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Based on an article originally printed in ULTRA, a quarterly newsletter devoted to *A WORLD AT WAR*, GMT Games' strategic simulation of World War II.
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POLAND

The First Blitzkrieg

by Bruce Harper and Kris Dzikowski

Introduction

Thinking about World War II brings to mind the Battle of Britain, Rommel and the Africa Korps, the titanic struggle on the eastern front, Pearl Harbor, Midway and Iwo Jima. But it all began in Poland, with a campaign that was as lopsided in history as it is in *A WORLD AT WAR*. But it is not without subtleties, either.

Poland, like a phoenix, was reborn in 1918 after 123 long years of occupation under the rule of three neighboring powers: Germany, Russia and Austria-Hungary. Between the two world wars the Second Polish Republic built everything from scratch: industry destroyed during the First World War and the Russo-Polish War which followed, a national economy, a unified system of laws, a political system and a national identity, although the flame of Polish nationalism had never been extinguished following the partitions of the late 18th century.

The Polish Situation

Poland's rebirth after the First World War was to a large extent a fortuitous accident of history. Poland's misfortune of being located between two hostile great powers was temporarily offset by the collapse of Germany and Russia in 1918-1920. This gave Poland the opportunity to assert its independence, but also created in some Polish circles the dangerous delusion that it was a power on par with its potentially powerful neighbors. Historically Poland suffered from being the invasion route between Germany and Russia, but a disaster occurred when the rapprochement between Hitler and Stalin led to the Nazi-Soviet Pact, which really amounted to a fourth partition of Poland.

The Depression of the 1930s was hard on Poland and the economic recovery that was underway in 1939 came too late to significantly benefit the Polish armed forces. When the Germans attacked in September 1939,

Poland had an obsolete army with relatively few tanks and aircraft. The army consisted mainly of infantry and the cavalry beloved by the Poles.

The German five-fold superiority in tanks and planes was augmented by the impossible strategic situation in which Poland found itself. The German occupation of Czechoslovakia in March 1939 allowed the Germans to attack from three different directions (in the north from East Prussia, in the west from Germany and in the south from Slovakia). Defense in depth, behind the Vistula, was impossible, as that meant giving up Poland's richest provinces. The Poles were concerned that if they didn't defend these areas, the Germans could conquer them without a fight and the Western Allies might accept the result in another Munich. Historically, in contrast to *A WORLD AT WAR*, Polish troops deployed along the Polish borders.

The Poles had some one million soldiers, in 39 divisions and 16 brigades, with 4,300 guns, 880 tanks and 400 planes. Against this the Germans deployed nearly two million men, in 56 divisions and 4 brigades, with 10,000 guns, 2,700 tanks and 3,000 planes.

The Historical Conquest

When Germany attacked Poland on September 1, 1939, the Polish armies were forced to withdraw towards the east. The basic Polish plan was to hang on and await an expected Western Allied attack in the west, but of course this attack never came. On September 17, 1939, the Red Army invaded the eastern regions of Poland to reclaim the territories lost to Poland in the Russo-Polish war of 1920. Poland had no chance against this combined attack, although its military situation was already hopeless when the Russians attacked (the Russian action in fact being accelerated by the speed of the German success).

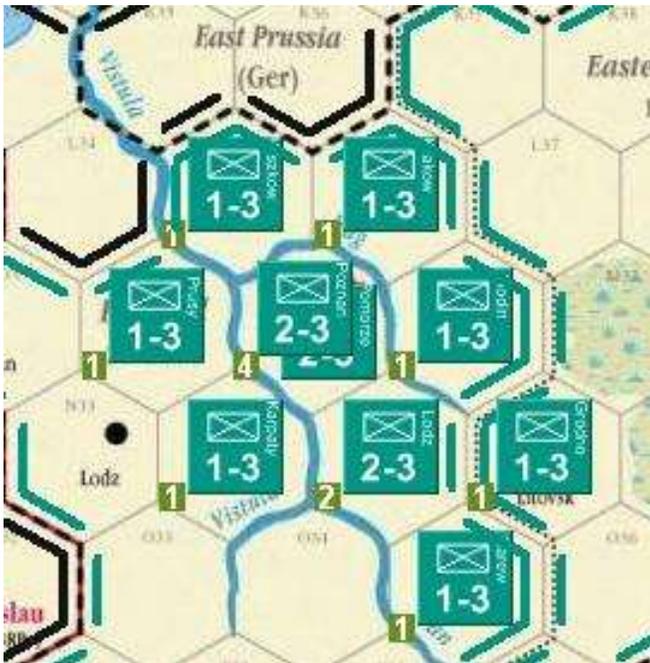
The Polish government, which never surrendered, together with the remaining Polish forces, evacuated to

neighboring Rumania. Many of the exiled Poles fought for the Western Allies with great distinction in many campaigns during the Second World War.

The Polish Defense

In A WORLD AT WAR, the conquest of Poland is determined by control of Warsaw, so the Poles will always set up with two 2-3 infantry units in the Polish capital. Their remaining forces will be used to try to block German access to Warsaw. We will consider the basic Polish defensive set up to consist of five 1-3 infantry units adjacent to Warsaw, the third 2-3 infantry unit in the hex southeast of Warsaw (N35), to cover the only non-river access to Warsaw, and the remaining two 1-3 infantry units in two of the three hexes adjacent to N35. This will be referred to as Polish Defense 1.

Note that in all the diagrams in this article, the Polish air units have been omitted.



Polish Defense 1

The German Attack

The German attack varies depending on the precise Polish set up. First let's consider the basic Polish defense, Polish Defense 1.

The Counterair

One aspect of the German attack common to all variations is that the Germans will counterair the Polish

air force. No matter where the two Polish AAF deploy, only two Germans AAF are required to negate them, as a quick look at the first two rows of the Air Combat Table confirm:

		Air Combat Table - 19.2										
AF AS		Dice Roll										
		2	3	4	5	6	7	8	9	10	11	12+
1	1	0	0	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3
2	2	0/1	0/1	1/0	1/0	1/1	1/1	1/2	1/2	1/3	1/3	2/2

Since the German Air Nationality DRM is two higher than that of the Poles, the German air combat dice roll receives a +2 modifier, while the Polish air combat dice roll incurs a -2 modifier. If the air combat is resolved as two one-on-one battles, the worst the Germans can do is roll a "2", which is increased to a "4", which inverts the Polish AAF. If the air combat is resolved as a single two-on-two battle, then the worst the Germans can do in their first air combat dice roll is to eliminate one Polish AAF, while the best the Poles can do is eliminate one German AAF. The battle would then continue with each side having one AAF, which we know the Germans can't lose.

This makes this part of the Polish campaign pretty simple – the Germans allocate two AAF to knocking out the Polish air force, leaving them 18 AAF for ground support.

The only variables are where the Poles set up their air and how well they roll in air combat. Together these will determine the extent of the German air combat losses.

David Earle correctly points out that, from a statistical point of view, the German losses will be higher if the Poles fight two air battles, because they have a 15/36 chance of eliminating a German AAF in each air combat. This requires a Polish infantry unit in Brest-Litovsk, so the Poles have a second airbase available.

Germany can't easily avoid this by holding back two AAF for interception of Polish ground support, because Poland can fly one AAF during the movement or combat phase, and then fly its second AAF during the exploitation phase.

However, it is worth noting that, while two air battles leads to a probable German loss of 2.5 BRPs of AAF (vs. 2.17 BRPs from one air battle), the former approach also gives Germany a 34% chance of no losses (vs. a 28% chance of no losses from one air battle). The Allied player may feel that it's more important to have a

greater chance of eliminating one German AAF than to increase the chances of eliminating two German AAF.

The Allied player may also decide that the time and energy spent resolving a second air battle is not worth the .37 BRP difference in expected German losses.

Even so, this analysis illustrates the subtleties to be found in even the simplest A WORLD AT WAR positions.

Editor's note: The attack originally proposed in the Fall 2005 issue of ULTRA is now set out, but several improvements were later found.

The Overrun

The next step for the Germans is to overrun one of the Polish 1-3 infantry units southeast or east of the Polish 2-3 infantry defending the southern route to Warsaw. For this the Germans will use two 4-6 armor units and four AAF (leaving them with 14 unused AAF). Since this article was originally published, the possibility of losses from overruns has been abolished, as time consuming and pointless, so there will be no German losses.

The Breakthrough

After the overrun, one of the overrunning German 4-6 armor units remains in place, while the other withdraws to make room for a German 3-3 infantry unit. Two more German 3-3 infantry units move into position and all four units attack the Polish 2-3 infantry unit southeast of Warsaw (13:4 = 3:1). This attack is guaranteed to succeed. The rest of the German armor moves adjacent to the attacking German units.

The Exploitation

At this point the Germans have three 4-6 armor units available for exploitation, plus 14 AAF, for a total of 26 factors for the exploitation attack on Warsaw. This is another 3:1 attack (26:8 = 3:1), with the only question being whether the Germans will lose a 4-6 armor unit. Germany cannot lose two 4-6 armor units, because of the following rule:

15.54 EARLY GERMAN OVERRUNS AND EXPLOITATION ATTACKS: "Ex" results from German overruns and exploitation attacks are treated as "Ex-1" results:

A. In Poland in Fall 1939.

B. On the western front during the first two Axis player turns in which the Axis conduct any western front offensive ground or air operations, but no later than Summer 1940. Normally this will be Spring 1940 and Summer 1940.

The Improvement

In fact, as pointed out on the A WORLD AT WAR Yahoo list by David Stepnowski, the Germans can do better by inverting the order of their attack.

A German 4-6 armor unit and two German 3-3 infantry units attack the Polish 1-3 infantry unit in O35 (two hexes southeast of Warsaw) at 5:1 odds. This creates a breakthrough from which the other three German 4-6 armor units exploit.

David Stepnowski's idea was that four German 3-3 infantry units attack the Polish 1-3 infantry unit southwest of Warsaw (N34) at 6:1 odds, in order to clear the hex. Because the attacking odds are so high, there is no risk of loss to the Germans.

Two German 4-6 armor units, supported by four German AAF, then overrun the Polish 2-3 infantry unit southeast of Warsaw (N35). This leaves Germany with 14 AAF. Two German 4-6 armor units then move to N34 and the third remains in N35, and a 3:1 exploitation attack is made against Warsaw, as detailed above. Apart from the initial counterair attack against the Polish air force, the only loss risked by the Germans is a single 4-6 armor unit in Warsaw.

David Earle pointed out that the infantry attack against the Polish 1-3 infantry unit in N34, while risk free, is unnecessary. Instead, two exploiting German 4-6 armor units overrun the Polish 1-3 infantry unit in Brest-Litovsk (N36), then overrun the Polish 2-3 infantry unit in N35, with four German AAF in support. The third exploiting German 4-6 armor unit follows this path, then move back into N36, then overruns the Polish 1-3 infantry unit east of Warsaw (M36), with two German AAF in support. This uses two more German AAF than before, but it doesn't matter, because the attack on Warsaw is still at 3:1 odds (three 4-6 armor and 12 AAF (24:8 = 3:1).

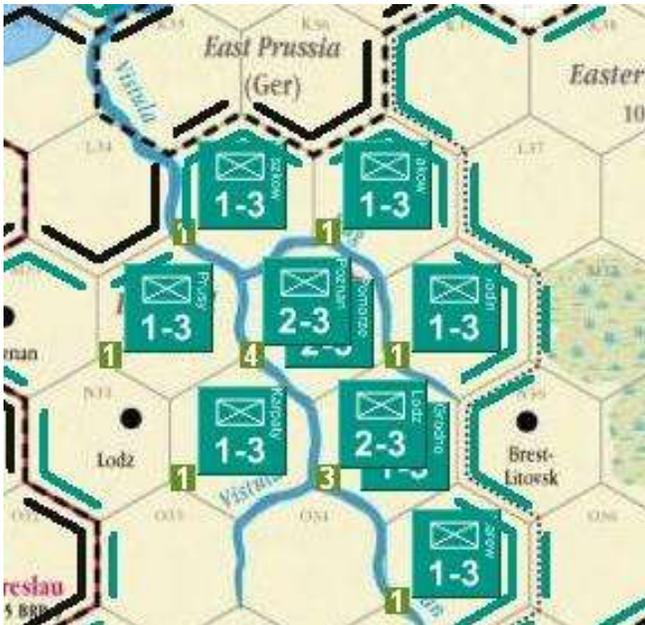
The advantage to this second approach is that the four German 3-3 infantry units which were to attack the Polish 1-3 infantry unit southwest of Warsaw are not needed, but this advantage is an illusion. Germany can't do anything other than attack Poland in Fall 1939, and all four German 3-3 infantry units can strategically redeploy to the western front through Breslau, Krakow and Warsaw, while the German armor can tactically redeploy to the west. Under either Polish attack, Germany will have all the units it used to attack Poland available if it wants to attack the Low Countries in Winter 1939.

Germany therefore has two equally good ways to

overcome Polish Defense 1, which proves that even the first turn of the game contains interesting nuances.

Variations in the Polish Defense

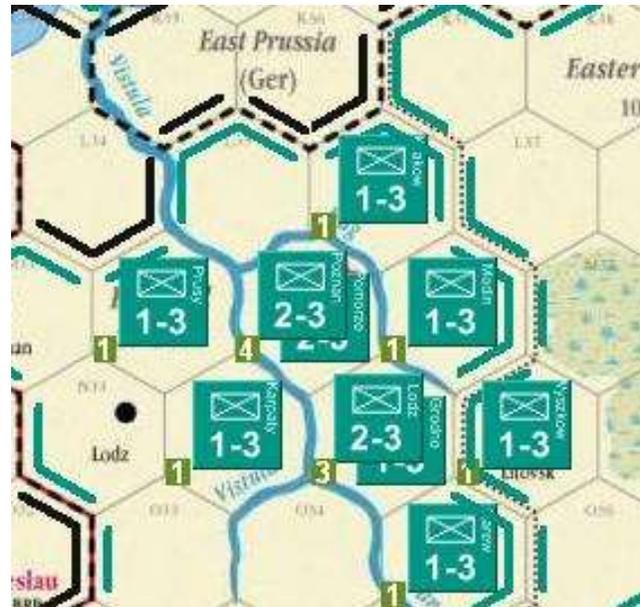
The first variation in the Polish defense is to leave two of the hexes adjacent to N35 vacant, and put a 2-3 infantry unit and a 1-3 infantry unit in N35 itself. This is Polish Defense 2:



Polish Defense 2

The German attack is then slightly varied. Germany overruns a Polish 1-3 infantry unit adjacent to N35, just as it did before, then attacks the three Polish infantry factors in N35 with a 4-6 armor unit and five 3-3 infantry units ($19:6 = 3:1$).

The second variation in the Polish defense is similar to Polish Defense 1, but in Polish Defense 3 one of the hexes adjacent to Warsaw is left vacant, and that 1-3 infantry unit is instead placed in N36, to reinforce N35. The idea of this defense is that if the Germans overrun one of the Polish 1-3 infantry units adjacent to N35, they will be able to attack the 2-3 Polish infantry unit in N35 with only a 4-6 armor unit, three 3-3 infantry units and two AAF ($15:6 = 2.5:1$). The attack will succeed and Warsaw will be captured by exploiting German armor at 3:1 odds, but the likely German losses are slightly increased because the Germans are unable to create their breakthrough with a 3:1 attack.



Polish Defense 3

The Germans don't have to go along with the Polish plan, however. When one hex adjacent to Warsaw is left vacant, the Germans may overrun the four Polish 1-3 infantry units adjacent to Warsaw using two 4-6 armor units and four AAF for each overrun. Once five hexes adjacent to Warsaw have been cleared, the Germans can attack Warsaw with four 4-6 armor units, six 3-3 infantry units and their two remaining AAF, for a total of 36 attacking factors, which is exactly what is required for a $36:12 = 3:1$ attack against Warsaw.

A third variation of the Polish defense is similar. The Poles leave two hexes adjacent to Warsaw vacant, put a 2-3 infantry unit and a 1-3 infantry unit in N35 and defend all three hexes adjacent to N35 with 1-3 infantry units. This is Polish Defense 4.

An inflexible German player will overrun two of the Polish 1-3 infantry units adjacent to N35, using eight AAF, then attack N35 with a 4-6 armor unit, three 3-3 infantry units and two AAF ($15:6 = 2.5:1$). This will use a total of 12 AAF (including the two needed to counterair the Polish air force), leaving him only eight AAF for the exploitation attack on Warsaw. The $20:8 = 2.5:1$ exploitation attack on Warsaw will succeed, but the German losses from two 2.5:1 attacks are likely to be higher than those for two 3:1 attacks.

To meet Polish Defense 4, the Germans should adopt the same approach as for Polish Defense 3; overrunning the Polish 1-3 infantry units adjacent to Warsaw, then attacking Warsaw in a 3:1 non-exploitation attack. Because the Germans have to make

one less overrun, Polish Defense 4 is actually slightly weaker than Polish Defense 3.



Polish Defense 4

Expected Losses

It should be clear by now that Poland cannot survive if the German player knows how to attack it (and if you've read this far, you do). The best the Poles can do is to try to maximize the losses incurred by the Germans. The merits of the various Polish defenses may be judged by the expected German losses, although this type of analysis doesn't tell the whole story, because some defenses may inflict higher German losses on average, but may also have a lower maximum German loss.

With respect to the Polish air, the expected losses to Germany are virtually the same whether the Polish air is stacked separately or together (with a tiny edge to stacking them separately). It comes out to around 2.5 BRPs (slightly less than one AAF). The Allied player just has to decide whether to roll once on the "1" row of the Air Combat Table or twice on the "2" row. Either way, the Allied player should keep in mind that it's better to roll high than low.

For each overrun, the Germans have a 1/6 chance of losing one AAF (rule 15.54A gives relief for overruns, therefore a die roll of "1" results in an "Ex-1", not a full "Ex"), so the expected loss for each overrun is half a

BRP (although for any given overrun, the actual loss will be either 3 BRPs or nothing at all).

For regular combat and exploitation attacks, the expected losses are calculated by determining the BRP cost of each possible result on the Combat Results Table:

Combat Results Table - 15.6								
	1:4	1:3	1:2	1:1	2:1	3:1	4:1	5:1
1	A	A	A	A	a	Ex	Ex-1	Ex-2
2	A	A	A	a	Ex	Ex-1	Ex-2	d
3	A	A	a	Ex	Ex-1	Ex-2	d	D
4	A	A	Ex	Ex-1	Ex-2	d	D	D
5	A	Ex	Ex	Ex-2	d	D	D	D
6	Ex	Ex	Ex	d	D	D	D	D
Modifier								
+1	For each previous round of combat							

For example, for the most important attack (the 3:1 exploitation attack on Warsaw), the Germans will lose 8 BRPs on a die roll of "1" (rule 15.54A), 8 BRPs on a die roll of "2", and nothing on a die roll of "3" or more. The expected loss is therefore 16 BRPs divided by 6 die rolls = 2.66 BRPs, although the actual loss in any given game will be either 8 BRPs or nothing.

For the 3:1 attack to create the breakthrough in N35, the Germans get no relief on a die roll of "1", but they can take their losses from infantry, so against both a single Polish 2-3 infantry unit or a Polish 2-3 infantry unit and a 1-3 infantry unit, the Germans will lose two 3-3 infantry units on a die roll of "1" (6 BRPs), one 3-3 infantry unit on a die roll of "2" (3 BRPs) and nothing on a die roll of "3" or more, for an expected loss of 1.5 BRPs.

If the Germans overrun the Polish 1-3 infantry units adjacent to Warsaw, the expected losses for the 3:1 attack on Warsaw will be four 3-3 infantry units on a die roll of "1" (12 BRPs), three 3-3 infantry units on a die roll of "2" (9 BRPs), two 3-3 infantry units on a die roll of "3" (6 BRPs), and nothing on a die roll of "4" or more. This comes out to 4.5 BRPs, plus 1 or 2 BRPs for the overruns, but in assessing this attack it must be kept in mind that these are the only attacks Germany will have to make, and that Germany will miss the infantry when it attacks in the west less than it would miss an armor unit.

In summary, the expected losses for Germany in Poland are a little less than 10 BRPs, and this figure changes little regardless of the exact Polish defense and the precise German attack. For most players, these

details are not worth worrying about. The Germans can only get in trouble in Poland if they somehow mishandle the attack.