

Paper Enigma Machine

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| Reflector | Left Rotor | Center Rotor | Right Rotor | Input/ Output |
|-----------|------------|--------------|-------------|------------------|
| Y A | A E | A A | A B | A |
| R B | B K | B J | B D | B |
| U C | C M | C D | C F | C |
| H D | D F | D K | D H | D |
| Q E | E L | E S | E J | E |
| S F | F G | F I | F L | F |
| L G | G D | G R | G C | G |
| O D | H Q | H U | H P | H |
| P I | I V | I X | I R | I |
| X J | J Z | J B | J T | J |
| N K | K N | K L | K X | K |
| G G | L T | L H | L V | L |
| O M | M O | M W | M Z | M |
| K K | N W | N T | N N | N |
| M M | O Y | O M | O Y | O |
| I I | P H | P C | P E | P |
| E E | Q X | Q Q | Q I | Q |
| B B | R U | R G | R W | R |
| F F | S S | S Z | S G | S |
| Z T | T P | T N | T A | T |
| C C | U A | U P | U K | U |
| W V | V I | V Y | V M | V |
| V V | W B | W F | W U | W |
| J J | X R | X V | X S | X |
| A A | Y C | Y O | Y Q | Y |
| T T | Z J | Z E | Z O | Z |

Setup

1. Select left/center/right rotors.
2. Position initial wheel positions by sliding the indicated window letter up to the first row.

Operation

[Start at the input column at right, then work left to reflector, and then back to the right to the output column.]

1. If the ↑ notch appears in the window row, shift that rotor and the rotor to the left up one row (the Right Rotor is always shifted up one row before each letter is encoded/decoded).
2. Select letter to encode/decode in the Input column.
3. Read adjacent letter, X, in right hand column of the Right Rotor; select the letter X in the left hand column of the Rotor.
4. Repeat for Center Rotor.
5. Repeat for Left Rotor.
6. Read the adjacent letter, R, in the Reflector; select the *other* letter R in the Reflector.
7. Read adjacent letter, Y, in left hand column of the Left Rotor; select the letter Y in the right hand column of the Rotor.
8. Repeat for Center Rotor.
9. Repeat for Right Rotor.
10. Write down the adjacent letter, Z, in the output column.
Repeat for each letter of the message.

Example: Initial setting: I-II-III: MCK, Letter E encodes to Q.
Sample Message: QMJIDO MZWZJFJR

X Cut here