

Post-curriculum training
of active radio operators
of the EVU-Sections.
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SECRET
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No. **596**

INSTRUCTIONS FOR CIPHERING
WITH THE CIPHER SLIDE RULE
" CAESAR "

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Translated and annotated in **red** by Crypto Museum, 24 August 2019

EVU = Eidgenössiger Verband der Übermittlungstruppen
Federal Confederation of Signals Corpses



A. Purpose

The 'Caesar' cipher method was developed for the training of cipher users, as part of the post-curriculum training for radio operators. It is very similar to the Enigma cipher and offers the the same cipher operations.

B. The Cipher Slide Rule

The 'Caesar' slide rule basically consists of two parts, a fixed double-alphabet and a movable 'tongue' with a single alphabet plus numbers. The fixed part has markers for Cipher (CH) and decipher (DCH). The 'tongue' carries a setting marker (red ↓ arrow), that is use for ciphering as well as deciphering.

With this cipher slide rule, texts consisting of letters, numbers and punctuation marks, can be converted into a letters-only ciphertext.

C. The Keyword

Each text is encrypted by means of a keyword. The keyword itself is determined by the checksum of the minutes in the time group.

A total of 15 keywords are defined, which can be altered at any time by the issuing office for cipher material.

Note: if the plaintext is longer than the keyword, the keyword will be reused from the start.

D. Keyword Table:

0	Bahnhofinspektorat	Train station inspection
1	Kreistelegraphendirektion	District Telegraph Directorate
2	Ueberschallgeschwindigkeit	Supersonic speed
3	Kathodenstrahlscillograph	Cathode Ray Tube
4	Dampfmaschinenoeffilter	Steam engine oil filter
5	Abgasturbinengehaeuse	Turbine exhause enclosure
6	Elephantendomteur	Elephant tamer
7	Quellenverunreinigung	Source pollution
8	Centrifugalregulator	Centrifugal governor
9	Fluxmeterangabe	Flux meter indication
10	Rohrleitungsbruch	Pipe break
11	Gartenbaugeschaeft	Horticulture business
12	Isolatorenwiderstand	Insulation resistance
13	Lichtquellenausbeute	Light source yield
14	Pythagorasformel	Pythagoras formula

Time group	1900	=	Keyword	0
"	2012	=	"	3
"	2159	=	"	14

E. Chipher rules:

For ciphering with the Cipher Slide Rule, the same rules are applicable as for the "Enigma" cipher machine. The only exceptions are the punctuation marks point (.) and comma (,).

Words and numbers are separated by the letters 'X' or 'Y', where the letter 'Y' is used to switch from letters to numbers.

The following abbreviations are used for encrypting punctuation marks:

.	Punkt	PU	point
,	Komma	KO	comma
:	Doppelpunkt	OS	colon
?	Fragezeichen	IMI	question mark
-	Bindestrich	BA	hyphen
/	Bruchstrich	DN	slash
()	Klammer	KK	brackets
<u>abc</u>	Unterstreichung	UNT	underscore
	Alinea	AL	paragraph

F. Examples:

Plain text : Send 3 trucks now

SENDY3XTRUCKSXNOW

Plain text : Petrol, oil and supplies can be taken at 0800 sharp

PETROLXKXOILXANDXSUPPLIESXCANXBEXTAKENXATY0800XSHARP

Plain text : 11.6.48 0500 despatch 2 trucks (3.5 T)
for ammunition transport

Y11Y6Y48Y0500XDESPATCHY2XTRUCKSXKKY3XPUY5XTXKKX
FORXAMMUNIITONXTRANSPORT

G. Procedure for ciphering and deciphering

Telegram : 20.3.48. 2156
Address
 Report team strength before 1630 today
Signature

1. Select keyword, based on time (minutes) :
 2156 5 + 6 = 11 = Gartenbaugeschaeft
2. Insert the necessary separators in the plain text (do not write in the text, but in the header)

X X X Y X
 Report team strength before 1630 today

3. Encipher the first word of the plain text with separator (with the first letter of the keyword G)
 - a) Put red ↓ marker (tongue) above G of the leftmost fixed alphabet.
 - b) Spell out the first plain text word on the movable alphabet (tongue) and read the cipher text from the alphabet below and write it down in five-letter groups.

R E P O R T X Plain text

 P E R S P N J Cipher text PERSP NJ...

4. Encipher the second word of the plain text with separator (with the second letter of the keyword A)
 - a) Put red ↓ marker (tongue) above A of the leftmost fixed alphabet.
 - b) Same as 3b.

T E A M X Plain text

 H W A O D Cipher text PERSP NJHWA OD...

5. Encipher the third word of the plain text with separator (with the third letter of the keyword R)
 - a) Put red ↓ marker (tongue) above R of the leftmost fixed alphabet.
 - b) Same as 3b.

S T R E N G T H X Plain text

 Z Y A N E L Y K U Cipher text PERSP NJHWA ODZYA NELYK U....

6. Encipher the fourth word of the plain text with separator (with the fourth letter of the keyword T)

- a) Put red ↓ marker (tongue) above T of the leftmost fixed alphabet.
- b) Same as 3b.

B E F O R E Y Plain text

S P O F C P V Cipher text PERSP NJHWA ODZYA NELYK USPOF CPV..

7. Encipher the fifth word of the plain text with separator (with the fifth letter of the keyword E)

- a) Put red ↓ marker (tongue) above E of the leftmost fixed alphabet.
- b) Same as 3b.

1 6 3 0 X Plain text

I S M C H Cipher text PERSP NJHWA ODZYA NELYK USPOF CPVIS MCH..

8. Encipher the sixth word of the plain text with separator (with the sixth letter of the keyword N)

- a) Put red ↓ marker (tongue) above N of the leftmost fixed alphabet.
- b) Same as 3b.

T O D A Y Plain text

U Z K N P Cipher text PERSP NJHWA ODZYA NELYK USPOF CPVIS MCHUZ KNP

9. The complete cipher text in five-letter groups:

PERSP NJHWA ODZYA NELYK USPOF CPVIS MCHUZ KNP

10. Deciphering in reverse order.

- a) Put red ↓ marker (tongue) above G of the leftmost fixed alphabet.
- b) Spell out the ciphertext on the fixed alphabet and read the plain text from the movable alphabet (tongue).

REPOR TX...

PERSP NJHWA ODZYA NELYK USPOF CPVIS MCHUZ KNP

As soon as the separator X or Y appears, put the red marker at the next letter of the keyword and continue.

Bern, 18 March 1949

ARMY ENGINEER CORPS

Pre- and post-curriculum training:

Signature