

# Comparative Efficacy of the Extermination Methods in Auschwitz and Operation Reinhard

---

Xavier Roca (Universitat de Barcelona)

## Resum /Resumen/ Abstract

Un anàlisi de les estimacions sobre el número de víctimes en Auschwitz, Belzec, Chelmno, Majdanek, Sobibor i Treblinka refuta la suposada major eficàcia de mètodes d'extermini amb Zyklon-B.

Un análisis de las estimaciones sobre el número de víctimas en Auschwitz, Belzec, Chelmno, Majdanek, Sobibor y Treblinka refuta la spuesta mayor eficacia de métodos de exterminio con Zyklon-B.

An analysis of the estimates on the number of victims at Auschwitz, Belzec, Chelmno, Majdanek, Sobibor and Treblinka refutes the purportedly higher efficacy of extermination methods using Zyklon-B

## Paraules clau /Palabras clave /Key Words

Auschwitz, Treblinka, Víctimes, Zyklon-B

Auschwitz, Treblinka, Víctimas, Zyklon-B

Auschwitz, Treblinka, Victims, Zyklon-B

## Abbreviations

ARC	Aktion Reinhard Camps ( <a href="http://www.deathcamps.org/">http://www.deathcamps.org/</a> ).
Avalon	The Avalon Project. Documents in Law, History and Diplomacy, Yale Law School ( <a href="http://avalon.law.yale.edu/">http://avalon.law.yale.edu/</a> ).
HEART	Holocaust Education & Archive Research Team ( <a href="http://www.holocaustresearchproject.org/">http://www.holocaustresearchproject.org/</a> ).
JVL	Jewish Virtual Library ( <a href="http://www.jewishvirtuallibrary.org/">http://www.jewishvirtuallibrary.org/</a> ).
USHMM	United States Holocaust Memorial Museum ( <a href="http://www.ushmm.org/">http://www.ushmm.org/</a> ).
Yad Vashem	Yad Vashem, The Holocaust Martyrs' and Heroes' Remembrance Authority ( <a href="http://www.yadvashem.org/">http://www.yadvashem.org/</a> ).



### Operation Reinhard, Chelmno and Majdanek

This article shall examine the efficacy of the extermination methods used in the *Vernichtungslager*<sup>1</sup>. The Operation Reinhard<sup>2</sup> camps (Belzec, Sobibor and Treblinka) shall be considered along with Chelmno<sup>3</sup> and Majdanek<sup>4</sup>. The mass killings in these camps were carried out by gassing using carbon monoxide produced by diesel engines, in both permanent facilities (chambers) and mobile facilities (vans) and mass shooting. The killing capacity in the most murderous camps (Belzec and Treblinka) was far superior to the capacity for disposing of the corpses, which were buried in mass graves. At Belzec, such mass graves were subsequently dug up to burn the corpses, while at Treblinka tens of thousands of corpses burnt in pits and buried underwent a second cremation in pyres<sup>5</sup>, carried out by an expert<sup>6</sup>. Nevertheless, the figures prove that Belzec and Treblinka were more effective than the Zyklon-B techniques used in Auschwitz.

**TABLE 1.** Estimates on the number of victims in Belzec, Chelmno, Majdanek, Sobibor and Treblinka.

<i>Camp</i>	<i>Estimate</i>	<i>Source</i>
Belzec	2,500,000	Rudolf Reder <sup>7</sup>
Belzec	600,000	Yitzhak Arad <sup>8</sup>
Belzec	550,000	Raul Hilberg <sup>9</sup> <i>JVL</i> <sup>10</sup>
Belzec	434,000	Peter Witte and Stephen Tyas <sup>11</sup>

200

<sup>1</sup> Extermination camps.

<sup>2</sup> Operation Reinhard was code-named after Reinhard Heydrich (1904-1942), an *SS-Obergruppenführer* and head of the RSHA (*Reichssicherheitshauptamt*, Reich Security Main Office), which coordinated the Gestapo, the *Kripo* and the SD (*Sicherheitsdienst*). Heydrich was killed by Czech partisans on June 4, 1942 in Praga. There seems to be some confusion about the correct spelling of Heydrich's first name. It seems that Heydrich himself spelt the name with a final "t", which is not the usual form for a first name. Furthermore, the operation is sometimes referred to in documents as *Einsatz* and sometimes as *Aktion*, so that up to four different variations can be found. It is referred to as Operation Reinhard in this paper.

<sup>3</sup> Chelmno nad Neren (Polish) or Kulmhof an der Nehr (German), in the Warthegau or *Reichsgau* Wartheland, former Polish territory annexed by Germany.

<sup>4</sup> Officially, KL Lublin. Majdanek was the informal name given to the facility by the local population because it was close to the Majdan Tatarski quarter in the city of Lublin.

<sup>5</sup> Testimony of *SS-Oberscharführer* Heinrich Matthes about Treblinka, *JVL*, retrieved 22/IX/2008.

<sup>6</sup> Herbert Floss, *ARC*, retrieved 19/IX/2008. More details in Steiner, Jean-François, *Treblinka*, Paris, Arthème Fayard, 1966.

<sup>7</sup> Reder, Rudolf, "Belzec, with an introduction by M. M. Rubel", *Polin: Studies in Polish Jewry*, vol. 13, 2000.

<sup>8</sup> Arad, Yitzhak, *Belzec, Sobibor, Treblinka - The Operation Reinhard Camps*, Bloomington, Indiana University Press, 1987.

<sup>9</sup> Hilberg, Raul, *The Destruction of the European Jews*, Chicago, Quadrangle Books, 1961.

<sup>10</sup> *JVL*, retrieved 2/XI/2008.

<sup>11</sup> Witte, Peter and Tyas, Stephen, "A New Document on the Deportation and Murder of the Jews during the Einsatz Reinhard 1942", *Holocaust and Genocide Studies*, Vol. 15, No. 3, 2001.

Belzec	434,000	<i>USHMM</i> <sup>12</sup>
Belzec	434,000	<i>ARC</i> <sup>13</sup>
Chelmno	150,000	Raul Hilberg <sup>14</sup>
Chelmno	152,000	<i>ARC</i> <sup>15</sup>
Chelmno	210,000	<i>HEART</i> <sup>16</sup>
Chelmno	152,000	<i>USHMM</i> <sup>17</sup>
Chelmno	180,000 (Jews)	<i>HEART</i> <sup>18</sup>
Chelmno	175,000 235,000	Richard Rubenstein and John K. Roth <sup>19</sup>
Chelmno	320,000	Holocaust Memorial Committee <sup>20</sup>
Majdanek	1,700,000	Tribunal Especial <sup>21</sup>
Majdanek	1,500,000	Polish-Soviet Commission <sup>22</sup> <i>JVL</i> <sup>23</sup>
Majdanek	360,000	<i>Yad Vashem</i> <sup>24</sup>



<sup>12</sup> *USHMM*, retrieved 2/XI/2008.

<sup>13</sup> *ARC*, retrieved 2/XI/2008. Sources: Rozett, Robert and Spector, Shmuel (eds.), *Encyclopaedia of the Holocaust*, Facts on File, 2000; Arad, Yitzhak, *Belzec... op. cit.*; Reder, Rudolf, *Belzec*.

<sup>14</sup> Hilberg, Raul, *The Destruction... op. cit.*

<sup>15</sup> *ARC*, retrieved 2/XI/2008.

<sup>16</sup> *HEART*, retrieved 2/XI/2008.

<sup>17</sup> *USHMM*, retrieved 2/XI/2008.

<sup>18</sup> *HEART*, 2007, retrieved 4/XI/2008. The figure is taken from the memorial monument at the camp site.

<sup>19</sup> Rubenstein, Richard L. and Roth, John K., *Approaches to Auschwitz. The Holocaust and Its Legacy*, Revised Edition, Westminster John Knox Press, 2003.

<sup>20</sup> *Holocaust Memorial Committee* (<http://www.thmc.org/>), retrieved 4/XI/2008.

<sup>21</sup> Lublin Special Court, December 1944.

<sup>22</sup> Polish-Soviet Extraordinary Commission for the Investigation of the crimes committed by the Germans in Lublin, report of August 23, 1944.

<sup>23</sup> *JVL*, retrieved 2/XI/2008.

<sup>24</sup> *Yad Vashem*, retrieved 3/XI/2008. Sources: Rozett, Robert and Spector, Shmuel (eds.), *Encyclopaedia of the Holocaust*, New York, Facts on File, 2000.

Majdanek	95,000 130,000	<i>USHMM</i> <sup>25</sup>
Majdanek	120,000	<i>ARC</i> <sup>26</sup>
Majdanek	78,000	Tomasz Kranz <sup>27</sup>
Majdanek	50,000	Raul Hilberg <sup>28</sup>
Sobibor	250,000	<i>Yad Vashem</i> <sup>29</sup>
Sobibor	200,000	Raul Hilberg <sup>30</sup>
Treblinka	700,000 900,000	Robin O'Neil <sup>31</sup>
Treblinka	870,000	<i>Yad Vashem</i> <sup>32</sup>
Treblinka	780,000	Jacek Andrezej Mlynarczyk <sup>33</sup>
Treblinka	750,000	Raul Hilberg <sup>34</sup>
Treblinka	700,000	Helmut Krausnick <sup>35</sup>

## Belzec

202

The figure of 2,500,000 deaths put forth by Reder (who had previously mentioned the figure of three million when testifying before the Historical Jewish Commission of Krakow in 1945) seems impossible in view of more recent

<sup>25</sup> *USHMM*, retrieved 2/XI/2008. Between 80,000 and 110,000 victims in the main camp. From the total (considering the sub-camps), between 89,000 and 110,000 were Jews. Sources: Schwindt, Barbara, *Das Konzentrations- und Vernichtungslager Majdanek: Funktionswandel im Kontext der Endlösung*, Würzburg, Koenighausen & Neumann, 2005; Kranz, Tomasz, "Exterminacja Żydów na Majdanka i rola obozu w realizacji Akcji Reinhard", *Zeszyty Majdanka*, Vol. XXII, 2003; Rajca, Czeslaw, "Problem liczby ofiar obozie na Madanku", *Zeszyty Majdanka*, Vol. XIV, 1992.

<sup>26</sup> *ARC*, 2005, retrieved 2/XI/2008. Total death toll for Jews: 78,000.

<sup>27</sup> Kranz, Tomasz, "Ewidencja zgonów i śmiertelność więźniów KL Lublin", *Zeszyty Majdanka*, Vol. XXIII, 2005.

<sup>28</sup> Hilberg, Raul, *The Destruction... op. cit.*

<sup>29</sup> *Yad Vashem*, retrieved 3/XI/2008.

<sup>30</sup> Hilberg, Raul, *The Destruction... op. cit.*

<sup>31</sup> O'Neil, Robin, Belzec: Stepping Stone to Genocide; Hitler's answer to the Jewish Question, *JewishGen* (<http://www.jewishgen.org/>), retrieved 4/XI/2008.

<sup>32</sup> *Yad Vashem*, retrieved 3/XI/2008.

<sup>33</sup> Mlynarczyk, Jacek Andrezej, "Treblinka - ein Todeslager der "Aktion Reinhard", in Musial, Bogdan (ed.), *Aktion Reinhard" - Die Vernichtung der Juden im Generalgouvernement*, Osnabrück, 2004.

<sup>34</sup> Hilberg, Raul, *The Destruction... op. cit.*

<sup>35</sup> Testimony of Dr. Helmut Krausnick at the first Treblinka trial.

documentation (the Höfle telegram<sup>36</sup>) that tallies the total number of persons deported until the end of 1942 at 434,000.

In 1961, Hilberg estimated the number of victims to be 550,000, and Yitzhak Arad set a figure of no fewer than 600,000. Other sources talk about up to more than one million.

The gassings were halted in December 1942, although the camp was not dismantled until the spring of 1943. There was a hiatus in operations between April and May 1942.

Period of operation: from 17 March 1942 to December 1942.

Months: 10.

Estimate: 434,000.

### **Chelmno**

Rubenstein and Roth seem to be at the midpoint in the estimates. The crematoria were dismantled in September 1944.

Period of operation: from December 1941 to September 1944.

Months: 34.

Estimate: 200,000.

### **Majdanek**

This camp shows the widest range of figures, from the 50,000 cited by Hilberg to the 1,700,000 cited by the special tribunal in 1944. The figures from the latter and from the Extraordinary Commission seem to be the original source of the estimates near these amounts, which are still occasionally published (*JVL*, although it does not cite the source). However, the 1944 investigators can be accused of disproportionate extrapolations compared to the physical proof available at that time. The most recent study is the one by Kranz, which drastically reduces the figures published hitherto. The numbers from the Holocaust Education & Archive Research Team are based on Polish publications specialising in this field, and they include material from Kranz himself from 2003. The Höfle telegram calculates the number of persons deported until late 1942 at 24,000.

The camp was officially an internment centre for the SS's prisoners of war until April 1943.

The mass deportations of Jews began in April 1942, and the crematoria started operating in October 1942.

Period of operation: from October 1942 to July 1944.

Months: 34.

Estimate: 100,000.

---

<sup>36</sup> Document declassified in 2000, Public Record Office, Kew, Great Britain.



## Sobibor

The estimates of between 150,000 and 250,000 deaths provided by ARC and the Holocaust Education & Archive Research Team come from Yitzhak Arad. Hilberg had estimated the figure at 200,000.

The Höfle telegram states that 101,000 persons had been deported up to the end of 1942.

Sobibor ceased operating as an extermination camp after the uprising on 15 October 1943, although it was used as a labour camp by the *Baudienst* (Construction Service) until July 1944.

Period of operation: from April 1942 to October 1943.

Months: 19.

Estimate: 200,000.

## Treblinka

The estimates usually range from between 700,000 and 900,000 deaths as calculated at the Treblinka trials. Figures higher than one million tend to be based on testimony from the survivors, who were sometimes the witnesses and guests at the party held to celebrate the arrival of the one millionth prisoner, which was supposedly held far before the operations were shut down<sup>37</sup>. The Höfle telegram states that 713,000 prisoners had arrived by the end of 1942. A vast number of victims, especially during the period when Irmfried Eberl was the camp commander, were shot immediately upon arrival.<sup>38</sup>

There were around 20-50 German SS staff and 80-90 Ukrainian guards, for a total of between 100 and 140 men<sup>39</sup>. The proportion of guards to victims would have been between 1/7,800 and 1/5,570.

204

Treblinka stopped working as an extermination camp after the August 1943 uprising.

Period of operation: from July 1942 until August 1943.

Months: 14.

Estimate: 780,000.

If we organise these estimates on a table, we get the following:

---

<sup>37</sup> Donat, Alexander (ed.), *The Death Camp Treblinka: A Documentary*, New York, Schocken Books, 1979.

<sup>38</sup> "Testimony from the Memoirs of the Survivor Edi Weinstein on Arriving at Treblinka Railway Station", *Yad Vashem*, retrieved 12/V/2008. Also, in Arad, Yitzhak, *Belzec, Sobibor, Treblinka - The Operation Reinhard Camps*, Indiana University Press, 1987. A more detailed comparison of the operations in Auschwitz and Treblinka can be found in Roca Domingo, Xavier, "La lógica de la Solución Final. Una guerra moral", *Hispania Nova*, 8, 2008, pp. 107-142 (<http://hispanianova.rediris.es/>).

<sup>39</sup> ARC, retrieved 19/IX/2008. Kurt Franz, who had been the commandant of the Ukrainian guards in Belzec before he held the same post in Treblinka, stated that the staffing in both camps was the same; between 60 and 80 men.

TABLE 2

<i>Camp</i>	<i>Estimate</i>	<i>Months</i>	<i>Monthly average</i>
Belzec	434,000	10	43,400
Chelmno	200,000	34	5,882
Majdanek	100,000	24	4,166
Sobibor	200,000	19	10,526
Treblinka	780,000	14	55,714

### Auschwitz

The estimates on the number of deaths in the Auschwitz complex fluctuate considerably, ranging from several million initially to one million more recently. There is a trend among Eastern European researchers to posit higher figures than Western European sources. Table 3 reflects the estimated figures put forth by the most prominent researchers since 1956.

TABLE 3. Millions of deaths in the Auschwitz complex. Eighty-eight percent of the victims are believed to have been Jews.

<i>Source</i>	<i>Estimate</i>
L. Poliakov <sup>40</sup>	2.3
R. Hilberg <sup>41</sup>	1
G. Reitlinger <sup>42</sup>	0.8-0.9
J. Billig <sup>43</sup>	2
L. Dawidowicz <sup>44</sup>	1.1
D. Czech <sup>45</sup>	2.5-4

<sup>40</sup> Poliakov, Leon, *Harvest of Hate*, Syracuse, Syracuse University Press, 1956.

<sup>41</sup> Hilberg, Raul, *The Destruction... op. cit.*

<sup>42</sup> Reitlinger, Gerald, *The Final Solution: The Attempt to Exterminate the Jews of Europe, 1939-1945*, London, Vallentine, Mitchell & Co. Ltd, 1968.

<sup>43</sup> Billig, Joseph, *Les camps de concentration dans l'économie du Reich hitlerien*, Paris, Presses universitaires de France, 1973.

<sup>44</sup> Dawidowicz, Lucy, *The War Against the Jews*, New York, Bantam Books, 1979.

<sup>45</sup> Czech, Danuta, "Konzentrationslager Auschwitz Abriss der Geschichte", in *Auschwitz: Geschichte und Wirklichkeit des Konzentrationslagers*, Reinbeck, Rowohlt Verlag, 1980.





K. Dunin-Wasowicz <sup>46</sup>	2.5-4
G. Wellers <sup>47</sup>	1.6
A. Weiss <sup>48</sup>	1.5-3.5
F. Piper <sup>49</sup>	1.1
J. van Pelt and D. Dwork <sup>50</sup>	1 – 1.1
W. Sofsky <sup>51</sup>	1.1
W. Dlugoborski <sup>52</sup>	1.1 – 1.5

We should deduct the number of deaths from means other than Zyklon-B from the totals listed on Table 1; this includes Monowitz victims, those executed by the Katowice *Gestapo*<sup>53</sup>, deaths from illness<sup>54</sup>, victims of medical experiments and others. There is a tendency to argue that because these deaths (although unrelated to the Zyklon-B operations) did actually take place in Auschwitz, they should be counted as successful productivity. However, to count them as successful, the crematoria should have sufficed to eliminate the corpses. Killing without disposing of the bodies meant repeating the mistakes made in Treblinka, where murder itself had never been a problem, while cremations were the real bottleneck in the process. However, we know that outdoor graves were used to cremate the corpses in Auschwitz<sup>55</sup>. Sometimes the victims were murdered and burned at the same time, dragging women and children to the burning pits while still alive<sup>56</sup>. Clearly this kind of practice, even more horrible than the massive shootings in Treblinka, cannot be counted as proof of the superior efficacy of the system. The most elementary logic indicates that the ideal operation of the Zyklon-B system would entail incinerating as many corpses as people gassed, or killing as many people as

206

<sup>46</sup> Dunin-Wasowicz, Krzysztof, *Resistance in the Nazi Concentration Camps, 1933-1945*, Warsaw, PWN, 1982.

<sup>47</sup> Wellers, Georges, "Essai de détermination du nombre de morts au camp d'Auschwitz", *Le Monde Juif*, October-December 1983.

<sup>48</sup> Weiss, Aharon, "Categories of Camps, Their Character and Role in the Execution of the Final Solution of the Jewish Question", in *The Nazi Concentration Camps*, Jerusalem, Yad Vashem, 1984.

<sup>49</sup> Piper, Franciszek, "The Number of Victims", in *Anatomy of the Auschwitz Death Camp*, US Holocaust Memorial Museum and Indiana University Press, 1994.

<sup>50</sup> Pelt, Robert Jan van and Dwork, Deborah, *Auschwitz 1270 to the Present*, New York, W. W. Norton, 1996. Estimate for the period March 1942-November 1944.

<sup>51</sup> Sofsky, Wolfgang, *The Order of Terror: The Concentration Camps*, Princeton, Princeton University Press, 1997.

<sup>52</sup> Dlugoborski, Waclaw and Piper, Franciszek (eds.), *Auschwitz 1940-45. Central Issues in the History of the Camp*, Oswiecim, The Auschwitz-Birkenau State Museum, 2000.

<sup>53</sup> Höss, Rudolf, "Testimony", Nuremberg Trial Proceedings, Vol. 11, *Avalon*, retrieved 16/XI/2008.

<sup>54</sup> About 500,000 deaths, according to Höss. "Rudolf Höss", in Gellately, Robert (ed.), *The Nuremberg Interviews*, New York, Knopf, 2004, p. 305.

<sup>55</sup> *Ibidem*, p. 304. Also, "The Testimony of Mrs. Sidonia Mandel", in *Holocaust Testimonies* (<http://www.zchor.org/>), retrieved 5/I/2009, and 16 testimonies (K. E. et al., Munkács) in Protocol 254, *DEGOB*, retrieved 6/I/2009.

<sup>56</sup> I. M. and I. M. (Oroszvégy), Protocol 468; K. D. (Budapest), Protocol 701 and H. E. and H. I. (Ungvár), Protocol 2534, *DEGOB*, retrieved 22/XII/2008, all, and Piper, Franciszek, *Die Zahl... op. cit.*, p. 77. Also, in the testimony of Sidonia Mandel (previous note).



corpses can be cremated. If the cremation capacity is inferior to the killing capacity, the system collapses, in a repetition of the problem in Treblinka (killing is easy but disposing of the corpses is not). There is evidence that the different activities at Auschwitz, as a multipurpose camp (labour, extermination, agricultural experimentation<sup>57</sup>, site of organised executions not related to the camp, etc.), hindered each other. Quite accurately, Rudolf Höss complained that the extermination activities prevented the camp from operating effectively as a war industry. Equally accurately, we can deduce that the industrial activities hindered its success as an extermination camp. Because it fulfilled several functions at the same time, Auschwitz never reached full efficacy despite its high figures.

Nor can the deaths of prisoners being transferred from Auschwitz to other camps in the 1945 death marches be counted as victims of Zyklon-B. One famous case is Anne Frank, who is usually cited as having died in Auschwitz, although in reality she survived the march to Belsen and died there<sup>58</sup>. Indeed, all the deaths that took place after November 1944 were caused by means other than Zyklon-B, as by then the death chambers and crematoria had been destroyed. Furthermore, the crematoria in the main camp were often out of order as they were inadequate for the large-scale use they were given and instead pyres had to be used in Birkenau, near Bunker 1<sup>59</sup>.

If we move from the estimates of between 0.8 and 1.1 million victims cited by Western European sources (Hilberg, Reitlinger, Dawidowicz, Piper, Van Pelt and Dwork, Sofsky and Dlugoborski) to the figures of up to 4 million cited by Eastern European sources (Czech and Dunin-Wasowicz), we would have to pinpoint the number of deaths caused by gassing since assuming that 4 million people were gassed might be at odds with the lethal capacity of the amount of Zyklon-B available at the camp. Calculating the use of Zyklon-B in Auschwitz is extraordinarily complex. Some of the thorny issues include the fact that at least two different variations of this compound were supplied (with and without irritating agents), that the amount needed to kill 1,000 people is not clear (according to Pery Broad, 1 kg; according to Höss, 4 kg, and even more in humid weather (Affidavit NI-034), and that large amounts were actually used to deparasite the inmates. Focusing just on 1943, Robert Jan van Pelt concludes that most of the Zyklon-B supplied to Auschwitz was used for deparasiting, but that nonetheless the remaining amount would have been enough to kill between 750,000 and 1,500,000 people in 1943 alone.<sup>60</sup> Robert Jan van Pelt's calculations have been disputed by other authors,<sup>61</sup> but Van Pelt himself estimates the total number of victims at no more than 1.1 million, as the mere availability of enough gas (even if the calculations were accurate) does not necessarily demonstrate that it was used in gassings.

<sup>57</sup> Auschwitz had a department of agriculture that ran experimental farms under the supervision of SS-Obersturmführer Werner Jothann.

<sup>58</sup> Anne Frank Museum (<http://www.annefrank.org/>), retrieved 9/XI/2008.

<sup>59</sup> Several testimonies, for instance, in Greif, Gideon, *We Wept Without Tears. Testimonies of the Jewish Sonderkommando from Auschwitz*, New Haven, Yale University Press, 2005.

<sup>60</sup> Pelt, Robert Jan van, *The Case for Auschwitz. Evidence from the Irving Trial*, Bloomington, Indiana University Press, 2002, pp. 427-428.

<sup>61</sup> For a study that centres on chemistry and forensic analyses, see Green, Richard J., "The Chemistry of Auschwitz", version 1.8, last updated 1998, *HHP* (this article also accepts 1.1-1.5 million as total death toll); Markiewicz, Jan *et al.*, "A Study of the Cyanide Compounds Content In The Walls Of The Gas Chambers in the Former Auschwitz and Birkenau Concentration Camps", last updated 2000, in *HHP*, retrieved 9/XI/2008, both, and Green, Richard J. and McCarthy, Jamie, "Chemistry is Not the Science: Rudolf, Rhetoric, and Reduction", *HHP*, retrieved 16/XI/2008.



The period in which the gas chambers were in operation ranges, in theory and at most, from July 1940 (construction of the first gas chamber with its corresponding ovens) to November 1944 (when Himmler ordered the crematoria destroyed).

The most detailed studies on the garrison of the camp are the ones by Aleksander Lasik, who counted around 7,000 guards during the entire lifetime of the camp. At any given time, this figure ranged from between 700 men and women in 1941 to around 4,500 in 1945 (from 7 to 45 times the average staff in Treblinka)<sup>62</sup>. According to Höss, in December 1943 there were 3,500 guards and 500 administrative workers at Auschwitz<sup>63</sup>.

Period of operation: from July 1940 to November 1944 (maximum).

\*Months:

53: from when the first gas chamber was built in July 1940 to November 1944.

40: from the beginning of mass killings in September 1941 to November 1944<sup>64</sup>.

35: from January 1942 to November 1944 (if we consider the previous killings to be “experimental”).

Estimate: Between 1.1 and 1.5 million (1.5 is the maximum cited by most modern Western sources and the minimum cited by Weiss).

If we list the scenarios derived from these estimates in order, we get the following:

**TABLE 4**

<i>Camp</i>	<i>Estimate</i>	<i>Months</i>	<i>Monthly average</i>
Auschwitz	1,500,000	35	42,857
Auschwitz	1,100,000	35	31,428
Auschwitz	1,500,000	40	37,500
Auschwitz	1,100,000	40	27,500
Auschwitz	1,500,000	53	28,301
Auschwitz	1,100,000	53	20,754

208

## **Conclusions**

If we accept the already-high figure of 1.5 million for the total number of deaths

<sup>62</sup> Lasik, Aleksander, “Historical-Sociological Profile of the Auschwitz SS”, in Gutman, Israel and Berembaum, Michael (eds.), *Anatomy of the Auschwitz Death Camp*, Bloomington, Indiana University Press, 1998.

<sup>63</sup> “Rudolf Höss”, in Gellately, Robert (ed.), *The Nuremberg Interviews...* op. cit., p. 305.

<sup>64</sup> According to Höss, mass killings using gas began in the summer of 1941. Höss, Rudolf, “Testimony”, Nuremberg Trial Proceedings, Vol. 11, 15/IV/1946, *Avalon*, retrieved 21/XI/2008.

at Auschwitz over the course of 53 months (starting from the construction of the first gas chamber), the monthly average would be 28,301 deaths, compared to almost twice that at Treblinka and more than 43,000 at Belzec. Consequently, even assuming that all the deaths in Auschwitz were due to gassing and that all the victims there underwent the entire deportation-selection-gassing-cremation process, which would have been impossible, the Zyklon-B system does not appear to be more effective than the systems used before it in the Operation Reinhard camps.

If we consider the period between the first mass gassings in September 1941 and the end of operations in November 1944, it is reduced to 40 months and the monthly average would be 37,500, still far below the moderate estimate for Treblinka of 55,714 and the estimate for Belzec. In fact, even if we take January 1942 as the starting date of the process, as the previous deaths using gas can be regarded as experimental, the period would be 35 months and the monthly average would be 42,857 victims, once again lower than the averages at Treblinka and Belzec. Consequently, even assuming that all the deaths in Auschwitz were due to gassing, that all the victims underwent the entire deportation-selection-gassing-cremation process and that all the victims were killed in the respective periods of 35 or 40 months, all of which would have been impossible, the Zyklon-B system does not appear to be more effective than the systems used before it in the Operation Reinhard camps.

Naturally, if we start with the figure of 1,100,000 deaths, the monthly averages are even lower, as can be seen in the table below:

TABLE 5

Treblinka	780,000	14	55,714
Belzec	434,000	10	43,400
Auschwitz	1,500,000	35	42,857
Auschwitz	1,500,000	40	37,500
Auschwitz	1,100,000	35	31,428
Auschwitz	1,500,000	53	28,301
Auschwitz	1,100,000	40	27,500
Auschwitz	1,100,000	53	20,754

In order to consider Zyklon-B more effective than the systems used in Treblinka, Auschwitz would have to be assigned 2,957,000 deaths solely from gassings in 53 months, 2,232,000 in 40 months or 1,953,000 in 35 months. This would entail raising the total death toll, that is, including the deaths in other periods and the ones attributed to causes other than gas, to numbers that cannot be found in modern Western sources. This means that the justification for the system at Auschwitz, and in particular for the use of Zyklon-B technology by the masterminds of the Final Solution, cannot be sought in



more effective killings.

If we consider the staff needed and the proportion of staff to victims, which we established above at between 1/7,800 and 1/5,570 for Treblinka (impossible for Auschwitz regardless of how the figures are manipulated), we reach the conclusion that Auschwitz was neither more effective nor more efficient than Treblinka or Belzec.

It would also be necessary to consider the proportion of Jews among the victims. There are no reasons for assuming that this proportion was higher in Auschwitz than in Treblinka or Belzec, rather the contrary, meaning that Auschwitz's efficacy as a centre for exterminating Jews could be even lower.

Even if we assume that 1.5 million people were killed in Auschwitz and that all of them were treated according to plan, Auschwitz did not kill more or faster than Treblinka or Belzec. In reality, Zyklon-B technology was not more effective, rather it was perhaps simply more abstract, impersonal, aseptic and psychologically bearable by the perpetrators.

### **Works and Testimonies Cited**

Arad, Yitzhak, *Belzec, Sobibor, Treblinka - The Operation Reinhard Camps*, Bloomington, Indiana University Press, 1987.

Billig, Joseph, «Les camps de concentration dans l'économie du Reich hitlerien», Paris, Presses universitaires de France, 1973.

Czech, Danuta, "Konzentrationslager Auschwitz Abriss der Geschichte", in Czech, Danuta *et al.*, *Auschwitz: Geschichte und Wirklichkeit des Konzentrationslagers*, Reinbeck bei Hamburg, Rowohlt Verlag, 1980.

210

Dawidowicz, Lucy, *The War Against the Jews*, New York, Bantam Books, 1976 (1975).

Długoborski, Waclaw and Piper, Franciszek (eds.), *Auschwitz 1940-45. Central Issues in the History of the Camp* (5 vols.), Oswiecim, The Auschwitz-Birkenau State Museum, 2000.

Donat, Alexander (ed.), *The Death Camp Treblinka: A Documentary*, New York, Holocaust Library/Schocken Books, 1979.

Dunin-Wasowicz, Krzysztof, *Resistance in the Nazi Concentration Camps, 1933-1945*, Warsaw, PWN/Ars Polonia, 1982.

Gellately, Robert (ed.), *The Nuremberg Interviews. Conducted by Leon Goldensohn*, New York, Alfred A. Knopf, 2005 (2004).

Green, Richard J., "The Chemistry of Auschwitz", version 1.8, last updated 1998, *HHP*.

Green, Richard J. and McCarthy, Jamie, "Chemistry is Not the Science: Rudolf, Rhetoric, and Reduction", *HHP*.

Greif, Gideon, *We Wept Without Tears. Testimonies of the Jewish Sonderkommando from Auschwitz*, New Haven, Yale University Press, 2005.

H. E. and H. I. (Ungvár), Protocol 2534, *DEGOB*.

Hilberg, Raul, *The Destruction of the European Jews*, Chicago, Quadrangle Books, 1961.

Höss, Rudolf, “Rudolf Höss”, 9/IV/1946, in Gellately, Robert (ed.), *The Nuremberg Interviews. Conducted by Leon Goldensohn*, New York, Alfred A. Knopf, 2005 (2004).

Höss, Rudolf, “Testimony”, Nuremberg Trial Proceedings, Vol. 11, 15/IV/1946, *Avalon*.

I. M. and I. M. (Oroszveg), Protocol 468, *DEGOB*.

K. D. (Budapest), Protocol 701, *DEGOB*.

K. E. *et al.* (Munkács), Protocol 254, *DEGOB*.

Kranz, Tomasz, “Exterminacja Żydów na Majdanku i rola obozu w realizacji Akcji Reinhard”, *Zeszyty Majdanka*, Vol. XXII, 2003, pp. 7-55.

Kranz, Tomasz, “Ewidencja zgonów i śmiertelność więźniów KL Lublin”, *Zeszyty Majdanka*, Vol. XXIII, 2005, pp. 7-53.

Lasik, Aleksander, “Historical-Sociological Profile of the Auschwitz SS”, in Gutman, Israel and Berenbaum, Michael (eds.), *Anatomy of the Auschwitz Death Camp*, Bloomington, Indiana University Press, 1998.

Mandel, Sidonia, “The Testimony of Mrs. Sidonia Mandel”, *Holocaust Testimonies* (<http://www.zchor.org/>).

Markiewicz, Jan, Gubala, Wojciech, Labedz, Jerzy, “A Study of the Cyanide Compounds Content In The Walls Of The Gas Chambers in the Former Auschwitz and Birkenau Concentration Camps”, last updated 2000, *HHP*.

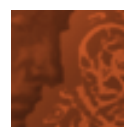
Młynarczyk, Jacek Andrezej, “Treblinka - ein Todeslager der “Aktion Reinhard”, in Musiał, Bogdan (ed.), “Aktion Reinhard” - *Die Vernichtung der Juden im Generalgouvernement*, Osnabrück, 2004.

O’Neil, Robin, Belzec: “Stepping Stone to Genocide; Hitler’s answer to the Jewish Question”, *JewishGen* (<http://www.jewishgen.org/>).

Pelt, Robert Jan van and Dwork, Debórah, *Auschwitz 1270 to the Present*, New York, W. W. Norton, 1996.

Pelt, Robert Jan van, *The Case for Auschwitz. Evidence from the Irving Trial*, Bloomington, Indiana University Press, 2002.

Piper, Franciszek, *Die Zahl der Opfer von Auschwitz-Birkenau. Aufgrund der Quellen und der Erträge der Forschung 1945 bis 1993*, Oswiecim, Verlag Staatliches Museum Auschwitz-Birkenau, 1993.



Piper, Franciszek, "The Number of Victims", in *Anatomy of the Auschwitz Death Camp*, US Holocaust Memorial Museum and Indiana University Press, 1994.

Poliakov, Leon, *Harvest of Hate*, Syracuse, Syracuse University Press, 1954.

Rajca, Czeslaw, "Problem liczby ofiar obozie na Madanku", *Zeszyty Majdanka*, Vol. XIV, 1992, p. 129.

Reder, Rudolf, "Belzec, with an introduction by M. M. Rubel", *Polin: Studies in Polish Jewry*, vol. 13, 2000.

Rubenstein, Richard L. and Roth, John K., *Approaches to Auschwitz. The Holocaust and Its Legacy*, 2<sup>nd</sup> ed., Louisville, Westminster John Knox Press, 2003.

Reitlinger, Gerald, *The Final Solution: The Attempt to Exterminate the Jews of Europe, 1939-1945*, 2<sup>nd</sup> ed., London, Vallentine, Mitchell & Co. Ltd, 1968 (1953).

Rozett, Robert and Spector, Shmuel (eds.), *Encyclopedia of the Holocaust*, New York, Facts on File, 2000.

Schwindt, Barbara, *Das Konzentrations- und Vernichtungslager Majdanek: Funktionswandel im Kontext der Endlösung*, Würzburg, Koenighausen & Neumann, 2005.

Sofsky, Wolfgang, *The Order of Terror: The Concentration Camp*, Princeton, Princeton University Press, 1999 (1993).

Steiner, Jean-François, *Treblinka*, Paris, Arthème Fayard, 1966.

212

Weinstein, Edi, "Testimony from the Memoirs of the Survivor Edi Weinstein on Arriving at Treblinka Railway Station", *Yad Vashem*.

Weiss, Aharon, "Categories of Camps, Their Character and Role in the Execution of the Final Solution of the Jewish Question", in *The Nazi Concentration Camps, Proceedings of the fourth Yad Vashem International Historical Conference*, Jerusalem, Yad Vashem, 1984.

Wellers, Georges, "Essai de détermination du nombre de morts au camp d'Auschwitz", *Le Monde Juif*, Oct-Dec 1983, pp. 127-159.

Witte, Peter and Tyas, Stephen, "A New Document on the Deportation and Murder of the Jews during the Einsatz Reinhard 1942", *Holocaust and Genocide Studies*, Vol. 15, No. 3, 2001, pp. 468-486.

