of these claims were exaggerated in order to conceal the poor performance of the Red Army in the opening months of the war. According to General Grigori Krivosheev, who is considered to be the definite authority regarding numbers about Red Army personal and equipment, on 22nd June 1941 the

⁷⁰ Hans-Heinrich-Wilhelm, Die Prognosen der Abteilung Fremde Heere Ost 1942-1945 – In: Schriftenreihe der Vierteljahreshefte für Zeitgeschichte Nummer 28, Zwei Legenden aus dem Dritten Reich (Deutsche Verlags-Anstalt GmbH, 1974), p. 32

⁷¹ David Glantz, Slaughterhouse: The Handbook of the Eastern Front (The Aberjona Press 2005), p. 10; Matthew Cooper, The German Army 1933-1945: Its Political and Military Failure (Macdonald and Jane's Publishers Limited 1978), p. 285; Overy Russia's war, p. 117

⁷² Piekalkiewicz, Der Zweite Weltkrieg, p. 535; Thomas L. Jentz (editor), Panzertruppen: The Complete Guide to the Creation & Combat Employment of Germany's Tank Force: 1933-1942: Volume 1 (Schiffer Publishing, Ltd. 1996), p. 209

⁷³ Weeks, Russia's Life-Saver, p. 109

Red Army had a total of 22 600 tanks and self propelled guns, of which 14 200 were with the fighting troops and only 3800 were operational.⁷⁴

The number of operational guns and mortars was given as 32 900, and the total number of combat aircraft as 20 000, of which 9200 were with the fighting troops.⁷⁵ Germany and its allies were claimed to have attacked with 4300 tanks and self propelled guns, 47 200 guns and mortars, and 5900 combat aircraft.⁷⁶ Thus according to the numbers presented by Krivosheev, the Red Army was outnumbered in both tanks and guns and had only a 1.5:1 advantage in combat aircraft. While Krivosheev's work is regarded to be the most detailed source about Red Army weapon stocks, his data is often contradictory and one cannot help but suspect that some of his numbers are influenced by Soviet propaganda. When Germany attacked the USSR, it did so with 2837 aircraft, of which only 2130 were serviceable.⁷⁷ Similarly, the Germans only had 3580 tanks and self propelled guns at the start of "Barbarossa".⁷⁸ Even when taking into account the small number of tanks, guns, and aircraft used by Germany's allies, the invading force had far fewer equipment than claimed by Krivosheev. Another irregularity found in the data provided by Krivosheev, concerns the numbers given for the amount of Red Army tanks and aircraft at the start of the campaign. Soviet tank production in the decade from 1930 to 1940 numbered a staggering 28 451 units, and in the first half of 1941 tank production stood between 1714 and 2413 machines.⁷⁹ Of these more than 30 000 tanks, only 22 600 were still present by June 1941. A small percentage of tanks would certainly have fallen victim to mechanical failures and would have been cannibalized for spare parts or mustered out. Additional hundreds of tanks were lost during the invasion of Poland, while fighting the Japanese in Mongolia and the Finns during the Winter War, but for this number to be in the vicinity of 8000 is, at the very least, questionable. Other sources give Soviet tank strength in June 1941 as 24 000 or 25 508 units.⁸⁰ Based on these numbers, it would seem that the Soviets had almost certainly more equipment present in total and operational than claimed by official figures. Similarly, a large part of Soviet equipment had been produced in the immediate years preceding the war and was not obsolete. Production

⁷⁴ Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century* pp. 241,252

⁷⁵ *Ibid*, pp. 241, 254

⁷⁶ *Ibid*, p. 241

⁷⁷ Ellis, *The World War II Data Book*, p. 238

⁷⁸ Burkhart Mueller-Hillebrand, *Das Heer 1933-1945: Band II Die Blitzfeldzüge 1939-1941: Das Heer im Kriege bis zum Beginn des Feldzuges gegen die Sowjetunion im Juni 1941* (E.S. Mittler&Sohn 1956), p. 106

⁷⁹ Mark Harrison, *Soviet Planning in Peace and War: 1938-1945* (Cambridge University Press 1985), p. 250; Steven Zaloga and James Grandsen, *Soviet Tanks and Combat Vehicles of World War Two* (Arms and Armour Press 1984), p.108; Bogdan Musial, *Stalins Beutezug: Die Plünderung Deutschlands und der Aufstieg der Sowjetunion zur Weltmacht*, (Ullstein Buchverlage GmbH 2010), p. 89

⁸⁰ Musial, *Stalins Beutezug*, p. 40; Zaloga and Grandsen, *Soviet Tanks and Combat Vehicles of World War Two*, p. 123

figures for the years 1939/40 were 5477 tanks and 20 947 aircraft, including 15 320 combat aircraft and 75 248 artillery pieces and mortars.⁸¹ German production for the same time period were 19 121 aircraft, and for the year 1940 a production of 1643 tanks and 6730 artillery pieces (excluding mortars).⁸² Unlike the Soviets, Germany lost much of this production in the conquest of Europe. The conquest of Poland had cost 236 tanks, the subjugation of Denmark and Norway 11, the campaign in Western Europe 839, and the invasion of Yugoslavia and Greece another 56 for a grand total of 1142 machines.⁸³ German losses in aircraft from September 1939 to May 1941 amounted to 6441 units.⁸⁴

Not only did the Soviets enjoy a vast numerical superiority over the invading German forces, most of their equipment was new and in many cases comparable or even better than their German counterpart. Of the 3580 tanks and sp-guns with which Germany invaded the USSR, fully 1928 were either the Panzer I or Panzer II, the Czech tank Pz38(t) or the Panzerbefehlswagen.⁸⁵ All of these were light tanks, armed with either a machine gun or 20 to 37 mm cannons and insufficient armour. On the Soviet side, the two most common models were the 11 000 T-26 and 6000 BT tanks, both armed with a 45 mm canon, superior to everything the German light tanks had and even capable of challenging the heavier German tanks.⁸⁶

The 1404 Panzer III and Panzer IV tanks were faced by 1475 T-34 and KV tanks, both far superior to their German counterparts during this time period.⁸⁷ In the air, the German Luftwaffe was confronted by Yak-1, LaGG-3, and MiG-3 fighters, and while each of these models was inferior to the Messerschmitt Bf 109 fighter, there were only 785 fighter aircraft in the German air fleet, while the Soviets had 11 500.⁸⁸ Even when taking into account the massive losses the Red Army sustained in the opening stages of the invasion, its numerical superiority in tanks and aircraft over the attacking forces would still have been in the vicinity of 5:1 several weeks after “Barbarossa” began. Soviet sources should thus be handled with caution as it stands to reason that Soviet propaganda attempted to mask and decrease their

⁸¹ Harrison, *Soviet Planning in Peace and War*, p. 250

⁸² Ellis, *The World War II Data Book*, pp. 277- 278

⁸³ Jentz, *Panzertruppen Volume 1*, p. 104, 115, 141, 157

⁸⁴ Ulf Balke, *Der Luftkrieg in Europa: Die operativen Einsätze des Kampfgeschwaders 2 im Zweiten Weltkrieg : Teil 1 Das Luftkriegsgesgeschehen 1939-1941: Polen, Frankreich, England, Balkan, Rußland* (Bernard& Graefe Verlag 1989), p. 429

⁸⁵ Mueller-Hillebrand, *Das Heer 1933-1945: Band II*, p. 106

⁸⁶ Zaloga and Grandsen, *Soviet Tanks and Combat Vehicles of World War Two*, p. 125

⁸⁷ Burkhart Mueller-Hillebrand, *Das Heer 1933-1945: Band II*, p. 106; Zaloga and Grandsen, *Soviet Tanks and Combat Vehicles of World War Two*, p. 125

⁸⁸ Olaf Groehler, *Geschichte des Luftkriegs 1910 bis 1970* (Militärverlag der Deutschen Demokratischen Republik 1975), p. 298; Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, pp. 254

horrendous casualties as well as inflating German forces to make the Red Army appear in a better light.

Lend-Lease

After the German attack against the USSR, both the US and Britain decided that it was in their best interest to supply the Soviets with war material to keep them from collapsing. The US government immediately thawed frozen Soviet assets totalling 40 million dollars, which had been frozen since the Soviet-Finnish war.⁸⁹ Delegates from both countries were rushed to the Soviet Union, in order to find out which materials the Soviets needed to repel the German attack. The amount of material the Russians requested was enormous. Among other things they requested monthly deliveries of 400 aircraft, 1100 tanks, 300 anti-aircraft guns, 300 anti-tanks guns, 2000 cars and 10 000 trucks, 4000 tons of aluminium and 500 tons of rolled duraluminum, 1500 tons of tin, 7000 tons of lead, 10 000 tons of armour plate for tanks, and many additional products.⁹⁰

These orders confronted the Western Allies with great difficulties. While some Soviet orders could be fulfilled immediately, the majority, especially the orders for tanks and aircraft, could not. Similarly, the Allies were presented with severe difficulties in delivering these supplies. The three main routes to supply the USSR led over the Arctic Ocean to Murmansk and Arkhangelsk, over the Persian Gulf via Iran, and over the Pacific and Siberia. All of these had their own sets of dangers and difficulties. Another problem represented the lack of shipping space. In order to supply the British Isles, President Roosevelt had already seized 80 foreign merchant ships residing in US ports to serve as Lend-Lease convoys.⁹¹ Now that Russia had to be supplied as well, shipping space became even scarcer. Despite these problems the Western Allies ratified the first Moscow Protocol, in which they compelled themselves to deliver to the USSR a total of 1.5 million tons of supplies between October 1st 1941 and June 30th 1942.⁹² In the years 1941/42 most of these deliveries consisted of military hardware, such as tanks and aircraft, which the Soviet Union needed badly to stop the German advance. As noted before, in 1941 the USSR had lost at least 20 500 tanks, while production in the year 1941 amounted to just 6590 units.⁹³ The British sent their first experimental convoy consisting

⁸⁹ Alexander Hill (1974) *British Lend-Lease Aid and the Soviet War Effort: June 1941-June 1942*, *The Journal of Military History*, 71:3, 773-808, p. 779

⁹⁰ Beaumont, *Comrades in Arms*, pp. 58-60

⁹¹ Weeks, *Russia's Life-Saver*, p. 4

⁹² Hill, *British Lend-Lease Aid and the Soviet War Effort*, pp. 781-782

⁹³ Ellis, *The World War II Data Book*, p. 277

of seven ships to Russia on August 21st, which arrived ten days later and provided several thousand tons of supplies including 39 aircraft.⁹⁴ Because the Germans believed that the war against the USSR would be over by the end of 1941, they had not planned for any countermeasures in the event of Western convoys. This meant that until the spring of 1942 Western shipments sustained no, or very few, casualties. Regular convoys started at the end of September, and by the end of the year six convoys with 45 ships had reached Arkhangelsk and Murmansk safely, supplying the USSR with 1400 trucks, between 600 and 669 tanks, 800 aircraft, and tens of thousands of tons of other materials.⁹⁵

According to Krivosheev, the Red Army possessed 7700 tanks and self propelled guns by January 1st 1942, a sharp decline from the 22 600 to 25 500 units it had possessed in June 1941.⁹⁶ Krivosheev's numbers however have to be taken with caution. He claims that the USSR possessed 22 600 tanks and sp-guns at the beginning of the war. From June to December 1941 the Red Army lost 20 500 units, while domestic production turned out 4700 machines and Western deliveries amounted to 600 to 669 vehicles, leaving between 7400 to 7469 tanks by the beginning of 1942. Krivosheev's numbers show that the Red Army received 5600 tanks from 22nd June to 31st December 1941, despite the fact that combined domestic production and Western deliveries amounted to just 5300 or 5369 vehicles, a difference of 231 to 300 tanks.⁹⁷ Production and supply of aircraft do not add up as well. According to Krivosheev, Soviet industry produced 11 500 aircraft from the start of the invasion until the end of the year, however, the Red Army received only 11 000 aircraft during the second half of 1941.⁹⁸ Combined with Western deliveries this leaves 1300 aircraft unaccounted for.

These discrepancies would suggest that official Soviet numbers are inaccurate and that Soviet losses in 1941 were higher than admitted. This would increase the value of Lend-Lease deliveries even further. Another aspect worth considering is the Soviet claim that many of the Western tanks they received were of inferior quality to Soviet models and useless against German tanks. This claim is partially wrong. While Western tanks were inferior to Soviet models such as the T-34, the Valentines, Matildas, and Grants were superior not only to all Soviet light tanks, (which made up 94% of the Soviet tank park in June 1941 and 82% at the beginning of 1942) but to all German light tanks and some early versions of German medium

⁹⁴ Piekalkiewicz, *Der Zweite Weltkrieg*, p. 513, 516

⁹⁵ Piekalkiewicz, *Der Zweite Weltkrieg*, p. 535; Zaloga and Grandsen, *Soviet Tanks and Combat Vehicles of World War Two*, p. 206

⁹⁶ Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, p. 252

⁹⁷ *Ibid*, p. 252

⁹⁸ *Ibid*, pp. 244, 254-255

tanks as well.⁹⁹ By December 1st 1941 the Red Army's field units had 1731 tanks at their disposal, of which 1214 were light and 517 medium and heavy tanks, of these 90 or 17.4% were Valentines and Matildas.¹⁰⁰ Western tanks had been used in the defence of Moscow as early as November 1941. A report of the Wehrmacht IX Corps notes that 252 Infantry Division engaged and destroyed three British supplied tanks of unidentified type at Petrovskoe near the River Istra on November 25th 1941.¹⁰¹ While many Western tanks broke down because of maintenance problems or due to the severe Russian winter, their mere presence represented important help: "[...] in the context of the limited number of superior Soviet models available at the time, and even an approximate parity with much German armor [sic] on a tank by tank basis, such vehicles represented a meaningful, morale-boosting British contribution to the war on the Eastern Front [...]."¹⁰²

Deliveries of aircraft were equally important. By January 1st 1942 the Soviet air defence forces had 1470 serviceable fighter aircraft, including 99 Hurricanes and 39 Tomahawks, corresponding to 9.4% of total Soviet stock.¹⁰³ Both these aircraft types were inferior to the German Bf 109, but so were most Soviet fighters of this time period. In fact Western fighter aircraft delivered in 1941 were of comparable quality to their Soviet counterparts: "The Hurricane was [...] arguably at least as useful at that point as many potentially superior Soviet designs such as the LaGG-3 and MiG-3, which were suffering considerable teething troubles in early war production aircraft."¹⁰⁴

The first Soviet formation to be equipped with Western aircraft was the 126th Fighter Air Regiment on October 12th 1941. By December 5th about 15% of the aircraft of the 6th Fighter Air Corps defending Moscow consisted of Tomahawks or Hurricanes.¹⁰⁵ Besides tanks and aircraft, the Allies delivered small but urgently needed quantities of aluminium and rubber, and up to 8300 motor vehicles from the United States.¹⁰⁶ Concerning the helpfulness of these deliveries, Alexander Hill concludes: "It would be difficult and unconvincing to argue that Lend-Lease aid "saved" the Soviet Union from defeat in 1941. Axis forces were, for instance, halted before Moscow with Soviet blood, and to a large extent with Soviet-manufactured arms

⁹⁹ Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, p. 252

¹⁰⁰ Alexander Hill (2009): *British Lend-Lease Tanks and the Battle of Moscow, November–December 1941 Revisited*, *The Journal of Slavic Military Studies*, 22:4, 574-587, p. 575; Hill claims that the 90 Matildas and Valentines represented 15% of Soviet medium and heavy tanks, 90 out of 517 is 17.4% though

¹⁰¹ *Ibid*, p. 577

¹⁰² *Ibid*, p. 587

¹⁰³ Hill *British Lend-Lease Aid and the Soviet War Effort*, pp. 792-793

¹⁰⁴ *Ibid*, p. 795

¹⁰⁵ *Ibid*, p. 796

¹⁰⁶ Alan Gropman (editor), *The Big L: American Logistics in World War II* (National Defence University Press 1997), p. 288

and equipment. Nonetheless, [...] Lend-Lease aid provided during the period of the First Moscow Protocol had a far more significant impact on the Soviet war effort and indeed on frontline capability both during and after the Battle for Moscow than the Soviet and indeed Western historiography would suggest.”¹⁰⁷

The air war

With Britain’s refusal to make peace with Germany, the Luftwaffe was forced to commit substantial forces into the bombing of Britain, and later into the Mediterranean, resulting in costly losses. From 1st July 1940 to June 22nd 1941, the Luftwaffe lost 4313 aircraft, including 1688 bombers and 1100 fighters.¹⁰⁸ Additionally, not all available aircraft could be used against the USSR. By June 22nd 1941 a total of 1561 German aircraft were stationed at other fronts in Europe and in the Mediterranean fighting against Britain, as compared to 3104 stationed at the Eastern Front.¹⁰⁹ German historian Rolf Dietrich-Müller concludes that if Britain had arranged itself with Hitler in the summer of 1940, the Luftwaffe could have used up to 9640 aircraft at the start of “Barbarossa”, which would have resulted in a quick victory against the USSR.¹¹⁰ In the second half of 1941 Luftwaffe losses against the RAF remained far lower than the losses sustained against the Soviet air force, however they were still substantial. By December 27th 1941 the Germans had lost 2505 aircraft in the East, while losses on all other fronts since June 1941 amounted to 779 aircraft.¹¹¹

The allocation of the majority of the Luftwaffe to the Eastern Front gave Britain the opportunity to build up its bomber force; this meant that with each passing month the RAF grew stronger and more capable of launching large scale bomber attacks against the German industry. After British forces had been kicked out of Europe in France and Greece, this form of warfare had remained the only possible way in which Britain could strike against Germany. Another reason for this approach was the hope to aid the Soviet Union by keeping away large German forces, as well as the desire to end the war without the necessity of costly land warfare. The bomb load dropped by the Royal Air Force (RAF) on Germany, and German occupied territories, rose from 13 037 tons in 1940 to 31 704 tons in 1941.¹¹² At this stage of

¹⁰⁷ Hill, *British Lend-Lease Aid and the Soviet War Effort*, p. 808

¹⁰⁸ Rolf-Dietrich Müller, *Der Bombenkrieg 1939-1945* (Christoph Links Verlag 2004), p. 96; Groehler, *Geschichte des Luftkriegs 1910 bis 1970*, p. 334

¹⁰⁹ Groehler, *Geschichte des Luftkriegs 1910 bis 1970*, p. 298

¹¹⁰ Müller, *Der Bombenkrieg 1939-1945*, p. 96

¹¹¹ Horst Boog/Jürgen Förster/Joachim Hoffmann/Ernst Klink/Rolf-Dieter Müller/Gerd R. Ueberschär, *Germany and the Second World War, Volume IV The attack on the Soviet Union* (Clarendon Press 1998), p. 817

¹¹² Ellis, *The World War II Data Book*, p. 233

the war bombing was still too imprecise and the bomb load too small to cause any substantial damage to German industry, however fighting over the skies of Western Europe and the Mediterranean resulted in costly losses for the Luftwaffe. During the second half of 1941 the Royal Air Force was responsible for roughly one quarter of all German aircraft losses; additionally large numbers of German aircraft were sent to these fronts to replenish and reinforce the Luftwaffe formations fighting the RAF. By October 1941 there were 642 German aircraft stationed in the Mediterranean theatre of war alone.¹¹³

Continued British resistance after the summer of 1940 denied the Germans the ability to reorganize and replenish their air forces, instead it forced them into a costly campaign which greatly decimated the Luftwaffe. Without British resistance in the year leading up to “Barbarossa” and the necessity to keep substantial amounts of aircraft in Western Europe and the Mediterranean, the Luftwaffe could have attacked the USSR with a force up to three times as strong as it actually did. On top of that, German stocks of aviation fuel would have been substantially higher because in case of a British withdrawal or surrender, fuel consumption would have stood at a fraction of the historical level. Even in the second half of 1941, at a time when the majority of the Luftwaffe fought in the East, Britain contributed greatly to Soviet survival by engaging and destroying hundreds of German aircraft, thus preventing the Luftwaffe to create reserves which could have been used to keep up the strength of German air forces in the East.

The Mediterranean

After the fall of France the Italian dictator Mussolini saw his chance to expel the British from the Mediterranean, once again creating a Mare Nostrum, a second Roman Empire in possession of the entire Mediterranean. Italian attempts to conquer Egypt however ended in disaster, with the British advancing deep into Libya.

Due to this development, Mussolini was forced to ask Hitler for help who immediately sent the German Afrika Korps under General Erwin Rommel. By mid-March 1941, a total of 168 tanks had been sent to Libya, of which 155 arrived.¹¹⁴ By April German forces were rapidly advancing towards the city of Tobruk, which was cut off from Allied forces and had to endure more than seven months of siege before being rescued. Operation “Battleaxe”, the first British attempt to relieve the city ended in disaster, the British lost 94 tanks compared to 12

¹¹³ Ellis, *The World War II Data Book*, p. 232

¹¹⁴ Jentz, *Panzertruppen Volume 1*, pp. 158-159

German.¹¹⁵ In the following months fighting in North Africa intensified, this resulted in increased deliveries of reinforcements to this theatre. By the time the British launched operation “Crusader”, the second attempt to relieve besieged Tobruk, the two Panzer Regiments of the Afrika Corps were in possession of 279 tanks.¹¹⁶

The fighting to relieve Tobruk continued throughout November and December, resulting in heavy losses on both sides. By December 19th the Germans had to send an additional 90 tanks as reinforcements to compensate for the losses sustained during the campaign, of which only 45 arrived, the other half was sunk.¹¹⁷ Total German losses sustained in November and December numbered 195 tanks.¹¹⁸ Throughout all of 1941, Germany sent roughly 10% of its tank production to North Africa, some 400 tanks in total. This may seem negligible compared to the 3600 tanks with which Germany attacked the Soviet Union, however one should not dismiss the amount of additional casualties these reinforcements could have inflicted on the Soviets. The kill ratio between German and Soviet tanks in 1941 was 6 or 7 to 1, meaning that Rommel and a potential “Russland Corps” could have destroyed an additional 2000 to 3000 Soviet tanks had they been deployed to Russia instead of North Africa.¹¹⁹ Considering that on January 1st 1942 the total Soviet tank park numbered at most 7700 machines, most likely less, the additional loss of 2000 or more tanks would have represented a serious loss in Soviet offensive capability. Even these numbers are misleading and do not represent the entirety of tanks Britain kept away from the USSR by continuing to fight against Germany. In order to counter possible British landings in Northern France and Norway, the Germans had to keep substantial mechanized forces in these areas. In April 1940 the total German tank stock numbered 3387 units, of which 2580 or 76% were used in the invasion of Western Europe.¹²⁰ By the beginning of June 1941, the German tank stock had increased to 5639 machines, but only 3580 or 63.5% were used against the USSR.¹²¹ Without British resistance, Germany should have been able to use against the USSR the same percentage of tanks as used against Western Europe, or an additional 700 machines. A thousand German tanks, supported by the hundreds of French, British and Polish tanks captured during 1939/1940, would have been enough to perform effective occupation duties throughout Europe had the British been knocked out of the war in 1940.

¹¹⁵ Jentz, Panzertruppen Volume 1, p. 167

¹¹⁶ Ibid, p. 168

¹¹⁷ Ibid, p. 174

¹¹⁸ Ibid, p. 174

¹¹⁹ Overy, Russia’s war, p. 191

¹²⁰ Mueller-Hillebrand, Das Heer 1933-1945: Band II, p. 106

¹²¹ Ibid, p. 106

3 The Eastern Front and Western aid 1942

By the beginning of 1942 German units in the East were in a precarious position. The counteroffensive launched by the Red Army at the end of the previous year had pushed them away from Moscow and was threatening to encircle large parts of Army Group Centre. To prevent the destruction of their units, the commanders of AGC wanted to withdraw to a better defensible position; Hitler however forbade his troops to retreat, fearing that a withdrawal might give the Soviets the opportunity to destabilize the whole front. German forces were ordered to hold their positions and to fight to the last man. This decision increased the risk of German units being encircled by the advancing Red Army and caused protest in the German general staff. After several failed attempts to persuade Hitler to allow a withdrawal, the commander of Army Group Centre, General von Kluge, convinced Hitler to order a limited retreat to the so called "Winterstellung". This concession came with a high price. As punishment for defying his orders, several competent commanders were suspended from the army and Hitler took complete control over the war in the East.

Despite the approved retreat, the Soviets managed to trap some 100 000 German soldiers at the city of Demyansk but were unable to defeat them. For the next four months these troops were supplied by the Luftwaffe which managed to provide 300 tons of supplies every day.¹²² In the southern sector of the Eastern Front the Soviets launched several offensive operations as well, scoring their greatest success at Kerch in the Crimea, where they briefly recaptured the whole peninsula. Soviet offensive operations continued until the middle of April, when the thawing snow started the Russian mud period and prevented any further fighting for several weeks. During this forced intermission Stalin had already ordered the next Soviet offensive. After pushing the Germans backwards continuously for four months straight, the dictator was convinced that the Germans were at their limit, and confident that the Red Army would secure an annihilating victory. This offensive was launched in mid-May against the German forces at Kharkov, a major industrial city in the north-west of the Ukraine. Despite initial success the offensive resulted in disaster, costing the Red Army 239 306 captured soldiers, as well as 2026 guns and 1249 tanks.¹²³ This defeat had exhausted Soviet offensive capabilities, and together with the end of winter, had shifted the initiative back to the Germans. In the centre of the front the Germans managed to reconnect with their troops at Demyansk through a narrow land bridge, and in early May German forces launched an offensive which conquered the

¹²² Piekalkiewicz, *Der Zweite Weltkrieg*, p. 572

¹²³ *Ibid*, p. 583

entire Kerch peninsula within a few days. This enabled them to concentrate on Sevastopol which fell by early July and secured the back of the German offensive against the Caucasus. By June 22nd 1942, after one year of heavy fighting, German losses in the East numbered 271 612 killed and 65 730 missing soldiers.¹²⁴ While these were horrendous casualties, representing roughly one tenth of the German strength at the start of “Barbarossa”, the Red Army had lost roughly twenty times as many soldiers.

Hitler believed that the Soviets were exhausted and expected that one final strike would be enough for the USSR to collapse. This strike was to be launched in the south against Stalingrad and the Caucasus. The Caucasian oil fields had supplied 86% of Soviet oil in 1940, and it was hoped that their conquest would solve Germany’s shortage of oil and weaken the Soviet economy and military to the point of collapse.¹²⁵ The main German offensive, codenamed “Case Blue”, was launched on June 28th, for this campaign Army Group South had been reorganized into the newly formed Army Group’s A and B. The original plan was for Army Group A and B to advance and to capture Stalingrad simultaneously. After this objective had been secured, both Army Groups should have advanced towards the oilfields of the Caucasus.

The offensive made good initial progress, by July 8th the Germans had captured 73 000 Soviet soldiers; and either captured or destroyed 1200 tanks and the same number of aircraft.¹²⁶ On July 23rd, less than a month after the start of the offensive, Hitler ordered the two Army Groups to split up and pursue both goals simultaneously. Army Group B was ordered to continue its advance towards Stalingrad and the Volga; the capture of the city would have secured the flanks of the German offensive and cut the flow of oil and other resources from the Caucasus to the industrial centres of the north. Meanwhile Army Group B was sent into the Caucasus, tasked with securing the oilfields of Maykop, Grozny, and Baku. By this time German forces were heavily overextended and had to rely on their Hungarian, Romanian, and Italian allies to secure the northern flank of Army Group B.

The greatest problem was the slow loss of air superiority on the Eastern Front. From June 1941 to May 1942 the Germans had lost 3000 aircraft in the East, including 1026 bombers and 762 fighters, while another 2000 aircraft had been damaged.¹²⁷ Additionally, from the summer of 1942 onwards the Luftwaffe had to keep up to half of its air force in the West and in the Mediterranean, leaving the Eastern Front with only 2350 to 2500 machines; by this time

¹²⁴ Die Wehrmachtsberichte 1939-1945, Band 2, 1. Jänner 1942 bis 31. December 1943 (Gesellschaft für Literatur und Bildung mbH 1989), p. 188

¹²⁵ Walter S. Dunn Jr. The Soviet economy and the Red Army: 1930-1945 (Praeger Publishers 1995), p. 37

¹²⁶ Piekalkiewicz, Der Zweite Weltkrieg, p. 586

¹²⁷ Ibid, p. 582

the Luftwaffe was already outnumbered 3:1.¹²⁸ The German air force managed to compensate for this numerical inferiority through the use of better tactics, skill and equipment, but this measure could only work temporarily. Greater Soviet production of aircraft, in combination with Lend-Lease deliveries, and the need to relocate large parts of the Luftwaffe to the west and south, meant that Soviet numerical superiority was continuously increasing. By September, Army Group A's advance was slowing down because of Caucasian geography, and Army Group B was deadlocked in the battle for the city of Stalingrad. At Stalingrad, the Soviets forced German mobile units into costly close range urban warfare, similar to World War I trench warfare, where they were unable to use their tanks and tactical skill, thus neutralizing all their advantages. This tactic enabled the Red Army to hold Stalingrad for nearly three months, giving the Red Army time to husband enough reserve formations for a gigantic counteroffensive codenamed "Uranus".

This offensive aimed at the weak link in the German defence, the Axis satellite armies north and south of Stalingrad. The offensive was launched on November 19th, breaking easily through the armies of Germany's ally Romania, and trapping over 200 000 German and Axis soldiers. Because German counterattacks to relieve the city were unsuccessful, it was decided to supply the trapped formations through air as had been done at Demyansk. The armies at Stalingrad needed a minimum of 300 tons a day of supplies to survive, but the average tonnage supplied was just 100 tons. By this point the Luftwaffe had lost its air superiority, which resulted in costly losses for the transport and bomber aircraft which were supplying Stalingrad.

From November 24th 1942 until January 31st 1943, the Luftwaffe lost 488 aircraft, including 266 Ju 52 transport and 165 He 111 bomber aircraft.¹²⁹ By the end of the year German armies were being pushed back from the Caucasus rapidly, while the encircled armies at Stalingrad had been ordered to fight to the bitter end. Another large Soviet offensive, codenamed "Mars", was launched a few days after the Stalingrad offensive and was aimed at the German troops near Moscow in the Rzhev salient. The Soviets used 667 000 men supported by 1900 tanks, however German units were able to repel the attack, leaving the Soviets with little gain for the loss of some 100 000 dead soldiers and 1600 destroyed tanks.¹³⁰

¹²⁸ Piekalkiewicz, *Der Zweite Weltkrieg*, p.668

¹²⁹ Bekker, *Angriffshöhe 4000*, p. 316

¹³⁰ Bellamy, *Absolute War*, p. 543

Lend-Lease

Compared to the small amounts delivered during the last four months of 1941, Western deliveries in 1942 were of far greater magnitude. Due to the lack of proper facilities and transportation capabilities in Iran and the Far East, most Lend-Lease transports in that year were directed towards Murmansk and Arkhangelsk. The first 12 convoys had sustained almost no casualties, the first convoy to be seriously attacked was PQ 13 sailing towards the end of March.¹³¹

PQ 14 and 15 sustained moderate casualties; after these convoys the Germans reinforced their air and naval forces in the north, which resulted in mounting losses for the Allies. Convoy PQ 16, sailing at the end of May, was hit hard with 7 ships out of 35 sunk, sending 43 205 tons of supplies to the bottom of the ocean.¹³² The next convoy, sailing at the end of June, was hit even harder. Of the 36 ships of PQ 17, 24 ships with 143 997 tons of supplies were sunk.¹³³ The ships sunk in these two convoys had carried 4120 motor vehicles, 577 tanks, and 287 aircraft; the ones arriving at Soviet harbours delivered 3403 motor vehicles, 485 tanks, and 211 aircraft.¹³⁴ Due to these losses, shipments were suspended for the rest of the summer and only two more convoys were sent by this route before the end of the year. In the meantime American and British engineers were expanding the capacity of Iranian harbours and railway transportations, while the Soviets did the same at Vladivostok and the Siberian railway. Despite difficulties in transportation and losses at sea, the Western Allies delivered great quantities of aid to the USSR. From December 1st 1941 to April 30th 1942, a total of 1441 aircraft and 1678 tanks had reached the Soviet Union.¹³⁵ By May 1st the Red Air Force had 1757 front line fighter aircraft, of which 249 were foreign machines.¹³⁶ While some tank and aircraft models were popular among Soviet soldiers, most were not. Nevertheless, despite their misgivings, the Red Army continued to use Western tanks and aircraft in large quantities. This indicates that the Soviets truly needed them, otherwise they would not have used equipment they considered inferior. German reports for the year 1942 mention the encounter of Western machines frequently. On March 25th the Germans reported having shot down 7 Hurricanes while attacking Murmansk.¹³⁷ Other reports from this front mention 3

¹³¹ Bekker, *Angriffshöhe 4000*, p. 288

¹³² *Ibid*, p. 289

¹³³ *Ibid*, p. 291

¹³⁴ *Ibid*, p. 291

¹³⁵ Harrison, *Soviet Planning in Peace and War*, p. 264

¹³⁶ Stanislav Gribanov (1998) *The Role of US Lend-Lease Aircraft in Russia in World War II*, *The Journal of Slavic Military Studies*, 11:1, 96-115, p. 100

¹³⁷ *Die Wehrmachtsberichte 1939-1945*, Band 2, p. 65

Hurricanes shot down on April 28th, 14 Hurricanes on April 29th, 22 Hurricanes on May 11th, another 13 Hurricanes on May 19th, and 6 Tomohawks and Hurricanes on May 31st.¹³⁸ Western tanks were used extensively as well. Four days after the start of the second battle of Kharkov, the Germans noted that they had already destroyed or captured 250 tanks, of which numerous were of British design.¹³⁹ Similarly on October 1st at the Stalingrad front, German units claimed to have destroyed 98 tanks, most of which were of British or American origin.¹⁴⁰ Some of these reports might be exaggerated; nonetheless they prove that the Red Army had to use Western equipment despite its shortcomings. Additionally, not all claims about Western military vehicles can be accepted.

As mentioned before, there is no question that Western tanks such as the M3, the Valentine, and Matilda were inferior to the T-34 and other heavy Soviet tanks; however at the beginning of 1942 out of a total tank stock of 7700 machines, 6300 were light tanks, inferior to the models delivered by the West.¹⁴¹ And during the year 1942 the Soviet Union continued to produce large quantities of light tanks. In 1942, the USSR produced 9573 T-40, T-60, and T-70 light tanks, all of which were inferior to Western supplied machines.¹⁴² Even if Western tanks had been deemed useless for tank to tank combat, they could still have fulfilled important roles by being used for infantry support, reconnaissance, or training of tank crews.¹⁴³ In fact, many Soviet tank drivers learned to drive on Western machines, since their engines lasted for years, while Soviet tanks had low quality engines that had to be replaced after six months.¹⁴⁴

Total Western deliveries of military equipment from December 1st 1941 to October 31st 1942 amounted to 4042 aircraft and 4582 tanks.¹⁴⁵ Domestic Soviet production for 1942 had been 25 436 aircraft and 24 446 tanks.¹⁴⁶ By the end of October the West had delivered nearly 16% of domestic aircraft production and nearly 19% of domestic tank production of that year. Other military supplies that had reached the Soviet Union during the First Moscow Protocol were: 6823 jeeps, 36 865 trucks, and 56 445 field telephones.¹⁴⁷ Military hardware was not the only item of value delivered by the West. Of immense value was aluminium, of which the British delivered 14 147 tons by the end of June, while the Soviets had produced just 51 700

¹³⁸ Die Wehrmachtsberichte 1939-1945, Band 2 pp. 98-99, 110,133,146

¹³⁹ Ibid, p. 120

¹⁴⁰ Ibid, p. 303

¹⁴¹ Krivosheev, Soviet Casualties and Combat Losses in the Twentieth Century, p. 252

¹⁴² Musial, Stalins Beutezug, p. 385

¹⁴³ Tuyll, Feeding the Bear, p. 55

¹⁴⁴ Dunn Jr, The Soviet economy and the Red Army, p. 73

¹⁴⁵ Harrison, Soviet Planning in Peace and War, p. 263

¹⁴⁶ Ellis, The World War II Data Book, pp. 277-278

¹⁴⁷ Schlauch, Rüstungshilfe der USA an die Verbündeten im Zweiten Weltkrieg, p. 152

tons of this important metal during all of 1942.¹⁴⁸ Even with these deliveries the lack of this precious metal was so severe that many Soviet aircraft had to use wooden components instead of aluminium.¹⁴⁹ Other supplies that had reached the Soviet Union by the end of the First Moscow Protocol at the end of June were: 424 525 tons of various metals, 56 007 tons of chemicals and explosives, 167 995 tons of petroleum products, and 305 037 tons of food.¹⁵⁰ From October 1941 until the end of June 1942, the Western World had delivered 1.42 million tons of supplies to the USSR.¹⁵¹ And this was just the beginning; much more was to come in the following years.

The air war

In February 1942 the RAF shifted its attacks from German industry against German cities, in an attempt to undermine the morale of the civilian population. In the previous year Bomber Command had been unable to conduct precision bombing against German factories, because at that time such targets were too specific and difficult to hit. Because of this the British decided to attack German cities in mass attacks, hoping to hit the people working in the factories. A factory worker continuously terrorized by bombing, deprived of sleep, in fear of his own and his family's lives, coupled with the destruction of a cities infrastructure, was far less productive than a factory worker who was rested, well paid, and safe. It was hoped that continued bombing of the cities would lead to rebellion against the Nazi regime, or at the very least to a serious loss in industrial production.

The new chief of Bomber Command, Arthur T. Harris, set out to implement this new policy immediately. However, by the time Harris took over, Bomber Command was still relatively weak. In early 1942 there were on average just 363 bombers available for bombing.¹⁵² To achieve greater results, bomber production rapidly accelerated and British bomber forces were radically reorganized in order to fulfil their new task. Before this reorganization phase had been completed, Harris already started to attack industrial targets on the periphery of Germany. For maximum efficiency the British designed a time schedule with the goal to attack the Germans relentlessly round the clock. The first major attack was launched on March 3rd against a Renault vehicle plant at Billancourt, near Paris. A total of 235 bombers

¹⁴⁸ Hill, *British Lend-Lease Aid and the Soviet War Effort*, p. 797

¹⁴⁹ Dunn Jr, *The Soviet economy and the Red Army*, p. 74

¹⁵⁰ Weeks, *Russia's Life-Saver*, pp. 141-142

¹⁵¹ *Ibid*, pp. 141-142

¹⁵² Roger A. Freeman, *Raiding the Reich: The Allied Strategic Bombing Offensive in Europe* (Arms&Armour Press 1997), p. 41

were dispatched, destroying 40% of the factory. This halted the production for more than one month, denying the Germans some 2300 vehicles.¹⁵³ The next major attack took place on March 8th with 211 bombers against the city of Essen. The attack was mostly ineffective, because the bombers had difficulties to locate a target at night, and resulted in minimal damage to the town and its industry. Due to its proximity to the coast (and therefore easier localization), Lübeck was chosen as the next target. On March 28th a total of 234 bombers descended upon the city, destroying roughly half of it.¹⁵⁴

In the following weeks, the British continued bombing of easily locatable German coastal cities, but despite great effort, these bomber attacks against German cities were perceived as ineffective. It was believed that bombing did little damage for a high price of aircraft and aircrews. Eager to silence critics and to demonstrate the full potential of bombing, Harris decided to unleash a series of attacks with overwhelming numbers. Mobilising every available bomber aircraft in the United Kingdom, including many aircraft from training units and reserve formations, Harris managed to amass over a thousand bombers. Due to favourable weather conditions Cologne was chosen as the target. On May 30th the city was attacked with 1047 bombers, dropping 1455 tons of bombs, which devastated 2.4 square kilometres of the city, including 36 factories.¹⁵⁵ The effect on German industry was estimated to be severe, and naturally Harris wanted to repeat this success. As a result two more 1000 bomber raids were launched. One with 956 aircraft against Essen on June 1st, the second with 1067 machines against Bremen on June 25th.¹⁵⁶ While Essen had been protected by a thick cloud front, rendering the raid ineffective, the attack against Bremen was considered a full success. Bombing managed to inflict considerable damage on a Focke-Wulf factory, the shipbuilding docks, and several military installations. While effective, these large scale bombing attacks proved to be too much of a strain for Bomber Command. It took tremendous effort to husband and organize such a large force, especially during a time when bombers were in short supply. As a result the 1000 bomber raids were abandoned and bombing with a smaller number of aircraft continued.

By the summer of 1942 the first American bomber squadrons that had arrived in the UK were starting to aid Bomber Command in its attacks against German occupied Europe. The first attack by the Americans was launched on July 4th in a combined RAF/USAAF attack against

¹⁵³ Freeman, *Raiding the Reich*, pp. 43-44

¹⁵⁴ *Ibid*, p. 43

¹⁵⁵ Freeman, *Raiding the Reich*, p. 45; Alan J, Levine, *The Strategic Bombing of Germany: 1940-1945* (Praeger publishers 1992), p. 47

¹⁵⁶ Freeman, *Raiding the Reich*, p. 45

German airfields in the Low Countries.¹⁵⁷ The first exclusive American attack was launched with 12 B-17 bombers against a rail yard in Rouen on August 17th.¹⁵⁸ The build up of American aircraft was so rapid that by October 9th over 100 bombers could be dispatched against a single target, a steel works at Lille.¹⁵⁹

The total Anglo-American bomb load released over Europe in 1942 totalled 46 972 tons, more than what the British had dropped from 1939 to 1941.¹⁶⁰ With the exception of targets like Lübeck, Bremen, Cologne, and a few others, bombing in 1942 did little physical damage to German industry. There were still severe problems with accuracy and not enough bombers to cause any large scale disruptions of German industry. However, even without physical damage, bombing still managed to reduce production figures by disrupting the time schedule. When Allied bombers attacked, the factory workers had to leave their workplace and resort to the air raid shelter, which resulted in the loss of hundreds of thousands of work hours in each enterprise.¹⁶¹ Additionally, the fear from being killed by bombs resulted in high rates of absenteeism; by 1944 some 20% to 25% of the workforce was absent regularly.¹⁶² The main contribution of bombing in 1942 though was that it opened up another front for Germany. In order to protect its cities and their population against Allied bombers, the Luftwaffe was forced to allocate ever increasing quantities of its aircraft for the defence of the Reich and Western Europe. From June to December 1942 the Germans lost 2388 aircraft on the Eastern Front, as compared to 2547 on all other fronts.¹⁶³ By the summer of 1942, the Western Allies were inflicting nearly half of all Luftwaffe losses. This represented a significant increase from the 20-25% of all losses they had inflicted in the second half of 1941. Besides the large number of destroyed aircraft by Western forces, substantial Luftwaffe formations had to remain in the Mediterranean and Western Europe. By November 1942 there were 1315 German aircraft stationed in the Mediterranean, and a further 365 day fighters, and a similar number of night fighters in Western Europe for the defence of the Reich.¹⁶⁴

¹⁵⁷ Freeman, *Raiding the Reich*, p. 47

¹⁵⁸ *Ibid*, p. 47

¹⁵⁹ *Ibid*, p. 48

¹⁶⁰ Ellis, *The World War II Data Book*, pp. 233-234

¹⁶¹ Werner Wolf, *Luftangriffe auf die deutsche Industrie: 1942-1945* (Universitas Verlag 1985), p. 63

¹⁶² Richard Overy, *Why the Allies won* (Pimlico 2006), p. 162

¹⁶³ Williamson Murray, *Strategy for Defeat: The Luftwaffe 1933-1945* (Air University Press 1983), p. 114

¹⁶⁴ Ellis, *The World War II Data Book*, p. 232, by August 1942 there had been 322 night fighters stationed in Germany, p. 238

The Mediterranean

Following Operation Crusader and the heavy fighting at the end of 1941, German troops had been pushed westwards several hundred kilometres and had lost much of their offensive capability. British forces, on the other hand, were severely weakened as well. Maintaining communications and a functioning supply line over hundreds of kilometres of newly conquered territory left the British lines spread thinly. Rommel, who had received new supplies and reinforcements of 54 tanks on January 5th, used this situation to his advantage and launched a counteroffensive on January 21st.¹⁶⁵ The offensive was eventually halted by British resistance after just two weeks, but in this time Rommel had managed to recapture large parts of the Cyrenaica, and had advanced to the city of Gazala, located just a few dozen kilometres west of Tobruk. By now both sides were so exhausted that they were forced to erect defensive lines; the following months were used to build up their armies and stockpile equipment for the next offensive.

From January to May 1942, a total of 328 tanks had been shipped to North Africa as reinforcements, and at the end of May, Rommel's two panzer divisions had at their disposal 425 tanks, the highest number in the whole North African Campaign.¹⁶⁶ With these forces, Rommel launched a new offensive on May 26th, breaking through British defensive lines and finally capturing Tobruk, where 32 220 Commonwealth troops went into captivity.¹⁶⁷ With the fall of Tobruk the gates to Egypt were open and Rommel immediately advanced across the Libyan-Egyptian border in an attempt to reach Cairo. Despite breaking through the British lines at Marsa Matruh, Rommel was eventually stopped at the end of July in the first battle of El Alamein. In the last two months the Afrika Korps had lost 233 tanks, while British losses were reported to be 1388 machines.¹⁶⁸ Although this was a severe blow to the British, it was easier for them to replace these losses since they were receiving thousands of Lend-Lease tanks from the US. Rommel realised that he had to attack the Allies at Alamein first, before they could build up overwhelming forces.

Due to a precarious supply situation, caused by Allied attacks from Malta against Axis supply ships, and the fact that Montgomery was forewarned of the attack by British intelligence, the Germans lost the resulting battle of Alam el Halfa, their last major offensive in the Western Desert. With this defeat Rommel was compelled to go over to the defensive, leaving the

¹⁶⁵ Jentz, Panzertruppen Volume 1, p. 175

¹⁶⁶ Ibid, pp. 177-178, 180

¹⁶⁷ Piekalkiewicz, Der Zweite Weltkrieg, p. 683

¹⁶⁸ Jentz, Panzertruppen Volume 1, pp. 180, 182

British enough time to amass a numerically overwhelming force. After having built up his forces, Montgomery launched his attack on October 23rd, forcing Axis troops to retreat towards Tunisia. Between the start of the offensive and December 2nd, the Germans had lost 229 tanks, leaving the Afrika Korps with only 64 machines.¹⁶⁹ Following Rommel's defeat at Alamein and the Anglo-American landing in Morocco and Algeria during operation Torch, Hitler had to send additional reinforcements to North Africa. While there had been 3 German divisions in North Africa in June 1942, their number had increased to 7 in December and 8 in March 1943.¹⁷⁰ Throughout 1942 the German Afrika Korps lost 462 tanks in the major battles of the May to July, and October to December period, and an unknown number during smaller engagements. Including the 64 tanks still present at the end of the year, and approximately 200 tanks shipped as reinforcements to Tunisia in November/December, this would mean that Germany invested around 700 tanks into the North African Theatre in 1942.¹⁷¹ This was more than 10% of German tank production of this year, which represented great help for the hard pressed Red Army.¹⁷²

¹⁶⁹ Thomas L. Jentz (editor), *Panzertruppen: The Complete Guide to the Creation & Combat Employment of Germany's Tank Force: 1943-1945: Volume 2* (Schiffer Publishing, Ltd. 1996), p. 13

¹⁷⁰ Ellis, *The World War II Data Book*, pp. 159-160

¹⁷¹ Jentz, *Panzertruppen Volume 2*, p. 13

¹⁷² Ellis, *The World War II Data Book*, p. 277

4 The Eastern Front and Western aid 1943

The forces of 6th Army, which had been completely encircled the year before, continued to fight on. However, an inadequate supply situation made their surrender only a matter of time. By early February the last remnants still offering resistance surrendered, ending the five month long battle of Stalingrad and releasing the Soviet armies which had been stationed at this front. By this time German forces were rapidly retreating from the Caucasus in an attempt to thwart the Red Army's intention of trapping them in this area by conquering Rostov. With great effort the Germans managed to hold the city and its surrounding areas until early February, giving the retreating German armies enough time to pull out of the Caucasus and establish a defensive position along the Mius River. A Soviet offensive farther north, aimed at the industrial city of Dnepropetrovsk, was thwarted by a major German counteroffensive by General Manstein. In the process of this counteroffensive, the Germans managed to recapture the industrial city of Kharkov and to stabilize the front. By the end of March the Soviet counteroffensive had exhausted itself and in early April the Russian mud period set in, forcefully ending all combat operations on the Eastern Front. By now it was clear that Germany could no longer defeat the Soviet Union, however a separate peace through negotiation was still possible.¹⁷³

The relationship between the Soviet Union and the West was not at its best. The Allies had not opened up a second front and were having difficulties in defeating a handful of German divisions in North Africa, while the Soviet Union continued to fight the overwhelming majority of the German army. Stalin suspected that the Western powers were not really interested in helping the Soviets, but wanted Germany and the USSR to devour one another instead. This mistrust could have been used to convince Stalin that it was better to make peace with Germany, rather than to fight and bleed for the capitalists. Hitler, who wanted to negotiate from a position of strength, thus planned another offensive against the Soviets, codenamed "Citadell", which should also have restored the prestige and the confidence of the German army. The goal of this offensive was to regain the initiative in the East and to correct the front at the Kursk salient. The capture of the city would have shortened the front by some 250 kilometres, and freed between 18 and 20 divisions for other operations.¹⁷⁴ Additionally, it was hoped that the capture of stockpiled supplies, in combination with the destruction of the armoured formations of the Red Army, would compel Stalin to a separate peace. During the

¹⁷³ Bellamy, *Absolute War*, p. 576

¹⁷⁴ *Ibid*, p. 562

three months before the start of “Citadell” German armies were greatly reinforced, while the Soviets used the time to create formidable defensive positions along the entire length of the salient. When the Germans attacked on July 5th, both sides had reinforced their troops with so many armoured fighting vehicles that the battle of Kursk became the largest tank battle in history. Through their “Lucy” spy ring, the Soviets had pinpointed the exact date and location of the attack and concentrated a majority of their forces in these areas, thus achieving numerical superiority. German forces in the Kursk area had at their disposal 900 000 men, 10 000 artillery pieces, 2700 tanks and self propelled guns and 2000 aircraft; the Soviets concentrated at Kursk 1.3 million men, 20 000 artillery pieces 3600 tanks, and 2400 aircraft.¹⁷⁵ Soviet knowledge of the exact date and location of the attack, in combination with their strong defenses and numerical superiority, made sure that the Germans were unable to penetrate Red Army defensive positions.

On July 10th in the midst of the battle, Anglo-American forces invaded Sicily, which caused the cancellation of the offensive and the relocation of forces from the East for the defence of Italy. Exhausted, German units were pushed back by the Soviets and had to retreat to their original positions. Utilizing the weakened state of the German army to their advantage, the Red Army then launched a major counteroffensive north and south of Kursk, aimed at the cities of Orel and Kharkov. From July 5th to August 6th 1943, German units reported to have captured 69 164 Soviet soldiers, and either captured or destroyed 7847 tanks, 3083 guns, and 3731 aircraft.¹⁷⁶ Actual tank and sp-gun losses for both sides during July and August seem to have been 1331 machines lost by the Germans and 8125 lost by the Soviets.¹⁷⁷

The Soviets however were able to bear their losses, something the Germans were unable to do, despite having sustained only a fraction of these casualties. By the end of August the Red Army had cleared all German forces from the areas surrounding Kursk, and launched a series of large scale attacks which were designed to keep the Germans off balance, denying them the time to regroup their forces. The initiative was now solely in Soviet hands, the exhausted and outnumbered Germans units were only capable of launching small and limited counterattacks, which remained without consequence for the Soviets. By the end of the year the Red Army had recaptured Kiev, Soviet units had crossed the Dniepr, and German units in the Crimea had been cut off from their main forces.

¹⁷⁵ Bellamy, *Absolute War*, p. 577

¹⁷⁶ *Die Wehrmachtsberichte 1939-1945*, Band 2. p. 534

¹⁷⁷ Fritz Hahn, *Waffen und Geheimwaffen des deutschen Heeres 1933-1945: Band 2: Panzer-und Sonderfahrzeuge »Wunderwaffen«, Verbrauch und Verluste* (Bernard & Graefe Verlag 1987). p. 241

Lend-Lease

During this year the Western Allies managed to increase the flow of supplies to the USSR dramatically. Facilities in Alaska had been vastly expanded, enabling the US to transfer large amounts of aircraft via the Arctic to the Soviet air base at Krasnoyarsk in Siberia. While only 114 aircraft had been delivered to the USSR via this route in 1942, in 1943 a total of 2465 aircraft were received by the Soviets at Krasnoyarsk.¹⁷⁸ Overall deliveries of Western aircraft reached their peak in 1943. At the end of October 1942 slightly more than 4000 Western aircraft had reached the USSR, by the end of 1943 this number had increased to 13 248.¹⁷⁹ Soviet production of aircraft in the years 1942/43 had amounted to 60 281 machines, meaning that Western aircraft represented some 18% of total Soviet aircraft supply in these two years.¹⁸⁰

Especially important was the delivery of bombers. By the end of July the United States had delivered 1901 bombers to the USSR, whereas domestic production for the years 1942/43 had been 7611 units.¹⁸¹ Western bombers thus represented some 20% of Soviet bomber supply during these two years, with the number being closer to 15% in 1942 and up to 25% in 1943. These numbers reflect themselves in the composition of the Soviet bomber force. Of the 2014 operational bombers the Red Air Force possessed on June 1st, a total of 296 were American.¹⁸² Deliveries of tanks during this year were of smaller importance. By October 1942 combined British-American tank deliveries had amounted to 4582 machines, and by the end of 1943 they had increased to 8380 delivered units.¹⁸³ Soviet production in 1942/43 had amounted to 48 535 tanks and sp-guns, giving Western supplied tanks a share of slightly less than 15% for these two years. The share in 1942 was slightly greater because tank deliveries peaked in that year and declined thereafter. Despite their small share and the unpopularity of certain models among Soviet troops, Western tanks continued to be used regularly by the Red Army. At the beginning of 1943 there were 1023 Lend-Lease tanks in Soviet tank units; 61-68% of Soviet tank brigades were equipped solely with Russian tanks, 19-22% were equipped with both Soviet and Western models, and 10 to 17% relied exclusively on British and American machines.¹⁸⁴ During the first half of 1943 the Red Army lost 5737 tanks and self propelled

¹⁷⁸ Weeks, *Russia's Life-Saver*, p. 120

¹⁷⁹ Harrison, *Soviet Planning in Peace and War*, p. 264

¹⁸⁰ Harrison, *Soviet Planning in Peace and War*, p. 264; Ellis, *The World War II Data Book*, p.278

¹⁸¹ Tuyll, *Feeding the Bear*, p. 171; Ellis, *The World War II Data Book*, p. 279

¹⁸² Gribanov, *The Role of US Lend-Lease Aircraft in Russia in World War II*, p. 100

¹⁸³ Harrison, *Soviet Planning in Peace and War*, p. 264

¹⁸⁴ Zaloga and Grandsen, *Soviet Tanks and Combat Vehicles of World War Two*, p. 206

guns, of which 839 were Western machines.¹⁸⁵ American tanks were also used at the battle of Kursk.¹⁸⁶ The 70th tank Brigade of the 5th Tank Corps for example, was equipped with 29 M4 Sherman tanks; all of these were either knocked out or completely destroyed in the week from July 24th to July 31st.¹⁸⁷ British tanks were also present. At the crucial battle of Prokhorovka, south of Kursk, the Soviets used 31 Churchill tanks to support their own machines.¹⁸⁸

The most important military deliveries however were not aircraft, tanks or guns, but motor vehicles. Most Soviet factories which had produced cars and trucks before the war had been converted to the production of light tanks, resulting in a lack of motor vehicles.¹⁸⁹ At the beginning of 1942 the Red Army was possessing 318 500 motor vehicles of all types; domestic production of all types of automobiles during that year amounted to a meagre 34 976 machines.¹⁹⁰ By comparison, Lend-Lease deliveries of motor vehicles amounted to 79 000 units in 1942.¹⁹¹ Of course not all of these were supplied to the Red Army. Some have been given to the civilian industry, others could not have been supplied to the troops before the end of the year, and a small part was destroyed in action. Soviet motor vehicle losses in 1942 amounted to 66 200 units, perhaps one tenth of these were Lend-Lease vehicles.¹⁹² As for supply, Soviet sources claim that the Red Army received 152 900 motor vehicles during 1942.¹⁹³ Between a third and half of this supply were Lend-Lease trucks and jeeps. But even with these additional gains it would mean that in 1942 the civilian industry had to give up tens of thousands of motor vehicles to satisfy the needs of the Red Army. This relocation of motor vehicles would not have been possible in 1943 or later, because by this time Soviet industry was desperately short on motor vehicles, even more than the Red Army.

By the beginning of 1943, the vehicle stock of the Red Army had increased to 404 500 machines, of which 10% to 15% were Western supplied vehicles.¹⁹⁴ Domestic production for 1943 consisted of 49 266 units, and losses amounted to 67 000 machines; in spite of this, the Red Army managed to increase its stock by 158 500 vehicles, bringing its vehicle park up to

¹⁸⁵ Musial, *Stalins Beutezug*, p. 387

¹⁸⁶ Paul Carell, *Verbrannte Erde: Schlacht zwischen Wolga und Weichsel* (Verlag Ullstein GmbH 1966), p.60

¹⁸⁷ Alexander Hill (2012): *The Bear's New Wheels (and Tracks): US-Armored and Other Vehicles and Soviet Military Effectiveness during the Great Patriotic War in Words and Photographs*, *The Journal of Slavic Military Studies*, 25:2, 204-219, p. 209

¹⁸⁸ Bellamy, *Absolute War*, p. 582

¹⁸⁹ Dunn Jr, *The Soviet economy and the Red Army*, pp.74, 126-127

¹⁹⁰ Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, p. 257; Mark Harrison, *Accounting for war: Soviet production, employment and the defence burden: 1940-1945* (Cambridge University Press 1996), p. 68

¹⁹¹ Tuyl, *Feeding the Bear*, p. 54

¹⁹² Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, p. 257

¹⁹³ *Ibid*, p. 257

¹⁹⁴ *Ibid*, p. 257

496 000 machines by January 1st 1944.¹⁹⁵ From the autumn of 1941 until the end of 1943 the US had delivered 173 000 trucks and 33 000 jeeps.¹⁹⁶ Taking into account losses sustained through enemy action and accidents, and the delay between delivery to the Soviet Union and delivery to the Red Army, Western vehicles should have made up between 20% and 25% of Red Army vehicle stock by the time of the battle of Kursk, and up to one third by the beginning of 1944. These motor vehicles were essential for the supply of Red Army units, and they greatly increased the mobility of Soviet anti-tank formations. Until the beginning of 1943 the Germans were regularly able to repel Soviet breakthroughs with their tank formations because the Red Army was unable to position its antitank guns quickly enough. By early 1943, however, the Red Army had received enough trucks and jeeps to tow large numbers of anti-tank guns, keeping them close to Soviet armoured formations at the forefront of an attack, thereby thwarting German counterstrikes.¹⁹⁷

Besides the delivery of military hardware and motor vehicles, Lend-Lease supplied the Soviet Union with a wide range of invaluable materials. These deliveries had been more than double the amount delivered during the First Moscow protocol, mainly due to the fact that the Allies had expanded the capacity of the Persian route and managed to contain the German U-boat threat in the Atlantic. During the Second Moscow Protocol, covering the period from July 1st 1942 to June 30th 1943, the Western Allies had delivered 3.054 million tons of supplies including: 749 890 tons of metals, 181 366 tons of chemicals and explosives, 213 448 tons of petroleum products, and most importantly, 997 783 tons of food.¹⁹⁸ These food deliveries were of immense importance because since the loss of the Ukraine in 1941, Soviet agriculture had struggled greatly to feed its population. Both grain and meat production had been reduced from 95.5 and 7.5 million tons respectively in 1940, to 29.4 and 3.29 million tons in 1943; potato production had fallen from 75.9 to 23.8 million tons between 1940 and 1942, and during the same time period, vegetable output had declined from 13.7 to just 4.3 million tons.¹⁹⁹ By the middle of 1943 food shortages had become so severe that many people were forced to eat wild herbs and grasses.²⁰⁰

Red Army soldiers were mostly living on bread, dried fish and vegetables. Dried fish however made the soldiers thirsty, forcing them to drink large amounts of water; this in turn forced

¹⁹⁵ Harrison, *Accounting for war*, p. 68; Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, p. 257

¹⁹⁶ Harrison, *Soviet Planning in Peace and War*, p. 260

¹⁹⁷ Dunn Jr, *The Soviet economy and the Red Army*, pp. 178-179, 184

¹⁹⁸ Weeks *Russias Life-Saver*, p. 142

¹⁹⁹ Harrison, *Accounting for war*, p. 262

²⁰⁰ Roger Munting (1984) *Soviet Food Supply and Allied Aid in the War, 1941-45*, *Soviet Studies*, 36: 4, 582-593, p. 582

them to urinate frequently which was a problem before and during battle.²⁰¹ Western food which went almost exclusively to the Red Army, saved the soldiers from this predicament, and it also spared the civilian population from having to share more of its food with the armed forces. In the first quarter of 1943, one-sixth of the food consumed by the Red Army came from American supplies, and for the years 1943-44 it was estimated that half the fats consumed by the Red Army came from American deliveries.²⁰² Overall Lend-Lease food supplied half the sugar and vegetables, 20% of the meat and most of the fat consumed by the Soviet people, increasing their calorie intake by more than 50%.²⁰³ The administrator of the Lend-Lease programme remarks:

“[...] without the food sent from the United States it would have been necessary either to reduce considerably the Red Army’s rations or to cut the ration of war workers well below the danger line in order to maintain the Red Army at top fighting strength.”²⁰⁴ What effect this would have had on the performance of civilian factory workers can be imagined. The typical workday of a Soviet factory worker was 12 hours a day, 18 on Sundays; besides able bodied men, millions of women, children and Gulag prisoners were put to work for the war effort.²⁰⁵ Had the already inadequate calorie intake of these civilians been reduced even further, this would have severely impacted their ability to produce weapons in the factories. People would have died because of malnutrition and hunger riots would have taken place, which in turn would have endangered the smooth process in the factories. The result would have been a reduced industrial output and fewer weapons for the Red Army, something which could not have been afforded.

The air war

By the beginning of 1943 strategic bombing, as well as the battles in North Africa, continued to intensify which lead to increased losses on both sides. The Luftwaffe had now to compete with two hostile air forces in the west and south, while the Allies lacked a long range fighter which would have escorted their bombers into the hearth of Germany. In an attempt to decrease losses the Allies introduced new tighter bomber formations and continued their

²⁰¹ Dunn Jr, *The Soviet economy and the Red Army*, p. 86

²⁰² Munting, *Soviet Food Supply and Allied Aid in the War*, p. 588

²⁰³ Dunn Jr, *The Soviet economy and the Red Army*, p. 57

²⁰⁴ Stettinius Jr, *Lend-Lease*, p. 228

²⁰⁵ Kenneth C. Weiler, *Why Normandy was Won: Operation Bagration and the War in the East 1941-1945* (Ostfront Publications 2010), p. 103

attacks against Germany in ever increasing numbers. While American bomber forces were still in the build up phase, Bomber Command had been brought up to remarkable strength. Whereas the Americans dropped only 636 tons of bombs on German dominated Europe in February 1943, the British released 12 274 tons, nearly as much as in all of 1940.²⁰⁶ Due to improvements of old and advancements of new technologies, bombing precision and accuracy had increased tremendously over the past months. This enabled the RAF to strike a fatal blow against Essen on March 5th, which caused extensive damage to the giant Krupps armaments work.²⁰⁷ In a similar precision attack on March 18th, the Americans had sent 103 aircraft against the U-boat yards at Vegesack, in which they managed to severely damage 7 U-boats.²⁰⁸

By the spring of 1943 British bomber forces had been supplied with large amounts of four engine heavy bombers, this caused Harris to believe that he could launch devastating attacks against the German industrial centres at the Ruhr. These resulted in the largest bombing raids up to that point of the war. The British sent 600 bombers against Pilsen and Mannheim on April 16th, another 826 aircraft against Dortmund on May 23rd, and 883 machines against Düsseldorf and Münster on June 11th.²⁰⁹ In total, the Allies launched 43 major raids against the Ruhr from March to mid July.²¹⁰ These attacks seriously impacted German industry. Steel production fell by 200 000 tons, ammunition production (which had doubled during 1942) was reduced to an increase of just 20% during 1943, and aircraft production came to an abrupt halt.²¹¹ The economic historian Adam Tooze remarks: “Between July 1943 and March 1944 there was no further increase in the monthly output of aircraft. For the armaments effort as a whole, the period of stagnation lasted throughout the second half of 1943. As Speer himself acknowledged, Allied bombing had negated all plans for a further increase in production. Bomber Command had stopped Speer's armaments miracle in its tracks.”²¹² The most severe attacks of 1943 however, befell the city of Hamburg. This city had been chosen because it was easily localized lying on the coast, and because it was at the periphery of German air defences. On July 24th the city was attacked by 791 bombers, then again on July 27th with 787 machines; on July 29th bombing was commenced with 777 aircraft, and in the final raid on

²⁰⁶ Freeman, *Raiding the Reich*, p. 58; Ellis, *The World War II Data Book*, pp. 233-234

²⁰⁷ Freeman, *Raiding the Reich*, p. 58

²⁰⁸ *Ibid*, p. 58

²⁰⁹ *Ibid*, pp. 58, 61

²¹⁰ *Ibid*, pp. 58, 61

²¹¹ Adam Tooze, *The wages of Destruction, The making and breaking of the Nazi Economy* (Allen Lane 2006), p. 598

²¹² *Ibid*, p. 598

August 2nd a further 740 bombers took part in the attack.²¹³ The devastation of the city was tremendous. Some 9000 tons of bombs had been released on Hamburg, engulfing 22 square kilometres of the city in devastating firestorms which annihilated 40 385 houses, 275 000 flats, 2632 shops, 24 hospitals, and 580 factories, additionally some 42 000 people had lost their lives.²¹⁴ Hamburg's population, which had stood at 1.7 million before the war, was reduced to 800 000 by August 1943, and by December it was still only 1.066 million.²¹⁵

Hundreds of thousands of people that had fled from the city never returned, partly because it +was not possible to re-house them. These attacks cost the city nearly two months of war production; although production reached 80% of the pre attack level after five months, Hamburg never fully recovered. The damage Hamburg sustained during these bombing raids was equivalent to the value of 23 billion Reichsmark.²¹⁶ Today this would translate into a value of roughly 150 billion US Dollars!

While the British were occupied with Hamburg, the Americans continued their precision raids, attacking aircraft plants at Kassel and Oschersleben, the Kiel shipyards, and the Heinkel works at Warnermünde.²¹⁷ These constant attacks forced the Germans to increase the number of aircraft in the west at the expense of the Italian and Russian fronts: "Instead of being able to overwhelm the technologically-inferior Russian Air Force on the Eastern Front, the Luftwaffe saw its newest and most professional units continually ground down over Germany's own skies."²¹⁸ By July 1943 the Luftwaffe had 6300 aircraft at its disposal, yet only 2400 were stationed at the Eastern Front.²¹⁹ Of the remaining 3900 aircraft, 1700 were stationed in Germany, 1200 in the Mediterranean, 800 in France and the Low countries, and another 200 in Norway and Denmark.²²⁰ Even with this preference given to the Western Front, the Allies were still able to break through German defences, wreaking havoc on German cities and industry.

After Hamburg, the next major attack was launched against Berlin on August 23rd with 727 bombers. On October 8th the Americans sent 399 bombers against Bremen and Vegesack, and on October 9th 378 heavy bombers were dispatched against the Marienburg fighter factory.²²¹ The city of Kassel, which was attacked on October 22nd, sustained destruction on a similar

²¹³ Freeman, *Raiding the Reich*, p. 63

²¹⁴ Max Hastings, *Bomber Command* (Pan Books 2010), p. 261

²¹⁵ Wolf, *Luftangriffe auf die deutsche Industrie*, p. 60

²¹⁶ *Ibid*, p. 47

²¹⁷ Freeman, *Raiding the Reich*, p. 65

²¹⁸ Phillips P. O'Brien (2000) East versus West in the defeat of Nazi Germany, *Journal of Strategic Studies*, 23:2, 89-113, p. 99

²¹⁹ Beaumont, *Comrades in Arms*, p. 151

²²⁰ *Ibid*, p. 151

²²¹ Freeman, *Raiding the Reich*, p. 73

scale as Hamburg with approximately 6000 dead Germans.²²² On December 3rd Leipzig was attacked, resulting in heavy disruption of Junkers aircraft production.²²³ Compared to 1942, the effects of bombing in 1943 were much more severe. In that year the Allies had dropped 214 696 tons of bombs on German occupied Europe, 4.5 times more than in 1942 and more than double the amount of the 1939-1942 period combined.²²⁴ This had several effects. These attacks did cause severe damage to German cities and industry. Each bombing strike disrupted the industry of an entire city for several weeks or in some cases even months.

Another effect was that the Eastern Front was deprived of large numbers of anti-aircraft guns which could have been used as anti-tank guns instead. By September 1943 German flak units had over 33 000 anti-aircraft guns of all calibres, some 6600 of them were the feared 85 and 88mm flak.²²⁵ By May 1944 this number had increased to 57 500 anti-aircraft guns of which 17 500 were heavy models.²²⁶ The last effect was the ever increasing percentage of destroyed aircraft in the west and south. German units in the East were deprived of much of their air power. A majority of all fighter aircraft that were crucial for the protection of the bombers and dive-bombers (which were effective anti-tank weapons), had to be relocated away from the Eastern Front. Allied attacks against Germany in the west and south meant that the Luftwaffe had to divert to these theatres even more aircraft than it did in 1942. This commitment of air forces resulted in severe losses:

German aircraft losses January to November 1943 by theatre²²⁷

Losses of fighter aircraft in braces

Month	Eastern Front	Mediterranean	Western Europe	Soviet % of total
January	482 (85)	282 (124)	176 (87)	51% (29%)
February	318 (63)	206 (89)	162 (77)	46% (28%)
March	314 (100)	308 (140)	256 (140)	36% (26%)
April	238 (67)	572 (247)	255 (143)	22% (15%)
May	331 (110)	333 (97)	331 (183)	33% (28%)
June	249 (85)	235 (131)	313 (157)	31% (23%)

²²² Freeman, *Raiding the Reich*, p. 71

²²³ *Ibid*, p. 95

²²⁴ Ellis, *The World War II Data Book*, pp. 233-234

²²⁵ Wolfgang Paul, *Der Heimatkrieg 1939 bis 1945: Tatsachenbericht* (Wilhelm Heyne Verlag 1983), p. 207

²²⁶ Alfred Price, *The Last Year of the Luftwaffe: May 1944 to May 1945* (Greenhill books 1995), p. 9

²²⁷ Murray, *Strategy for Defeat*, pp. 148-49

July	558 (201)	711 (246)	526 (335)	31% (26%)
August	472 (150)	321 (133)	625 (248)	33% (28%)
September	338 (99)	503 (167)	522 (276)	25% (18%)
October	279 (94)	285 (92)	530 (284)	26% (20%)
November	194 (45)	180 (54)	529 (281)	21% (12%)
Total	3773 (1099)	3936 (1520)	4225 (2211)	32% (23%)

In the six months from June to November 1942, the Luftwaffe had lost 1980 aircraft on the Eastern Front; during the same six months of 1943 losses had increased by just 5.5% to 2090 destroyed machines, of which only 674 were fighter aircraft. The Western Allies on the other hand were able to increase their share of destroyed Luftwaffe aircraft dramatically. From June to November 1942 they had destroyed 2181 German aircraft, in the June to November 1943 period the number had increased to 5280 machines of which 2404 were fighters, an increase of 142%. Throughout 1943 the Western Allies were responsible for the destruction of more than three quarters of all German fighters and two thirds of all Luftwaffe aircraft in general.

The Mediterranean

By early 1943 Axis forces in Libya were retreating from the advancing British armies, while German forces in Tunisia hastily organized a defence against the Anglo-American armada that had landed in Morocco and Algeria. Due to their numerical superiority, the Allies managed to overwhelm the more experienced and better equipped German forces, forcing them steadily towards the coast. At the same time Allied aircraft destroyed almost all Axis ships carrying supplies from Italy, leaving Axis forces with a strained supply situation. Outnumbered and short on supplies, Axis forces managed to prolong Allied victory for months before surrendering at the city of Tunis. On May 13th, between 94 000 and 130 000 Germans and around 120 000 Italians went into captivity.²²⁸

The North African campaign had been a costly endeavour for the Axis. Total losses amounted to 620 000 killed or captured soldiers (one third of them German), and 7600 aircraft, 2550 tanks, 6200 guns, and 70 000 trucks.²²⁹ German forces alone had lost 835 tanks in the two years from February 1941 to February 1943, aircraft losses had been even more severe.²³⁰

²²⁸ Janusz Piekalkiewicz, *Die Schlacht von Monte Cassino: Zwanzig Völker ringen m einen Berg* (Gustav LübbeVerlag GmbH 1980) p. 65; Hillebrand, *Das Heer 1933-1945: Band II*, p.88

²²⁹ Piekalkiewicz, *Der Zweite Weltkrieg* 843; Tucker, *The Second World War*, p. 160

²³⁰ Paul, *Der Heimatkrieg 1939 bis 1945*, p. 130

From November 1942 to May 1943 the Germans had lost 2422 aircraft in the Mediterranean, including 1005 fighters, 862 bombers, and 371 transport aircraft.²³¹ British historian R.A.C. Parker concludes: “The western allies were keeping occupied a comparatively small number of German troops, but their fighting power made their removal from the eastern front an important help to the Red Army. North Africa was thus an authentic ‘second front’.”²³²

With North Africa secured, the Allies planned on attacking Sicily. Through misinformation the Allies had convinced the Germans that they would strike at Greece, Corsica or Sardinia, because of this ploy there were only few German units on the island. On July 10th Allied forces shipped out on the southern part of the island of Sicily, in an attempt to knock Italy out of the war and to secure the Mediterranean sea lanes. Italian forces on the island surrendered quickly, while German forces mounted an effective defensive line around mount Etna. The Italian opposition used this opportunity to topple Mussolini and to switch to the side of the Allies. Italian units in the mainland, Yugoslavia, and the Dodecanese islands were now considered hostile by the Germans and had to be disarmed. This led to severe fighting which gave the British the opportunity to launch an invasion of the Aegean islands. These were successfully liberated; however after reinforcing their forces in this region the Germans managed to recapture these islands, securing themselves the last major victory of the war. By August Allied pressure on Sicily had become so great that the Germans had to evacuate the island. The evacuation went surprisingly well, the Germans managed to save almost all of their troops and their entire equipment which was evacuated through the straits of Messina to Italy. In total the Germans saved 55 000 men with 10 000 vehicles, some 5000 German soldiers had been killed, and another 6000 captured.²³³ From July 10th to August 17th, when the last German units had been shipped from the island, the Germans had lost 118 tanks and sp-guns.²³⁴ The Allies immediately pursued German forces, and in early September they crossed the straits of Messina and landed at Salerno. From there the Allies continued northward, capturing Naples and proceeded with their advance towards Rome.

²³¹ Murray, *Strategy for Defeat*, p. 163

²³² Parker, *The Second World War*, p. 107

²³³ Tucker, *The Second World War*, p. 254

²³⁴ Jentz, *Panzertruppen Volume 2*, p. 107

5 The Eastern Front and Western aid 1944-45

At the beginning of this year German forces in the south were gradually pushed back towards the German border, in the north the Soviets had finally managed to relieve Leningrad, ending the 900 day long siege of the city which had started in the autumn of 1941. At the beginning of April the Red Army started its offensive to liberate the Crimea, and within a few weeks all Axis troops had been cleared from the area, with a last bastion remaining at the city of Sevastopol.

Here German forces planned to resist the Soviet offensive as the Red Army had done during the years 1941-1942, however, most defenses had been destroyed in 1942 and thereafter never rebuilt. Due to this, the Red Army was able to overcome German resistance quickly, capturing the city by early May. A few days later all of the Crimea was in Soviet hands. By this time Soviet forces had crossed the Polish-Soviet border of 1939, had advanced into Romania, and were threatening the Axis satellite states of Slovakia and Hungary. From mid-1943 to mid-1944 the main axis of the Soviet offensive had been in the Ukraine, with smaller offensives taking place in the north and in Byelorussia. As a result the Baltic States and most of Byelorussia were still in German hands. Over the past year Army Group Centre had been on the periphery of Soviet attacks, sustaining comparatively low casualties. In order to destroy this Army Group and secure their flank in the south, the Soviets had amassed one of the largest armies in history. Hitler feared that the main strike would come from the south and aim at Eastern Prussia, thus separating and trapping a majority of Germany's armies in the East. Due to this most of German fighting strength was concentrated in the south, leaving Army Group Centre with little to defend itself. Against 2.4 million Soviet soldiers stood 1.2 million German ones, the superiority in guns was 36 400 to 9500, in tanks 5200 to 900 and in aircraft 5300 against 1350.²³⁵

The attack, codenamed "Bagration" after a general of the Napoleonic Wars, commenced on June 22nd 1944, exactly three years after the German attack against the Soviet Union. Minsk fell on July 3rd, by this time the German army had already lost 25 divisions.²³⁶ Hitler ordered his troops to stand firm, yet this did not prevent the Red Army to overwhelm the outnumbered German units. Less than a month after the start of the offensive the German army had lost the equivalent of 42 divisions.²³⁷ These horrendous losses made it impossible for the Germans to hold the Baltic or Byelorussia; instead the German navy had to start large scale evacuations of

²³⁵ Bellamy, *Absolute War*, p. 613

²³⁶ *Ibid*, p. 615

²³⁷ *Ibid*, p. 615

soldiers and civilians along the entire length of the Baltic. In the south the Soviets used this opportunity to sweep through Romania and Bulgaria which switched sides quickly. This compelled the Germans to pull out of Greece and southern Yugoslavia. Attempts to stem the Soviets in Hungary remained unsuccessful. By the end of 1944 the Red Army had cleared the Germans from most of the Baltic, had entered Eastern Prussia and was standing less than 100 kilometres from Königsberg. In the centre the Red Army had liberated all of Byelorussia and was standing before Warsaw and in the south Soviet forces had encircled Budapest and stood just 100 kilometres from the German border. During the first four months of 1945, the Red Army continued its advance through Poland, reaching Berlin by the middle of April. By early May the German capital had been conquered, Hitler had killed himself, and the remaining German army had capitulated to the victorious Soviet forces.

This victory had come at tremendous cost. Official Soviet figures admit the loss of 8 668 400 Soviet soldiers, of whom 6 885 100 had died through war related causes and another 1 783 300 that had died in German captivity.²³⁸ Materiel losses were claimed to have been 96 500 tanks and sp-guns, 106 400 aircraft and 351 800 motor vehicles.²³⁹ Even these numbers appear to be understated. Other sources talk about 14.7 million military dead, over 100 000 lost tanks and sp-guns and 106 452 aircraft that were lost until December 1944.²⁴⁰ German forces alone claim to have captured or destroyed 80 777 tanks from 1941-1943, as well as 113 744 aircraft by the end of 1944.²⁴¹ Soviet numbers concerning the amount of their soldiers that had died in German captivity are roughly half the number accepted by Western historians. Due to these discrepancies, one has to suspect that Soviet data is trying to downplay Red Army casualties at least in some areas. German casualties on the other hand appear to be massively overstated. According to Soviet data, German casualties on the Eastern Front amounted to 32 000 tanks and sp-guns as well as 56 800 combat aircraft.²⁴² Considered that total German aircraft production in the years 1940-1944 had been 103 492 aircraft and that by 1943 the Western Allies were destroying 2/3 of the Luftwaffe, this claim is at the very least doubtful.²⁴³ As for tanks and sp-guns, German figures speak of 33 324 armored vehicles that were lost on the Eastern Front by the end of 1944, however only 15 673 of these were tanks and only 5231 were assault guns.²⁴⁴ Overall the German army and air force stationed on the Eastern Front

²³⁸ Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, p. 85

²³⁹ *Ibid*, p.252-253, 254-255, 257

²⁴⁰ Glantz, *Slaughterhouse*, p. 10, Musial, *Stalins Beutezug*, p. 264

²⁴¹ Hans-Heinrich-Wilhelm, *Die Prognosen der Abteilung Fremde Heere Ost 1942-1945*, pp. 24, 28

²⁴² G. F. Krivosheev, *Rossija i SSSR w wojnach XX weka: Poteri woruschennyh sil:*

Statistitscheskojeissledowanie (OLMA-Press 2001), p. 488

²⁴³ Ellis, *The World War II Data Book*, p. 278

²⁴⁴ Hans-Heinrich-Wilhelm, *Die Prognosen der Abteilung Fremde Heere Ost 1942-1945*, pp. 35

sustained between one quarter and one third of the casualties of the Red Army. From December 1941 to December 1944 for example, German units in the East are estimated to have lost 16 000 tanks and sp-guns, compared to some 60 000 lost by the Red Army; a loss ratio close to 4:1.²⁴⁵ In 1943 alone the Red Army had lost at least 23 500 tanks and sp-guns, 98% of all Soviet tanks produced during that year.²⁴⁶

One can only speculate how much larger Soviet casualties would have been had the Red Army been deprived of Lend-Lease and had the Germans been able to concentrate all their forces to in the East. Nevertheless it would seem that without Western aid, Soviet casualties would have exceeded their own domestic production and would thus have become unsustainable.

Lend-Lease

Throughout this year the USSR received 3223 tanks and 6459 aircraft.²⁴⁷ When compared to a Soviet production of 28 963 tanks and 40 426 aircraft, this translates into a rate of 10% and 14% respectively of total supply.²⁴⁸ Total Allied deliveries of tanks and aircraft from the start of these supplies until the end of 1944 had been 11 603 tanks and self propelled guns, and 19 707 aircraft.²⁴⁹ Many of these machines were used by the Soviets until the end of the war. For example, on January 1st 1945 the Red Air Force had a frontline strength of 5810 fighter aircraft, of which 1006 had been received through Lend-Lease.²⁵⁰ During the war over 200 air regiments of the Red Air Force used Western aircraft, and a similar number of Soviet fighter aces scored many of their kills in British and American machines.²⁵¹ Among the most successfully were Vasili Efimovich Bondarenko who scored 19 kills in a P-39, Stepan Matveevich Novichkov who shot down 19 enemy aircraft in a P-40, Ivan Grigor'evich Borisov, who scored 18 kills in a P-39, and Pyotr Georgievich Sgibnev who destroyed 16 enemy aircraft in a Hurricane.²⁵² By 1944 the need for military equipment had abided, and the Soviets were demanding more motor vehicles for their armed forces and more resources for

²⁴⁵ John Ellis, *Brute Force: Allied Strategy and Tactics in the Second World War* (André Deutsch Limited 1990), p. 123

²⁴⁶ Ellis, *The World War II Data Book* 277; Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, p. 252

²⁴⁷ Harrison, *Soviet Planning in Peace and War*, p. 264

²⁴⁸ Ellis, *The World War II Data Book*, p. 277

²⁴⁹ Harrison, *Soviet Planning in Peace and War*, p. 264

²⁵⁰ Griбанov, *The Role of US Lend-Lease Aircraft in Russia in World War II*, p. 100

²⁵¹ George Mellinger, *Soviet Lend-Lease Fighter Aces of World War 2* (Osprey Publishing Limited 2006), pp. 85, 86-92

²⁵² *Ibid.*, pp. 86, 90-91

their industry. Due to the reconquest of large parts of its population and territory, Soviet motor vehicle production in 1944 had increased to 60 549 machines, yet in that year the Red Army received 157 900 vehicles.²⁵³ Stocks at the beginning of 1944 had been 496 000 units and despite the loss of 32 500 vehicles, had increased to 621 300 at the beginning of 1945.²⁵⁴ In the years 1944/45 the United States had delivered another 190 000 trucks and 19 000 Jeeps.²⁵⁵ From late 1941 until the end of the war, the United States had delivered 363 000 trucks and 52 000 Jeeps to the Soviet Union, for a grand total of 415 000 motor vehicles.²⁵⁶ Soviet industry on the other hand, had manufactured a meagre 144 791 motor vehicles of all types from 1942-1944, many of them inferior to American models.²⁵⁷

Based on these numbers it can be estimated that in early 1945 Western vehicles should have made up between 40% and 45% of all motor vehicles used by the Red Army. Even with these deliveries the Red Army was forced to use 3.5 million horses during the war, which were inefficient for transport and supply.²⁵⁸ Horses required intense care, had to be watered and fed, required shelter and rest.²⁵⁹ All this cost time and energy. The supply of American trucks and jeeps helped to decrease this dependency on horse drawn transports, thus making the Red Army far more efficient and flexible.

Aside from military equipment, the last two protocols saw an unprecedented amount of resources that had been sent to the USSR. From July 1943 to the end of June 1944 the Allies delivered 5.745 million tons of supplies, including: 1.012 million tons of metals, 448 149 tons of chemicals and explosives, 446 706 tons of petroleum products and 1.734 million tons of food.²⁶⁰ From the start of the Lend-Lease deliveries, until April 30th 1944, the United States had dispatched 8.5 million tons of cargo with a value of 5.357 billion dollars, including among others: 206 771 trucks, 3168 anti-aircraft guns, 22.4 million shells, 87 900 tons of gunpowder, 5.5 million pairs of army boots, over two million automobile tyres, 476 000 tons of high-octane aviation fuel, 1.16 million tons of steel and steel articles, 4138 ship engines, and 263 travelling power stations.²⁶¹ During the same time period the British and Canadians had dispatched an additional 1.15 million tons of supplies, including: 562 anti-aircraft guns,

²⁵³ Harrison, *Accounting for war*, p. 68; Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, p. 257

²⁵⁴ Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, p.257

²⁵⁵ Harrison, *Soviet Planning in Peace and War*, p. 260

²⁵⁶ *Ibid*, p. 260

²⁵⁷ Harrison, *Accounting for war*, p. 68

²⁵⁸ Janus Piekalkiewicz, *The Cavalry of World War II* (Stein and Day, 1980), p. 4.

²⁵⁹ Dunn Jr, *The Soviet economy and the Red Army*, pp. 226-227

²⁶⁰ Weeks *Russia's Life-Saver*, p. 142

²⁶¹ Peter Gosztony, *Die Rote Armee: Geschichte und Aufbau der sowjetischen Streitkräfte seit 1917* (Verlag Fritz Molden 1980), pp. 254-255

548 anti-tank guns 17.8 million shells, 12 300 tons of gunpowder, 103 500 tons of rubber, and 346 800 tons of food.²⁶² From July 1944 until September 20th 1945 when Lend-Lease was terminated, the Allies delivered a further 7.11 million tons of supplies, including: 1.38 million tons of metals and 1.42 million tons of food.²⁶³ These deliveries gave the Soviet industry a huge boost in production and increased the combat effectiveness of the Red Army tremendously. It has been estimated that Lend-Lease supplies would have kept 675 000 soldiers in the field throughout the entire war, or up to 975 000 if applied to ground forces alone.²⁶⁴

The air war

At the end of 1943 it was believed that the bomber force was strong enough to destroy Berlin. It was hoped that the loss of the capital would demoralize the Germans to a point that they would quit the war. This led to the “Battle of Berlin”, which raged from November 1943 to March 1944. By the beginning of 1944 the RAF was intensifying its attacks against the German capital, launching four major attacks against the city in January alone. Despite a great concentration of bombers, Allied air forces were still taking heavy casualties. The German fighter force in early 1944 was still a formidable force to be reckoned with.

In the face of these casualties, Bomber Command and the USAAF launched their first combined campaign against the German aviation industry. The first of these attacks was one of the costliest of the entire war. Of the 816 bombers that were sent against aviation targets in Leipzig on February 19th, a total of 78 were shot down by the Luftwaffe.²⁶⁵ On the next day the Americans attacked Leipzig with 417 B-17 bombers, with simultaneous attacks being conducted against aviation installations in Brunswick, Gotha, and Tutow.²⁶⁶ By now both Bomber Command and the American 8th Air Force had build up enough strength to dispatch close to a thousand machines regularly. This resulted in a constant, never ending series of attacks against German cities and their populations. At the end of February the Allies managed to bomb the cities of Aschersleben, Schweinfurt, Gotha, Rostock, Steyr, Regensburg, Augsburg, Stuttgart, and Fürth within a few days, some of these cities were even attacked several times.²⁶⁷ These regular large scale attacks led to mounting losses on the side

²⁶² Gosztony, *Die Rote Armee: Geschichte und Aufbau der sowjetischen Streitkräfte seit 1917*, pp. 254-255

²⁶³ Weeks, *Russia's Life-Saver*, pp. 143-144

²⁶⁴ Tuyll, *Feeding the Bear*, p. 83

²⁶⁵ Freeman, *Raiding the Reich*, p. 100

²⁶⁶ *Ibid*, p. 100

²⁶⁷ *Ibid*, pp. 101-102

of the Allies. Of the 730 bombers that attacked Berlin on March 6th, 69 were destroyed and another 347 damaged.²⁶⁸ Another attack on March 25th resulted in the loss of 72 bombers out of 811 dispatched, while an attack against Nuremburg on March 31st cost 96 out of 795 bombers, the highest loss rate for the entire war.²⁶⁹ To counter these losses the Allies started to use long range fighter aircraft as escort for the bombers. Newly developed long range fighters like the P-47 and P-51 enabled the bombers to be escorted deep into the heart of Germany. The newly introduced fighter escort resulted in unbearable casualties for the Luftwaffe. While the Germans were still able to hurt the Allied bombers, they were becoming weaker. Having lost the majority of its experienced pilots, the Luftwaffe was forced to rely on inadequately trained recruits that were rushed into battle. Due to fuel shortages, training hours of German pilots had been steadily cut back since the end of 1942, resulting in a slow erosion of pilot quality and therefore combat effectiveness. By the summer of 1944 the German air force had been reduced to a state that it had lost the ability to seriously challenge the Allied bomber armadas.

With no serious opposition left, the Allies started a bombing campaign against German oil production. Due to the British blockade of the continent, Germany had been entirely dependent on oil from Romania. In order to reduce this dependency, Germany had developed an industry of synthetic oil production, which was now targeted by the Allies. On May 12th the Allies sent 886 bombers to target the German synthetic oil production at the Cities of Merseburg, Lützendorf, Zwickau, Brux, Zeitz, and Bohlen, on May 18th, 206 bombers were sent against the Romanian oilfields at Ploesti.²⁷⁰ The total number of RAF and USAAF attacks against petroleum-related targets in June were 36, in July 33 and in August 50.²⁷¹ Bombing over the summer of 1944 reduced oil production at the Ploesti refinery by 80%.²⁷² The effects of bombing Germany in 1944 were devastating. Aside from the destruction of factories, infrastructure and skilled factory workers, the Allies destroyed German oil production capabilities, and most of the German transportation system. In 1944 the Allies dropped a staggering 1 157 319 tons of bombs on German dominated Europe, five and a half times as many as in 1943 and nearly four times as much as during the entire 1939-1943 period combined.²⁷³ For the entire duration of the war, the Americans believed to have destroyed 35

²⁶⁸ Freeman, *Raiding the Reich*, pp. 103

²⁶⁹ *Ibid*, p. 104

²⁷⁰ *Ibid*, p. 124

²⁷¹ *Ibid*, p. 126

²⁷² *Ibid*, p. 126

²⁷³ Ellis, *The World War II Data Book*, pp. 233-235

783, and the British 21 622 German aircraft.²⁷⁴ These however were only combat losses, indirect losses through bombing were believed to have been equally severe. Investigations after the war came to the conclusion that between July 1943 and December 1944, the loss of German aircraft production caused by bombing amounted to 18 492 aircraft, including 11 662 single engine fighters, 2961 twin engines fighters and 1170 bombers.²⁷⁵ Overall production loss for 1944 through bombing has been estimated to range anywhere from 10% to 35%. Albert Speer concluded that without bombing, German industry in 1944 would have produced 30 000 tanks and sp-guns and 58 000 aircraft, instead of the actual 19 000 and 40 000.²⁷⁶ These numbers do not include production capacity invested into other projects such as the V-1 and V-2 rockets: “It has been estimated that the cost of these programs was equal to the production costs of 24,000 fighter aircraft.”²⁷⁷ Another effect of bombing was the forced imbalance of arms production. By 1944 anti-aircraft guns made up one third of German artillery production, absorbed 20% of German ammunition production, additionally some two million Germans were needed either to man the flak guns, or to repair damaged factories.²⁷⁸ Many factories had to be relocated underground in order to protect them from bombing, this endeavour absorbed almost half of all industrial construction and close to half a million workers.²⁷⁹ Despite the evidence, some historians maintain the position that bombing of German industry was a waste of resources since it did not cause any substantial damage until the end of 1944, by which time the outcome of the war had already been decided. The historian Robin Neillands concludes:

On the matter of effectiveness, looking at photographs of the devastation wrought in Germany by the Combined Bomber Offensive from 1943 to 1945, it is hard to see how anyone can seriously maintain that strategic bombing had only a marginal effect on German industry. Even if the production of tanks, guns and aircraft proceeded unabated, what heights that production would have reached without the bombing of Germany can only be wondered at.²⁸⁰

²⁷⁴ David MacIsaac, *The United States Strategic Bombing Survey: Over-all Report European War*, p. X – In: *The United States Strategic Bombing Survey Volume I*, (Garland Publishing 1976)

²⁷⁵ David MacIsaac, *The United States Strategic Bombing Survey – Aircraft Division Industry Report*, p. 82 – In: *The United States Strategic Bombing Survey Volume II*, (Garland Publishing 1976)

²⁷⁶ Townshend, *Axis Power*, p. 232

²⁷⁷ O'Brien, *East versus West in the defeat of Nazi Germany*, p. 108

²⁷⁸ Overy, *Why the Allies Won*, p. 160

²⁷⁹ *Ibid*, p. 160

²⁸⁰ Robin Neillands, *The Bomber War: Arthur Harris and the Allied Bomber Offensive 1939-1945* (John Murray Publishers 2001), p. 382

The disruptive effect of bombing can clearly be seen by the example of German aircraft production. In the second half of the war, German aircraft industry was forced to produce fighters at the expense of other aircraft types, robbing the German ground forces of much needed aircraft that could have been used as ground support.

German aircraft production²⁸¹

(Numbers in bracelets represent percentage of total aircraft production)

Year	All types	Fighters	Bombers	Ratio Fighters/Bombers
1940	10 826	2746 (25%)	2852 (26%)	1:1
1941	11 776	3744 (32%)	3373 (29%)	1.1:1
1942	15 556	5515 (35%)	4502 (29%)	1.2:1
1943	25 527	10 898 (43%)	4789 (19%)	2.3:1
1944	39 807	26 326 (66%)	1982 (5%)	13.3:1

The need to produce ever increasing quantities of fighters in order to cope with the Allied bomber offensive, had prevented any significant expansion of German bomber production in 1943 and led to a severe reduction in 1944. The loss of these bombers had a great impact on the fighting ability of the German army on the ground. It had been the bombers that had greatly aided German ground forces in the years 1939-1942, especially on the Eastern Front. German bomber formations were used regularly as a sort of mobile “firefighter” against Soviet numerical superiority of armour on the ground. The stagnation of bomber production in 1943 and its decline thereafter, robbed the Germans of much needed air support and reduced their combat effectiveness severely.

In the last months of the war, Allied bomber forces continued to target the remainder of German cities, annihilating the last remnants of German industry that was still functioning. By this time the Luftwaffe had been reduced to a state where it could launch only occasional small scale attacks against the incoming bombers. The anti-aircraft gun system however was still operational; most of the 590 bombers the British lost from January to April were shot down by anti-aircraft guns.²⁸² During the first four months of 1945 the British and Americans dropped another 465 440 tons on the last remaining targets, leading to a complete collapse of

²⁸¹ Ellis, *The World War II Data Book*, pp. 278-279

²⁸² Neillands, *The Bomber War*, p. 396

German industry.²⁸³ During the war the total amount of bombs dropped on Germany and the occupied territories amounted to 954 958 tons dropped by the British, and 974 241 dropped by the American.²⁸⁴ This bomb load had the destructive equivalent of nearly 2 Megatons of TNT, or roughly 100 times the destructive power of the nuclear bombs used against Hiroshima and Nagasaki.

Italy

Allied progress in Italy during 1943 had been slow, after four months of fighting, Allied armies had advanced little more than 100 kilometres from their original landing point at Salerno and were still over 100 kilometres from Rome. German propaganda posters, aimed to demoralize Allied soldiers, compared them to snails, claiming that on average they advanced only 80 centimetres per minute, mocking them with the phrase: “it’s a long way to Rome”²⁸⁵. The reason for the slow Allied advance was the difficult Italian terrain which was ideal for defence and the reinforcement of German troops. By the end of January German armoured forces in Italy had been increased to 428 tanks and self-propelled guns.²⁸⁶

In order to bypass German defensive positions, the Allies decided to land in the back of the German front at the city of Anzio, located just 50 kilometres outside of Rome. While Allied forces were unable to break out of the bridgehead, the Germans did not manage to push them back into the sea. This resulted in a stalemate, which compelled the Allies to launch a major offensive in the Italian mainland against German defensive positions at Monte Casino. These positions were overcome at great costs for the Allies, however the breakthrough enabled them to liberate Rome by the beginning of June. German losses had been severe. To replace the massive casualties sustained during the Allied offensive, 28 Tiger and 38 Panther tanks were shipped to Italy between May 27th and June 4th; additionally, the schwere Panzer-Abteilung 504 which was scheduled to be moved to the Eastern Front, was shipped to Italy instead.²⁸⁷

Following the Allied invasion in Normandy, several Allied divisions were pulled out of Italy and used during “Operation Dragoon”, the landing in southern France. This relocation of forces slowed down the Allied advance, yet despite this weakening of their offensive capability, the Allies were still able to advance beyond Rome. By the end of August they had taken Florence and were approaching the main German defensive position in northern Italy,

²⁸³ Ellis, *The World War II Data Book*, p. 235

²⁸⁴ *Ibid*, pp. 233-235

²⁸⁵ Matthias Färber, *Zweiter Weltkrieg in Bildern* (OTUS Verlag 2003), p. 395

²⁸⁶ Jentz, *Panzertruppen Volume 2*, p. 144

²⁸⁷ *Ibid*, p.149

the Gothic Line. Allied offensives in autumn managed to penetrate this defensive position in several places, but did not secure a decisive breakthrough. The onset of winter compelled the Allies to hold further offensive operations until the spring of 1945. This time was used to build up the strength of the Anglo-American armies, which resulted in the overcoming of the Gothic line once the offensive was resumed in the spring of 1945. Shortly after that, the remaining German units capitulated, effectively ending the war in Europe.

Western Europe

On June 6th 1944 the Allies launched “Operation Overlord”, the Allied invasion of Normandy, which opened up another front in Western Europe. On the first day of the invasion the Allies put ashore 130 000 troops, 2000 tanks, 12 000 vehicles and 10 000 tons of supplies.²⁸⁸ To confront this armada the Germans had built up their armoured formations to a strength of 2191 tanks and self-propelled guns, including 655 Panthers and 102 Tigers.²⁸⁹ While impressive on paper, the number of operational armoured vehicles was far lower, since many of the tanks and sp-guns were in the process of being repaired or refitted. Additionally, much of the equipment used in Normandy came from captured French and Czech stock, the resulting diversity of required spare parts and ammunition made supply difficult.²⁹⁰ Another problem was the composition of German forces at this front. During the past year many German units in France had been sent to the Eastern Front and replaced with conscripts from the East and the rest of Europe. By the time of the invasion there were 123 000 Osttruppen (forced conscripts from the East) in France, with some volunteers coming from as far as Thailand and India.²⁹¹ Approximately 15% to 20% of all soldiers in German uniform serving in France were not born in Germany, in total there were soldiers from 28 different nationalities.²⁹² Many of these troops surrendered quickly, allowing the Allies to easily overcome otherwise formidable German defences.

Due to Allied misinformation, which convinced the Germans that the main Allied landing would come at the Pas de Calais, the Germans reacted slowly to the landings. Few units were committed to counter the invasion during the first days when it was most vulnerable, as a result the Germans failed to stop it. Because they believed that the main landings would occur farther north, the German 15th Army with 250 000 men was inactive for eight weeks at the Pas

²⁸⁸ Tucker, *The Second World War*, p. 263

²⁸⁹ Jentz, *Panzertruppen Volume 2*, p. 177

²⁹⁰ Weiler, *Why Normandy was Won*, p. 310

²⁹¹ *Ibid*, p. 254

²⁹² *Ibid*, p. 255

de Calais, awaiting an invasion that would never come.²⁹³ So effective was Allied misinformation that the Germans committed only 400 000 soldiers to the battle, while another 250 000 stood at the Pas de Calais, 150 000 in southern France and another 100 000 in the southwest of the country.²⁹⁴ Another factor was massive allied superiority in the air. From June 6th to June 19th the Luftwaffe had lost 594 aircraft, almost 75% of all aircraft that were stationed in Northern France before the invasion.²⁹⁵ Until the end of the month, the Luftwaffe had lost 998 aircraft in France and a further 443 in the defence of the Reich.²⁹⁶ This development forced the Germans to send all their aircraft to the west, even at the expense of the Eastern Front. By the end of June, 795 fighter aircraft were stationed in Germany and Western Europe as compared to 475 machines along the entire length of the Eastern Front.²⁹⁷ Overall aircraft strength in the East had declined from 2085 aircraft in June, to 1760 machines by the end of July.²⁹⁸ Tank losses sustained in the Normandy area were heavy as well. From June 6th to July 8th the German Army in France had lost 349 tanks and sp-guns, by July 27th these losses had increased to 450 machines.²⁹⁹ Casualties became so great that the Germans had to transfer two SS-Panzer-Divisions from the Eastern Front to France in order to cope with the Allied attack.³⁰⁰ With these reinforcements the Germans were able to prevent an Allied breakout from Normandy for one and a half months; however, by doing so they had exhausted all of their reserves.

The Allies on the other hand had been pouring in fresh troops and new equipment into Normandy for weeks, building up an overwhelming numerical superiority. By the end of July, 591 000 British and Canadian troops and 770 000 Americans had landed in Normandy.³⁰¹ On August 15th Allied forces landed in southern France as well: 860 ships and 1370 landing craft brought ashore 86 000 men and 12 000 vehicles.³⁰² At the end of the month, Allied forces in the north had liberated Paris and scored a great victory against German forces at the city of Falaise. Here some 60 000 German soldiers had been killed or captured, and while 100 000 managed to escape, they did have to leave most of their equipment behind.³⁰³ Since the start of the invasion until the end of August the Germans had lost 500 000 killed and captured

²⁹³ Eversley Belfield and H. Essame, *The Battle for Normandy* (Pan Books 1967), pp. 137-140

²⁹⁴ *Ibid.*, p. 140

²⁹⁵ Murray, *Strategy for Defeat*, p. 281

²⁹⁶ *Ibid.*, p. 283

²⁹⁷ *Ibid.*, p. 284

²⁹⁸ *Ibid.*, p. 286

²⁹⁹ Jentz, *Panzertruppen Volume 2*, pp. 185, 189

³⁰⁰ *Ibid.*, p. 185

³⁰¹ Belfield and Essame, *The Battle for Normandy*, p. 179

³⁰² Tucker, *The Second World War*, p. 266

³⁰³ *Ibid.*, p. 267

soldiers, as well as 1600 tanks and sp-guns.³⁰⁴ These losses had weakened the German army severely, allowing Allied forces to push the German formations gradually back to the German border. Allied losses were high though, because the most frequent tank model used by the Allies, the American M4 Sherman tank, was vastly inferior to German models. While the Sherman tank had a 76mm gun with a muzzle velocity of just 800 meters per second, the German Pz IV with a long 75 mm gun had a muzzle velocity of 900 meters per second, and the German Panther, armed with an upgraded 75 mm gun, had a muzzle velocity of 1000 meters per second.³⁰⁵ Even heavy Allied tanks such as the M26 Pershing or the M36 tank destroyer, had a muzzle velocity of less than 900 meters per second and were thus weaker than the German Pz IV.³⁰⁶

In an attempt to stop the Allied armies which were nearing the German border, Hitler ordered another offensive in the west. This attack was to be carried out through the Ardennes with the aim of capturing the harbor of Antwerp, thus denying the Anglo-American armies their supply. If successful, the operation would have given the Germans breathing space and allowed them to deal with the Red Army in the East.

The attack commenced on December 16th in foggy weather, which denied the Allies their air superiority. The Germans made good initial progress, pushing the Allies back almost 100 kilometres, but soon their lack of fuel, in combination with stubborn British-American resistance, forced them to a halt. Once the weather cleared and the Allies were able to use their air fleet, the battle was promptly decided. German units had to retreat, destroying many of their tanks who had run out of fuel. By the middle of January the offensive had cost the Germans nearly 100 000 killed, wounded or captured soldiers and approximately 800 tanks.³⁰⁷ These had been the last reserves, the loss of these units had broken the backbone of the German army in the west. While the Germans still had enough equipment at their disposal, there were no more soldiers to operate it and no more fuel to move it. For example, in April 1945 at the Luftwaffe training ground at Koethen, the Americans captured hundreds of abandoned fighters and bombers. In the woods surrounding Frankfurt am Main, over 2000 aircraft had been preserved intact.³⁰⁸ In the last months of the war the Allies continued their advance into Germany against stubborn but futile resistance, capturing half the country by May 8th when the war in Europe came to an end.

³⁰⁴ Tucker, *The Second World War*, p. 268

³⁰⁵ Belton Y. Cooper, *Death Traps: The Survival of an American Armored Division in World War II* (Presidio Press 1998), pp. 23-24

³⁰⁶ *Ibid*, pp. 28, 176

³⁰⁷ Tucker, *The Second World War*, p. 277

³⁰⁸ Cooper, *Death Traps*, pp. 297-298, 309-310

6 The impact of Western aid

German military effort used against the Soviet Union and the Western Allies

The most reliable method to calculate the military help provided to the USSR, is to examine the amount of effort the German army had to expend into fighting the Western Allies. According to Norman Davies, British forces accounted for perhaps 5-10% of German casualties, American forces for perhaps 15%, making the Western Allies responsible for 20% to 25% of German land warfare losses.³⁰⁹

Calculating the number of German divisions by the time these units were stationed at a certain front, John Ellis comes to the conclusion that out of a total of 9032, the Eastern Front accounted for 7146 (79%) of German military effort, while the North African Campaign, the battles in Italy, and the fighting in Western Europe accounted to 91, 393 and 637 respectively.³¹⁰ This conclusion is easily verifiable. The average number of German divisions fighting on the Eastern Front from June 1941 to May 1945 was 161.5.³¹¹ If one multiplies the amount of divisions with the duration they spent on this front, or 161.5 divisions times 46.5 months, one gets a military effort of 7510 “division-months”.³¹² Using the same method for the fronts where the Germans were fighting the Western Allies, produces the following results³¹³:

North Africa: An average of 3.5 German divisions were fighting for 26.5 months = 93

Italy: An average of 22 German divisions were fighting for 22 months = 484

Western Europe: An average of 60 German divisions were fighting for 11 months = 660

The total amount of “division-months” the Germans invested into fighting the Western Allies in the years 1941 to 1945 amounted to 1151 as compared to 7510 used against the Soviet Union. This number would represent just 14% of the total military effort expended by Germany from 1941 onwards. In the time up to D-Day it would be even less: 326 against 5396, or barely 6% of the total. At first glance it would therefore appear that the combined forces of the United States, the British Empire, and the remnants of the French, Polish, and other European armies did not manage to divert any significant German forces from the Eastern Front. This assumption is misleading. While it is certainly true that the Germans used

³⁰⁹ Norman Davies, *Europe At War 1939-1945: No simple Victory* (Pan books 2007), p. 25

³¹⁰ Ellis, *The World War II Data Book*, p. 229

³¹¹ Calculated from Ellis, *The World War II Data Book*, pp. 175 -177

³¹² Davies used a similar method of „Man-months“: Davies *Europe at War 1939-1945*, pp. 22-23

³¹³ All numbers calculated from Ellis, *The World War II Data Book*, p. 159-160, 164-165, 175-177, 184-185

and lost an overwhelming majority of their infantry on the Eastern Front, in relation they lost far more equipment against the Western powers. Since modern wars are not decided by the number of soldiers alone, but rather the number and quality of aircraft, tanks, transportation vehicles, and guns, military aid to the Soviet Union has to be measured by the amount of such material destroyed by the Western Allies. As has been mentioned before, by February 1943 German tank losses in North Africa had amounted to 835 tanks, until the capitulation of the Afrika Korps in mid May, hundreds more were lost. From the data available it would seem that the total German investment of tanks into the North African Campaign from February 1941 to May 1943 amounted to roughly 1400 machines. Additionally, over a hundred German tanks were lost during the defence of Sicily and several hundred during the last months of 1943 after the Allies had invaded the Italian mainland. Total tank losses inflicted on the Germans by the Western Allies in the three years from 1941-1943 thus amounted to roughly 2000 destroyed machines, nearly 10% of production.³¹⁴ Losses of tanks on the Eastern Front amounted to 7099 destroyed machines from June 1941 until February 1943.³¹⁵

For each of these three years, the Western Allies had destroyed roughly one tenth of annual German tank production. This number might seem insignificant, nevertheless the denial of these tanks prevented the German armies in the East to build up any reserves, or to replenish the depleted tank armies after major offensives. For example, on November 18th 1941, when the German armies in the East struggled in their advance towards Moscow, Rommel had 224 tanks at his disposal.³¹⁶ These units would have been of great help in October and November; additionally their presence could have severely hampered the Soviet counteroffensive launched in early December. By the end of May 1942, the front line tank strength in North Africa had increased to 330 machines, and by the end of October, just before the Allied offensive at El Alamein, there were still 242 frontline tanks in North Africa.³¹⁷ While far greater numbers of German tanks were stationed in the East (1503 in March 1942, 3133 in November 1942, and 2374 in March 1943), only a fraction of these were operational.³¹⁸ Out of the 1503 tanks present in March 1942, only 140 were serviceable; in April 1943 a total of 600 tanks were serviceable despite the fact that the total number of tanks was roughly four times higher.³¹⁹ Had the tanks that were sent to Africa and Italy been relocated to the Eastern Front instead, they would have increased overall tank forces only marginally. However they

³¹⁴ Ellis, *The World War II Data Book*, p. 277

³¹⁵ Paul, *Der Heimatkrieg 1939 bis 1945*, p. 130

³¹⁶ Ellis, *The World War II Data Book*, p. 229

³¹⁷ *Ibid*, p. 229

³¹⁸ *Ibid*, p. 230

³¹⁹ *Ibid*, p. 230

might have greatly increased the number of serviceable tanks during critical time periods as during the German advance towards Moscow and Stalingrad and the Soviet counteroffensives before these cities, possibly influencing the outcome of these battles. Similarly, the tanks that were sent to Italy and Western Europe in the years 1943-45 would have greatly increased the offensive capabilities of the German army. Based on available data, German tank casualties during 1944 in Italy and Western Europe can be estimated to have been at around 4000 to 5000 machines; a significant portion of the 19 002 tanks and sp-guns produced by Germany during that year.³²⁰

Besides a large number of tanks, Western involvement also kept significant amounts of German manpower away from the Eastern Front. On June 22nd 1941, when the German armies invaded the Soviet Union with 3.2 million men, there were 594 000 German soldiers stationed at other fronts.³²¹ A year later the German army in the East had shrunk to 2.85 million soldiers, while the number of German soldiers stationed at other fronts had increased to 971 000.³²² By the middle of 1943 the numbers had increased to 3.12 million soldiers stationed at the Eastern Front, compared to 1.37 million in other parts of Europe.³²³

Of far greater importance than the neutralisation of roughly 15% of German ground forces, was the occupation of a majority of the Luftwaffe. By mid 1942 roughly half of the German air force was used to battle the Allies in the Mediterranean and Western Europe, in 1943 this share increased to 2/3, and in 1944 it hovered between 2/3 and 3/4. While German aircraft strength in the East reached its peak in July 1943 with 2500 frontline machines, it kept declining thereafter to 1800 machines in January 1944 and 1430 aircraft in January 1945.³²⁴ Meanwhile German aircraft strength in the Mediterranean remained fairly stable. In April 1943 there were 1000 front line aircraft stationed at this theatre of war, by March 1944 this number had increased to 1326 machines.³²⁵

The need to station fighter aircraft in Western Europe for German home defence increased dramatically in the second half of 1942. While there had been 322 night fighters and an unknown number of day fighters stationed for German home defence in August 1942, this number increased to 635 day fighters in January 1943, 800 in July, and at least 1316 day and night fighters in October.³²⁶ At the end of May 1943 there had been just 579 fighters and 800

³²⁰ Ellis, *The World War II Data Book*, p. 277

³²¹ Burkhart Mueller-Hillebrand, *Das Heer 1933-1945: Band III Der Zweifrontenkrieg: Das Heer vom Beginn des Feldzuges gegen die Sowjetunion bis zum Kriegsende* (E.S. Mittler&Sohn 1969), p. 124

³²² *Ibid*, p. 124

³²³ *Ibid*, p. 124

³²⁴ Ellis, *The World War II Data Book*, p. 233

³²⁵ *Ibid*, p. 232

³²⁶ *Ibid*, p. 238

bombers in the East, while in Germany there were stationed 752 fighters, in France an additional 328 fighters and 300 bombers, and another 311 fighters and 176 bombers in Italy.³²⁷ Leaving aside the small number of fighters and bomber stationed in Norway and the Balkans, the ratio of east against west was 579 to 1391 in fighters, and 800 to 476 in bombers. By February 1944, despite sustaining the heaviest losses of the war so far, there were still 1086 day and night fighters present for German home defence.³²⁸ Aside from the loss of large amounts of aircraft, the fight against the Western Allies cost the Luftwaffe many experienced pilots. By March 1943 the Luftwaffe was forced to transfer experienced pilots from the Eastern Front to compensate for losses sustained against the Western powers.³²⁹ The demand for new pilots became so great that German training schools had to accept a decline in quality:

Up to the summer of 1942, the training program had run on a peacetime leisurely basis, with dancing classes and skiing holidays for future pilots. Thereafter, the training program ran into difficulties. Fuel shortages and demands from the front for more pilots led to reductions in training hours. [...] training schools produced barely enough pilots to keep up with losses. [...] The result of these training weaknesses and the attrition taking place in early 1944 was that the experience and the skill level of German fighter pilots spiralled downward.³³⁰

Historically the Luftwaffe in the East enjoyed air superiority until the end of 1942, thereafter a short period of parity, and from mid-1943 onwards a massive inferiority. Without having to invest a majority of its aircraft and pilots in order to fight the Americans and British, the Luftwaffe would have extended these periods by several years, possibly keeping superiority, or at least parity, until the end of the war. The quality, skill, and combat effectiveness of German pilots would have remained high throughout the entire war, because without Western intervention no attrition of pilots would have occurred; no reduction in flying hours would have been necessary. With greater German air superiority it is questionable if the Red Army could have resisted the German drive into the Caucasus, the prospect to expel the German army from this region would have been even more remote. Another factor supporting the USSR was that the Western Allies forced the Germans to use most of their artillery and anti-aircraft guns in the west. The most famous German artillery piece of the war, the 88 mm anti-aircraft gun, was rarely seen on the Eastern Front. In the period 1941-1943 German industry

³²⁷ Groehler *Geschichte des Luftkriegs 1910-1970*, p. 376

³²⁸ Ellis, *The World War II Data Book*, p. 238

³²⁹ Murray, *Strategy for Defeat*, p. 181

³³⁰ *Ibid.*, pp. 254-255

had produced 9164 pieces of these guns, which could have been used as excellent anti-tank weapons, yet only 1200 were delivered to the Eastern Front during the same time period.³³¹ Besides a small number that was sent to North Africa, Italy, and other fronts, well over 7000 of the over 9000 produced 88 mm guns had to remain in Germany to protect German cities from Allied bombing. Without a war against the Western Allies the Germans could have sent additional thousands of these guns to the East, which would have greatly increased their capability to repel Soviet tank attacks.

Overall, the Western Allies were responsible only for a small fraction of the losses sustained by German infantry and armour between 1941 and 1943 (around 10%); however their contribution in the destruction and occupation of the Luftwaffe was overwhelming. The same applies to their contribution in forcing the Germans to leave most heavy artillery in the Reich as anti-aircraft weapons, preventing them to be used as anti-tank weapons in the East. Without Allied military intervention, the Germans could have sent at least 2000 additional tanks, some 5000 additional 88 mm anti-aircraft guns, around 15 000 additional aircraft, tens of thousands of additional motor vehicles, and up to half a million additional soldiers to the Eastern Front in the years 1941-1943, which would have shifted the balance in their favour.

Disruption of German economy

Besides military intervention, another major contribution of the Western Allies was the disruption of German economy. To fight the British, Americans, and Soviets, Germany had to simultaneously produce for land, air and naval warfare. Additionally, from 1942 onwards, German industry was constantly attacked by Allied bombers, disrupting the production schedule of German factories. While the Soviet Union had the luxury of one single front, its industry could concentrate on the production of tanks, aircraft, and guns necessary for ground warfare. Other products that were needed, were delivered by the West. The Germans, on the other hand, were fighting on several fronts, waging a massive land, air and naval war simultaneously, which forced them to invest a large part of their industrial capacity into the production of naval units and transportation vehicles for their armies. Germany had produced 1158 submarines with a displacement of nearly a million tons in order to attack the supply line from North America to Great Britain; the Soviets on the other hand had constructed just

³³¹ Willi A. Boelcke (editor), *Deutschlands Rüstung im Zweiten Weltkrieg: Hitlers Konferenzen mit Albert Speer 1942-1945* (Athenaion 1969) p. 24; Janusz Piekalkiewicz, *Tank War 1939-1945* (Historical Times 1986), p. 246

52 submarines during the war.³³² Fighting German U-boats, overseas units, mines, and aircraft, cost the Western Allies 5150 ships with a displacement of 21 570 720 tons, of which the U-boats sunk 2828 ships with 14.7 million tons; however this feat cost the German 605 U-boats between 1941 and 1944 alone.³³³ The share of German naval units sunk by Soviet forces is almost negligible. During 1943 for example, the British and Americans sank 220 German U-boats, while the Soviets managed to destroy just one!³³⁴

Another area where Germany had to invest much of its industrial capacity was locomotive production. In order to transport its troops across all of Europe, Germany had build vast amounts of locomotives, outproducing all Allied powers combined. Britain had manufactured 3110 locomotives from 1940-1944, the United States 4601, and the Soviet Union just 1706.³³⁵ Compared to these 9417 locomotives built by the big three Allied powers combined, Germany alone had assembled 14 981 locomotives during these years.³³⁶

One should also not forget that German production was massively hampered from expanding in the years 1943-1945. Locomotive production, which had increased from 2637 machines in 1942 to 5243 machines in 1943, was reduced to just 3495 units in 1944; a reduction by one third.³³⁷ The effort invested into building a 100 ton locomotive was equal or greater than the effort of building a Tiger or Panther tank. Without the need to constantly shift forces across Europe in order to cope with Allied attacks in North Africa, Italy, the Balkans, and Western Europe, German industry could have scaled back locomotive production and built several thousand additional heavy tanks instead. Without Allied bombing, German industry would also not have been compelled to produce vast amounts of ammunition for the anti-aircraft guns, capacity which could have been invested otherwise:

Ammunition production of various anti-aircraft calibres in thousand ³³⁸

Year	20 mm rounds	37 mm rounds	88 mm rounds
1941	51 493	10 423	11 958

³³² David MacIsaac, *The United States Strategic Bombing Survey –German Submarine industry report*, p. 12, In: *The United States Strategic Bombing Survey Volume IV*, (Garland Publishing 1976)

³³³ Léonce Peillard, *Die Schlacht im Atlantik* (Paul Neff Verlag 1975), pp. 600-601

³³⁴ O'Brien, *East versus West in the defeat of Nazi Germany*, p. 97

³³⁵ Howlett, *Fighting with Figures*, p. 177; Edwin P. Alexander, *American Locomotives: A Pictorial of Steam Power 1900-1950* (W.W. Norton & Company 1950), p. 14; Harrison, *Accounting for war*, p. 68

³³⁶ Gregor Janssen, *Das Ministerium Speer: Deutschlands Rüstung im Krieg* (Verlag Ullstein 1968), p. 337

³³⁷ *Ibid*, p. 337

³³⁸ *Ibid*, p. 338

1942	68 875	7332	12 942
1943	117 971	11 191	12 467
1944	144 444	29 213	13 649

Most of this ammunition was wasted, since it took up to 16 000 rounds to take down one single bomber.³³⁹ The aluminium needed to produce this amount of anti-aircraft ammunition would have sufficed to build an additional 40 000 fighter aircraft.³⁴⁰ Additionally, bombing and a two front war compelled the Germans to rely increasingly on forced labour from occupied territories. By 1944 there were millions of forced labourers in German factories; naturally these were less efficient than German workers. The performance of prisoners of war and forced labourers was estimated to be anywhere between 20% and 80% of a German worker.³⁴¹

Without the need to fight in the Atlantic, to transport large amounts of troops, equipment and supplies across the entire continent, and the necessity to defend against Allied bombing, Germany could have massively reduced its U-boat, locomotive and anti-aircraft gun and ammunition production, and converted at least part of these capacities into the production of more aircraft and equipment for land warfare. Additionally, without bombing, and the need to maintain a large enough army to fight on several fronts, there would have been less need to use forced labour in the factories, thus boosting production. Historically Germany already outproduced the USSR in certain areas like locomotives, trucks and even bombers, with 12 664 produced by Germany in the years 1941-1943, as compared to 11 359 build by the USSR.³⁴² Without Allied intervention and Lend-Lease, Soviet margins in these areas would most likely have widened, while margins in areas such as tanks would have shrunk significantly. If Germany and its industry could have concentrated on one single front from 1941 onwards, it most likely would have vastly changed the outcome of the war in the East.

Lend-Lease deliveries

While Soviet and Russian historians are reluctant to admit the great impact Allied deliveries had on the Soviet war effort, the numbers available do not allow for any other conclusion. The

³³⁹ Müller, *Der Bombenkrieg*, p. 141

³⁴⁰ *Ibid.*, p. 141

³⁴¹ Hans Pfahlmann, *Fremdarbeiter und Kriegsgefangene in der deutschen Kriegswirtschaft 1939-1945* (Wehr und Wissen Verlagsgesellschaft 1968), pp. 149, 229

³⁴² Ellis, *The World War II Data Book*, p. 279

Soviet Union was in a perilous state throughout the entire war which Lend-Lease helped overcome.

On average, the nearly 4.5 million tons of food were enough to feed over 3 million people every year, or roughly half the active Red Army. When compared to a population of nearly 200 million before the war, this might not seem much, however, even with these deliveries the people of the Soviet Union were desperately short on food. In fact less than a year after the cancellation of Lend-Lease, the USSR experienced a famine which cost the lives of between 500 000 and 1.5 million people.³⁴³ Food was rationed very strictly, soldiers and industry workers received the most, while people not vital for the war effort were allocated almost no food at all. Children and the elderly received just 700 calories, while ordinary industry workers received between 1300 and 1900 calories a day.³⁴⁴ In both cases this was roughly half the required amount. In order to maximise food production, the government allowed the creation of urban gardens. Besides the fields, food was grown in parks, public gardens and alongside roads to the cities. In 1942 there were already five million of these public gardens, by 1944 this number had increased to 16 million.³⁴⁵

Besides delivering large quantities of food, such as 1.154 million tons of grains, 672 429 tons of sugar, 782 973 tons of canned and 730 902 tons of smoked meat, Lend-Lease also delivered 37 477 tons of seeds, which enabled the Soviets to grow large quantities of additional food on their own land.³⁴⁶ While the supplied grain represented just over 1% of Soviet domestic production for the years 1942-1944, the 1.5 million tons of meat compared favourably to a domestic supply of just 7 million tons.³⁴⁷ Without American food, of which nearly all went to the Red Army, the government would have been forced to reduce the food supply for the civilian population even further, which would have resulted in decreased productivity, more dead, and in some instances, possibly even outright rebellion against the Soviet regime: “[...] one can reasonably conclude that the shortage of food in Russia in World War II was so acute that without the American help Russian resistance might have collapsed from want of food alone.”³⁴⁸ Other extremely important deliveries were metals such as aluminium, copper, zinc, and nickel, which are vital for the production of modern military equipment like tanks and aircraft. Soviet industry had produced just 285 418 tons of

³⁴³ Stéphane Courtois (ed.). *The Black Book of Communism: Crimes, Terror, Repression* (Harvard University Press 1999), p. 233; Michael Ellman (2000) *The 1947 Soviet famine and the entitlement approach to famines*, *Cambridge Journals of Economics*, 24, 603-630, p. 603

³⁴⁴ Overy, *Russia's war*, p. 225

³⁴⁵ *Ibid*, p. 225

³⁴⁶ Jones, *The Roads to Russia*, p. 217, 219

³⁴⁷ Tuyll, *Feeding the Bear*, p. 179

³⁴⁸ Jones, *The Roads to Russia*, p. VIII-IX

aluminium in the years 1941-1944, during the same time the Western Allies had delivered an additional 261 109 tons, nearly doubling Soviet supply of this metal.³⁴⁹ Additionally, during 1941-1944 the Soviets had produced 573 000 tons of copper, while total Western deliveries amounted to 391 711 tons, roughly 40% of total Soviet wartime supply.³⁵⁰ Domestic production of zinc and nickel in the years 1942-1944 had been 142 100 and 38 100 tons respectively, while the Western Allies supplied 54 826 tons of zinc and 13 843 tons of nickel, (in both cases more than a quarter of total supply).³⁵¹ Another field in which Lend-Lease helped the Red Army were communications. Throughout the war the US delivered 40 000 radios, 380 135 field telephones, and 1.25 million miles of telephone cable, which made the Red Army a far more organized and efficient fighting force.³⁵²

Assuming that Western deliveries were responsible for a boost of Soviet production by just 5%, it would mean that without these materials the factories of the USSR would have produced some 4000 less tanks, 5000 less aircraft and 7000 less motor vehicles during the years 1942-1944.³⁵³ This loss of production could not have been afforded. Besides the delivery of food, resources and equipment, Western supply of tanks, aircraft, and especially motor vehicles helped to keep up the strength of the Red Army. The following table shows the historical Soviet tank, aircraft, and motor vehicle strength of the Red Army and the strength it would have possessed if the same losses as historically had been sustained but no Lend-Lease had arrived:

First day of year/ historical number/hypothetical number without Lend-Lease supply ³⁵⁴

Year	Tanks	Combat aircraft	Motor Vehicles
1942	7700 to 6800	12 000 to 10 300	318 500 to ca. 318 500
1943	20 600 to 16 200	21 900 to 19 900	404 500 to ca. 350 000
1944	24 400 to 16 800	32 500 to 27 300	496 000 to ca. 335 000
1945	35 400 to 22 100	43 300 to 35 700	621 300 to ca. 360 000

³⁴⁹ Jones, *The Roads to Russia*, p. 220

³⁵⁰ Harrison, *Accounting for war*, p. 195; Jones, *The Roads to Russia*, p. 221

³⁵¹ Harrison, *Accounting for war*, p. 195; Weeks, *Russia's Life-Saver*, p. 150

³⁵² Dunn Jr, *The Soviet economy and the Red Army*, p. 86

³⁵³ Numbers calculated from Ellis, *The World War II Data Book*, pp. 277-278 and Harrison, *Accounting for war*, p. 68

³⁵⁴ Numbers calculated from Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, p. 244, 252-255;257; Harrison, *Accounting for war*, p. 68

These numbers are calculated from official Soviet data, by comparing Soviet production to the amount received by the Red Army. If the number of supply exceeded production, it was assumed that the surplus came from Lend-Lease deliveries. However these numbers are more of an approximate guess and should be taken with extreme caution. While the numbers regarding the supply of tanks is for the most part compatible with the data presented by Western historians, Soviet numbers regarding aircraft deliveries do not correspond with Western sources at all. According to Soviet data, during 1942 the Red Air Force received only 300 more combat aircraft than produced by Soviet industry, despite the fact that during this year the Western Allies had already supplied several thousand combat aircraft to the Soviet Union. For the entire period 1941-1944, in which Lend-Lease had delivered close to 20 000 combat aircraft, Soviet sources show a surplus of only 7600 machines.

Since it is inconceivable that over 10 000 military aircraft should not have been supplied to the Red Army, it stands to reason that Soviet sources are incomplete or have been manipulated. Another irregularity can be found in the supply of motor vehicles. When taking into account the maximum number of vehicles that could have been supplied by Lend-Lease during 1942, the Red Army would still have received around 50 000 more motor vehicles than produced by Soviet industry. The only possible explanation for this surplus would be that during this year, Soviet industry had to hand over these vehicles to the Red Army. As can be seen in the table above, without Lend-Lease deliveries the supply of motor vehicles for the Red Army would have been wholly inadequate. During the years 1942-1944 Soviet industry had manufactured 144 791 motor vehicles of all kinds, while losses had amounted to 165 800 machines.³⁵⁵ Even with some 50 000 motor vehicles supplied by Soviet industry during 1942, supply would have exceeded losses by a meagre 30 000 machines and would have nearly halved the number of available motor vehicles by the beginning of 1945. This lack of jeeps and trucks would have made the Soviet offensives of 1943-1945 impossible. In his memoirs Nikita Khrushchev concludes:

Almost all our artillery was pulled by American towing equipment. On one occasion after Stalin's death I proposed: "Let's give all the transport equipment that we produce to the military because it's simply embarrassing to see a parade going by and all the artillery is being towed by American trucks." Almost all the military equipment we had in East Germany was also being towed by American Studebakers. This was an awkward and shameful situation

³⁵⁵ Harrison, *Accounting for war*, p. 68; Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century*, p. 257

for us. So many years had gone by since the end of the war, and we were still using American trucks. [...] Just imagine! How could we have carried out an offensive without this materiel? How could we have moved forward from Stalingrad to Berlin? I can't imagine it. Our losses would have been colossal because our troops would not have had the same maneuverability [sic].³⁵⁶

From the start of its war with Germany until the end of September 1945 when Lend-Lease was terminated, the Soviet Union had received 17.5 million tons of supplies with a value of over 10 billion US dollars, the transportation of these goods had cost the Americans another 700 million dollars.³⁵⁷ The value of British aid received by the USSR stood at 1.5 billion dollars.³⁵⁸ In today's money value these deliveries would translate to the equivalent of roughly 150 billion dollars.

³⁵⁶ Khrushchev, *Memoirs of Nikita Khrushchev*, p. 647

³⁵⁷ Weeks, *Russia's Life-Saver*, p.25, Jones, *The Roads to Russia*, p. VIII-IX

³⁵⁸ Tuyll, *Feeding the Bear*, p. 23

7 The Russo-German war without Western intervention

Now that it has been shown what impact Western deliveries and Western military intervention had on the Soviet Union's war effort, one has to examine what would have happened without this aid. The only way to prevent any form of Western intervention, was by removing Britain from the war in 1940. Had Germany eliminated the United Kingdom in the autumn of 1940, either through negotiation or military force, intervention by the United States would have become impossible. Separated by the Atlantic Ocean and without Britain as an unsinkable base, there would have been no possible way for the United States to strike at Germany or to supply the USSR via the Atlantic or Iran. Similarly, the Mediterranean, the skies of Western Europe, and the Atlantic would have been neutralized as fronts, which would have given Germany the luxury to concentrate on the Soviet Union exclusively.

A military way of knocking out Britain from the war was difficult but possible. Had the Luftwaffe pursued different tactics during the Battle of Britain, it could have achieved air superiority which would have enabled German units to invade Britain safely and defeat the weak and ill equipped British forces on the island.³⁵⁹ In a war game conducted by the Royal Military Academy Sandhurst in 1974, it was concluded that the Germans would have managed to land their forces even without having achieved air superiority, and would have advanced successfully for the first two days, before the Royal Navy would have destroyed their reinforcements and forced them to abandon the island.³⁶⁰ However, with air superiority the fortunes would have shifted heavily into Germany's favour. Additionally, Britain could have been removed from the war by negotiation. The English writer Peter Fleming argues that Britain would have accommodated itself with Germany had Hitler just left it alone:

Had he, in his hour of victory, left the British severely alone, it is difficult to resist the conclusion that he would have improved his chances of securing their withdrawal from the war. [...] It would have meant a return to the Phoney War. Save at sea [...] there would not only have been no fighting but no prospect of fighting. [...] America, [...] would have offered less comfort to a nation which, after being decisively defeated, was wordily pretending that nothing of that sort had happened. Churchill's tenacity of purpose would have kept defiance alive—but for how long, when there was nothing tangible to defy? [...] some 40, 000 British prisoners of war had fallen into German hands. If Hitler had made a contemptuous offer to

³⁵⁹ For more details see: Townshend, *Axis Power*, pp. 47-56

³⁶⁰ <http://mr-home.staff.shef.ac.uk/hobbies/seelowe.txt>. 21.5.2015

send them home, could any British Government have refused it? And for how much longer, after it had been accepted, would the nation have continued to face the prospects [...] of boredom, bankruptcy and blockade?³⁶¹

With Britain out of the war the USSR would have faced Germany alone. This would have meant that the German army could have attacked it with much more aircraft than historically; moreover all the tanks that were sent to North Africa could have been relocated to the Eastern Front as well. These additional units would have enabled the Germans to advance more rapidly and to inflict greater damage on the Red Army. Furthermore the quantity of these forces might have been great enough to allow Army Group Centre to continue its advance against Moscow in the summer of 1941, even after diverting most of its armoured formations to Army Group South. Historically Army Group Centre had advanced over 700 kilometres in seven weeks and was standing only 320 kilometres from Moscow by early August, before being placed on the defensive for nearly two months.³⁶² Dr. William Roger Townshend concludes, that had these units continued their attack against Moscow without interruption, they would have succeeded to encircle the Soviet capital by September or October and would have advanced between 80 and 160 kilometres beyond the city before the onset of winter.³⁶³ This victory would most likely have sufficed to win the war in the East:

Moscow was an important industrial centre with up to 10% of total production, and unique as a rail communication hub for all of European Russia. Its loss would have effectively cut the country in two [...] If Moscow had fallen in September 1941, or was even just encircled and therefore politically isolated as well, Russia would have been even closer to, or over, the tipping point of regime change. Stalin himself would have been forced to abandon Moscow if he wanted to survive, but at a severe risk of a coup, revolution or just a disintegration of the state and political system. [...] Even had there been no overall surrender by Stalin's Russia, the prospects for 1942 with the central front back on the middle Volga and morale shattered, would have been dire. Regime survival was the most important objective for Stalin, and Moscow's fall, at the very least, would have forced him to negotiate a peace treaty. Lenin after all had signed the Treaty of Brest-Litovsk in 1918 in less dramatic circumstances [...].³⁶⁴

³⁶¹ Peter Fleming, *Operation Sea Lion: An account of the German preparations and the British countermeasures* (Pan Books 1984), pp. 307-308

³⁶² Townshend, *Axis Power*, p. 116

³⁶³ *Ibid.*, pp. 116 -117

³⁶⁴ *Ibid.*, pp. 124-125

Even if the Soviets could have prevented the capture of Moscow by launching their counteroffensive earlier, these forces would have been weaker than historically, leading to a less successful operation. By the middle of 1942, just before the start of their campaign against the Caucasus, German forces in the East would have been significantly stronger, while the Red Army, deprived of Western aid, would have been severely weaker. These additional German forces would most likely have been enough to conquer Stalingrad and the Caucasus, which would have severed the flow of oil and other resources to Northern Russia, with devastating consequences for the Soviet economy. The loss of the Caucasus, which supplied between 75% and 80% of Soviet oil, would have most likely crippled Soviet economy by the middle of 1943.³⁶⁵

Again, even if the Soviets could somehow have resisted the German army in 1942, and even if they would have been able to launch “Uranus”, their offensive would have been stopped much earlier by a stronger German Army. By the beginning of 1943 the situation on the Eastern Front would have been entirely different than historically. The German armies in the East would have occupied much more territory due to stopping all Soviet offensives earlier, and they would have been substantially stronger, supplied by thousands of additional aircraft, guns, motor vehicles, and tanks. German industry, untouched by bombing and with the luxury to concentrate on the production required for land warfare alone, would have reached new records. The Red Army, on the other hand, would have been exhausted. Without Lend-Lease supplies it would have had less tanks and aircraft; tens of thousands of trucks and jeeps would have been missing. Without the hundreds of thousands of tons of food supplied in 1942, rationing would have been much more severe, leading to hunger and starvation. Soviet industry would have been deprived of aluminium, steel, copper, and other metals; additionally large amounts of Western supplied chemicals, petroleum, and explosives would have been missing. The historian Phillips P. O’ Brien concludes: “Had the Germans been able to throw everything they had against the Russians in 1943 and 1944, and on the other hand, had the Russians been deprived of the Lend-Lease aid, it is hard to see how the Red Army could have resisted. These changes alone would have guaranteed the Germans greater mobility and air superiority.”³⁶⁶ If both Lend-Lease aid and Western military intervention had been missing, a Soviet defeat would have been likely and stalemate the best option. The historian Albert Seaton concludes: “If the United States and Great Britain with its Commonwealth and Empire

³⁶⁵ Townshend, *Axis Power*, pp. 157-158

³⁶⁶ O'Brien, *East versus West in the defeat of Nazi Germany*, p. 109

had been strictly neutral during the Russo-German War, the German and Axis military forces so released would have overwhelmed the Soviet Union.”³⁶⁷

If, for some reason, the Western Allies had been at war with Germany, but due to their anti-Communist stance had not supplied the USSR with Lend-Lease, the situation would have been in the Soviet Union’s favour. The binding of large parts of the German tank and air force, coupled with the disruption of German industry, would have enabled the Red Army to defeat the Germans at Moscow and Stalingrad, and to advance to Kursk. However, Soviet losses would have been greater than historically, and without Lend-Lease they would have been missing important resources for their industry, as well as military equipment and most importantly, food and motor vehicles. By the middle of 1943 Lend-Lease had delivered 1.3 million tons of food as well as 150 000 trucks and jeeps.³⁶⁸ The lack of these commodities would have put an even greater strain on Soviet economy and agriculture, and would have robbed the Red Army of much of its mobility. Soviet forces would not have been able to supply offensives on a scale witnessed in the years 1943-1945, rather they would have been forced to conduct limited attacks at certain segments of the front as had been done in the winter of 1941-42. The result would have been a slow crawl towards the German border with horrendous casualties. A lack of Lend-Lease supplies might have even made a German victory at Kursk possible, enabling the Germans to create a stalemate on the Eastern Front, which would have forced Stalin to negotiate.

In a scenario where the Western powers would have supplied the Soviet Union without actively fighting Germany, the odds would at first have stood in Germany’s, and later in the USSR’s favour. Additional German forces used against the Red Army in 1941 and 1942 (when Lend-Lease had only a minor impact), might have been enough to defeat the Soviet Union. However, if the Red Army had managed to resist the onslaught during these two years, then from 1943 onwards, increased quantities of Western aid would have slowly shifted the balance in the Soviet Union’s direction. Increased production figures of a German industry undisturbed by bombing, would have been offset by Western deliveries to the Soviets. The numerical superiority of the Red Army would have been lower than historically, nevertheless, Lend-Lease would have ensured that this superiority would have existed throughout the entire war. Supplied by the Western powers, but facing much stronger German formations than historically, the most likely outcome for the Soviet Union would have been stalemate. In this

³⁶⁷ Albert Seaton, *The Russo-German War 1941-1945* (C. Tinling & Co. Ltd. Or Arthur Barker Limited 1971), p. 590

³⁶⁸ Weeks *Russia’s Life-Saver*, pp. 141-142; Jones, *The Roads to Russia*, p. 233

scenario both sides would have been close to equal in strength making it unlikely that either side would have gained the initiative. Russian historian Boris Sokolov concludes:

As a whole, one can reach the conclusion that, without the Western supplies, the Soviet Union not only could not have won the Great Patriotic War, but even could not have resisted German aggression, since it was not able to produce sufficient quantities of weapons and combat equipment and provide them with fuel and ammunition. [...] Since the USSR could not have waged war against Germany without the cooperation of Britain and the USA, the assertion by Soviet propaganda about the economic victory of Socialism during the Great Patriotic War and about the USSR's capability of independently defeating Germany, remains nothing more than a myth.³⁶⁹

³⁶⁹ Boris V. Sokolov (1994): The role of lend-lease in Soviet military efforts, 1941–1945, *The Journal of Slavic Military Studies*, 7:3, 567-586, pp.583-584

8 Conclusion

Western aid in the form of Lend-Lease and military intervention was of far greater importance to the Soviet Union than claimed by Soviet historiography. The Western Allies were responsible for engaging and destroying an overwhelming majority of the Luftwaffe, at the same time they were solely responsible for the disruption of German industry through bombing. Additionally, their active intervention in the war forced the Germans to invest parts of their ground forces into the Mediterranean, keeping them away from the Eastern Front during a time when the Soviets needed it the most. In fact, Allied military intervention during the years 1941-1942 was far more important than Lend-Lease.

Without these obstacles, German military power on the Eastern Front would have been much greater, and German industrial output far larger. Soviet claims that Lend-Lease accounted for just 4% of Soviet war production are inaccurate as well. By 1943 Allied aid contributed 10% of overall resources available to the Soviet economy.³⁷⁰ During the year 1944, Western deliveries made up 8.1% of domestic Soviet steel output, 33% of meat products, 58% of animal fats, 37% of aircraft fuel, and 100% of natural rubber.³⁷¹ Nearly half the wartime aluminium supply and more than 1/3 of total supply of copper were delivered by the Western powers; the supply of military equipment exceeded the supposed 4% by far. During the years 1942-1944, Soviet industry had manufactured 77 498 tanks and 100 527 aircraft, while the Americans and British had delivered 11 603 tanks and 19 707 aircraft; a share of 15% and 20% of Soviet production respectively.³⁷² Domestic production of motor vehicles for these three years had stood at 144 791 machines, while Lend-Lease had supplied twice this number by 30th June 1944.³⁷³ Additionally, the United States delivered 1981 locomotives, 12 000 freight cars and 8071 tractors during the war, while domestic production had turned out just 84 locomotives, 268 freight cars and 7737 tractors in the years 1942-1944.³⁷⁴

Soviet victories from 1943 onwards were won by using superior numbers to overwhelm German defences. Without Lend-Lease and Western military intervention, Soviet superiority would have been smaller, or might have even been reversed. The results would have been either a Soviet defeat, stalemate, or a slow and costly advance through Eastern Europe, which would have forced the Soviets to abandon the war. The historian Dr. Townshend states: “The

³⁷⁰ Harrison, *Accounting for war*, p. 134

³⁷¹ *Ibid*, p. 150

³⁷² Ellis, *The World War II Data Book*, p. 277-278; Lend Lease deliveries for tanks and aircraft include

December of 1941, for motor vehicles entire period: Harrison, *Soviet Planning in Peace and War*, p. 264

³⁷³ Harrison, *Accounting for war*, p. 68; Jones, *The Roads to Russia*, p. 233

³⁷⁴ Harrison, *Accounting for war*, p. 68, 197; Harrison, *Soviet Planning in Peace and War*, p. 258

Axis eastern campaigns in both 1941 and 1942 were 'close run things'. Contrary to popular belief the Soviet Union was fairly close to collapse".³⁷⁵

This conclusion however should not be misused by Westerners to inflate their contribution in the war. While it is true that the Western powers disrupted German industry, supplied the Soviet Union with invaluable materials, and destroyed a majority of the German air force and navy, their contribution to the defeat of German ground forces was modest at best. Had the USSR collapsed or negotiated a peace treaty in the years 1941-1942, the units so released would have overwhelmed Allied forces in the Mediterranean and seriously threatened the British Islands and the Middle East. Even a collapse or negotiated peace as late as 1943 would have enabled the Germans to kick out Allied forces from Italy and would have made an invasion of Europe impossible. Estimates by the US War department came to the conclusion that in the event of a Soviet surrender, the Allies would have to raise an army of 700 to 900 divisions with approximately 25 million men to defeat the European Axis.³⁷⁶ This plan was fantasy. Before the war the population of the United States had stood at 135 million and industry requirements led experts to believe that a maximum of 10% of the population could be drafted into the military, anything over this number would have endangered the economy and reduced industrial output.³⁷⁷ Because the Red Army engaged most of German ground forces, the US had to raise an army of just 90 divisions, investing most of its work force into industry.³⁷⁸

Still, the fact remains that Western aid decisively contributed to the Soviet Union's victory over Nazi Germany. This victory allowed the USSR to seize control over the countries of Eastern Europe, gaining an additional 100 million subjects with roughly half the industrial capacity of the Soviet Union. Soviet forces then dismantled this industrial capacity and transferred hundreds of factories and millions of tons of equipment back to the Soviet Union.³⁷⁹ By the beginning of 1947 the value of the plundered equipment received by Soviet economy amounted to 4.12 billion US dollars.³⁸⁰ By plundering the resources of these regions the USSR was able to rebuild after the war and ensured its continued existence despite a flawed economic system. The capture of German scientists and technology resulted in technological injections which enabled the Soviets to be ahead of the Americans during the

³⁷⁵ Townshend, *Axis Power*, p. 160

³⁷⁶ Charles E. Kirkpatrick, *An Unknown Future and a Doubtful Present: Writing the Victory Plan of 1941* (Center of Military History 1992), p. 82

³⁷⁷ Tucker, *The Second World War*, p. 98

³⁷⁸ Parker, *The Second World War*, p. 144

³⁷⁹ For more details see: Musial, *Stalins Beutezug*, pp. 337- 369,388-397

³⁸⁰ *Ibid*, p. 339

1950's. However, by the early 1960's the Communist system was entering a phase of stagnation. Innovation from Germany had been exhausted, as had been the resources of Eastern Europe. It became clear that Soviet economy was unable to cope with the requirements of the Cold War. The USSR was unmasked as a fake superpower, maintaining its status by involuntary loans from Eastern Europe. During the last thirty years of its existence this led to increased Soviet aggression around the globe, in an attempt to convince the world that it was still as strong as during the time it had supposedly defeated Germany on its own.

To this date, victory over Nazi Germany positively influences the perception of Stalin and Communism in Russia and throughout the world. This distorted perception created a feeling of nostalgia towards a totalitarian system which caused the death of over 20 million people and prevents an objective historical reflection of Stalin and Communism. This is a great hindrance on Russia's way towards democracy. If Russian historiography would finally accept that the Soviet Union had needed Western aid, which was readily provided, then this would be a great step towards the unmasking of the flaws of Stalin and Communism, and its condemnation. This in turn would help Russia on its way to become a true democracy and could possibly improve relations between Russia and the Western World. In the face of the current diplomatic and economic tensions between Russia and the West over the Ukraine, this would be a most desirable outcome!

Bibliography

Books

Edwin P. Alexander, *American Locomotives: A Pictorial of Steam Power 1900-1950* (W.W. Norton & Company 1950)

Ulf Balke, *Der Luftkrieg in Europa: Die operativen Einsätze des Kampfgeschwaders 2 im Zweiten Weltkrieg: Teil 1 Das Luftkriegsgeschehen 1939-1941: Polen, Frankreich, England, Balkan, Rußland* (Bernard& Graefe Verlag 1989)

Joan Beaumont, *Comrades in Arms: British Aid to Russia 1941-1945* (Davis Poynter 1980)

Cajus Bekker, *Angriffshöhe 4000: Die deutsche Luftwaffe im Zweiten Weltkrieg*, (Wilhelm Heyne Verlag 1985)

Eversley Belfield and H. Essame, *The Battle for Normandy* (Pan Books 1967)

Chris Bellamy, *Absolute War: Soviet Russia in the Second World War* (Pan Books 2009)

Willi A. Boelcke (editor), *Deutschlands Rüstung im Zweiten Weltkrieg:Hitlers Konferenzen mit Albert Speer 1942-1945* (Athenaion 1969)

Horst Boog/Jürgen Förster/Joachim Hoffmann/Ernst Klink/Rolf-Dieter Müller/Gerd R. Ueberschär, *Germany and the Second World War, Volume IV The attack on the Soviet* (Claredon Press 1998)

Phil Butler and Dan Hagedorn, *Air Arsenal North America: Aircraft for the Allies 1938-1945: Purchases and Lend Lease* (Midland Publishing 2004)

Paul Carell, *Verbrannte Erde: Schlacht zwischen Wolga und Weichsel* (Verlag Ullstein GmbH 1966)

Belton Y. Cooper, *Death Traps: The Survival of an American Armored Division in World War II* (Presidio Press 1998)

Matthew Cooper, *The German Army 1933-1945: Its Political and Military Failure* (Macdonald and Jane's Publishers Limited 1978)

Stéphane Courtois (ed.). *The Black Book of Communism: Crimes, Terror, Repression* (Harvard University Press 1999)

Norman Davies, *Europe At War 1939-1945: No simple Victory* (Pan books 2007)

Walter S. Dunn Jr. *The Soviet economy and the Red Army: 1930-1945* (Praeger Publishers 1995)

John Ellis, *Brute Force: Allied Strategy and Tactics in the Second World War* (André Deutsch Limited 1990)

John Ellis, *The World War II Data Book: The Essential Facts and Figures for all the Combatants* (Aurumn Press 1993)

Matthias Färber, *Zweiter Weltkrieg in Bildern* (OTUS Verlag 2003)

Peter Fleming, *Operation Sea Lion: An account of the German preparations and the British countermeasures* (Pan Books 1984)

Roger A. Freeman, *Raiding the Reich: The Allied Strategic Bombing Offensive in Europe* (Arms&Armour Press 1997)

John Lewis Gaddis, *We Now Know: Rethinking Cold War History* (Oxford University Press 1997)

David Glantz, *Slaughterhouse: The Handbook of the Eastern Front* (The Aberjona Press 2005)

Peter Gosztony, *Die Rote Armee: Geschichte und Aufbau der sowjetischen Streitkräfte seit 1917* (Verlag Fritz Molden 1980)

Olaf Groehler, *Geschichte des Luftkriegs 1910 bis 1970* (Militärverlag der Deutschen Demokratischen Republik 1975)

Alan Gropman (editor), *The Big L: American Logistics in World War II* (National Defence University Press 1997)

Fritz Hahn, *Waffen und Geheimwaffen des deutschen Heeres 1933-1945: Band 2: Panzer- und Sonderfahrzeuge »Wunderwaffen«, Verbrauch und Verluste* (Bernard & Graefe Verlag 1987)

Mark Harrison, *Accounting for war: Soviet production, employment and the defence burden: 1940-1945* (Cambridge University Press 1996)

Mark Harrison, *Soviet Planning in Peace and War: 1938-1945* (Cambridge University Press 1985)

Max Hastings, *Bomber Command* (Pan Books 2010)

Manfred Hildermeier, *Geschichte der Sowjetunion 1917-1991: Entstehung und Niedergang des ersten sozialistischen Staates* (Verlag C.H. Beck 1998)

Burkhard Mueller-Hillebrand, *Das Heer 1933-1945: Band II Die Blitzfeldzüge 1939-1941: Das Heer im Kriege bis zum Beginn des Feldzuges gegen die Sowjetunion im Juni 1941* (E.S. Mittler&Sohn 1956)

Burkhard Mueller-Hillebrand, *Das Heer 1933-1945: Band III Der Zweifrontenkrieg: Das Heer vom Beginn des Feldzuges gegen die Sowjetunion bis zum Kriegsende* (E.S. Mittler&Sohn 1969)

Peter Howlett, *Fighting with Figures* (Central Statistics Office 1995)

Robert Huhn Jones, *The Roads to Russia: United States Lend-Lease to the Soviet Union* (University of Oklahoma Press 1969)

David Mac Isaac, *The United States Strategic Bombing Survey Volume I*, (Garland Publishing 1976)

David Mac Isaac, *The United States Strategic Bombing Survey Volume II*, (Garland Publishing 1976)

David MacIsaac, *The United States Strategic Bombing Survey Volume IV*, (Garland Publishing 1976)

Gregor Janssen, *Das Ministerium Speer: Deutschlands Rüstung im Krieg* (Verlag Ullstein 1968)

Thomas L. Jentz (editor), *Panzertruppen: The Complete Guide to the Creation & Combat Employment of Germany's Tank Force: 1933-1942: Volume 1* (Schiffer Publishing, Ltd. 1996)

Thomas L. Jentz (editor), *Panzertruppen: The Complete Guide to the Creation & Combat Employment of Germany's Tank Force: 1943-1945: Volume 2* (Schiffer Publishing, Ltd. 1996)

John Keegan, *The Second World War* (Viking Penguin 1990)

Nikita Khrushchev, *Memoirs of Nikita Khrushchev: Volume 1, Commissar 1918-1945* (Pennsylvania State University Press 2005)

Charles E. Kirkpatrick, *An Unknown Future and a Doubtful Present: Writing the Victory Plan of 1941* (Center of Military History 1992)

Colonel-General G.F. Krivosheev, *Soviet Casualties and Combat Losses in the Twentieth Century* (Greenhill Books, 1997)

G. F. Krivosheev, *Rossija i SSSR w wojnach XX weka: Poteri woruschennyh sil: Statistitscheskojeissledowanie* (OLMA-Press 2001)

Alan J. Levine, *The Strategic Bombing of Germany: 1940-1945* (Praeger publishers 1992)

George Mellinger, *Soviet Lend-Lease Fighter Aces of World War 2* (Osprey Publishing Limited 2006)

Rolf-Dietrich Müller, *Der Bombenkrieg 1939-1945* (Christoph Links Verlag 2004)

Williamson Murray, *Strategy for Defeat: The Luftwaffe 1933-1945* (Air University Press 1983)

Bogdan Musial, Kampfplatz Deutschland: Stalins Kriegspläne gegen den Westen (Propyläen Verlag 2008)

Bogdan Musial, Stalins Beutezug: Die Plünderung Deutschlands und der Aufstieg der Sowjetunion zur Weltmacht, (Ullstein Buchverlage GmbH 2010)

Robin Neillands, The Bomber War: Arthur Harris and the Allied Bomber Offensive 1939-1945 (John Murray Publishers 2001)

Richard Overy, Russia's war (Penguin Books 1998)

Richard Overy, Why the Allies won (Pimlico 2006)

R.A.C. Parker, The Second World War: A Short History (Oxford University Press 2002)

Wolfgang Paul, Der Heimatkrieg 1939 bis 1945: Tatsachenbericht (Wilhelm Heyne Verlag 1983)

Léonce Peillard, Die Schlacht im Atlantik (Paul Neff Verlag 1975)

Hans Pfahmann, Fremdarbeiter und Kriegsgefangene in der deutschen Kriegswirtschaft 1939-1945 (Wehr und Wissen Verlagsgesellschaft 1968)

Janusz Piekalkiewicz, Der Zweite Weltkrieg (Komet Verlag 1986)

Janusz Piekalkiewicz, Die Schlacht von Monte Cassino: Zwanzig Völker ringen um einen Berg (Gustav Lübbe Verlag GmbH 1980)

Janusz Piekalkiewicz, The Cavalry of World War II (Stein and Day, 1980)

Janusz Piekalkiewicz, Tank War 1939-1945 (Historical Times 1986)

Clive Ponting, 1940: Myth and Reality (Hamish Hamilton Ltd 1990)

Alfred Price, The Last Year of the Luftwaffe: May 1944 to May 1945 (Greenhill books 1995)

Wolfgang Schlauch, Rüstungshilfe der USA an die Verbündeten im Zweiten Weltkrieg (Wehr und Wissen 1967)

Albert Seaton, The Russo-German War 1941-1945 (C. Tinling & Co. Ltd. Or Arthur Barker Limited 1971)

Edward R. Stettinius Jr, Lend-Lease: Weapon for Victory (The Macmillan Company 1944)

Adam Tooze, The wages of Destruction, The making and breaking of the Nazi Economy (Allen Lane 2006)

Dr. William Roger Townshend, Axis Power: Could Nazi Germany and Imperial Japan have won World War Two? (Amazon Create Space 2012)

Spencer C. Tucker, *The Second World War* (Palgrave Macmillan 2004)

Hubert P. Van Tuyll, *Feeding the Bear: American Aid to the Soviet Union 1941-1945* (Praeger 1989)

Albert L. Weeks, *Russia's Life-Saver: Lend-Lease Aid to the U.S.S.R in World War II* (Lexington Books 2010)

Kenneth C. Weiler, *Why Normandy was Won: Operation Bagration and the War in the East 1941-1945* (Ostfront Publications 2010)

Werner Wolf, *Luftangriffe auf die deutsche Industrie: 1942-1945* (Universitas Verlag 1985)

Steven Zaloga and James Grandsen, *Soviet Tanks and Combat Vehicles of World War Two* (Arms and Armour Press 1984)

Die Wehrmachtsberichte 1939-1945: Band 1: 1. September 1939 bis 31. December 1941 (Gesellschaft für Literatur und Bildung mbH 1989)

Die Wehrmachtsberichte 1939-1945, Band 2, 1. Jänner 1942 bis 31. December 1943 (Gesellschaft für Literatur und Bildung mbH 1989)

Journal Articles

Michael Ellman (2000) *The 1947 Soviet famine and the entitlement approach to famines*, *Cambridge Journals of Economics*, 24, 603-630

Stanislav Griбанov (1998) *The Role of US Lend-Lease Aircraft in Russia in World War II*, *The Journal of Slavic Military Studies*, 11:1, 96-115

Alexander Hill (1974) *British Lend-Lease Aid and the Soviet War Effort: June 1941-June 1942*, *The Journal of Military History*, 71:3, 773-808

Alexander Hill (2009): *British Lend-Lease Tanks and the Battle of Moscow, November–December 1941 Revisited*, *The Journal of Slavic Military Studies*, 22:4 574-587

Alexander Hill (2012): *The Bear's New Wheels (and Tracks): US-Armored and Other Vehicles and Soviet Military Effectiveness during the Great Patriotic War in Words and Photographs*, *The Journal of Slavic Military Studies*, 25:2, 204-219

Alexander G. Lovelace (2014) *Amnesia: How Russian History Has Viewed Lend-Lease*, *The Journal of Slavic Military Studies*, 27:4, 591-605

Roger Munting (1984) *Soviet Food Supply and Allied Aid in the War, 1941-45*, *Soviet Studies*, 36: 4, 582-593

Phillips P. O'Brien (2000) East versus West in the defeat of Nazi Germany, *Journal of Strategic Studies*, 23:2, 89-113

Boris V. Sokolov (1994): The role of lend-lease in Soviet military efforts, 1941–1945, *The Journal of Slavic Military Studies*, 7:3, 567-586

Hans-Heinrich-Wilhelm, Die Prognosen der Abteilung Fremde Heere Ost 1942-1945 in *Schriftenreihe der Vierteljahreshefte für Zeitgeschichte Nummer 28, Zwei Legenden aus dem Dritten Reich* (Deutsche Verlags-Anstalt GmbH, 1974)

Internet Sources

Operation Sealion - summary of an exercise held at the Staff College, Sandhurst in 1974 (<http://mr-home.staff.shef.ac.uk/hobbies/seelowe.txt>) 21.5. 2015

Abstract

During World War II the Soviet Union received large amounts of aid from the Western World in form of supplies and military intervention, aid which was held in high regard by Soviet leaders throughout the war. However, after the end of the war, Soviet historiography minimized this aid, claiming that this help had been unimportant in the Soviet Union's victory over Nazi Germany.

This claim of exclusive Soviet victory was used to legitimize Stalin's rule and to whitewash all the mistakes and crimes of the Communist regime. This paper examines the claim made by Soviet historiography, by comparing the amount of received Western supplies to Soviet domestic production and the military effort invested by Germany into fighting the Western Allies and the Soviet Union. It comes to the conclusion that in both cases, Western aid was far more helpful than claimed by the Soviets. Overall Western deliveries supplied roughly 10% of the Soviet Union's resources, regarding certain materials the share was far higher, reaching between one third and half the wartime supply. In terms of military vehicles, Lend-Lease supply varied between 10% and several times the war time supply of Soviet industry. In military terms the Western Allies were engaging and destroying only a small part of German ground forces, however, they were responsible for the destruction of a majority of the Luftwaffe, and for major disruptions of German industry. Without this aid the Red Army would not have been able to perform as well as it did historically, tilting the balance in Germany's favour. Soviet claims about the irrelevance of Western aid can thus be dismissed as propaganda and inaccurate.

Zusammenfassung

Während des Zweiten Weltkrieges wurde die Sowjetunion von den westlichen Alliierten mit erheblichen Mengen an Kriegsmaterial versorgt. Diese Lieferungen wurden während des Krieges hinreichend gewürdigt, nach dem Sieg über Nazi-Deutschland jedoch von der sowjetischen Geschichtsschreibung als unerheblich eingestuft. Die offizielle Version des „Großen Vaterländischen Krieges“ verlautbarte, dass die Rote Armee den Krieg im Alleingang gewonnen hatte. Den Anstrengungen der westlichen Alliierten wurde höchstens eine unterstützende Rolle zugestanden. Diese Behauptung wurde dazu genutzt die Herrschaft Stalins und der Kommunistischen Partei zu legitimieren. Im Rahmen dieser Masterarbeit wird die Richtigkeit dieser Aussage untersucht. Zum einen wird die Qualität und Menge der

westlichen Lieferungen der sowjetischen Eigenproduktion gegenübergestellt, zum anderen der militärische und wirtschaftliche Aufwand welchen das Dritte Reich zur Bekämpfung der Sowjetunion und der Westalliierten verwendete verglichen. Die Arbeit kommt zu dem Schluss, dass der Beitrag der Westalliierten in beiden Fällen wesentlich umfangreicher war als von der sowjetischen Geschichtsschreibung dargestellt. Westliche Rohstofflieferungen halfen der sowjetischen Wirtschaft Engpässe und Versorgungsschwierigkeiten zu überwinden, während das gelieferte Kriegsmaterial die Schlagkraft der Roten Armee erhöhte. In militärischer Hinsicht bekämpften die Westalliierten nur einen geringen Teil der deutschen Landstreitkräfte, zerstörten jedoch einen Großteil der Luftwaffe und verursachten erhebliche Störungen in der deutschen Industrie. Ohne diese Unterstützung seitens der Amerikaner und Briten, wäre die Rote Armee in einer wesentlich schlechteren Position gewesen gegen die Wehrmacht zu bestehen. Die von der sowjetischen Geschichtsschreibung vertretene Position, wonach westliche Unterstützung für den Erfolg der Roten Armee unerheblich war, ist schlicht unhaltbar und entspricht nicht den historischen Tatsachen.

Lebenslauf

Name: Denis Havlat

Universität Wien:

2012 - 2015 Masterstudium Zeitgeschichte Universität Wien

2008 - 2012 Bachelorstudium Geschichte Universität Wien

2009 - 2013 Bachelorstudium Politikwissenschaften Universität Wien

2008 - 2009 Bachelorstudium Internationale Betriebswirtschaft Universität Wien

Ausbildung:

2003 - 2007 Bilinguales Oberstufenrealgymnasium des Schulvereines Komensky Wien,

1999 - 2003 Private bilinguale Sekundarschule des Schulvereines Komensky Wien

1995 - 1999 Private bilinguale Volksschule des Schulvereines Komensky Wien