



# ENIGMA. **DECIPHER VICTORY**

## Technical specification of the exhibition



- 20 Umkehrwalze
- 25 Stenwand
- 26 Rollen
- 27 Rotorblätter



## ENIGMA. DECIPHER VICTORY Boards

**Boards** – 23 boards made of Komatex sheet, 4 mm thick, graphic design printed on Komatex sheet directly. Size of all boards - 1405x2000mm. English language version.



**Board connecting elements** – made of aluminum profiles called "alu OCTANORM – MAXIMA"; square horizontal section, side length = 80mm.



17. Chiffrierwalzen  
18. Zahlenscheibe  
19. Schalttafel  
20. Umkehrwalze  
21. Statorwand  
22. Saften  
23. Rotorriegelkasten



## ENIGMA. DECIPHER VICTORY

### Arrangement of the exhibition

**Labyrinth** – the boards may be arranged in a form of a labyrinth; boards with graphics inside the installation are placed opposite plain boards so that visitors watch the exhibition on one side of the boards only. The labyrinth has only one entrance and one exit; as per the enclosed schematic drawing. The width of the passage is ca. 1405mm (+- 40mm).



**Lamp** – each board with graphics is illuminated separately. Exhibition lamp + 50 WAT halogen bulb. The lighting system wiring and fittings are inside the aluminum profiles.



17. Charakterystyka  
18. Zależności  
19. Metale  
20. Umiejętności  
21. Siatki  
22. Materiały

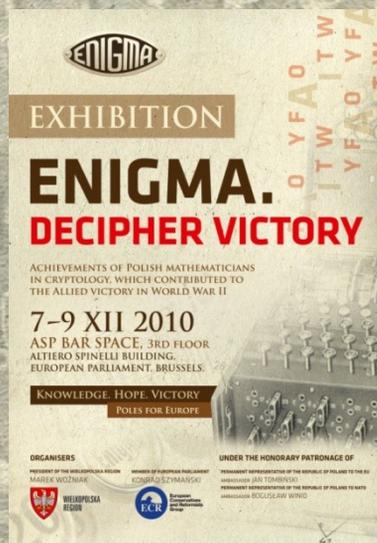


## ENIGMA. DECIPHER VICTORY Additional materials

**Brochure** – size:630x210mm (folded into 3 parts), after folding it is in a shape of a square 210x210mm. Available in the English language version; optional: translation into other languages. The brochure summarizes information presented at the exhibition.



**Poster** – A3 size. Available in the English language version; optional: translation into other languages or text modification.



**Souvenir** – a puzzle cube, 40x40x40 mm, made of wood, packed in a bag and a special box.



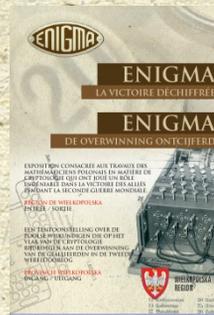
13. Chiffrierwalzen  
18. Zahlenscheibe  
17. Metalldeckel  
19. Galtzschel  
20. Umkehrwalze  
25. Stützwand  
26. Saften  
27. Rotortriebhafter



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### Additional materials

**Brochure** – black and white, size 120x150 mm (additionally a free-standing rack for leaflets). Prepared in the language of the country in which it is presented. It includes translation of all boards at the exhibition.



**Promotion wall** – arched, size 2600x2350 mm, aluminium structure. It can serve as a background for speeches during a vernissage of the exhibition or can promote the display (for use inside a building).



**Promotion banner** – colourful, size 2500x1800 mm. Banner promoting the exhibition. It can be put outside or inside a building.





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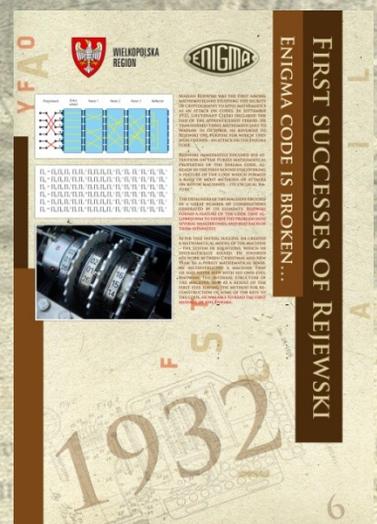
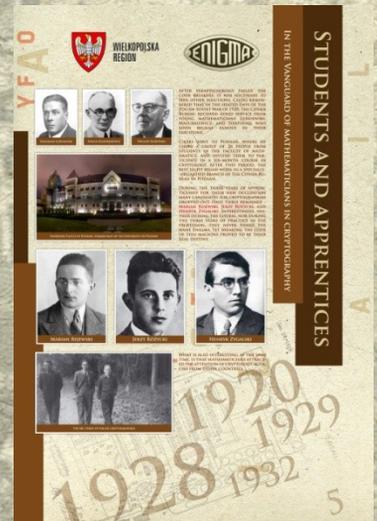
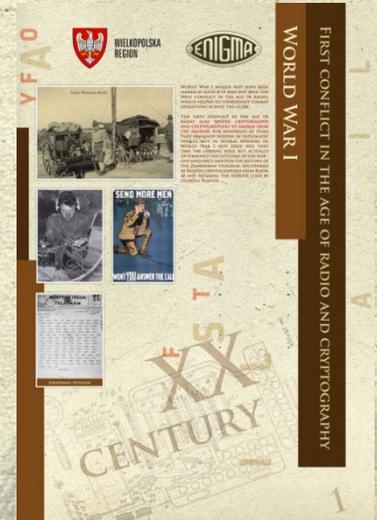
## Description of the exhibition

### Thematic range of boards

When tracing the development of modern knowledge-based economy we often forget that roots of many disciplines stick in the trenches of the great wars of the 20<sup>th</sup> Century. The exhibition organised by Marek Woźniak, Marshal of the Wielkopolska Region, entitled **“Enigma.Decipher Victory”** is dedicated to the great achievements of Polish mathematicians in breaking the code of the Enigma machine. The exhibition conjures up one of such stories, which is worth remembering in so far as it contributed to saving millions of lives rather than deepening the madness of mutual destruction.

World War I saw a breakthrough in the use of the cryptology. Application of codes and ciphers at the mass scale made the enemy break them, which was often crucial for taking actions that shaped the course and the result of the conflict.

During the last months of the war, first ciphering machines were constructed. Their application made majority of codebreaking methods developed for thousands of years obsolete. It seemed that the next war would be settled in the battlefields rather than in the codebreakers' offices. Two factors, however, led to a very different course of action. The first was the Blitzkrieg doctrine that assumed strict coordination of armour, airplanes, and infantry. This coordination was possible only through the everyday use of the radio, which again required massive use of ciphering machines. The most famous ciphering machine in history, the German Enigma machine, became the keystone of the Blitzkrieg concept.



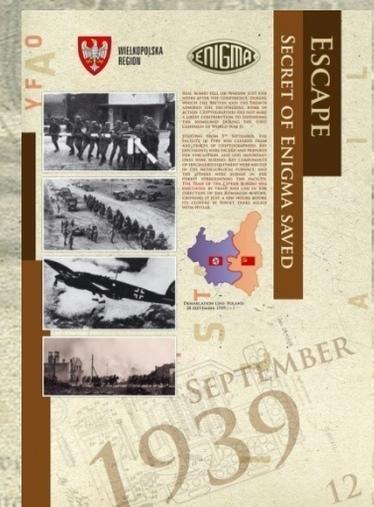
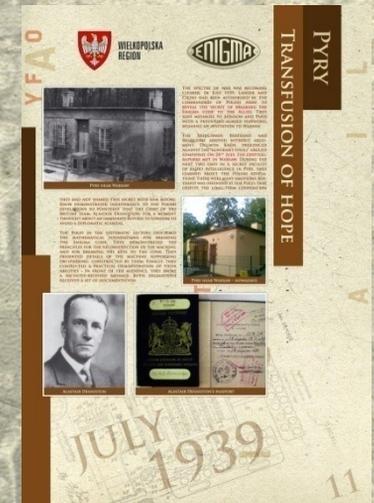
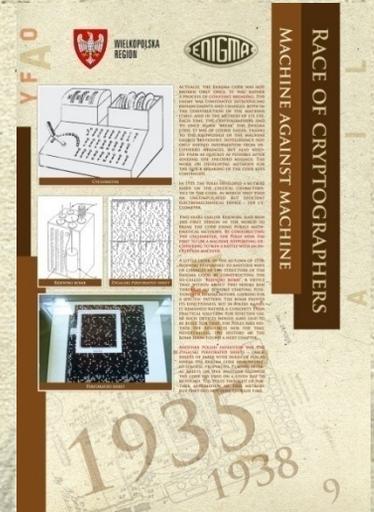


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The other factor was the Polish Cipher Bureau officers' decision to hire mathematicians. In the late 1920's and early 1930's no one would consider using mathematics for attacking codes and ciphers. Poles were the first to organise a course on cryptology for a group of students from the Poznań University. Later they let the students apprentice as codebreakers for four years before they revealed the true nature of the task they were supposed to carry out – breaking the ciphers of the Enigma machine. Patience paid off in the autumn of 1932 when in just three months Marian Rejewski broke the cipher considered unbreakable by the rest of the world. He demonstrated a perfect sense of timing as he had achieved this success less than a month before Hitler came to power in Germany.

But the achievement of Rejewski and his colleagues, Jerzy Różycki and Henryk Zygalski, had a second, much deeper agenda. Mathematical basis they had created for the attacks on machine ciphers were to revolutionise cryptology. In July 1939, on the brink of World War 2, the Poles shared their secret with the special services of France and Great Britain. Especially Britons, who until that time did not believe in hiring mathematicians as codebreakers, soon converted to the new doctrine and won the cream of mathematicians from the best universities in the country to work at the cryptology centre in Bletchley Park. During several years they significantly developed the mathematical basis, which had been created by Poles before the war. However, the majority of methods used by them came straight from the pre-war Polish achievements that remained valid for several decades after the war. As a result, it was only in the mid-1970's that the world learned about breaking the ciphers of the Enigma machine and the crucial role of Polish mathematicians in this success.



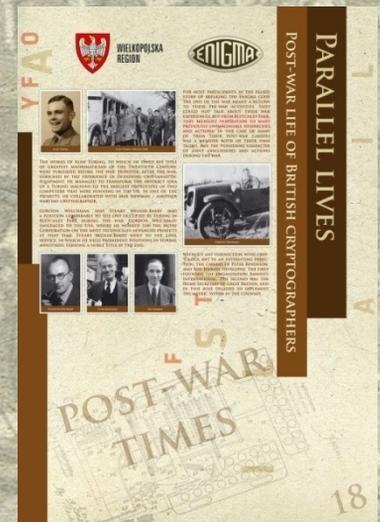
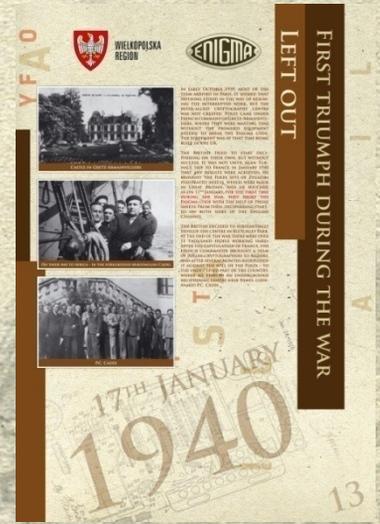


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Rejewski, Różycki, and Zygałski passed away before the results of their breakthrough became fully apparent. Contemporary historians agree that their success contributed to the shortening of World War 2 by two to three years and saving a number of potential victims proportional to that period of time. Most probably they saved our continent also from the nightmare of nuclear war – had the war lasted a couple of months longer, the first nuclear bombs would have been dropped on Berlin and other cities in Germany. The mystery surrounding the works of the cryptologists made the achievements of the mathematicians poorly appreciated during their lifetimes. The exhibition places them back in the memory of the residents of the continent which owes them so much.

The Local Government of the Wielkopolska is undertaking actions to spread the knowledge about the Polish scientists and the staff of the Cipher Bureau, who contributed to breaking the codes of Enigma. On November 10, 2007, Marshal of the Wielkopolska Region took part in the ceremonial unveiling of the monument dedicated to the memory of the three cryptologists from Poznań. At the initiative of the Marshal of the Wielkopolska Region and the Mayor of Szamotuły, the ashes of Maksymilian Ciężki, who was in charge of the German section of the Cipher Bureau before World War 2, were brought to Szamotuły, his native town.



17. Chiffrierwalzen  
18. Zahlenringe  
19. Metallblech  
20. Umkehrwalze  
23. Stützwand  
26. Saften  
27. Rotorstellungen



## ENIGMA. DECIPHER VICTORY

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