

Example of Coding and Decoding with a *NEMA* Cipher Machine

(valid for war reserve model with sticker "Nur bei Kriegsmobilmachung abgeben!")

For more information check the accompanying literature

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Key word: CRYPTOGRAPH

(at least 10 letters)

Rotor settings: 12 A - 13 B - 14 C - 15 D - 22 / 1

(rotor sequence)

Coding:

- Set up operational mode
(connect to mains or battery, place rotors in above sequence, close inner cover and set key word along rim of cap, drop excess letters, set meter on zero, put red clutch lever on "Betrieb")
- Plain text to be encoded (18 characters): **BRIDGE 146 DESTROYED**
- Processed text (20 char.): **BRIDGEY146XDESTROYED**
(Y denotes change to numbers, X back to letters)

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- Randomly chose key letters (thereafter called group 1) and note down on message pad
DAYIO QRBLF
 - Press a key once (and disregard result)
 - Key-in group 1 and Generate New Code word (**GNC**)
(i.e. encipher group 1 and get a "message key" for rotor starting positions)
AICUG KXOSY (write on separate paper, destroy immediately after keying in)
 - Read meter: 10 (ok)
 - Set GNC on rotor rims, set meter on zero, red clutch lever on "Betrieb"
 - Write group 1 letters as heading block in front of the subsequently generated cipher text
DAYIO QRBLF
 - Press a key

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- Create cipher text from processed text and write down in blocks of five after header (group1) DNOQO TBKXB CNMKB CMWTX
 - Read meter: 20 (ok)
 - Repeat group1 letters after cipher text DAYIO QRBLF
 - The string of characters to be transmitted, e.g. by a Morse key or verbally by phone, now reads as follows: DAYIO QRBLF DNOQO TBKXB CNMKB CMWTX DAYIO QRBLF
(Group 1) (Cipher text) (Group 1)
(Header) (Trailer)
 - Transmit to opposite station (partner) and indicate also the total number of characters (40) for control.

For each outgoing message a "fresh" group 1 and its corresponding GNC is a MUST.

Extraordinary long messages need be split up in two or more block messages, each being enciphered with a different message key.

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Decoding:

- Partner station is set in operational mode and message has been received
- Press a key
- Generate GNC from group 1

AICUG KXOSY

(write on separate paper, destroy immediately after keying in)

- Read meter: 10 (ok)
- Set GNC on rotor rims, set meter on zero, red clutch lever on "Betrieb"
- Press a key

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- Deduce and note plain text from cipher text, without keying-in group 1 header and trailer

BRIDG EY146 XDEST ROYED

- Read meter: 20 (ok)
- The plain text without shift-key letters X, Y now reads:

BRIDGE 146 DESTROYED

