

~~TOP SECRET FROTH~~~~TOP SECRET FROTH~~IV. ENIGMA WIRINGS

A. Unsteckered Enigmas

[In listing wheel wirings, the various Enigma machines have been arbitrarily classed according to certain characteristics; the grouping is by no means intended to be definitive. Wheel wirings, as ordinarily given by sources, are with the rings set at letter A. The letters "r" and "l" represent "right" and "left", indicating the direction of the flow of current through the wheels.

The appendices comprise four documents of interest from TICOM sources. Indices to all wiring sequences and individual machines begin on page 219. Source of material is given with the discussion of each machine. A full list of these sources starts on page 209.]

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ENIGMA WIRINGS

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Name of Machine: COMMERCIAL ENIGMA

Sources: (These are listed under the various types)

The Commercial Enigma is known to have been sold widely prior to 1935. It was used by several governments. Some of these countries rewired the wheels for greater security. Presumably because of its different usages it has been named simply Commercial, A-Commercial, D-Commercial, and K. A serial number prefixed by A without an additional suffix denotes a standard Army machine as issued to the German Army, Air Force, and the SS. In addition, there are various types with the Greek letters Alpha and Delta suffixed to the serial number, e.g., A-246176a. These were standard machines returned to Heimsoeth & Rinke (manufacturers of the machines) for special re-wiring. The purpose or destination of these machines is unknown. One machine included in this report has the letter S suffixed to its serial number.

Basically, the machine has three single-notched wheels, and six wheel orders. The reflector is settable and the endplate sequence is fixed. (All Commercial type Enigmas dealt with at ISK had the QWERTZU input). The three wheels are wired differently and are usually distinguished by the numbers I, II, and III. Each wheel has one notch in its ring so placed that wheel I steps at position E, wheel II at N, and III at Y. The rotatable reflector is moved mechanically, but can be set at any one of 26 positions by hand. The wheels and reflector each have clip position devices (Ringstellung). When the several clip positions are known, a definite setting of the wheels is determined by noting which letter of each ring appears in the window situated in the cover of the machine. The letters are read from left to right starting with the reflector.

This discussion deals with Enigmas in the following order: A types, Swiss, D, K, and those named simply Commercial Enigmas.

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ENIGMA WIRINGS

Name of Machine: A (OLD COMMERCIAL)

Source: 6b (p. 1-3)

These wheels were sold on the commercial market. They were marked A by the manufacturers. At one time the Swiss used this Enigma, and it is believed that they rewired the wheels (but not the reflector) twice in the passage of years.

The reflector on this machine, in addition to being used on the Swiss rewired models, is also used on the Spanish Naval Attache machine and on the Coast Guard 3-N Enigma.

These two wirings were obtained from the U.S. Army Signal Corps. The reflector is the same as for the old commercial machine. Apparently the Swiss rewired the three wheels but not the reflector. No information is available as to notches; they are presumed to be the same as for the old commercial.

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ENIGMA WIRINGS

Name of Machine: A (OLD COMMERCIAL)

Endplate Sequence:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z (Endplate)
(Keyboard)

Rotors: (Paper strip wiring)

I. r. A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
l. H R W Y I P C G V X L A F U J B K O D T S M Z N Q E

II. A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
S E W Y M G D L O I U B T X K V J P A F Z C N H R Q

III. A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
L V A D Z P C G Y B H X Q S U E T K F I J W M O R N

Reflector: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
I M E T C G F R A Y S Q B Z X W L H K D V U P O J N

Notch patterns are indicated by /

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