

~~TOP SECRET FROTH~~

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III. OUTLINE OF ENIGMA MACHINES

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## OUTLINE OF ENIGMA MACHINES

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Names: Commercial  
K  
Swiss Enigma

Used by: Commercial firms  
Reichspost  
Reichsbahn  
Miscellaneous government departments  
Swiss Government

- Rotors: 1. Right fixed sequence, usually QWERTZU.  
2. Three cipher wheels which are interchangeable.  
Each wheel has one notch.  
Construction: Hebern-type wheels; consists of two parts: the core (containing random-mixed wiring); and the tire which may be revolved to any one of 26 positions with relation to the core. Tire setting called "Ringstellung" and affects motion of wheels and acts as concealment of core positions.  
3. Umkehrwalzeor reflector - wired on right side only; 26 contact points wired to each other in mixed order to form 13 reciprocal pairs.

Motion: Regular and meter-like.  
Wheel 1 moves once with every letter encipherment; wheel 2 steps one when dog engages notch on wheel 1; wheel 3 steps one when dog engages notch on wheel 2 (at same time, wheel 2 will move again).  
Reflector remains stationary but may be set by hand at any one of 26 positions.  
Encipherment takes place after stepping.

Reflector: Rotor, not pluggable.

Endplate: Fixed, not pluggable.

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OUTLINE OF ENIGMA MACHINES

Names: Zahlwerkmaschine (Z-Maschine) (Counter)  
CHANKU (ASA)  
ISK (British)  
Abwehr  
"G"  
Group II type

Used by: Military Attache until 1943; then by Reich Security Office

Rotors: 1. Right fixed sequence.  
2. Three cipher wheels which may be interchanged. Multiple but fixed notches - 11, 15, and 17.  
3. Rotating Umkehrwalze.

Motion: Wheel 1 steps one with every letter encipherment; wheel 2 steps one when notch on wheel 1 is in effective position; wheel 3 steps one when notch on 2 is in effective position; Umkehrwalze steps one when notch on 3 is in effective position; each wheel moves only when all wheels to its right (faster than it) move.

Reflector: Rotor, not pluggable, rotating.

Endplate: Fixed, not pluggable.

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Names: Plugboard Stecker  
YELLOW (ASA)

Used by: Supreme Command, Army, and Air Force

Rotors: Three from a set of 5 available rotors.  
Each rotor has one notch.

Motion: Same as Commercial machine.

Reflector: Fixed plate, not pluggable (until later when the pluggable  
D Umkehrwalz was introduced).

Endplate: Pluggable, reciprocal stecker.  
Generally, six letters were left unsteckered, the other  
twenty letters being steckered together in 10 pairs.  
Difference between encipherment of this machine and the  
Commercial machine lies in endplate steckering.

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