Calculation of the Jewish death toll in the Second World War

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Abstract: Based on demographic calculations the article presents the following arguments: Jewish deaths in Auschwitz were only the registered deaths of some 60,000; not all sent to Chełmno died; Hungarian Jews are not missing, the missing ones came to Displaced Person camps after 1946; 200,000 Galician had emigrated to France from Eastern Poland before 1939; the figure for the Ukraine Jews in 1939 is one million too high because Galician Jews were counted twice; due to these two errors summing to 1.2 million, the Jewish death toll is 1.2 million smaller than the figure 4.5 million that follows from the data in American Jewish Yearbooks; this death toll is most probably still too large as up to one million of Jews sent to the three Operation Reinhardt camps may have survived; the Jewish death toll may be as low as 2.2 million and certainly at most 3.2 million.

1. Introduction

This article presents my calculation of the Jewish death toll in the Holocaust. The main sources are the American Jewish Yearbooks (AJY) for 1939-40 and 1948-49, complemented by information from concentration camp websites and accepted historical sources. The sources are the same as those used by Holocaust researchers, who for some unknown reason have came to different conclusions from the same data. All arguments in this article are simple calculations, adding and subtracting numbers. They can be easily checked and there seems to be no error, intentional or unintentional, in these calculations. Clearly, adding and subtraction of numbers from accepted sources cannot be against any laws in any country, and the results are what mathematics gives.

2. An upper bound 0.45 million to Jewish deaths in Auschwitz

In 1939 Poland was divided into German and Soviet parts. Let us call them West-Poland and East-Poland. The present eastern border of Poland is rather close to the eastern border of West-Poland. Auschwitz is in West-Poland. A large fraction of the Jews of Western and Central European countries were sent to West-Poland. Very few were sent directly to East-Poland or further east. Thus, calculating how many Jews could have been in West-Poland and subtracting survivors and those who died in other places we get an upper bound for the Jewish death toll in Auschwitz.

The argument is very simple:

1) There were 1.84 million Jews in West Poland after some Jews had escaped to East-Poland when Germany attacked in 1939. Nazis transported 1.126-1.2 million Jews to West Poland. There were some small transfers from West Poland to East and from East (Ukraine, White Russia, Baltic countries) to West Poland: they increased the Jewish population of West Poland by 60,000. Thus, there could have been 3.03 million Jews in West-Poland.

2) Estimated 1.48 million Jews were transported to the three Operation Reinhardt camps (Treblinka, Sobibór, Bełżec) and c. 0.15 million were taken to Chełmno.

3) I calculated estimates for Jews who died in the West or West-Poland: in Majdanek, work camps and ghettos in Poland, concentration camps in Germany and Theresienstadt, in the German attack of 1939 or in POW camps and in Warsaw ghetto uprising. Some were easy to obtain, like and that in Theresienstadt died 33,000 Jews, some I had to estimate as Jews and non-Jews were not separated in the data. I used Wikipedia and pages of individual concentration camps. The result was: Majdanek (official estimate 59,000), work camps and ghettos in Poland (at least 165,000), concentration camps in Germany+Austria (about 160,000), in Theresienstadt (33,000), Jews who died in the German attack

of 1939 or in POW camps (about 30,000), and the Jews who died in Warsaw ghetto uprising (7000). The sum of these figures is 59,000+165,000+160,000+33,000+30,000+7,000=454,000.

4) Thus, from 3.03 million we subtract 1.48+0.15+0.454=2.084 million as dead, or transported to death camps and presumed dead. 3.03-2.084=0.946 million are left. It must include Jews who died in Auschwitz and Jews of the West, who were transported by Nazis and survived, and Jews of West-Poland who survived.

5) After the war there were survivors in the West, who were taken to camps by Nazis, and in West-Poland, whether taken to camps by Nazis or not. 88,000 Jews managed to hide in West-Poland and were not taken to camps. In addition to them, at least 0.41 million Jews of West and West-Poland survived German concentration camps in various countries, or were Jews from West-Poland who managed to hide in addition to the 88,000. Thus, at least 0.498 Jews survived.

6) This means that the upper bound to Jewish deaths in Auschwitz is about 0.946-0.498=448,000. This is an upper bound, not the best estimate, but it clearly shows that the official death toll in Auschwitz, 1-1.5 million and mostly Jews, must be wrong.

There is a lower bound to the deaths in Auschwitz from the Death Books of Auschwitz. As these records are not complete, it is common to assume that the death toll of registered prisoners in Auschwitz-Birkenau-Monowitz is about 120,000 and half of them were Jews. Thus, the lower bound can be taken as 60,000.

The difference 388,000 between 60,000 and 448,000 seems to be mostly created by Hungarian Jews. 424,000 Hungarian Jews were transported, mainly to Auschwitz in 1944-45. At that time Operation Reinhardt camps were no longer operating. These Jews could not have been taken to Operation Reinhardt camps. 100,000 Hungarian Jews were taken to forced work and 40,000 of them survived. The fate of the rest, 324,000 is not known. They are presumed to have been gassed and burned in Auschwitz.

I have tried to include and correctly estimate all major components of the Jewish death toll in the West and West-Poland. The East is more difficult to estimate because AJY population estimates for the Soviet Union and Romania are very uncertain. For the official death toll estimate for Auschwitz: 1.-1.5 million mostly Jews, I refer to the tablet in Birkenau.

1.1. There were 3.03 million Jews in West-Poland:
The population of different ethnic and religious groups in different parts of Poland in 1931 is known from the Polish census of 1932 and we can estimate that in 1939, after some Jews escaped to the area occupied by the Soviets, there were about 1.84 million Jews in West-Poland and about 1.41 million Jews in the East-Poland. The estimate depends on the assumed population growth and can have an error of about 0.1 million. It could be smaller if Jews emigrated from Poland, but for West-Poland the estimate seems fairly accurate. The number of Jews who were transported by Nazis from Western and Central Europe and could have been taken to West-Poland is known, it is around 1.126 million. It could be 1.2 million, but not much more. There were some direct transports from West-Poland to east (East-Poland, Baltic, Belarusian) and from east to West-Poland. I calculated the difference of these transports and 60,000 more were transported to West-Poland than were taken by these direct transports from West-Poland to east. This gives c. 3 million: 1.84+1.126+0.06=3.026 million. The component figures are calculated in 1.1.1, 1.1.2 and 1.1.3. I use 3.03 million as the value in the calculation, but notice that the precision of the calculation is about one hundred thousand, not ten thousand.

1.1.1 The estimate that in 1939 there were 1.84 million Jews in West-Poland:
The figure of 1.84 million Jews in West-Poland in 1939 cannot be much in error. The Jewish population in Poland in 1939 was 3.25 million according to AJY 1948–49. Estimates range between 3.2 and 3.3 million. In 1931 21.8 million Poles lived in the area captured by Germany in 1939 and 13.2 million lived in the area taken by Soviets by the Polish census of 1932. By mother's tongue there

were 8.5% Jews in the whole Poland in 1931, and in areas captured by Soviet Union in 1939 there were 8.4% Jews by mother's tongue. By religion there were 8.89% Jews in Poland in 1931. Calculating from these we conclude that by religion in the Soviet occupied area were 8.79% Jews in 1931, i.e., 1.16 million. Thus, in West-Poland in 1931 lived 1.954 million Jews. In 1939 the numbers had risen to 1.21 million and 2.039 million. But when Germany attacked in 1939, 336.000 Polish people escaped to East-Poland. Of them 198.000 were Jews. These refuges were taken to Siberia and only a small number of them survived. So, there were 2.039–0.198=1.841 million Jews in West-Poland. This number cannot have a large error. The only way that a large error could appear is that Jews from West-Poland emigrated in large numbers. This does not seem to be the case: emigration form Poland was from East-Poland, Galicia.

1.1.2 About 1.2 million were transported by Nazis from Western and Central Europe outside Poland and could have been taken to West-Poland:

My estimate is precisely 1.126 million transported by Nazis from Western and Central Europe outside Poland and who could end up to West-Poland. This estimate may have some error, but the error is small. The American Jewish Year Book 1938-39 gives the following Jewish populations: Belgium (60,000), Bulgaria (48,565), Czechoslovakia (356,830), Danzig (10,448), Denmark (5,690), France (240,000), Germany (691,163), Greece (72,791), Hungary (444,567), Italy (57,425), Yugoslavia (68,405), Netherlands (156,817), Norway (1,359) and Luxemburg (2400). Austria is merged into Germany in these figures. These figures sum to 2.216 million. The figure for Germany after annexing Austria is given as 691,163, but it decreased much before 1941 because these Jews emigrated (mainly) to South America. Emigration of Jews from Germany and Austria was an intentional policy of Hitler and strongly encouraged by the Third Reich before 1941. I will use the figure 300,000 for Germany and Austria from the 1939 estimate of the American Jewish Year Book for 1948-49 given on Table 6 on the page 697. Thus, the estimate for Jews in these countries was 1.83 million in 1941. From these countries Jews were transported to camps and eventually to West-Poland. How many Jews from West were taken to Poland (=West-Poland)? I found the following information:

Country	Quota	Transported to Poland	Left in place
Belgium	60,000	less than half	30,000
Bulgaria	48,565	none	48,565
Czechoslovakia	356,830 divided (Germany, Hungary, Slovakia)		
- Slovakia	90,000	90,000	-
Danzig	10,448	10,448	-
Denmark	5,690	none to Poland, 500 elsewhere	5,690
France	240,000	about a third	160,000
Germany	691,163->333,892	about 320,000	14,000
Greece	72,791	about 70,000	-
Hungary	444,565->592,000	over 400,000	192,000
Italy	57,425	8000	49,425
Yugoslavia	68,405	none, 58,000 killed in place	10,000
Netherlands	156,817	about three fourths	39,000
Norway	1,359	800 (900 to Sweden)	900

(Notice that Hungary gained some area during the war and got 147,000 Romanian Jews.)

From this we can get a rough estimate of transports to Poland:

Country	Transported to Poland
Belgium	30,000
Slovakia	90,000
Danzig	10,448
France	80,000
Germany	320,000
Greece	70,000
Hungary	400,000
Italy	8000
Netherlands	117,200

Norway	800
sum=	1,126,000

As there were 1.83 million Jews in the West excluding Poland and 1.126 million were transported and some 58,000 killed in Yugoslavia, then 0.646 million survived in Western Europe under German rule excluding Poland. However, the estimate is rather imprecise because of the expressions "less than half" etc. Summing the figures in the American Jewish Year Book for 1948-49, Table 1 on page 693 gives the figure for European Jews as 831,500 in the areas occupied by Germans outside the Soviet Union, Romania and Poland. Many Jews returned home from DP camps or abroad after the war or escaped from East. This can be around 831,500-646,000=185,500 people. The figure 1.126 million is not precise, but not much wrong either. The sum how many Jews were left to these countries after transports by Nazis is 0.55 million according to the table above. It is a bit smaller than we get from AJY figures (0.653 million), but similar.

There is a study that confirms my estimates. Wikipedia refers (or referred in its Holocaust page when I checked it) to a study of Dawidowicz (1975). Summing his numbers from the Wikipedia gives 1,153,942 dead for the mentioned countries. The figure includes those shot in Yugoslavia. When they are subtracted (60,00), the figure is 1,127,942, not essentially different from 1.126 million in my calculation. Dawidowicz also estimates the Jewish population of West-Poland as 1.857 million versus my estimate 1.84 million. The highest estimate to the number of Jews who may have been transported to Poland that I found is 1.2 million. Thus, both numbers 1.84 million and 1.126 million are quite good estimates.

1.1.3 Estimate that 60,000 were transported from east to West-Poland:
There were transports to Bełżec of 87,000 Jews from East from the following Galician ghettos (in East-Poland) and camps: Lwów ghetto (about 45,000), Stanisławów ghetto (about 10,000), Tarnopol ghetto (about 10,000), Kołomyjasta camp (18,000) and Czortkowista camp (4,000), to Treblinkaan from Bialystok ghetto 10,600, from Białystok ghetto also 8.600 to Majdanekin and Theresiastadtin ghetto, to Sobibór 13,000 from Minsk, Lida and Vilno. In total from East to West were transported 119,000 Jews. From West to East were transported small amounts. There were two transports to Minsk: end of 1941 8,000 and May 1942 26,000. There were transports to Riga October 1941 - April 1942 25,000. From these we get West-to-East transports as 59,000. Netto-total is 119,000–59,000=60,000. This number is also well motivated. It could be a bit different, but the number is small and has almost no effect to the total death toll.

1.2. The numbers of Jews sent to the death camps Treblinka, Sobibór, Bełżec together as 1.48 million and Chełmno 0.15 million:
The following estimates are from the Wikipedia: Treblinka (700,000-900,000), Sobibór (200,000-350,000), Bełżec (430,000- 600,000). The range of these numbers is 1.33-1.85 million. The Hölfe telegram and the Korherr report give the figure 1,274,166 as sent to these camps 31 December 1942. Therefore the lower bound of 1.33 million is too low. There is a better estimate for Treblinka, 781,000, by the Polish examining magistrate. This rises the lower bound to 1.41 million. I do not think taking the lower bound is fully realistic, thus I selected in my calculations 1.48 million Jews sent to Treblinka, Sobibór and Bełżec as the best guess. In the calculation of the upper bound for the Auschwitz death toll I use 1.48 million. It is at most 0.07 million too high and probably not at all too high. From the Łódź ghetto to Chełmno were sent 75,000 Jews during 1940-42 were sent and over 25,000 during 1943-45. These give the lower bound 0.1 million. Adding transports to Chełmno from other ghettos and camps in Poland the sum rises to 0.18 million, but there is some uncertainty in certain figures. I consider 0.15 million as a well-justified best guess of Jews sent to Chełmno.

1.3. Other deaths and survivors
These numbers I calculated from various sources.

1.3.1   88,000 Jews managed to hide in West-Poland: this is from the American Jewish Yearbook. These Jews were in West-Poland in 1946 and were not a part of the 410,000 concentration camp survivors in 1.3.8.

1.3.2   33,000 Jews died in Theresienstadt: from the camp pages and the Wikipedia.

1.3.3 At least 59,000 Jews died in Majdanek: this is the official 2005 estimate by Thomas Kranz.

1.3.4 At least 7,000 Jews died in the Warsaw ghetto uprising: The Wikipedia gives the death toll as 13,000. I found 7,000 from another page and as it is smaller, I always selected the smallest figure so that the Auschwitz death toll can be as high as possible.

1.3.5 Minimum 165,000 Jews died in ghettos and work camps in Poland:
Deaths in ghettos and work camps in Poland, excluding Majdanek: Warsaw ghetto (76,000) before the uprising, Łódź ghetto (43,800), Tarnow (10,000), Stanisławów (about 10,000), Kielce (6,000), Stryj (4,000-12,000), Tomazów Mazowiecki (4,000), Sieniawa (3,000), Pietrków Trybunalski (3,000), Zagórów (2,000-2,500), Minsk Mazowicki (1,300), Nowy Zmigrow (1,300) and Góra Kalvaria (300). The total is 165,000-173,000 Jews. I select the lower bound 0.165 million in order to get as high an upper bound to Auschwitz as possible. Some of these camps are in East-Poland, but these Jews came from the West as Jews were moved to the East. The original East-Polish Jews either escaped or died or were sent to Operation Reinhardt camps in the transports from East to West, included in 1.1.3.

1.3.6 About 160,000 Jews died in concentration camps in Germany:
In German camps died some 560.000 inmates, but not all were Jews. This figure I calculated as: Bergen-Belsen 0.05 million, Buchenwaldt 0.056, Ravensbruk 0.05, Mauthausen about 0.12 (this is the low estimate, mostly non-Jews), Flossenberg 0.03, Dachau 0.032, Gross-Rosen 0.04, Stutthof 0.064, Sachenhausen 0.03, Neuengammen 0.043, Natzweiler 0.022, Mittelbau 0.02. These all sum to 0.557 million. How many were Jews? It is difficult to say. One third maybe, that would be 190,000. We can get a lower bound by summing some camps: Bergen-Belsen was mainly Jews, so 50,000, Ravenbruck 10,000, Buchenwald 11,000, Stutthof 28,000, Sachenhausen 1,500, Gross-Rosen 40,000. These make 150,000. As a compromise, I chose 160,000. Here we have some source of error, but it cannot explain a 0.5 million gap between the official Auschwitz death toll estimate and my estimate.

1.3.7 About 30,000 Jews died in the German attack of 1939:
I estimate that the German attack 1939 and following terror caused about 50,000 Jewish dead. In the 1939 German attack died 66,000 Polish soldiers and 150,000–200,000 civilians. In the German terror were killed 61,000 civilians. In German POW camps died 120,000 Polish soldiers. In Soviet POW camps died 130,000 Polish soldiers (as the West Poland was larger, half of these probably were from West Poland). Of Poland's population 8.89% were Jews by religion. There was a general conscript service, also for Jews: unlike what happened in 1920, in 1939 Jews were not interned to camps because of doubts of their loyalty. Estimating from these numbers, some 40,000-50,000 Jews died in 1939 attack, terror or POW camps, most from West-Poland, since civilian losses from the German attack were in West-Poland. Jews, who were taken as POWs, were in POW camps and not taken to civilian concentration camps. At least this was the case in Northern Finland: Germans kept Jewish POWs in POW camps as a separate group. They were not shipped to the Continent to concentration camps. The figure could be a bit smaller, so I set 30,000 as a lower bound.

1.3.8 About 410,000 Jews of the West and West Poland were taken to concentration camps and survived, or were Jews from West-Poland, who managed to hide in addition to 88,000:
Summing the camp inmates liberated by the US and the UK gives about 190,000. Of them maybe a third were Jews. The Soviet Union liberated maybe 60,000 camp inmates. In total, the sum of liberated camp inmates from large camps is about 250,000 and maybe 1/3 (=83,000) of them were Jews, but this is only the large camps and inmates who stayed in the camps. The total sum of Jews, who were taken to camps from the West and West Poland and survived alive is larger. There were some 1,200 camps and subcamps and all survivors are not in the figure of 250,000 liberated. Many probably escaped in

some way in death marches or were left behind. In order to estimate the number of camp survivors, I give two calculations A) and B). To DP-camps came Jews, who were transported by Nazis, or Jews of West-Poland, who had been hiding and did not return home immediately as the 88,000. Jews hiding in other countries are in the population figures of 1984 as they were not transported. Only with West-Polish Jews there are also Jews, who were hiding, as we did not calculate how many Jews Nazis captured in West-Poland but used the total number of Jews.

A) From AJY vol 50 (1948/49) statistics Table 13, p. 708, we get 90,566 Jews on DP camps in Germany, Austria and Italy at the end of 1945. From Table 14, p. 709, we get 230,000-235,000 displaced Jews in other countries (removing Romania). From Tables 6 (p. 697) we conclude that 350,000 (West) Polish Jews survived (East-Polish Jews were Soviet Jews after the war), i.e., 3.25-2.9=0.35 million. Of them 88,000 were in Poland in 1945 (Table 1, p. 693) and 180,000 were in the area of (West) Poland occupied by the Soviet Union (Table 14). There must have been 350,000-88,000-180,000=82,000 additional West-Polish Jewish survivors, who were in camps or hiding. The total sum of survivors is thus 90,500+235,000+82,000=407,500. I round it to 410,000.

B) Another way to calculate this number is as follows. From AJY 1939-40 in the countries (Belgium, Bulgaria, Czechoslovakia, Danzig, Denmark, France, Germany, Greece, Hungary, Italy, Yugoslavia, Holland, Luxembourg ja Norway) were 1.83 million Jews. From AJY 1948-49 there were 0.831 million Jews in these countries after the war. In Jugoslavia died 0.058 million. Thus, 0.941 million are missing. From these countries Nazis transported 1.126 million. Thus, 1.126-0.94=0.185 Jews sent to camps from these countries survived the war, see 1.1.2. In total 0.3 million Jews from Poland survived the war and came to the West. These are Jews from West Poland as Jews of East-Poland were Ukrainian Jews after the war and not let out of the Soviet Union. According to AJY 1948-49, 0.088 million Jews of (West) Poland managed to hide from Nazis. Thus, 0.3-0.088=0.21 million Jews of West Poland survived the camps. Together 0.185+0.21=0.415 million. I round it to 0.41 million.

1.4 Conclusions:

The sum of survivors and dead should equal the number of Jews who were in Nazi hands in West or hiding in West-Poland. At least, not more can die and survive than there originally were. We do not need to look at the East where the data is not so precise. It is enough to look at Western and Central Europe, where the data is quite good. So, please, look at the numbers and find some place where there could be 0.5 million additional deaths in Auschwitz. There is no such place. Therefore the official account of the death toll 1-1.5 million and mostly Jews in Auschwitz is false: the upper bound of Jewish deaths is less than half a million. This upper bound is not the best estimate because it turns out in the next section that there were more survivors. They are not any crypto-Jews that are unknown, but Jews, who came to Displaced Persons (DP) -camps after 1946. We find more survivors simply by looking at emigration from Europe. These survivors can be found from the statistics and most of them moved to Israel.

2. The actual number of Jewish deaths in Auschwitz

We start by calculating how many Jews there were in Europe in 1939 (8.89 million) and in 1946 (4.4 million). The difference gives the death toll of 4.4 million. This death toll fits into the frames of accepted death tolls for the Holocaust. Indeed, it agrees with the range 4.2-4.5 million calculated by Gerald Reitlinger in 1953. It is the number you get from the American Jewish Yearbooks (AJY) when emigration out of Europe is taken into account, and it agrees with the death toll from the Jewish World Almanac where the WWII losses appear after some years from the end of the war. This Almanac is based in AJY figures, thus it naturally derives the same death toll as we will get here from AJY figures, but it does more: it looks at Jews everywhere in the world and shows that they did not emigrate to countries that are not considered in the calculation in this section.

We get a good estimate for Jewish deaths in Auschwitz by looking carefully at the emigration figures, especially at the emigration from Displaced Person camps after 1946. From these camps emigrated more Jews than there were in 1946, thus more Jews came from the East. Checking where they could have come from and who they could have been, we conclude that they were Hungarian-Romanian and Polish Jews and make up the difference between the registered Jewish deaths in Auschwitz (60,000) and the upper bound of 0.43 million in section 1.

2.1. How many Jews there were in 1939 according to AJY with minor and accepted corrections?

American Jewish Yearbook (AJY) 1939-40 gives the number of Jews in those countries from where Nazis could not transfer any Jews. These countries were UK, Ireland, Spain, Portugal, Sweden, Switzerland, European part of Turkey and Finland. Jewish population in these countries in 1939 was 0.389 million. AJY 1939-40 overestimates Romania's Jewish population in 1939 to 0.9 million. According to newer studies Romanian Jewish population in 1939 was 0.6 million. Data for the Jewish populations of Estonia, Latvia, Lithuania, Ukraine, Belarus, Crimea and the European part of the Soviet Union is less certain, but AJY gives the total figure 2.82 million Jews in these countries.

AJY 1939-40 gives the Jewish populations to Belgium, Bulgaria, Czechoslovakia, Danzig, Denmark, France, Germany, Greece, Hungary, Italy, Yugoslavia, Netherlands, Norway and Luxemburg. Austria is merged into Germany in these figures. These figures sum to 2.216 million. The figure for Germany after annexing Austria is given as 691,163, correcting it to 300,000 in 1941 for Germany and Austria from the 1939 estimate of the American Jewish Year Book for 1948-49 given on Table 6 on the page 697. Thus, the estimate for Jews in these countries is 1.83 million for 1941.

The population of Jewish Poland in 1931 can be estimated to 3.25 million, see section 1. In 1939 Poland was divided between Germany and the Soviet Union. The parts are here referred to as West and East-Poland. West will refer to Europe outside the Soviet Union in 1939, while East refers to areas occupied by Soviets in 1939.

The European Jewish population in 1939 is the sum of these figures: 0.389+0.6+2.82+1.83+3.25=8.89 million.

2.2. How many Jews there were in 1946?

AJY for 1948-49 gives the Jewish populations for the year 1948. In the eight countries not occupied by Germany lived 0.48 million Jews in 1948. In Romany there were 0.38 million Jews in 1948, in the Soviet Union 2 million, in Poland 0.088 million. In the countries (Belgium, Bulgaria, Czechoslovakia, Danzig, Denmark, France, Germany, Greece, Hungary, Italy, Yugoslavia, Holland, Luxembourg ja Norway) had 0.83 million Jews. The sum of these numbers is 3.778 million, but this is not the whole answer as there was immigration out of Europe.

The estimate of 5.7 million dead in AJY 1948-49 is derived in the following way. The Romanian population is given as 0.9 million and Germany after annexing Austria is given as 691,163. Then the 1939 Jewish population increases to 0.389+0.9+2.82+2.216+3.25=9.58 million. The 1948 population 3.778 is subtracted from the 1939 population: 9.58-3.778=5.8 million, rounded to 6 million. We see that in this estimate the Romanian figure is too high and emigration is ignored, both the emigration of German and Austrian Jews before 1939 and also emigration between 1939 and 1948. This estimate is clearly incorrect: when these are correcte, the AJY numbers yield the estimate of 4.4 million for the dead toll, as will soon be shown.

Legal immigration to Palestine during 1939-48 was 75,000. This was defined by UK White paper of 1939. All but 3,000 immigration visas were granted during 1939-44 and the rest surely before 1948. Thus, the whole 75,000 immigrated legally from Europe. During 1946-48 there was another legal immigration program, 138,000 Jews immigrated from DP-camps to Palestine. All were European

Jews. Illegal Alyah Bet immigration to Palestine during 1939-48 was about 110.000 Jews. This gives the total Jewish immigration from Europe to Palestine during 1939-1948 as 0.323 million.

We can add these to survivors, thus 3.778+0.323=4.101 million Jews survived. But there is still one group of survivors. The existence of this group can be shown by looking at the Displaced Person (DP) camps. After the war ended in 1945, there were millions of people from different countries in DP-camps. Most of these people returned home before 1948. In 1946 250,000 Jews stayed in DP-camps, 50,000 of them were concentration camp survivors. In section 1 we showed that there were at least 410,000 Jewish survivors, but only 250,000 in DP-camps, the rest must have returned home or moved somewhere in 1945-46. Jews, who returned home or moved somewhere in Europe, are already in the Jewish populations of different European countries in 1948. We will not use the number 410,000 any more as part of it is already included in the population figures.

There were 250,000 Jews in the DP-camps in 1946 and 138,000 immigrated legally to Palestine from DP camps. There could have been at most 112,000 Jews in DP camps in 1948. This 138,000 legal immigration is the only immigration program that could have taken these Jews. Almost all of the UK White paper immigration of 75,000 was before 1946 and the illegal immigration of 110,000 was not from DP camps. It was mainly from Ukraine, the East.

We have now included the legal immigration of 75,000 for 1939-48 and the legal immigration of 138,000 of 1946-48, and the illegal immigration of 110,000 for 1939-48. We should have 112,000 Jews in the DP-camps. The problem is that much more than 112,000 Jews emigrated from DP-camps after 1946. There were many Jews who come to DP-camps from Eastern Europe after 1946.

Newly independent Israel opened doors in 1948 and took from Europe 0.338 million Jews during 1948-53. They came from DP-camps. Of these 0.338 million, 0.025 million were from Western Europe and the rest from Eastern Europe. Additionally the USA took first 80,000 Jews from DP camps and later 57,000. Thus, 137,000 Jews from DP-camps immigrated to the USA after 1948. Canada and South-Africa took additionally 20,000 Jews from DP-camps after 1948. So, there was supposed to be 112,000 Jews in DP-camps but after 1948 from DP-camps immigrated 338,000+137,000+20,000 =495,000 Jews. That means that 495,000-112,000=383,000 Jews came to DP-camps from Eastern Europe after 1946. These 112,000 Jews have already been counted in 1948 populations in AJY 1948-49. The 383,000 Jews have not been counted in any figures.

Adding these 383,000 to the survivors we get 4.101+0.383=4.484 survivors. This is gives the death toll 8.89-4.484=4.406 million. This is the figure that can be derived from the AJY data after corrections to the Jewish population of Romania and emigration out of Europe.

2.3. How many Jews died in Auschwitz?

As the total death toll is 4.4 million from AJY data, we can calculate how many Jews died in Auschwitz simply by subtracting from the the total death toll those who died elsewhere.

The Soviet Union occupied to Eastern part of Poland in 1939 and after 198,000 Jews had escaped from the Western part, there were 1.41 million Polish Jews in the Soviet area. In total this area had 2.82+1.41=4.23 million Jews according to AJY in 1939. After Germany attacked in 1941, there were small transfers from East to West. These transfers moved in netto 60.000 Jews from East to West. Thus, the Eastern area had 4.17 million Jews. According to AJY 1948-49 the Jewish population of the Soviet Union in 1948 was 2 million. I will at this point assume that this is also the Jewish population in 1946 and therefore the number of dead Jews in East is 4.17-2=2.17 million.

To Displaced Person -camps arrived after 1946 0.123 million Romanian Jews and 0.3 million stayed in Romania, thus 0.177 million Romanian Jews died out of the pre-war 0.6 million.

The accepted figure of Jews shot in Yugoslavia is 58,000.

All 1.48 million sent to Operation Reinhardt camps are considered to have died in the death toll 4.4 million from AYJ numbers.

The sum of these death tolls is 2.17+0.177+0.058+1.48=3.885 million. Thus, the number of Jews who died in the West of West-Poland is 4.4-3.885=0.515 million.

In the beginning of section 1 we estimated the number of Jews who died in the West of West-Poland elsewhere than in Auschwitz and Chełmno as 0.454 million from item 3) in section 1.

The sum of Jewish deaths in Auschwitz and Chełmno is 0.515-0.454=0.061 million. Let us set the Jewish death toll in Auschwitz to 60,000. There is only 1000 left for Chełmno. Naturally these numbers are not precise and Chełmno can have a considerable death toll, but it must be much smaller than the number 0.15 million sent to the camp, see item 2) in section 1. This calculation shows that large numbers of unregistered Jews did not die in Auschwitz and Chełmno was not a death camp, assuming that the AJY data is correct.

About 150,000 Jews, mainly children, were sent to Chełmno, but apparently all of them did not die there. These survivors must have mostly emigrated to Israel. The Jewish person connected with sending the children from the Łódź ghetto to Chełmno was associated with kibbutzes. Possibly many of the children were later sent e.g. to kibbutzes. This issue cannot be investigated in this article, but it would be odd if Chełmno would be the only death camp in West and West-Poland as there were no death camps in Germany, Majdanek was not a death camp and the AJY data shows that Auschwitz was also not a death camp.

The difference in the Auschwitz death toll that we get from the AJY data (60,000) and the upper bound 448,000 in section 1 is that we have missed some group of survivors in the estimate of survivors in section 1. In section 1 we had 410,000 camp survivors and 88,000 Polish Jews, who managed to hide. The number of survivors in section 1 was 0.41+0.088=0.498 million. It should have been 3.03-1.48-0.515=1.035 million. We missed 0.537 million survivors.

The groups of Jewish survivors in Europe (in millions) are as follows:
0.389, lived on countries from which Nazis did not capture Jews in 1939.
2, survivors in the Soviet Union after the war.
0.3, survivors in Romania in 1946, notice this differs from AJY 1948-49 where it is 0.38.
0.646, Jews of the West, who were not transferred in the war, see section 1.
0.11, transferred to Palestine by Aliyah Bet, mainly working in Ukraine.
...
0.41, survivors in Nazi camps, or Jews of West-Poland hiding in addition to 88,000.
0.088, survivors in Poland, not included in the 0.41 million.
0.383, arrived to DP-camps after 1946.
0.083=0.112-0.029, Romanian survivors in DP-camps in 1946.
0.075, legal transfer to Palestine during 1939-46.

The sum is 4.484 million, the same as in 2.2. This means that all listed groups of survivors are non-overlapping. None of the groups above the dots can account for survivors of 3.03 million Jews of West-Poland or Jews transported from West. The figures 0.41 million and 0.088 cover 300,000 Polish Jewish survivors, and 185,500 Western Jews who returned home. There are only three groups that can explain the difference between the upper bound 448,000 and the registered death toll 0.06 in Auschwitz: 0.383 of Jews who came to DP-camps after 1946, 0.083 Romanian survivors and the White paper transfer of 75,000. (The Romanian 0.08 appears in AYJ 1948-49, but they cannot be in Romania. This group is a part of 0.112 million, who were in DP-camps in 1946.) The sum of these three groups is 0.541. It explains where the missing 0.537 million survivors are: they emigrated.

2.5. The missing Hungarian Jews

424,000 Hungarian Jews were transported, mainly to Auschwitz. There was an idea of using Hungarian Jews in the Project Riese in the Książ castle and in similar projects near this site, but only small a fraction of these Jews were capable to this heavy building work. Indeed, only 13,000 concentration camp inmates worked in Riese, mainly from Gross-Rosen. Most workers in Riese were POWs. Riese (giant) was a huge project and engaged c. 80,000 slave workers, but if does not explain Hungarian Jews. 100,000 Hungarian Jews were taken to work in some other projects. 40,000 of them survived. According to the Holocaust explanation the remaining Hungarian Jews were gassed and burned, but this would have been the first mass killing in Auschwitz and would disagree with the official story according to which there were mass gassings since 1942. It also contradicts AJY numbers, which do not allow more than the registered deaths of 60,000 to Auschwitz. We must look for some other explanation.

Let us continue assuming that no-one sent to the three Operation Reinhardt camps appeared to DP-camps after 1946. In section 1 we got the upper bound for Jewish deaths in Auschwitz as 448,000 and gave also the lower bound for these deaths as 60,000. The difference 388,000=448,000-60,000 must have been mostly Hungarian Jews.

Adolf Eichmann gave an interview, which lead to his capture by Mossad and death in Israel. In this interview Eichmann claimed that Nazis only transported 360,000 Hungarian Jews to Auschwitz and that they left 200,000 to an open camp close to Auschwitz to wait for Soviets when Germans withdrew and many also escaped. Eichmann's claim has not been verified, but it could explain this issue. If Germans did leave 200,000 Jews in an open camp, Soviets did not tell having met them. Such a large group could not have escaped back to Hungary or be hiding somewhere for a long time. They would have come to DP-camps, but maybe only after 1946. If Eichmann is correct that 200,000 Hungarian Jews were left to an open camp in Auschwitz and 360,000 were taken to Auschwitz, then the rest 360,000-200,000=160,000 were transported on death marches to camps in Germany, or they had died in Auschwitz, but many may have survived and also came to DP-camps after 1946. The number of survivors from 324,000 Hungarian Jews should be somewhere in the groups of survivors. The only possibility is the 83,00+383,000 survivors who came to DP camps, see the last table in 2.4.

Israel immigration does not tell that any large group of Hungarian Jews imigrated there. The largest groups that immigrated in the period 1948-53 from Europe to Israel were from Poland (104,000) and from Romania (123,000). The origin of 30,000 is not known. Very few came from the Soviet Union. These 104,000 Polish Jews were part of the 383,000 that came to DP-camps and certainly not Hungarian Jews. These Polish Jews must be from West-Poland, since the place of birth for East-Polish Jews was in the Soviet Union after the war and they most probably were not allowed to move to the West. The same argument applies to the whole 383,000 Jews: they were allowed to move to the West, thus they were not born in areas that after the war belonged to the Soviet Union. There remains 83,000+383,000-104,000=362,000 unknown Jews, who came to DP-camps after 1946.

Let us assume that the 123,000 Romanian Jews were from the part of Romania taken by Hungary in the beginning of WWII and they were sent to Auschwitz as Hungarian Jews, and let us assume they were part of the 383,000 who came to DP-camps. If they were not Hungarian-Romanian Jews, then how they came to DP-camps from Romania? There remains 323,000-104,00-123,000=156,000. They can include Hungarian Jews. In total we have 362,000 unknown Jewish survivors, who can include the missing transported Hungarian Jews. It can fully explain what happened to the 324,000 missing Hungarian Jews: the survivors emigrated from DP-camps.

Notice that we have not assumed that there are any crypto-Jews in Poland or elsewhere in the West of present Poland. All groups of survivors are real and known.

The only other alternative is to assume that 260,000 of the 383,000, i.e., those who were not Romanian Jews, were sent to Operation Reinhardt camps and came back to DP-camps after 1946. Assuming that

this is not the case, the Jewish death toll in Auschwitz deaths is 60,000, the registered deaths. Next we will look at the Jewish death toll in the East, but first we need to check the immigration to the USA.

3. How many Jews immigrated to the USA between 1924 and 1939?

The Wikipedia gives the following figures for the American Jewish population

Year	Jewish population
1880	250,000
1890	400,000
1900	1,500,000
1910	1,777,000
1920	3,389,000
1930	4,228,000
1940	4,771,000
1950	5,000,000

According to the official explanation this growth was mainly a result of natural growth and the immigration of about 2 million Jews between the years 1880 and 1924, between 1924 and 1940 Jewish immigration to the USA was small. We will show that this is not possible. First we should select a reasonable figure for the natural population growth for American Jews for this period. We can try to estimate it from two cases of historical data.

The first case is that the population of Eastern European Jews (Ashkenazi) is said to have grown from 350 individuals 600-800 years ago. The Ashkenazi community was formed around the years 600-800 in Northern Italy from where they moved to Rhineland. Jews were expelled from France 1182, England 1290 and France 1306 and finally 1394. In 1332 Casimir the Great of Poland invited Jews to Poland where they thrived well. The genetic bottleneck must be before this time. Let us place the genetic bottleneck to the year 1300. In 1939 the Ashkenazi population included 8.9 million in Europe, 4.8 million in the USA, and some 300,000 in South America. This gives 14 million. The time is 1939-1300=639 years and the population has grown by the factor 14,000,000/350=40,000. As $40,000=2^{15.29}$ there were about 15 doublings in 639 years. The doubling time is 639/15.29, 42 years. The yearly growth rate was 69.3/42=1.65%. If the Ashkenazi population size in 1939 was in reality 13 million, the doubling time is not changed significantly and is still 42 years. If the Ashkenazi population size was 12 million, the doubling time is 42.4 years and the yearly growth rate is 1.63%. Thus, the yearly population growth does not much depend on if there were 14, 13 or 12 million Jews in 1939. If we move the genetic bottleneck to 1200, then the doubling time is 48-49 years and the yearly growth rate decreases to 1.43%. It cannot go much lower than that.

We get another estimate in the following way. In the year 1764 the Jewish population of the Polish-Lithuanian Commonwealth was 750,000 and in 1897 the Russian Empire Census found 5.2 million Jews. Not all Commonwealth was taken by Russia, parts went to Austria and Prussia, but there were Jews in Russia before the time, e.g., in the Crimea. We get round numbers by assuming that 650,000 Commonwealth Jews were in the Russian part. Thus, 650,000 grew to 5.2 million in 129 years. That means three doublings in 129 years, the doubling time is 43 years. It seems reasonable to estimate that the Ashkenazi Jewish population grew in past centuries with the doubling time of some 43 years. It means the yearly growth rate 1.61%.

However, the American Jewish population size in 1930 was 4,228,000 and in 1940 it was 4,771,000. The increase in ten years is by multiplier 1.1284=4771/4228. In a year this yields the growth rate 1.215%. The growth rate of Jews in Poland in the time period from 1931 to 1939 is often estimated to 1%, as in eight years 3 million grew to 3.25 million. From this data we can conclude that the natural

growth rate of the American Jewish population in the time period 1880 to 1940 was over 1% and certainly below 2%.

Let us make calculations of how many Jews immigrated to the USA with different choices for the natural yearly growth rate. We start with the population of 1880 with the value 250 thousands (the table has the sizes in thousands). It is in the third column. Let us select the natural growth of 2% yearly as a high value, so in each decade it is multiplied by 1.22: in 1890 it is 1.22*250=305 and so on:

Year	Population							
1880	250	250					
1890	400	305	95				
1900	1500	372	116	1012			
1910	1777	454	141	1235	53		
1920	3389	554	173	1506	65	1091	
1930	4228	676	210	1838	79	1331	94
1940	4771	824	257	2242	96	1634	115 = 5,168,000

The second column has the Wikipedia population sizes. We are missing 400-305=95 thousand and add immigration of 95 thousand to the fourth column, and calculate how it grows with 2% yearly growth. The sum of 372 and 116 for the year 1900 is 488. In order to get 1500, we need immigration of 1012 thousand. We add this as the fifth column and calculate how this figure grows in the fifth column. The principle should be clear, we complete the table. In the last row the sum of the columns gives 5168, i.e., 5.17 million. The Jewish population was only 4.8 million. This is too large a difference and means that the growth rate 2% a year is too high. With this 2% growth rate the number of Jewish immigrants to the USA from 1880 to 1940 is given by the sum of the first numbers in the columns the four (95), fifth (1012), sixth (53), seventh (1091) and eight (94). The sum is 2,345,000. Even with this too high natural birth rate we cannot get the American Jewish population growth with natural growth and 2 million immigrants.

Let us do the calculation with the natural yearly growth rate of 1.215%. It yields the multiplier 1.1284=4771/4228, the population growth from 1930 to 1940 in the Wikipedia data. Now the table is:

Year	Population							
1880	250	250					
1890	400	282	118				
1900	1500	318	133	1049			
1910	1777	359	150	1184	84		
1920	3389	405	170	1336	95	1383	
1930	4228	457	191	1507	107	1561	405
1940	4771	516	216	1701	121	1761	456 = 4,771,000

Now we get the correct population size for 1940, but decreasing the natural population growth has the inevitable effect of increasing the immigration size. This time the immigration is 188+1049+84+1383 +405=3,039,000 million. It is one million higher than the official number 2 million. Whatever natural yearly population growth rate we put into this calculation, the immigration will be between 3 million and 2.345 million. Let us do the calculation with the population growth rate 1.6%, as it seems to be the historical rate for Ashkenazi Jews. The multiplier for 10 years is $1.016^{10}=1.172$. The table is:

Year	Population							
1880	250	250					
1890	400	293	107				
1900	1500	333	125	1042			
1910	1777	402	147	1221	7		
1920	3389	472	172	1431	8	1306	
1930	4228	553	202	1677	10	1531	225
1940	4771	648	237	1966	11	1794	299 = 4,955,000

The population of 1940 is 180,000 larger than it should, but it is a relatively small mistake. The number of immigrants is 107+1042+7+1306+225=2,687,000, but the growth rate of 1.6% yearly is quite high considering that from 1930 to 1940 it in reality is only 1.215%.

Let us repeat the calculation with the rate 1.4%. The multiplier is 1.149 for a decade:

Year	Population						
1880	250	250					
1890	400	287	113				
1900	1500	330	130	1040			
1910	1777	379	149	1195	54		
1920	3389	436	171	1373	62	1347	
1930	4228	501	197	1578	72	1548	332
1940	4771	575	226	1813	82	1778	381 = 4,855,000

The error in the 1940 figure gets smaller when the growth percentage decreases, but the exactly correct number can only be obtained with the growth yearly rate at most 1.1215% as otherwise the immigration must be negative. The immigration size for the growth rate 1.4% yearly is 113+1040+54+1347+332=2,886,000.

Finally, we do the calculation with the rate 1.6% for 1880-1890, 1.5% for 1890-1900, 1.4% for 1900-1910, 1.3% for 1910-1920, and 1.215% for 1920-1940. The multipliers are 1.172 for 1880-1890, 1.161% for 1890-1900, 1.149 for 1900-1910, 1.138 for 1910-1920, and 1.1284 for 1920-1940.

Year	Population						
1880	250	250					
1890	400	293	107				
1900	1500	340	124	1036			
1910	1777	391	143	1190	53		
1920	3389	445	162	1355	60	1367	
1930	4228	502	183	1529	68	1543	403
1940	4771	566	207	1725	77	1741	455 = 4.771,000

Now the figure for 1940 is correct. The number of immigrants is 107+1036+53+1367+403=2,966,000. This is the best guess. The yearly growth rate was falling from 1.6% to 1.215%.

Ashkenazi Jews had for centuries much higher growth rate than other European populations. Before 1890s the population growth rate was under 1% practically everywhere. In the early 20th Century European natural growth rates were reaching 1% and the world population growth rate peaked in 1962 at 2.1%. The historical yearly growth rate for the Ashkenazi population is about 1.6%, but in the USA it certainly dropped to 1.1215% for the period 1930-1940. The best explanation has the growth rate falling gradually. Varying the growth rate, as we have done here, does not make much difference and it cannot explain the population as a result of natural growth and 2 million immigrants.

We can conclude that to the USA arrived 2.97 Jewish immigrants during 1880-1940. This is not a hypothesis but a fact: 2 million immigrants cannot explain the growth of the American Jewish population. The USA decided to stop immigration from East Europe in 1924 and in the last table immigration during 1930-1940 is zero. There is immigration of 403,000 from 1920 to 1930. It can be all before 1924, but some may be some illegal immigration during 1924-1929. Immigration statistics explain 2 million of this estimated 2.97 million. The remaining about one million must have immigrated in ways that they did not get registered in immigration statistics as Jews. Maybe they first went to a third country and immigrated as non-Jews in the quota of that country. Yet, the growth of the American Jewish population does not support the idea that a million Jews moved to the USA from Poland in the 1930s.

4. Jewish death toll in the East

4.1. How many Jews were in the Soviet Union in 1939 and in 1946?

From the American Jewish Yearbook for 1948-49 we see that there were 2 million Jews in the Soviet Union in 1948. There could have been more Jews in the Soviet Union in 1946 than in 1948 as there came Jews from the East to DP-camps, but let us assume that after the war there were 2 million in the Soviet occupied Europe and the Jews, who came to DP-camps were another set of people (i.e., survivors in the West and West-Poland). In the beginning of 1950ies the Jewish population of the Soviet Union was a bit over 2 million. In 1959 there were 2.2 million Jews, after that time the Jewish population declined with a constant rate. The Soviet census of 1959 found 2,268,000 million who announced that they are of Jewish nationality, but it is expected that a large number of Jews chose to write some other nationality. The "Core" Jewish population in 1970 is given as 2.15 million. Thus, it seems correct to assume that there were about 2 million Jews in the Soviet Union of 1946.

According to the American Jewish Yearbook (AJY) for 1938-39, after the Soviet Union (SU) had conquered the Baltic states and before taking Eastern Poland there were 2.82 million Jews in Soviet occupied Europe. We will show that this number is one million too high.

Russian Empire Census of 1897 gives the number of Jews as 5,215,805 and the number of Yiddish speakers as 5,063,156 for 1897. In section 3 we demonstrated that the yearly growth rate of American Jews from 1880 to 1940 was falling from 1.6% to 1.215%. As American Jews had a large portion of immigrants, who mostly were in child-making years, their population growth rate was not lower than for Jews left to Europe. Let us use the same growth rates for the whole population that were the best fit for the American Jewish population. The yearly multipliers are 1.015% for 1890-1900, 1.014% for 1900-1910, 1.013% for 1910-1920, 1.01215% for 1920-1940. The population 5.2 million in 1897 must be multiplied by the number: $1.015^4*1.149*1.138*1.1284*1.01215^9=1.547$ yielding the population in 1939 as 8.05 million.

The Jewish population of Poland in 1939 is estimated to 3.25 million in section 1. This figure includes c. 1 million Galician Jews that Poland got in the peace agreement in 1926 from Ukraine and who had belonged to Austria before 1918. Poland also got the area of Poznan and the corridor to the Baltic Sea from Germany after the First World War. It is not possible that this German area had more than 100,000 Jews of German origin in 1918. This is because German Jews lived in big cities and there were only two larger cities in this area: Poznan and Bydgosc. In 1918 there were less than 400,000 Jews in the whole Germany. In 1933 there 100,000 Jews in Germany who had Polish citizenship, thus Polish Jews had moved to Germany. We conclude that these areas that Poland got from Germany in 1918 did not increase the Jewish population of Poland. Indeed, we can assume that these areas had very small Jewish population originally and Poland lost some Jews to Germany from its original Jewish population by 1939. Thus, 3.25-1=2.25 million Polish Jews must have been descendants of the Russian Jewish population in the 1897 census, and only the 1 million Galician Jews were not from this original population.

The American Jewish population in 1940 was 4.77 million, thus in 1939 it was 4.7 million. Not all of this population grew from the Russian Jewish population of 1896. Indeed, the population 400,000 in 1890 grew to 566,000+207,000=763,000 in 1940, see the last table in section 3. In 1939 this population was 0.763/1.01215=0.754 million. These Jews were originally Russian Jews, but they had moved earlier than 1896. Thus, 4.7-0.754=3.95 million American Jews derive from the Russian population of 1896. The size of the Jewish population in the Soviet Union and the three Baltic countries is estimated as 8-2.25-3.95=1.8 million. The AJY estimate of 2.82 million is one million too high.

A likely reason for this overestimation is that about one million Jews of Galicia were counted twice: both to the Soviet Union figure as Ukrainian Jews and to Poland as Polish Jews. These Jews were

Jews of the Polish-Lithuanian commonwealth and when Poland was divided, Austria took this part. After the World War I the area was joined to Ukraine. In the Soviet-Polish war Poland conquered this area and got it in the peace treaty of 1922. The Soviet Union took this are from Poland in 1939. In the AJY statistics the Ukrainian Jewish population is shown as 1.5 million in 1926, thus after the peace treaty. Yet, it is difficult to see where these Jews could be in Ukraine of 1926 as Poland took practically all area in the East that once belonged to the commonwealth and where the majority of Jews were living. The Ukrainian Jewish population in 1939, before Soviets attacked Poland, was most probably c. 400,000. Soviet statistics in Stalin's time was not especially reliable. This statistics does not show any Holodomor in Ukraine and the results of the census of 1937 are considered falsified. It is very possible that this Ukrainian population figure relates to the year 1920, not 1926.

The Soviet estimates support the conclusion that the AJY estimate is one million too high. After the war the Soviet Union estimated that Germans had shot 1-1.5 million Jews in their area as in 1940 and there remained 2 million Jews. This implies that they estimated that 3.25 million Jews had been in this area before Germany attacked. The Polish census of 1932 allows calculating that there were 1.41 million Jews in East-Poland in 1939, of whom 198,000 were escapees form West-Poland and taken to Siberia. It seems that the Soviets estimated that there had to be 3.25-1.41=1.84 million Jews in 1939 in the Soviet Union and the Baltic countries without East-Poland. This figure seems to be essentially correct. Soviets may have known the correct figure.

We will correct the Jewish population of the Soviet Union and the three Baltic states in 1939 before the attack to Poland to 1.82 million, one million smaller than the AJY figure.

4.2. How many Jews were in East-Poland in 1939?

The Wikipedia in the History of the Jews of France tells that 200,000 of Russian Jews escaped pogroms to France between 1900 and 1939. This is not possible as there is no allowance to an additional 200,000 Jews in 1939 that descended from the Russian Jewish population of 1896. These Jews must have been Galician Jews, that is, Jews of East-Poland. Before 1918 Galician Jews were Austrian Jews and controlled the economy of Galicia. They had not reason to leave. In 1918 Ukraine got this area, but was not yet fully joined to the Soviet Union. There was a war between different sections in Ukraine and the Soviet-Polish war of 1920-1922. During this time Galician Jews hardly could emigrate. When Poland got this area in 1922, Galician Jews could leave abroad and it seems that many did leave to France. The Madagascar plan of was originally a Polish plan to move Poles to the island. France supported a modified 1937 version of the plan where the intention was to move Polish Jews, not native Poles, because too many Polish Jews had recently moved to its area.

There was a Polish census of 1932 stating that there were 1.1 million Jews in the Eastern area in 1931, but taking a census did not mean that the people identified themselves with documents and their presence was verified. Taking a census meant that census collectors went to houses and asked how many people live there, without seeing all of them. Those, who had left illegally, were still officially living in Poland. Physically they had moved to France or Germany.

We will reduce the East-Poland Jewish population by 200,000 to 1 million in the war area. In Siberia there were additionally 0.198 million Jews who escaped West-Poland in 1939.

Thus, in addition to reducing about one million from the Jewish population of the Soviet Union and the three Baltic countries in 1939 before the attack to Poland, we also have to reduce 200,000 Galician Jews from the Jewish population of East-Poland in 1939. Reducing 1.2 millions automatically decreases the Jewish death toll of 4.4 million to 3.2 million.

4.3. How many Jews were killed by Einsatzgruppen in the Eastern front?

Germany attacked to the Soviet Union in the summer of 1941. It is not in doubt that Einsatzgruppen and SS-divisions did kill Jews in the Eastern front. Jews, who stayed, were treated as partisans by

Germans and were shot. Also their families were shot. Though some may have survived, this was the general policy. What needs to be evaluated is how many Jews were killed in this way.

According to the standard Holocaust explanation Einsatzgruppen killed 1-1.5 million Jews and later they opened massgraves and burned the bodies so that there are no remains to be found. However, Einsatzgruppen were small units and their main task was to eliminate partisans. For them shooting 1-1.5 million Jews and later burning their bodies so that massgraves do not show signs of this scale killings seems like a too large task and this is a problem in the theory. There were Jews in the Baltic countries, White Russia and Ukraine, and some massgrave sites have been pointed out, but they do not make 1-1.5 million.

The standard Holocaust explanation requires that 60-80% of the Jews in the East were evacuated or escaped deeper to the Soviet Union (SU) before the German attack of 1941. This is so because if they were not evacuated, then over half of the 4.17 million Jews in the area of the Soviet Union of 1940 were left to German hands and as Germans killed all left in the area, Germans would have shot over 2 million and not 1-1.5 million. There indeed is Stalin's order of evacuation of Jews, but no evidence that such evacuation took place and that there were evacuation camps for Jews. Stalin did move over a million Poles from East-Poland to Siberia, but they were ethnic Poles, not Jews.

Yet, there had to be evacuation of Jews of East-Poland. The claimed massgraves are not in Galicia where most of the East-Polish Jews should have been. As only 200,000 Galician Jews moved to France, there were some 800,000 in East-Poland in 1940, mainly in Galicia. They were not shot by Einsatzgruppen as there are no claimed massgraves, and only 87,000 were transported to Bełżec, see 1.1.3. Nazis had some labor camps and ghettos in Galicia, as 1.1.3 lists, but they were small. Some 700,000 Jews of Galicia must have been evacuated to Russia.

Such a large number of evacuated people could only be put on evacuation camps. All camps at that time in the Eastern front had infective diseases in the same way as concentration and POW camps. Additionally, Soviets took soldiers from the camps and some of them died. As a result these camps also had quite high death ratios.

Let us calculate the death ratios in the Soviet Union assuming the official Holocaust history is correct. If there were 4.17 million Jews in this area before the German attack and 80% were evacuated, there stayed 834,000 and 3.336 million were evacuated. Germans killed those who stayed. 2 million survived, so 1.336 million died of 3.336 million. That is 40%. If 60% were evacuated, there stayed 1.668 million who were killed, and 2.502 million were evacuated. 2 million survived, 502,000 died of 2.502 million, that is 20%. From these figures, the death ratio for an evacuation camp was on the range 20-40%. It is about the same as for a concentration or POW camp in the Eastern front, and it most probably was not under 30%.

But we showed in 4.2 that the AJY data has an error of 1.2 million: there were only 2.97 million Jews in this area before the German attack. Aliyah Bet saved 110,000, mainly working in this area. Thus, the number of survivors was not 2 million. It was 2.11 million.

Let us assume that the death ratio of an evacuation camp was 30% and that the Einsatzgruppen killed all who were left in the area. If 80% were evacuated, 594,000 stayed and were killed. 2.376 million were evacuated. Of them survived 70%, that is 1.66 million. There were 2.11 million survivors, so 0.45 million survivors had to come from the Operation Reinhardt camps. If 60% were evacuated, 1.188 million stayed and were killed, 1.782 million were evacuated. Of them survived 70%, that is 1.25 million. In this case 0.86 million survivors had to come from the Operation Reinhardt camps.

We see that since the AJY data has an error of 1.2 million, there had to either be survivors from Operation Reinhardt camps or the Einsatzgruppen did not kill all who stayed. Otherwise there could not be 2 million survivors in the Soviet Union in 1948.

Let us still assume that nobody survived Operation Reinhardt camps and derive an upper bound for the number of Jews shot by Einsatzgruppen and SS-divisions in the Eastern front. The total death toll is 3.2 million, calculated in 4.2. In the West and West-Poland died 0.615 million. In Romania died 0.177 million (as I increased the figure by 100,000 to account for Hungarian-Romanian Jews). In Jugoslavia died 0.058 million. There is left 3.2-0.515-0.177-0.058=2.45 million deaths to be explained.

If 80% were evacuated, then 0.713 million died on the Soviet side and 1.66 million survived. There must be 0.45 million survivors from the German side. There remains 2.45-0.713=1.737 million deaths. Assuming that nobody survived Operation Reinhardt camps, there remains 1.737-1.48=0.257 million deaths. It includes killings by Einsatzgruppen and SS divisions, and deaths in ghettos for Jews who stayed. 594,000 were left in the area and 450,000 survived. Einsatzgruppen could only kill 144,000.

If 60% were evacuated, then 0.535 million died on the Soviet side and 1.25 million survived. There must be 0.74 million survivors from the German side. There remains 2.45-0.535=1.915 million deaths Assuming that nobody survived Operation Reinhardt camps, there remains 1.915-1.48=0.435 million deaths. If Einsatzgruppen killed 144,000, then there stayed 1,188,000-144,000=1,044,000 and 850,000 of them survived. The death ratio is 18.6%, which is too low, thus Einsatzgruppen killed fewer.

We see that the Einsatzgruppen and SS-divisions did not kill more than 144,000.

4.4. Did all sent to Operation Reinhardt camps die?

By using the assumption that nobody survived Operation Reinhardt camps we have shown incorrect all other claims in the Holocaust narrative: there were no unregistered Jewish deaths in Auschwitz on the range of a million or hundreds of thousands; Chełmno was not a death camp; Hungarian Jews are not missing; Einsatzgruppen did not kill 1-1.5 million; the Jewish death toll was not 6 million, it was at most 3.2 million, and we have also shown that AJY numbers have an error of 0.2 million in the Jewish population of Poland (Galicia) in 1939 and 1 million error in the Soviet Union (Ukraine) in 1939.

The assumption that 1.48 million Jews sent to Operation Reinhardt camps were all killed is not especially logical. Why these Jews should have been transported all the way to Operation Reinhardt camps when Auschwitz had much better crematories? Also, if Germans killed all sent to Operation Reinhardt camps, they should have killed all left on the area, but then the evacuation percentage must be higher than 80% as Einsatzgruppen did not kill more than 144,000.

These problems set aside, there is a simple problem with the death ratio. If all sent to Operation Reinhardt camps were killed there were 2.95 million Jews in the area and 2.11 survived. Additionally, the 2.95 million includes 198,000 Jews, who were sent to Siberia and almost all died. Thus, there were c. 2.87 million Jews and 2.11 million survived. The death ratio is 26.5%. Einsatzgruppen did kill some Jews. Assuming they killed 100,000, the death ratio is 23.8%. This is clearly too low. POW camps for Russians in Finland in the WWII time had the death ratio 29.5%. German POW camps in Northern Finland had the death ratio 24.5%, but they were very small camps. In Project Riese worked 13,000 concentration camp prisoners and 5,000 of them died. The death ratio was 38.4%. Soviet POW camps had very high death ratios. Soviet Gulags could in peasetime have death ratios even under 20%, but this was wartime. The conclusion is that not all Jews sent to Operation Reinhardt camps could have died. Otherwise there could not be 2.11 million survivors.

If any of these Jews survived Operation Reinhardt camps, we must assume that they stayed in the Soviet Union. Nothing was heard of them, thus they must have been in a camp of some kind. It means that Germans did not simply let them go where they wanted. If the goal of transferring Jews to the East was to later settle them to a new homeland, they were to stay in camps until they were moved ton the homeland. This homeland was not to be in Europe. There are only two candidates: Madagascar or Palestine, and naturally the alternative that Nazis moved Jews to the East just in order to kill them before they got to the East. When Germans were pushed away by Soviets, the Jews probably had to

stay in the camps, only the guards were now Soviets. They were waiting to be settled to a new homeland. Israel was created in 1948, but Stalin did not allow any Soviet Jews to emigrate to Israel. If there were Operation Reinhardt survivors, they also were not allowed to emigrate to Israel.

All camps in the Eastern front at that time had quite high death ratios. Let us estimate the death ratio of the hypothetical Operation Reinhardt camps as 29%. With 29% death ratio 1 million of 1.48 million would have survived, and 0.48 million died, i.e., 29% was chosen because it is typical and the number of survivors is a round million, but also because it is the smallers realistic ratio.

If one million Jews did survive Operation Reinhardt camps and were transported to Ukraine, then why did they not announce after the war that they were from the West? The simplest solution is that just after the war they could not, because they were still in the same camps. They may have later been released from the camps, but the Holocaust narrative was already created. It is difficult to see why they should have wanted to tell a different story. Probably they wanted revenge more than historical truth. There is a similar problem with Hungarian Jews: if some 279,000 Hungarian and Romanian Jews did come to DP-camps after 1946, why did they not tell having been among the missing Hungarian Jews? Their story would have conflicted with the accepted Holocaust narrative. Why should they have told? There were also some Jews, who were sent directly to Minsk. If any of them survived, they also did not announce it after the war. Instead, there were eyewitnesses, who told having seen to gassings and mass burnings. These are unsolved problems in the presented solution, but the problem is not mathematical and cannot be addressed by the approach used in this article.

If all sent to Operation Reinhardt camps died, the Jewish death toll is 3.2 million, but if only 29% of these Jews died, the death toll is 2.2 million. The real number is somewhere between these two.

6. Sources:
Polish census of 1932
American Jewish Year Books 1939-40 and 1948-49
Wikipedia on the History of American Jews
Official websites of concentration camps