

NATIONALE VOLKSARMEE
Of The D.D.R.

CHIFFRIERSACHE!
Secret classified information

GVS No.: B 434-109/78

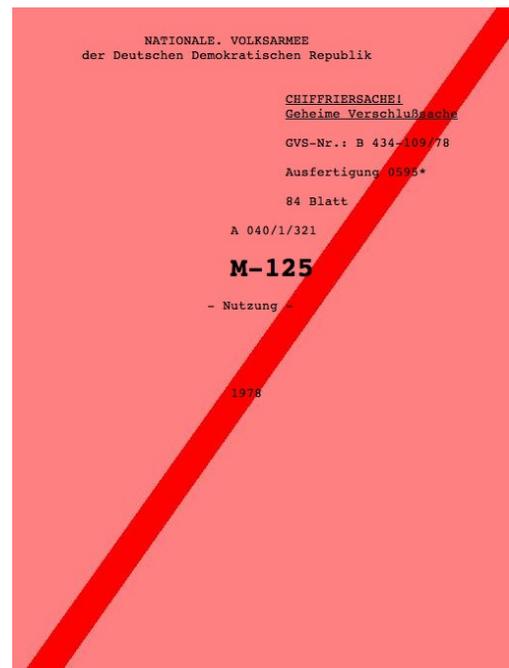
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84 sheets

A 040/1/321

Operations manual for M-125

1978



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Introduction rules for A 040/1/321

These instructions 040/1/321 - System M-125 (Cipher Machine Models M-125-3MN and M-125-MN - Operations Manual) - is adopted and comes into force on 01 December 1978.

At the same time, the following expire and must be destroyed:

- a) Usage instructions for the FIALKA system, GVS-XI/897/70;
- b) New rules for the retrieval (i.e., usage) and destruction of FIALKA system Message Key Tables, GVS-No. A 411 549.

O.U., 01 Dec. 1978 Chef Nachrichten.

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1. Purpose

The M-125 cipher-system is a machine-based system for stationary and mobile use.

It is used for processing German or Russian plain-texts and pure number texts. Only pre-ciphering is possible.

The M-125 system is approved for the processing of information to and including classification level GVS. Messages enciphered by the M-125 system can be transmitted by any means of communication, including radio.

Using this system, individual, circular, and general traffic can be handled.

There are Key Areas with up to 600 participants allowed.

2. Cipherng equipment.

The M-125 cipher-system consists of the following cipherng equipment:

- (1) Cipher Machine Model M-125-3MN or M-125-MN with its cipherng elements and Power Supply Unit (forming the set of components) ,
- (2) The Key Packages ,
- (3) The current rules for the M-125 system,
- (4) Technical descriptions for the Models M-125-3MN and/or M-125-MN.

2.1 The Cipher Machine Models M-125-3MN / M-125-MN

2.1.1 General

Between the Cipher Machine Models M-125-3MN and M-125-MN basis of these provisions cooperation is possible if

- the same key setting is used (note Section 7.2.1^[P48] sub-section (4))
- the pre-editing of the plain-text of the Letter-Number text is completed (see Sections 3.1^[P28] , 3.2^[P31] , 3.4^[P32]) .

2.1.2 Technical Specifications

(1) Input voltage:	Line voltage: 100 V \approx ... 250 V \approx DC: 24 V- +-10%

(2) Output voltage:	DC: 24 V- +-10%

(3) Frequency:	50 Hz or 400 Hz

(4) Power consumption:	50 VA

(5)	Permitted operating temperature: With relative Humidity	0°C... 50°C 65 + - 10%	+2°C...40°C 95 to 98%																								

(6)	Equipment set in Shipping crate: Cipher Machine with covering lid: Cipher Machine in work location: Power Supply Unit:	<table border="0" style="width: 100%;"> <tr> <td colspan="3" style="text-align: center;">Dimensions:</td> <td style="text-align: right;">Weight:</td> </tr> <tr> <td style="text-align: center;">Width</td> <td style="text-align: center;">Height</td> <td style="text-align: center;">Depth</td> <td></td> </tr> <tr> <td style="text-align: center;">470 mm</td> <td style="text-align: center;">400 mm</td> <td style="text-align: center;">350 mm</td> <td style="text-align: right;">38 kg</td> </tr> <tr> <td style="text-align: center;">350 mm</td> <td style="text-align: center;">280 mm</td> <td style="text-align: center;">215 mm</td> <td style="text-align: right;">19 kg</td> </tr> <tr> <td style="text-align: center;">465 mm</td> <td style="text-align: center;">380 mm</td> <td style="text-align: center;">350 mm</td> <td style="text-align: right;">16 kg</td> </tr> <tr> <td style="text-align: center;">270 mm</td> <td style="text-align: center;">175 mm</td> <td style="text-align: center;">190 mm</td> <td style="text-align: right;">6.8 kg</td> </tr> </table>	Dimensions:			Weight:	Width	Height	Depth		470 mm	400 mm	350 mm	38 kg	350 mm	280 mm	215 mm	19 kg	465 mm	380 mm	350 mm	16 kg	270 mm	175 mm	190 mm	6.8 kg	
Dimensions:			Weight:																								
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350 mm	280 mm	215 mm	19 kg																								
465 mm	380 mm	350 mm	16 kg																								
270 mm	175 mm	190 mm	6.8 kg																								

(7)	Telegraph Alphabet:	internal code																									

(8)	Operating speed on tape: using the keyboard:	max 455 characters / min. max 500 characters / min.																									

(9)	Error probability-sensitivity:	2.10 ⁻⁵																									

(10)	5-channel tape	Width: Step Length	17.4 mm 2.54 mm (or 2.50 mm)																								

2.1.3.Unpacking the equipment set

Unpacking the equipment set is to be done in the following order:

(1) Break the seals of the shipping box and remove the spring washers from the locks of the box.

(2) Remove the unit from the box, remove the packaging materials and place the unit on a rubber pad on the work table.

(3) Remove the lid; then take the paper-tape cassette and

the paper-tape punch chad box out of the lid.

(4) Insert punching roll or printing paper-tape roll into the paper-tape cassette and fit it onto onto the bracket on the rear of the machine, hook on the chad box and pull down the output chute of the punch.

(5) For the Model M-125-3MN open the cover and insert the print-wheel appropriate for the required work in the machine:
- Lift the lever and remove the print-wheel.
- Install the required print-wheel such that the mark on the wheel and on the square axle match. Slide the spare print-wheel onto the axle on the lid of the device and lock it in place.

(6) Take the Power Supply Unit out of the crate and remove the packaging material. Open the lid of the Power Supply Unit.

(7) Open the storage compartment of the power device and take out the necessary power cable.

2.1.4.Ciphering elements of the Cipher Machine (Figs. 6^[P86] and 7^[P87])

(1) The ciphering elements of the Cipher Machine consist of ten disassemblable (Model M-125-3MN) or ten non-disassemblable (Model M-125-MN) rotors - the rotor set - and a Key-card Reader "KC - 30 x 30"

Each disassemblable rotor consists of a rotor body and a inner wired disk.

A spare rotor set is located in the lid of the Cipher Machine.

(2) The rotor body and the side faces of the rotors of each set of rotors are each marked with one of the Russian letters А В В Г Д Е Ж З И К and also with sequential numbering.

(3) On the setting ring of each rotor and on the marker ring of the rotor body are the Russian letters: А В В Г Д Е Ж З И К Л М Н О П Р С Т У Ф Х Ц Ч Ш Щ Ъ Ь Ю Я Й

(4) On the setting ring of the disassemblable rotors there is a setting mark opposite the letter А.

(5) The inner wired disks of the disassemblable rotors are marked as follows:

- Each of the first sides with
A1, B1, B1, Г1, Д1, Е1, Ж1, З1, И1, К1;
- Each of the second sides with
A2, B2, B2, Г2, Д2, Е2, Ж2, З2, И2, К2;

Next to the contact with the label, a setting mark is located on both sides.

2.1.5. Maintenance of the Cipher Machine

(Approx: "All maintenance is to be done according to a different document (number given)" plus signature and date (24/11/86)? of cancellation of this page.)

Alle Wartungsarbeiten

Sind entsprechend der besonders unvollständigen Wartungstechnologie

Adressat 324, S. Nr. 1675 088, durchzuführen.

24.11.86

[Signature]

2.1.5.1. General

(1) The maintenance of the device may only be carried out by persons who are in possession of the operating authorisation.

(2) In addition to the daily and weekly maintenance and the maintenance of the rotor sets, all maintenance activities are to be carried out in accordance with the current specific maintenance technology for the device.

(3) The maintenance must comply with the following requirements:

- Unplug the Cipher Machine from the power supply
- Clean the Cipher Machine with a clean, dry rag, or one lightly moistened with oil or petroleum. When doing so, it is very important to ensure that the removed dirt does not fall into other parts of the machine.
- Clean the electrical wiring with a dry brush.
- Remove old grease with mineral spirits. Do not allow the oil, gasoline or alcohol to fall onto the electrical wiring. Allow the parts which have been cleaned with Benzine or alcohol to dry.
- Only slightly oil the oil points which are marked in red. Additionally, Apply a thin film of oil to all sliding surfaces.
- Remove any excess grease and oil.

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of this page.**

*Y.M. 24.11.86
C.J. 10/86*

2.1.5.2. Daily maintenance

Daily maintenance is carried out in the following order:

- (1) Prepare the workplace, lay out the tools and materials.
- (2) Remove the lid and the housing from the Cipher Machine.
- (3) Remove the rotor set as follows (Fig. 8^[P88]):
 - Pull the locking levers of the contact holders towards the front of the machine.
 - Move the setting bar upwards and towards the rear of the machine.
 - Pull the contact holders laterally apart, i.e. away from the rotors.
 - Carefully remove the rotor set, taking care not to damage the movable contacts of the right-most rotor.
- (4) Open the cover of the Power Supply Unit.

(5) Clean dust and oil residue from the lid, the housing, the paper-tape cassette, the paper-tape punch chad box and the Power Supply Unit.

(6) Clean the print-wheel with a linen cloth, slightly moistened with mineral spirits.

(7) Check the condition of the print ribbon..

(8) Check the condition of the pulse group contacts "ИТ".

(9) Reassemble the Cipher Machine and check for functionality as described in Section 5^[P39].

2.1.5.3 Weekly Maintenance

The following parts of the Cipher Machine are to be lubricated once a week.

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John, on 24.11.86
[Signature]

(1) With teleprinter oil lubricate:

- All oiling points in the Cipher Machine which are marked in red;
- In the base plate, the bolt, the axle and the pins of the rod and of the frame (Fig. 8^[P88]);
- In the punch the felt around the guides of the punching pins (*Führung der Stanzstifte*), the connecting parts between the selection lever (*Auswahlhebel*), the intermediate levers (*Zwischenhebel*) and the support pieces (*Auflagestücken*), the axles (*Achse*) of the intermediate and selection levers and the bearing of the paper-tape transport shaft (Fig. 10^[P90]).

(2) Apply teleprinter oil: (Fig. 8^[P88])

- In the rotor unit, to the axles of the fixing lever (*Fixierhebel*),
- To the axles of the transport lever (*Transporthebel*) and of the sensing lever (*Abfühlhebel*),
- To the hinges of the holder (*Scharniere der Halterung*)

(3) To be greased with Vaseline (Fig. 11^[P91])

- The worm (*Schnecke*) and the worm gear (*Sneckenrad*) of the power train.

After lubricating the Cipher Machine, verify its functionality in accordance with Section 5^[P39].

2.1.5.4 Maintenance of rotor set

The rotors and contact holders are to undergo maintenance after the processing of 45,000 groups:

(1) Remove the spring ring from the rotor set and take the rotors off the axle (Fig. 6^[P86]).

(2) Grease the axle of the rotor set with technical vaseline.

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(3) Clean the left contact holder with a brush, clean the right contact holder with a linen cloth soaked in spirit. Lightly grease the contacts of the right contact holder (Fig. 8^[P88]).

(4) Clean the moving contacts of the rotors with a linen cloth and a stiff brush.

(5) In the case of the disassemblable rotors, remove the inner wired disks.

(6) Clean the stationary contacts of the rotors with a linen cloth soaked in spirit.

(7) Clean the moving contacts of the rotor body with a brush (Fig. 7^[P87]).

(8) Check all the rotors for damage (cracks, breakage, damaged contacts).

(9) Grease the fixed contacts of the rotor or of the inner wired disks lightly with Vaseline. It is forbidden to apply technical Vaseline

to the movable contacts!

(10) In the case of the disassemblable rotors, re-fit the inner wired disks and the lock-washer (Fig. 7^[P87]).

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(11) Put together the rotor set and secure with the spring -ring (Fig. 6^[P86]).

(12) Insert the rotor set into the Cipher Machine, run the device for two minutes in Operating Mode "C" ("3") or "D" ("P") , and then check the machine for functionality according to Section 5^[P39].

2.1.6. Packing up the equipment set

The packaging of the equipment set is to be carried out in the following order:

(1) Remove the power cord and put it in the storage area in the Power Supply Unit.

(2) Remove the paper-tape cassette and the paper-tape punch chad box from the unit and put into the cover, slide up the output chute of punch.

(3) Put the cover on the Cipher Machine and clip it shut.

(4) Seal the Cipher Machine and pack it in the packaging material.

(5) Clip shut the the cover of the Power Supply Unit and pack it in the packaging material.

(6) Packing the equipment set in the crate, close the crate, secure with the spring rings and seal the crate.

2.2. The Key Packages

2.2.1. General

(1) The Key Packages for the M-125 cipher-system consist of a Daily Key Package, a Message Key Package and a Identification Group Package for general traffic.

(2) The Daily Key Package contains the Daily Keys for one month. Each Daily Key consists of a Daily Key Table and a Key Card. The Daily Key has a validity of 24 hours.

(3) For inter-working with machines which have only non-disassemblable rotors, use the Daily Key Tables for non-disassemblable rotors "Daily Key Tables for disassemblable and non-disassemblable rotors can be used."

2.2.2. Retrieval, verification, storage and destruction.

The verification, storage and destruction of The Key Packages (Daily Key Tables, Punched Key-cards, Message Key Tables, Identification Group Tables) are based upon the "rules and regulations of the GDR for enciphering" ("*Regelungen und Bestimmungen für das Chiffrierwesen der DDR*") in accordance with the appropriate provisions.

(1) The Daily Key Table and the Punched Key-card should only be retrieved from the respective package when they are needed for immediate work. The retrieval of the Daily Key Tables and the Punched Key-card are to be shown by date and signature symbol or emblem "*signum*"(?) in the respective signature sheet.

(2) Once Message Keys for the individual and the circular traffic have been used, Identification Groups are to be removed from the Identification

Group Tables. The Message Key Table is deleted, to be signed by the user with the date of use, and to left for destruction in the Message Key Package.

(3) Damaged, invalid or compromised Daily Key Tables, Punched Key-cards and Message Key Tables are not to be used for enciphering. In the case of Message Key Tables, the next non-compromised Message Key is to be used.

(4) All Key Packages, including those withdrawn, unused or unusable for processing are to be stored for destruction so that access is impossible for unauthorised persons.

(5) Unless otherwise instructed, used, unused, or unusable Daily Key Tables, Message Key Tables, Punched Key-cards, and completely used up Identification Group Tables, are to be destroyed within 48 hours.

(6) The destruction of Key Packages is to be consistently confirmed with date and two signatures.

(Handwritten instructions concerning required documentation when Daily Key Tables are destroyed)

Der Abschweis der Vernichtung der Tageschlüsseltabellen, Schlüssellockkarten und Spruchschlüssel, tabellen hat in der Entnahmefabrik zu erfolgen.

2.2.3. Daily Key Package

(1) The cover of the Daily Key Package includes the following markings:

- OSB-25-MN for disassemblable rotors, OSB-25-N and OS-25 for non-disassemblable rotors,
- Serial number,
- Copy number,
- Classification level,
- Effective period.

(2) Each Daily Key Package includes:

- 31 Daily Key Tables
- 31 Punched Key-cards for the Key-card Reader "KC-30 x 30",
- 1 signature sheet to indicate key retrieval.

The Tables and Punched Key-cards are numbered consecutively from 1 to 31. By this numbering the validity period (date) is determined.

(3) Each Daily Key Table for use with disassemblable rotors contains 8 groups of five letters and 2 groups of five numbers as shown in Fig. 1^[P22].

When using non-disassemblable rotors only the 1st and 2nd rows of this table are to be used as described in Section 2.2.3(4)^[P23].

ИДЖЗА	ВКБГЕ	14
ОСАНЕ	РТБВЕ	
БДВИА	ГЕЗКЖ	
2ИИ22	I22I2	
КУЛКЮ	ЫХВУГ	

Figure 1. Daily Key Table for use with disassemblable rotors.

The values of the five rows, each containing two groups of five characters, are as shown in order below:

- The 1st line determines the arrangement of the rotors on their axle.
- The 2nd line determines the position of the setting mark of the respective setting ring to the letter of the associated marker ring.
- The 3rd line determines the order of the letters marked for the inner wired disks within the

rotor bodies of which the sequence has already been defined by the first line. The two groups of five may contain the letters **А Б В Г Д Е Ж З И К** only once each, otherwise the Daily Key is not to be used for processing text.

- The 4th line determines (in the order of the inner wired disks of the associated rotor bodies), which side of the respective inner wired disks must be visible from the outside.
- The 5th line determines the position of the setting mark line to the respective inner wired disks of the associated marker ring.

(4) Every Daily Key Table for use with non-disassemblable rotors contains 4 five-letter groups in the configuration specified in Figure 2 below.

БЖКАГ	ИЕВДЗ	14
ФРМКЕ	УЗЧГР	

or

БЖКАГ	ИЕВДЗ	14
ФРМКЕ		
УЗЧГР		

Figure 2

Daily Key Tables for use with non-disassemblable rotors.

The values of the two or three rows, each containing one or more groups of five characters, are as shown in order below:

- The two groups of five letters in the 1st line determine the arrangement of the rotors on their axle.

These two groups of five letters may contain the letters A Б В Г Д Е Ж З И К only once each; if not, this Daily Key is not to be used for text editing.

- The two groups of five letters on the 2nd line, or on the 2nd and 3rd lines together, determine the initial position of the rotors on their axle to create the key groups (enciphering of the Identification Groups) for general traffic.

(5) Each Key Card (Fig. 3 below) contains 30 perforations, of which each row and each column has only one.

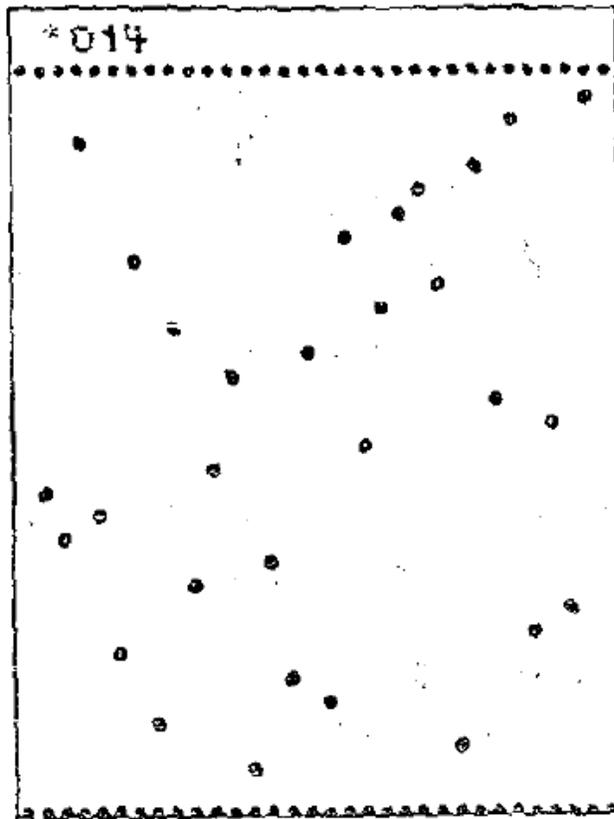


Fig.3 Key Card No. 14.

2.2.4 Message Key Package

(1) The envelope of the Message Key Package contains the following notation:

- KV-25-MN or KV-25-N (designation for the individual traffic)
ZV-25-MN and ZV-25-N (designation for the circular traffic).

- Serial number,
- Copy number (unless instructed otherwise, copy 1 for enciphering, the other copy is for deciphering),
- Level of secrecy.

(2) Each Message Key Package includes:

- 40 Message Key Tables
- 2 Identification Group tables
- 2 signature sheets.

(3) Each Message Key Table for the individual or circular traffic contains two key groups (two groups of five letters each) - the Message Key - which determine the initial position of the rotors on their axle. The Message Keys within a package are consecutively numbered in accordance with the Message Key Tables from 01 to 40.

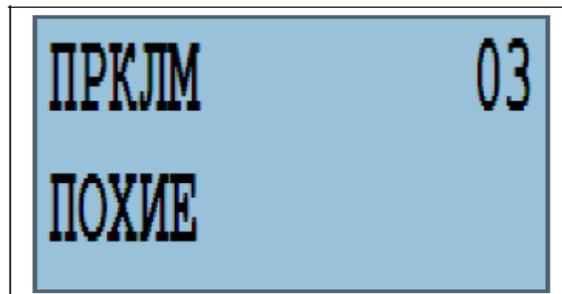


Figure 4 Message Key Table

Once used, these key groups must not be reused for enciphering.

(4) Each Identification Group Table (see Figure 5^[P26]) contains of 20 groups of five letters (for Letter-Number cipher texts) and 20 groups of five numbers (for Number cipher texts). Regardless of the type of text, the Identification Groups for the Message Key being used (groups of five letters and numbers) are to be struck out.

<p> ЧЧШХР ФНОКБ ИДРУЛ ЖЮЯФБ ЛЧРХА ОКРРД ТВХРН АВГБЧ КВНСП ИРСЗО ПЗТРЧ АРБГС ОКЕКК КТМНО ОЛДРИ ЫЧМЛТ САВНС ДИМТК ЛХРАХ ФЯТЪЖ </p>	<p> 61449 56442 81770 12327 19804 66262 63452 86367 25477 24262 35715 34194 83271 37012 81576 38721 92421 70875 69640 65856 </p>
<p> УПРАХ АЛЛУБ ПУЦЕЙ ЫКІСТ ШКІМ ЫТРУ ОКРИК ЕЗТРА ХХБЕЕ МККОП СЕМЕЯ АЛВСУ ОКТОА ББГРС ИАИИХ ХХДАД ВДРІЬ ТАЛРА ЧОБЕЦ ОЛКРА </p>	<p> 17828 13695 22384 75607 29083 52365 41026 21319 66775 28694 48333 62978 39666 68988 34515 97492 20250 75921 73905 79110 </p>

(For letter-digit cipher text)

(For Number cipher text)

Fig.5 Identification Group Tables

2.2.5. Identification Group Packages for general traffic

(1) Identification Group Packages for general traffic contain the following notation on the envelope:

- Type number,
- Serial number,
- Level of secrecy.

Each Identification Group Package includes:

- 50 Identification Group Tables
- 1 signature sheet.

(2) Each Identification Group Table contains 48 Identification Groups for use with 24 messages.

(3) Two directly adjacent groups of five characters are to be used in each case for the formation of a Message Key.

Identification Groups can only be used once each to form a Message Key.

2.3. Key Validity

(1) The Daily Key is time-dependent, and has a 24 hour validity. The key change time is 00:01 o'clock.

(2) The Message Key is valid only for one message.

(3) Daily Key Tables and Punched Key-cards, which cannot be used due to damage or compromise, are to be reported to the control centre of the key area (the enciphering post responsible for the enciphered connection) by enciphered message or via courier. The new Daily Key (or a new set of Daily Keys) is to be sent enciphered by the control centre or by courier.

(4) When using disassemblable rotors, after the expiry of the validity period of a key, and when putting the rotor set into storage, the setting marks of the setting rings are to be set to A; the inner wired disks are to be fitted into their matching rotor bodies (i.e. those with the same labelling), in position A (with side 1 outwards) and secured.

The rotors (both disassemblable and non-disassemblable) are to be arranged in alphabetical order on the axle and secured with the spring ring.

3. Pre-editing of plain-texts

3.1. General

(1) Model M-125-3MN has two registers and can, after the appropriate print-wheel has been installed, be used either for processing German plain-texts only, or for processing Russian plain-text together with pure Number texts only.

(2) It is important to ensure that the appropriate pre-editing method of the plain-text for the connection being used (Letters-Numbers-Special Characters/German or Russian, Letters-Numbers/German, Letters/Russian, or Numbers) is consistently adhered to, in to obviate misunderstandings (see Figure 12^[P91]):

- When using the Latin print-wheel, the red Letters, Numbers and Special Characters on the keyboard apply for Letter-Number-Special Characters text and for Letter-Number text (10/30 Modulus switch to 30).
- When using the Russian print-wheel, the blue Letters, Numbers and Special Characters on the keyboard apply for Letter-Number-Special Character text and for Letter text (10/30 Modulus switch to 30);

For the processing of pure Number text, the blue Number keys on the grey background apply (10/30 Modulus switch to 10).

(3) In pre-edited plain-text, the group of letters "BBBBB" ("BBBBB") is to be enciphered as the first group, when both pre-editing for plain-text (Letter-Number-Special Characters text and Letters-Numbers text) is allowed in the Key Area, and the plain-text is being pre-edited as Letter-Number text (Text Mode switch on the Model M-125-3MN is set to the "Bu" ("B")) position).

(4) Any Latin/Russian letters which occur in ~~German/Russian~~ Russian/German texts respectively, are to be implemented as shown in the

following table in Russian/Latin letters:

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
А	Б	Ц	Д	Е	Ф	Г	Х	И	Ш	К	Л	М	Н	О	П	Я	Р	С	Т	У	Ж	В	Ъ	Ы	Э

When using Latin/Russian letters, letters converted into Russian/Latin using the table above are to be marked with the Service Code "RUS"/ "JAT" within bracket/slash characters (Example 1^[P77]).

(5) Single space character is to be used:

- between successive words, between hours and minutes, before and after numeric characters, commonly used abbreviations, etc. (Examples 2^[P77], 3^[P77], 6^[P78], 8^[P79], 9^[P79], 13^[P80], 14^[P80])
- between important letters or difficult proper names (Examples 4^[P78], 6^[P78], 12^[P80]),
- instead of punctuation (hyphen, etc.) in place and street names (Example 11^[P80]).

(6) Two space characters are to be used:

- before and after proper names, closed expressions, words, figures, and names that were already divided by single spaces for better understanding or for other reasons (Examples 1^[P77], 3^[P77], 4^[P78], 6^[P78]),
- before and after repetition of proper names and designations (Examples 4^[P78], 6^[P78], 8^[P79]),
- instead of commas if misunderstanding cannot happen (Example 6^[P78]).

(7) Fivefold spaces are to be used when in the plain-text a paragraph occurs.

(8) Roman numerals can be introduced in repetitions, depending on whether there is German or Russian plain-text, by the indicator "RÖM", "ROEM" or "PIM" if misunderstandings are possible. Their presentation can be

carried out by the corresponding Latin or Russian characters or by Arabic numerals (Example 2^[P77]).

(9) Tables are to be prepared in the row order that was specified by the sender. In order to maintain the unique order of the columns, the column headings, and the information within each column are to be enumerated by letters of the alphabet in alphabetical order (Example 3^[P77]).

(10) Characters with diacritics in Letter-Number-Special characters text are to be pre-edited as Latin texts. For diacritics in a repetition, the replacement units set out in the table^[P85] are to be used. The replacement unit is to directly follow the Latin character to which the diacritical mark is associated (Example 5^[P78]).

(11) Repeats are important for proper names, vehicle, unit and type designations, dates, coordinates, words with diacritics, and words with Russian characters. They are to be announced by the indicator "RPT" (repetition) (Examples 4^[P78], 5^[P78], 6^[P78]).

(12) Redirects are generally only permitted if there exists no direct enciphered connection by a unit to another, or if the enciphered connection is temporarily suspended.

- The message is to be enciphered via the nearest available service, which has an enciphered connection with the receiver, in order to enable forwarding.
- By the sending unit is "VVVVV" (= to be forwarded) to be sent as the first plain-text group, the entire final

recipient and the sender are then to be enciphered.

- The forwarding unit decipheres the message. The message is then to be processed with a new key. The receiver and the entire original sender are to be enciphered.
(Example 7^[P79]).

(13) When correcting errors, the indicator "NN" to to be used, continuing with the first newly revised word (Example 5^[P78]). If misunderstandings are possible, the entire section is to be repeated.

3.2. Plain-Text Processing - Outline

(1) Unless otherwise instructed, each plain-text which is to be enciphered, should be enciphered as follows, taking into account the text arrangement declared by the sender:

- Classification (in VS, the registration number),
- Receiver
- Actual text (possibly with repetitions, continuation notes, etc.),
- Sender.

(2) In traffic between cipher posts, the recipients and senders can be omitted. The same is true with repeated reports, corrections, etc., from which it is clear who are recipients and senders.

(3) Abbreviations of the plain-text are permissible if misunderstandings are not possible, and letter-by-letter faithful reproduction of the plain-text is not required.

(4) Longer plain-texts are to be split depending on the rules applicable in the areas of application of the system's operating service regulations, if the length of the cipher-text significantly exceeds 300 groups. Corresponding to the number of parts into which the plain-text is to be divided,

in the first part of the message, after the sender, there is to be a section of the form "This is part one of two / three / etc. parts, VS-No." (for a non-classified message, the FS-No. replaces the VS-No.).

In the following parts (except for the last) before each plain-text part, there is to be a section of the form "This is part two / three / etc., VS-No." (For a non-classified message, the FS-No.)

In the last part, before the plain-text part, there is to be a section of the form "End of VS-No." (for a non-classified message, the FS-No.).

3.3. Pre-editing the plain-texts in the Letter-Number-Special Characters Text Mode (Model M-125-3MN, Text Mode switch set to "Bu" ("B") "Mi" ("C")).

(1) When working as a two-register machine the plain-text (German or Russian) is to be pre-edited considering in Sections 3.1^[P28] and 3.2^[P31] determinations made in accordance with the message operating regulations valid in the area.

(2) When entering the plain-texts it is important to ensure, when shifting from one keyboard shift to the other, that the keyboard shift key (1... or A...) is pressed, as the keyboard shifts are not locked to each other.

3.4 Pre-editing German language plain-texts in the Letter-Number Text Mode (Models M-125-MN and M-125-3MN, Text Mode switch set to "Bu" ("B"))

(1) Special characters and letters which don't exist on the keyboard are replaced as follows:

Ä - AE	ß - SZ	W - VV
Ö - OE	J - I	X - KS
Ü - UE	Q - KV	Y - I

Are words written locked so the quoted letter pairs are inseparable. (Examples 2^[P77], 3^[P77], 4^[P78], 6^[P78], 8^[P78], 11^[P80], 12^[P80])

(2) Punctuation marks should be presented as follows:

- | | |
|-----------|------------------|
| , - KOMMA | - - STRICH |
| . - PKT | / - SSTRICH |
| : - DKPT | ? - FRAGEZEICHEN |
| () - KL | |

(Examples 1^[P77], 8^[P79], 9^[P79])

Punctuation may be omitted, if misunderstandings are not possible (Examples 3^[P77], 11^[P80]).

(3) Characters that are not on the keyboard, and which are not the punctuation marks shown above, are to be written out as words in full (Example 10^[P79]).

(4) Clarification characters, corresponding to the original spelling of proper names, are to be doubled if a clear interpretation of each letter must be ensured and no repetition is provided (Example 8^[P79]).

(5) Number and Letter-Number sequences are to be passed unchanged in pre-edited plain-text. Numbers which are not available on the keyboard are to be replaced by letters:

Digit: 0 1

Letter: O I

Characters occurring in Number- or Letters-Number sequences are to be pre-edited according to sub-section (2) above, if misunderstandings would otherwise be possible (Examples 1^[P77], 2^[P77]).

(6) Ordinal numbers are to be written with the abbreviation "PKT" (Example 9^[P79]).

If the current day number of the month is used in conjunction with the month number, then to avoid misinterpretation, the abbreviation "PKT" can be used (Example 14^[P80]).

(7) Times are to be written thus:

- whole hours as two-digit numbers;
- hours with minutes as four-digit numbers written without punctuation (Example 13^[P80]).

(8) Month names are to be written in the following form as abbreviations:

IAN, FEB, MAERZ, APRIL, MAI, IUNNI, IULLI, AUG, SEPT, OKT, NOV, DEZ (Example 14^[P80])

(9) In repetitions, the bigrams AE, OE, UE, SZ, KV, VV and KS are to be doubled if they are identical to the original spelling, (Example 6^[P78]).

In repetitions, J is to be replaced by IOT and Y by IPS (Example 6^[P78]).

In repetitions, figures being sent in disturbed channels in A1-mode should be written out in words (Example 1^[P77]).

3.5. Pre-editing pure Number text (Model M-125-3MN, Text Mode switch set to "Zi" ("И"))

(1) It is important to note that it is necessary that the print-wheel with Russian characters be used (note Figure 12^[P91]).

(2) The Text Mode switch is to be set to "Zi" ("И") (Number text), and the 10/30 Modulus switch is to be set to "10".

(3) Only texts may be enciphered, which can, by means of special provisions (code form, substitution tables, etc.) be converted such that they consist of pure Number text. .

It is strictly prohibited, to enter other characters (punctuation marks, letters, spacing) for enciphering. (When inputting using punched paper-tape, each character

which is not a number will result in a no-holes character on the tape.)

4. Commissioning the equipment set

4.1. General

(1) The Cipher Machine must be placed in a secured area / stop band as defined in the appropriate safety regulations concerning cipher-systems. The radius of the controlled zone must be at least 10 m.

(2) The equipment set - the Cipher Machine (with rotor set and print-wheel), the power supply and the power supply cable - must, when working, be kept clear of other communication equipment (radio receiving and transmitting equipment, power-line communication equipment, microwave equipment, etc.) and must be kept clear of all other cables which go beyond the controlled zone, maintaining a minimum distance of 0.5 m.

(3) Prior to commissioning the equipment set, ensure that

- the available supply (AC or DC) and the line voltage have been determined,
- on the Model M-125-3MN the screw under the Baseplate is to be set to:
 - "BKJI." (On) when the Output Mode switch is set to "DL" ("ПФ"), when simultaneous printing and punching are required;
 - "ОТКЛ." (Off) when only punching is required and the required print-wheel (Latin or Russian) is inserted,
- the corresponding Daily Key is set (See Section 7.2^[P48].)
- the lever "Transmit <---> Receive" ("Передача в линию <---> Прием") (right of the unit) to "Transmit" ("Передача в линию") is,
- the paper-tape is fed into the Cipher Machine.

4.2. Operations when working with AC voltage (127/220V)

- (1) Set the power type switch on the Power Supply Unit to "Netz~" ("СЕТЬ~") .
- (2) Set the Power Switch of the Cipher Machine to "Off" ("ВЫКЛ") .
- (3) Connect the Cipher Machine to the output of the Power Supply Unit (labelled ("Maschine" or "Gerät" ("МАШИНА"))).
- (4) Control switch on the power supply in the middle ("1" or "0") position.
- (5) Connect the Power Supply Unit ("Input ~" ("ВХОД ~")) using the power cable to the mains power supply.
- (6) Set the voltage selector switch ("НАПРЯЖЕНИЕ") on the Power Supply Unit to "250".
- (7) Set the Power Switch of the Cipher Machine to "On" ("ВКЛ") . (The components within the Cipher Machine establish their starting positions.)
- (8) Output Mode switch is in the "DL" ("ПФ") switch (Printing and Punching) .
- (9) Set the Operating Mode switch in position "D" ("Р") (Deciphering) or "C" ("З") (Enciphering) .
- (10) Press the "On" ("ПУСК") key of the tape-reader and using the voltage selector switch ("НАПРЯЖЕНИЕ") and the control switch of the Power Supply Unit, set an output voltage of $24V \pm 2.4V$.
- (11) Cipher Machine off.

4.3. Operations when working with DC voltage (24v)

The power switch on the PSU must be set to "Off" ("ВЫКЛ"),

(1) Set the Power Type switch of the Power Supply Unit to "Netz=" ("СЕТЬ=").

(2) Set the Power Switch of the Cipher Machine to "Off" ("ВЫКЛ").

(3) Connect the Cipher Machine to the output (labelled "Maschine" or "Gerät" ("МАШИНА")) of the Power Supply Unit.

(4) Connect the Power Supply Unit ("Maschine 24 V" ("ВХОД 24")) via a power cable to the DC power supply or a battery.

(5) Set the power switch of the Power Supply Unit to "On" ("ВКЛ").

(6) Set the Power Switch of the Cipher Machine to "On" ("ВКЛ"). (The components within the Cipher Machine establish their starting positions.)

(7) Output Mode switch to "DL" ("ПФ") switch (Printing and Punching).

(8) Set the Operating Mode switch in position "D" ("P") (Deciphering) or "C" ("З") (Enciphering).

(9) Press the "On" ("ИУСК") of the tape-reader and check the voltage using a voltage meter.

(10) Cipher Machine off.

5. Checking the Cipher Machine for functionality

5.1. General

(1) The review of the Cipher Machine for functionality is to be carried out and demonstrated daily after changing the Daily Key, or service takeover (shift change), regardless of the amount of work carried out, in the specified order. The resulting test text material is to be demonstrably destroyed.

(2) The Cipher Machine may not be used for enciphering if the result of the review differs from that prescribed.

(3) Defects in the Cipher Machine must be corrected by approved persons. Checking for correct operation of the Cipher Machine is to be fully repeated after correcting defects.

5.2. Checking the Cipher Machine in the "K" ("O") (plain-text) Operating Mode

(1) Commission the equipment set according to Section 4^[P36].

(2) On the Cipher Machine

<u>Model M-125-3MN</u>	<u>Model M-125-MN</u>
Set the Text Mode switch to "Bu" ("B") (Letter-Number text), and the 10/30 Modulus switch to "30".	<u>Set the Language Mode Plug to "LAT" ("LAT") (Latin).</u>

(3) Set the Operating Mode switch to the position "K" ("O") (plain-text).

(4) Set the Power Switch of the Cipher Machine to "On" ("BKJ").

(5) Press each of the following keys five times in this sequence, each set of five immediately after the preceding set:

Key "G" ("Г") (hole in channel 1),
Key "8" ("Ч") (hole in channel 2),
Key "6" ("Ы") (hole in channel 3),
Key "K" ("К") (hole in channel 4),
Key "A" ("А") (hole in channel 5),
Key "9" ("Ю") (punching in all channels), according to
ITA No. 2

(6) Press the space-bar once.

(7) Press all keys in the order along the rows of keys, alternating with the space-bar.

(8) On the Model M-125-3MN

- Using the tape transport roller, move on the tape one step further;
- All keys (except for keys "1..." and "A...") in the order of the rows of keys, alternating with the space-bar;
- Press the "1 .." key once;
- All keys (except for keys "1..." and "A...") in the order of the rows of keys, alternating with the space-bar;
- Using the tape transport roller, move on the tape one step further;
- Except button "Й/J", press the keys along the first row of keys in order, alternating with the space-bar;

(9) Press the lever of the pinch-roller forwards, and move the tape on about 30 cm. Tear tape.

(10) Place the tape thereby produced (the test punched paper-tape), with the first character of the test text ready to read, in the tape-reader.

(11) Set the Output Mode switch to "DL" ("ПФ") (Printing and Punching) or to position "D" ("ПЧ") switch (Printing).

(12) Press the "On" ("ПУСК") button on the tape-reader. (The text inserted in the tape-reader is output on paper-tape. The Cipher Machine stops automatically after reading the no-holes character from paper-tape.)

(13) On the Model M-125-3MN

- Set the Text Mode switch to "Mi" ("C") (Letter-Number-Special Characters text);
- Press the "On" ("ПУСК") button on the tape-reader (The text inserted in the tape-reader is output on paper-tape. The Cipher Machine stops automatically after reading the no-holes character from paper-tape.);
- Press the "On" ("ПУСК") button on the tape-reader (The remainder of the text inserted in the tape-reader is output on paper-tape. The Cipher Machine stops automatically after reading the no-holes character from paper-tape.)

(14) Remove the tape from the tape-reader and close the tape-reader flap.

(15) Press the lever of the pinch roller forwards and move the tape on about 30 cm. Tear the paper-tape and compare it with the test punched paper-tape or with Testing Text (see Figure 13^[P92]). The tape or the text must match the test punched paper-tape or the Testing Text.

5.3. Checking the Cipher Machine in the Operating Modes "C" ("3") (Enciphering) and "D" ("P") (Deciphering)

The checking of the cipher machine is to be carried out using a valid Daily Key in the following sequence:

(1) Place the tape produced in Section 5.2^[P39] (the test punched paper-tape), with the first character of the test text ready to read, in the tape-reader (see Section 6.3^[P46]).

(2) Bring the rotors to such an initial position on their axle that above the setting bar the letter sequence **AAAAAAAAAA** is placed.

(3) On the Model M-125-3MN set the Text Mode switch to "Bu" ("B") (Letter-Number text).

(4) Set Output Mode switch to the "DL" ("ΠΦ") switch (Printing and Punching).

(5) Set the Operating Mode switch to the position "C" ("3") (Enciphering).

(6) Press the "On" ("ΠΥCK") button on the tape-reader. (The test punched paper-tape is output in enciphered form on tape. The machine will stop automatically after reading the no-holes character from paper-tape.)

(7) If, when using the Cipher Machine Model M-125-3MN, stops occur then press repeatedly the "On" ("ΠΥCK") button on the tape-reader until the entire test punched paper-tape is read. (The test punched paper-tape continues to be output in enciphered form to tape.)

(8) Remove the test punched paper-tape from the tape-reader.

(9) Press the pinch roller lever forward. Move the tape on about 30 cm and tear. Insert the cipher-text punched tape, resulting from steps (6) and (7) above, with the first character of the cipher-text ready to read, in the tape-reader . (See Section 6.3^[P46]).

(10) Bring the rotors to such an initial position on their axle such that above the setting bar the letter sequence **AAAAAAAAAA** is placed.

(11) Set the Output Mode switch to "D" ("**ПЧ**") (Printing).

(12) Set the Operating Mode switch in position "D" ("**Р**") (Deciphering).

(13) Press the "On" ("**ПУСК**") button on the tape-reader. (The cipher-text punched paper-tape is output deciphered on tape. The machine will stop automatically after reading the no-holes character from paper-tape.)

(14) For the Model M-125-3MN

- Set the Text Mode switch to "Mi" ("**С**") (Letter-Number-Special Characters text);
- Press the "On" ("**ПУСК**") button on the tape-reader. (The cipher-text punched paper-tape is output deciphered on tape. The machine will stop automatically after reading the no-holes character from paper-tape.);
- Text Mode switch to "Zi" ("**Ц**") (Number text);
- Press the "On" ("**ПУСК**") button on the tape-reader. (The cipher-text punched paper-tape is output deciphered on tape. The machine will stop automatically after reading the from paper-tape.);

(15) Cipher Machine off.

(16) Remove the cipher-text punched tape from the tape-reader.

(17) Press the pinch roller lever forward. Move the tape on about 30 cm and tear. Compare this tape with the test text paper tape (see Figure 13^[P92]). The two Texts must match!

6. Preparing and printing a paper-tape

6.1. General

(1) In making a plain-text paper-tape the key with the letter combination "Й/J" should not be pressed.

(2) For the Model M-125-3MN.

- install the print-wheel, which contains the required Latin or Russian characters for the selected Language Mode (see Figure 12^[P91]),
- for pure Number text, install the type wheel with Russian Characters. (See Figure 12^[P91]),
- The 10/30 Modulus switch on the left side of the Cipher Machine, when in Letters text, is to be set to "30"; in Number text, it is to be set to "10",
- the Text Mode switch
 - for Letter text, is to be set to "Mi" ("C") (Letter-Number-Special Characters text) or be set to "Bu" ("B") (Letter-Number text),
 - in Number text, is to be set to "Zi" ("I") (Number text).

(3) Set the Model M-125-MN's Language Mode Plug, according to the selected Language Mode, to "LAT." or "RUSS" ("PYC").

6.2. Work flow for the creation of a punched paper-tape.

(1) Set the Operating Mode switch to the position "K" ("O") (plain-text) and the Output Mode switch to the position "DL" ("ИФ") switch (Printing and Punching).

(2) Commission the equipment set (see Section 4^[P36]); if this has already been done, turn on the Cipher Machine.

- (3) Using the space-bar, make 5 to 10 cm paper-tape lead-in.
 - (4) Type in text using the keyboard.
 - (5) After typing in the last element, use the space-bar to produce 5 to 10 cm of paper-tape run-out.
 - (6) Press the pinch roller lever forward, move on the tape about 30 cm and tear off.
- Clearly label the plain-text with "PLAINTEXT" (originally "KLARTEXT").

6.3. Inserting a punched paper-tape into the tape-reader

- (1) Open the tape-reader flap.
- (2) Load the punched paper-tape into the tape-reader, in such a way that the first character to be read is over the reading pins of the tape-reader.
- (3) Close the tape-reader flap.

Plain-text tape must be marked clearly with "PLAINTEXT" (originally "KLARTEXT")!

6.4. Printing and copying a paper-tape.

- (1) Set the Operating Mode switch to the position "K" ("O") (plain-text) and the Output Mode switch to:

<u>Printing</u>		<u>Printing and Punching</u>
In position "D" ("ПЧ")		In position "DL" ("ПФ")
switch (Printing).		(Printing and Punching).

- (2) Insert the tape into the tape-reader (see Section 6.3^[P46]).

(3) Using the space-bar, make 5 to 10 cm paper-tape lead-in.

(4) Press the "On" ("ИYCK") button on the tape-reader. Text is read and then

<u>Printing</u>		<u>Print and Punch</u>
printed on the paper-tape.)		printed and punched on
		the paper-tape.)

The Cipher Machine stops automatically when reading the .

(5) Press forward the lever on the paper-tape pinch roller, move on the tape about 30 cm and tear off.

Clearly label the plain-text tape with "PLAINTEXT" (originally "KLARTEXT").

7. Enciphering

7.1. General

(1) The commissioning of the equipment set is to be carried out according to Section 4^[P36].

(2) The hand crank must not be used for enciphering.

(3) The Cipher Machine-related terms and switch settings that are mentioned in this section are shown in Figures 6^[P86], 7^[P87], 8^[P88], 9^[P89].

7.2. Setting the Daily Key

7.2.1 General

(1) The Daily Key Setting is, within its validity time period, independent on the traffic type, that is, the individual, circular and general traffic types.

(2) For setting the key, only the assigned rotor sets are to be used.

(3) The assigned Daily Key Tables are usually to be used starting with the lowest serial number.

For processing of messages, retrieve the Daily Key, consisting of the Daily Key Table and the Punched Key-card, by matching the current date to the correspondingly numbered Daily Key Package (Example 15^[P80]).

(4) If interworking of Cipher Machines with disassemblable and non-disassemblable rotors is required, the disassemblable rotors are to be assembled and adjusted as follows (see Fig. 7^[P87]):

- Adjusting each rotor body until the setting mark matches the letter **A** of the marker ring;
- The inner wired disk and the rotor body with the same letter code assigned to each other;
- Insert the inner wired disk, with its side 1 facing outwards, in its associated rotor body, in such a way that that the setting mark of each inner wired disk lines up with the letter **A** on the marker ring of the rotor body;
- By means of the lock-washer, secure the setting of the inner wired disk;
- The rotors are to be set according to the provided Daily Key for non-disassemblable rotors (See Section 7.2.4^[P51]).

It is forbidden to use disassemblable rotor sets with this fixed setting, or non-disassemblable rotor sets, for processing Number texts in general traffic.

(5) The Daily Key Settings must always be checked.

7.2.2 Key Card

Insert the Key Card (see Section 2.2.3 sub-section (5) Figure 3^[P24]) as follows into the Key-card Reader:

- Fold down the securing latch of the cover of Key-card Reader.
- Pull out the cassette until it stops.
- Remove the Key-Card of the previous Daily Key (or metal triangle, if fitted).
- Insert the Key-Card for the upcoming period of validity into the cassette such that the two-digit number of the Key-Card appears in the left corner of the cassette and the left edge of the Key-Card appears at the stop bar of the cassette.

- Push in the cassette until it stops and secure it with the latch.

The metal triangle may be used in the Key-card Reader only when testing the Cipher Machine during repair work.

7.2.3 Setting disassemblable rotors using the Daily Key Table

Set the rotors according to the intended Daily Key as follows (see Figures 6^[P86] and 7^[P87]):

(1) Remove the spring ring from the axle, pull rotors off the axle, loosen the key-lock washer and remove the inner wired disks from the rotor bodies.

(2) Set out the rotor bodies according to their markings as specified by the letters the Daily Key Table (Example 16^[P80]).

(3) Set the setting mark on the setting ring of each rotor body (previously set out in paragraph (2) above) according to the letters of the second line of the Daily Key table in the order indicated on the letters of the marker ring (Example 17^[P81]).

(4) Set out the inner wired disks, in the order of the letters given in the third line of the Daily Key Table, next to the rotor bodies already set out in paragraph (2) above (Example 18^[P81]).

(5) Insert the inner wired disks into the rotor bodies, with the side facing out which is indicated by the fourth line of the Daily Key Table in the order shown (Example 19^[P81]).

(6) Insert the inner wired disks into the rotor body in such a way that the alignment mark of the respective inner wired disks matches the letter on the respective marker ring of the rotor body, as determined by the fifth line of the Daily Key Table (Example 20^[P81]).

Secure the inner wired disks with the lock-washer.

(7) Place the rotors in the order determined by the first line of the Daily Key Table with the fixed contacts against the stop on the axle and secure with the spring ring (Example 21^[P82])

7.2.4. Setting non-disassemblable rotors using the Daily Key Table

Set the rotors according to the intended Daily Key as follows (see Figure 2^[P23]):

(1) Remove the spring ring and remove the rotors from the axle.

(2) Place the rotors in order specified on the upper line of the Daily Key Table (see example in Figure 2^[P23]) with the fixed contacts against the stop on the axle. The order of the rotors on the shaft must match the order of the letters of the Daily Key (Example 22^[P82]).

(3) Secure the rotors with the spring ring.

7.3. Message Key Setting

7.3.1 General

(1) The Message Keys for individual or circular traffic are allocated from the Message Key Package in numerical order of the messages.

(2) The Message Key for general traffic, depending on the instructions, are to be formed either from predefined or from generated Identification Groups.

When generating punched paper-tapes, resulting Identification Groups and Key Groups are to be handled as a piece of intermediate material, to be kept with other associated resulting intermediate material, to be held securely, and to be demonstrably destroyed after the error-free processing of the respective message (not later than the end of the specified period).

(3) Each Message Key will become invalid after one use. Repeated use of a key table for the enciphering of individual, circular or general traffic is forbidden!

(4) The proper adjustment of the rotors after the predetermined key is set, is always to be double-checked.

7.3.2. Message Key Setting for individual or circular traffic.

(1) For the first letter of the first key group, turn the first rotor (counting from the left) until that letter appears just above the setting bar.

(2) For the second letter of the first key group, turn the second rotor (from the left) until this letter appears just above the setting bar, etc.

(3) For the first letter of the second key group turn the sixth rotor (from the left) until this letter appears just above the setting bar, etc.

After setting all of the rotors, the letters on the rotors just above the setting bar must show the letters in the order of the letters of the Message Key. (Example 23^[P82]).

7.3.3 Generating the Message Keys for general traffic.

(1) Set the Operating mode switch to the position "C" ("3") (Enciphering).

(2) Set the Output Mode switch to the position "D" ("ИЧ") (Printing).

(3) On the Model M-125-3MN when processing:

<u>Letter text</u>		<u>Pure Number text</u>
		- install the print-wheel with Russian characters,
- Set the 10/30 Modulus switch in position:		
"30",		"10"
- Set the Text Mode switch in position :		
"Bu" ("Б")		"Zi" ("И") (Number text)
(Letter text).		

(4) Set the Power Switch of the Cipher Machine to "On" ("BKJ").

(5) When generating the Message Key not using issued Identification Groups:

- Bring the rotors into any (randomly chosen) initial position on their axle.
- Bring one of the marks on the paper-tape transport roller in line with the mark on the paper-tape pinch roller lever.

- When processing

<u>Letter-text</u>	<u>Pure Number-text</u>
type in ten randomly chosen characters.	type in ten randomly chosen numbers.

(On the paper-tape will be printed two groups of five characters, forming the 1st and 2nd Identification Group.)

- Press the pinch roller lever; move on the tape, tear off and label with "KG" (= Kenngruppen (= Identification Groups)).

It is forbidden, when producing the two groups of five (Identification Groups), to use the tape-reader, the same item (letter, number, symbol, space) several times one after the other, or in a logical succession on the keyboard!

(6) When generating the Message Key using issued Identification Groups:

- Two consecutive unused Identification Groups (1st and 2nd Identification Group) are to be retrieved from, and then struck out from, the Identification Group Table.
- The retrieval of these two Identification Groups is to be confirmed by writing date and signature directly under them.

(7) The rotors

- when working with disassemblable rotors bring them (Daily Key Table as shown in Fig. 1^[P22]) to the initial position on their axle of AAAAAAAAA;
- when working with non-disassemblable rotors (Daily Key Table as shown in Fig. 2^[P23]), using the groups of five from the second, or from the second and third, lines

of the Daily Key Table in the given order, set the rotors to the initial position on their axle (Example 24^[P82]).

"or when using Daily Key Tables for disassemblable rotors, use the groups of five on the second line (Fig. 1^[P22]).

(8) Bring one of the marks on the paper-tape transport roller in line with the mark on the paper-tape pinch roller lever.

(9) Type in the letters or numbers of the two Identification Groups (given or generated) (Note Figure 12^[P91]). (Replace the letter J/Й by spaces.) On the paper-tape from the two five groups (1 and 2 keys) is existing Message Key reprinted.

(10) Cipher Machine off.

(11) Press forward the lever of the pinch roller; move the paper-tape forward, tear it, and mark it with the label "SchG". Message Key must consist of at least three different elements (Letters, Numbers), otherwise a new Identification Group to form the Message Key is to be used.

- In Letter text (Text Mode in the position "Bu" ("Б")) implement the Numbers and Latin characters of the key groups in Russian characters using the Keyboard Layout at the top of Page 29.
- In pure Number text (Text Mode in the position "Zi" ("Ц")), numbers in the key groups are to be converted to Russian characters using this table:

Digit	1	2	3	4	5	6	7	8	9	0
Letter	А	Б	В	Г	Д	Е	Ж	З	И	К

(12) Set the Message Key as for individual traffic (see Section 7.3.2^[P52]).

The generation of the Message Key by any other method that differs from that listed is strictly prohibited!

7.4. Message Detail Groups

7.4.1. General

To the Message Detail Groups belong, in order, the System Indicator Group, the Traffic Type Group, the Identification Group(s) as well as the Service Group.

7.4.2 System Indicator Group

(1) The System Indicator Group is used to clearly distinguish the messages of the M-125 cipher-system from messages produced by other systems:

Letter text	AAAAA
Number text	11111

(2) The System Indicator Group is to be typed in clear as the first group, before the Traffic Type Group.

(3) Messages of general traffic contain no System Indicator Group.

7.4.3 Traffic Type Group

(1) The traffic type for circular messages is specified by means of the Traffic Type Group:

	Text Mode	
	Letter-text	Number-text
Language Mode		
German	DDDDD	55555
Russian		55555

(2) The Traffic Type Group is to be typed in clear immediately before the Identification Group (after the System Indicator Group).

7.4.4. Identification Group(s)

(1) The Identification Group(s) determine(s) the Message Key, with which the plain-text has been processed.

(2) The retrieval of the Identification Groups for the individual or circular traffic from the Identification Group Table (see Figure 5^[P26]) is to be carried out by columns from top to bottom, in order of the columns from left to right (Example 25^[P82]).

(3) Each letter / Each digit of the Identification Groups for general traffic (see Section 7.3.3^[P53]) is to be sent three times (Example 27^[P83]).

(4) The Identification Group(s) is (are) to be typed in clear immediately before the first group of the cipher-text (after the Traffic Type Group) (Examples 26^[P83], 27^[P83]).

7.4.5. Service Group

(1) The Service Group consists of five digits. The first two digits indicate the date of the Daily Key. The last three digits contain the count of the number of groups of the cipher-text, including the System Indicator Group, the Traffic Type Group, and the Identification Group, but excluding the Service Group itself (Examples 26^[P83], 27^[P83]).

(2) If the group count consists of a number of only one or two digit(s), then before this number two zeros or one zero must be placed (to ensure that the group count is a three-digit number).

If working in Russian letter Text Mode, characters of the Service Group are to be converted into Russian characters as in the table in Section 7.3.3. sub-section (11)^[P55].

(3) The Service Group is to be added as the last group of the cipher-text.

7.5. Workflow for enciphering

7.5.1 General

(1) When using the M-125 cipher-system, plain-texts may only be prepared according to the provisions of this document.

(2) In accordance with the prescribed Language Mode

- On the Model M-125-3MN

For Letter-Number and Letter-Number-Special Character text install the appropriate print-wheel with Latin or Russian characters, and set the 10/30 Modulus switch to "30"; for pure Number text, use the print-wheel with Russian characters and set the 10/30 Modulus switch to "10",

- The Model M-125-MN's Language Mode Plug is to be set:

in German text, to "LAT" ("JIAT"),
in Russian text, to "Russ" ("PYC").

(3) Set the applicable Daily Key (see Sections 7.2^[P48] and 5.1^[P39]).

(4) For general traffic generate the Message Key (see Section 7.3.3^[P53]).

(5) To control the proper conversion of the plain-text to cipher-text, decipher at least the beginning of the cipher-text. Check the deciphered text for compliance with the specified plain-text. Demonstrably destroy the deciphered text along with other intermediate materials.

7.5.2. Enciphering with printing to paper-tape

(1) On the Model M-125-3MN set the Text Mode switch, according to the selected Text Mode, to "Bu" ("Б") or "Zi" ("Ц").

(2) Set the Operating Mode switch to the position "K" ("O") (plain-text).

(3) Set the Output Mode switch to the position "D" ("ПЧ") (Printing).

(4) Push the lever for automatic group-of-5 division (on the right side of the Cipher Machine) towards the rear of the machine.

(5) Bring one of the marks on the paper-tape transport roller in line with the mark on the paper-tape pinch roller lever.

(6) Power switch on the Cipher Machine "On" ("BKJI").

(7) In order according to the selected traffic type

Individual and circular:

- type in the System Indicator Group (see Section 7.4.2^[P56]),

Circular:

- type in the Traffic Type Group (see Section 7.4.3^[P56]),

Individual and circular:

- type in the Identification Group (see Section 7.4.4^[P57]). (If the installed print-wheel has Latin characters or if the setting of the Language Mode Plug is "LAT" ("JIAT"), the Russian Letters of the Identification Group(s) will be printed in Latin Letters and Numbers as per the keyboard layout, see Figure 12^[P91].)

General:

- type in each letter / each number of the Identification Groups three times (see Section 7.4.4^[P57]), key (six groups of five).

(8) Set the Operating Mode switch to the position "C" ("3") (Enciphering).

(9) Clear the Group-of-5 counter to "zero". Turn off automatic group-of-5 division by pressing the button (on the right hand side of the device).

(10) Setting Message Key (see Section 7.3^[P52]).

(11) If you enter the pre-edited plain-text via:

the Keyboard

- Type in pre-edited plain-text (see Section 3^[P28]).

the Tape-reader

- Load plain-text paper-tape (see Section 6.3^[P46]).

- Button "On" ("ПЫСК") button on the tape-reader.

- Before the end of the plain-text punched-tape "Off" key ("СТОП") button.

- Press the "Off" key ("СТОП") several times until the last plain-text character has been read. Remove the paper-tape from the tape-reader.

- Close the tape-reader flap.

- If there is not a complete group-of-5 at the end of the message, complete it with space characters. Check this process using the group-of-5 counter.

(12) Set the Operating Mode switch to the position "K" ("0").

(13) Press the space-bar once.

(14) Type in the Service Group (see Section 7.4.5^[P57]).

(15) Power Switch of the Cipher Machine and of the Power Supply Unit off.

(16) Press the lever of the pinch-roller forwards, and move the tape on about 30 cm. Tear tape. Attach the cipher text tape

onto the form.

7.5.3 Enciphering with output to punched-tape

(1) On Model M-125-3MN, set the Text Mode switch, according to the selected type of text, to "Bu" ("Б") or "Zi" ("Ц").

(2) Set the Operating Mode switch to the position "K" ("O") (plain-text).

(3) Set the Output Mode switch to the position "DL" ("ПФ") (Printing and Punching).

(4) Power switch on the Cipher Machine to "On" ("BKЛ").

(5) Using the space-bar, make 5 to 10 cm paper-tape lead-in.

(6) In order according to the selected traffic type individual and circular:

- type in the System Indicator Group (see Section 7.4.2^[P56]),

circular:

- press the space-bar once
- type in the Traffic Type Group (see Section 7.4.3^[P56]),

individual and circular:

- Press the space-bar once
- type in the Identification Group (see Section 7.4.4^[P57]). (If the installed print-wheel has Latin characters or if the setting of the Language Mode Plug is "LAT" ("ЛАТ"), the Russian Letters of the Identification Group(s) will be printed in Latin Letters and Numbers as per the keyboard layout, see Figure 12^[P91].)

general:

- type in each letter / each number of the Identification Groups three times (see Section 7.4.4^[P57] and Example 27^[P83]), with a single space after every 5th character (giving 30 characters and 5 spaces).

(7) Using the space-bar, give 3 to 5 cm paper-tape lead-in. Using the tape transport roller, move on the tape one step further.

(8) Set the Operating Mode switch to the position "C" ("3") (Enciphering). Set the group-of-5 counter to the "zero" position.

(9) Setting the Message Key (see Section 7.3^[P52]).

(10) If you enter the pre-edited plain-texts via
the keyboard | the tape-reader

- | | |
|--|--|
| <ul style="list-style-type: none"> - type in the pre-edited plain-text (see Section 3^[P28]). | <ul style="list-style-type: none"> - load the plain-text tape (See Section 6.3^[P46]). - press the "On" ("ПУСК") key on the tape-reader. - press the "Off" key ("СТОП") button before the end of the punched plain-text tape. - press the "Off" key ("СТОП") several times until the last plain-text character has been read. - remove the paper-tape from the tape-reader - Close the tape-reader flap. |
|--|--|

- If there is not a complete group-of-5 at the end of the message, complete it with space characters. Check this process using the group-of-5 counter.

- Using the tape transport roller, move on the tape one step further.

(11) Set the Operating Mode switch to the position "K" ("0").

(12) Type in the Service Group (see Section 7.4.5^[P57]).

(13) Using the space-bar, make 5 to 10 cm paper-tape run-out.

(14) Power Switch of the Cipher Machine and of the Power Supply Unit off.

(15) Press the lever of the pinch roller forwards, move the cipher-tape on about 30 cm, and tear it off.

(16) Where messaging forwarding is taking place, write by hand the necessary service information, including the Message Detail Groups, onto the associated message form or onto the beginning of the cipher-text punched-tape.

8. Deciphering

8.1 General

(1) The commissioning of the equipment set is to be carried out according to Section 4^[P36].

(2) The following operations are to be done in the order given below, taking into account the traffic type and the type of presentation of the cipher-text.

(3) In accordance with the prescribed Language Mode

- On Model M-125-3MN

In Letter-Number and Letter-Number-Special Characters text, install the appropriate print-wheel with Latin or Russian characters and set the 10/30 Modulus switch to "30",

for pure Number text, use the print-wheel with Russian characters and set the 10/30 Modulus switch to "10",

- The unit M-125-MN's Language Mode Plug is to be set:

with German text, to "LAT" ("JIAT"),

with Russian text, to "Russ" ("PYC").

The Cipher Machine-related terms and switch settings that are mentioned in this section are as shown in Figures 6^[P86], 7^[P87], 8^[P88], 9^[P89].

8.2 Workflow for deciphering

8.2.1 Reproduction of the Message Detail Groups

(1) On Model M-125-3MN, set the Text Mode switch, according to the specific Text Mode, to "Bu" ("Б") and "Zi" ("Ц").

(2) Set the Operating Mode switch to the position "K" ("O") (plain-text).

(3) Set the Output Mode switch to the position "D" ("ПЧ") (Printing).

(4) Insert the cipher-text tape, ready to read from the first character of the Message Detail Group, into the tape-reader (see Section 6.3^[P46]).

(5) Power switch on the Cipher Machine to "On" ("ВКЛ").

(6) Press the "On" ("ПУСК") button on the tape-reader. (The Message Detail Groups at the beginning of the message, see Section 7.4^[P56], are printed on the paper-tape).

(7) Open the tape-reader flap, and remove the cipher-text tape from the tape-reader.

(8) Insert the cipher-text tape, with the first step of the group message after the no-holes character ready to read, into the tape-reader (see Section 6.3^[P46]).

(9) Press the "On" ("ПУСК") button on the tape-reader. (The Service Group, see Section 7.4.5^[P57], is printed on the paper-tape.

(10) Cipher Machine off

(11) Open the tape-reader flap, and remove the cipher-text punch tape from the tape-reader. Close the tape-reader flap.

(12) Press the lever of the pinch roller forwards and move on the paper-tape with the Message Detail Groups 30 cm.

8.2.2 Determining the traffic type and key

(1) The System Indicator Group (see Section 7.4.2^[P56]) determines the cipher-system being used.

(2) The Traffic Type Group (see Section 7.4.3^[P56])

determines the traffic type.

(3) The Service Group (see Section 7.4.5^[P57]) should determine the date of the Daily Key.

(4) If process is unsuccessful, set the Daily Key (see Section 7.2^[P48]).

(5) Power switch on the Cipher Machine to "On" ("BKJI").

(6) If the traffic type is:

general

individual or circular

- Based on the submitted six groups of five, produce the secured Identification Groups (see Section 7.4.4^[P57]), which determine two Identification Groups and the Message Key as described in Section 7.3.3^[P53].

- Convert the received Identification Groups into Russian letters according to the keyboard table^[P29] (see also Section 3.1. sub-section (4)^[P28]).

- The two resulting groups of five (two key groups) form the Message Key.

- Find the Identification Group in the corresponding Message Key Package and determine the appropriate Message

- The resulting Message Key corresponding to the Keyboard Layout (see also Section 3.1. sub-section (4)^[P28] and table^[P29]) implement in Russian letters.

Key (two groups) (see Sections 7.4.4^[P57] and 2.2.4^[P24]).

(7) Set the Message Key (see Section 7.3^[P52]).

8.2.3 Deciphering the cipher-text

(1) Depending on the intended type of output, set the Output Mode switch to one of the two possible positions:

"D" ("ПЧ") Print | "DL" ("ПФ") (Printing and Punching)

- Using the space-bar make 5 to 10 cm tape lead-in.

- group-of-5 counter to "zero" position.

(2) Set the Operating Mode switch to position "D" ("P") (Deciphering).

(3) On the Model M-125-3MN, set the Text Mode switch to "Mi" ("C"), "Bu" ("B") or "Zi" ("И") depending on the intended type of text.

(4) If the deciphered text is to be printed in groups of five, push the lever for the automatic five-group division (right of the unit) towards the rear of the Cipher Machine and engage it. Bring one of the marks on the paper-tape transport roller in line with the mark on the paper-tape pinch roller lever.

<u>Paper</u>		<u>Punched paper-tape</u>
- Type in the cipher-text using the keyboard		- Insert the cipher-text tape, ready to read from the first character of the cipher-text, into the tape-reader. (see Section 6.3 ^[P46]).
		- By repeatedly pressing the "OFF" ("CTOH") key of the tape-reader, check that the cipher-text is being deciphered correctly.
		- If the cipher-text is being deciphered correctly, press the "On" ("ИУСК") key of the tape-reader (tape-reader stops automatically after the end of the plain-text)

- | - Remove the cipher-text tape from the
- | tape-reader.

(6) Power switch of the Cipher Machine and of the Power Supply Unit off.

(7) If the group-of-5 division has been set, turn off the automatic group-of-5 division by pressing the button (right side of the Cipher Machine).

(8) Press the lever of the pinch roller forwards and move on the paper-tape 30 cm and tear off.

(9) Clearly mark the plain-text punched-tape with "PLAINTEXT" (originally "KLARTEXT")!

(10) Correct the plain-text if necessary. Stick the corrected plain-text paper-tape, without intermediate work details, onto a message form.

9. De-garbling

9.1. No deciphering possible

Perform the following operations in order:

(1) If necessary, print out the Message Detail Groups at the beginning and end of the message from the cipher-text punched-tape (see Section 8.2.1^[P64])

(2) Check the setting of the Daily and Message keys (see Sections 7.2^[P48] and 7.3^[P52]).

- | | | |
|---|----------|---|
| <p>- <u>In the case of general traffic, check the Identifications Groups for garbling. Repeat the processing of the message with possible variants.</u></p> | <p> </p> | <p>- <u>In the case of individual or circular traffic, attempt to process the message using the previous or next Message Key.</u></p> |
|---|----------|---|

(3) Attempt to process the message with the previous or next day's Daily Key.

(4) If the de-garbling attempt described below does not achieve success, then a check-back query (see Section 10^[P73]) should be sent.

9.2. Garbling during deciphering

The cause of the garbling is often a disorder of the synchronism between cipher-text and the rotor unit by a character or group shift. When using the crank, make sure that the power switch of the Cipher Machine is set to "Off" ("ВЫКЛ").

9.2.1 Deciphering upon presentation of the cipher-text written on paper

(1) On the paper sheet, mark the spot where the garbling begins.

(2) Determine the cause of the garbling:

- Check that the number of groups specified in the Service Group matches actual number of groups received.
- Check the number of groups thus far deciphered matches the number of groups shown on the groups counter.
- Using the crank, turn back the rotors to the position that corresponds to the last clearly deciphered word. Count the number of cycles rotated back and note them.

(3) After trying to determine the cause of the garbling, eliminate the garbling as follows:

- The group number in the message is smaller (larger) than that declared in the Service Group: Add (Skip) one or more groups and continue deciphering.
- The group number of the already deciphered message segment is smaller (larger) than the one displayed by the group-of-5 counters: Add (Skip) one or more groups and continue deciphering .
- In a group, there are one or more missed (extra) characters): Add (Delete) one or more characters randomly chosen and continue deciphering.

9.2.2 Deciphering upon presentation of a cipher-text punched on paper-tape

(1) Press the "Off" ("СТОП") key on the tape-reader and stop the processing.

(2) On the tape mark the location and count on the plain paper-tape the number of garbled characters.

(3) Rotate back the rotors using the crank the same number of cycles. Check the number of turns using the groups-of-5 counter.

(4) Using the thumbwheel on the paper tape-reader, move the cipher-text one, two or three steps forwards or backwards.

(5) Press the "OFF" ("CTOП") (single release) several times and check whether readable text appears.

(6) Repeat the attempts to de-garble until the cipher-text is deciphered correctly.

(7) If the Cipher Machine stops automatically and prints "*" on the plain paper-tapes, press the "OFF" ("CTOП") key repeatedly.

- If plain-text appears, continue with deciphering.
- Individual missing elements are to be, as far as possible, recognised and inserted from the context.
- If a correction of the element from the context is not possible, in place of the no-holes character in the cipher-text tape, place one of the letters "A (A)", "G (Г)", "K (K)", "6 (Ы)" or "8 (Ч)" via the keyboard.

9.2.3 Deciphering the cipher text in Text Mode "Mi" ("C")

One possible cause of the garbling is a failure in the setting, or not setting, the shift keys "A..." or "1..." to the correct keyboard shift.

(1) Check the garbled text components to see whether replacing the printed characters with characters of the other keyboard shift (see. Fig. 12^[P91]) results in a meaningful text.

(2) If there is a meaningful text:

- | - According to Sections 9.2.1^[P70]
| or 9.2.2^[P70], return the device
| to the position that corresponds
| to the last word clearly
| deciphered
|
- Set the Text Mode switch to the desired position "Bu"
("B") or "Zi" ("I"). Enter an element accordingly.
Set the Text Mode switch to "Mi" ("C") and continue
deciphering.
- After
deciphering the
entire message,
set the
Operating Mode
switch to "K"
("O") and the
Text Mode
switch to the
position
required
("Bu" ("B") or
"Zi" ("I")) for
the garbled
piece of text.
- Type the
garbled plain-
text on the
keyboard.

(3) If the above does not result in meaningful text, then a check-back query (see Section 10^[P73]) should be sent.

10. Check-back queries

10.1. A check-back query must be sent, if a message is received with garbled sections, which cannot be corrected from the context or by de-garbling attempts.

10.2. It is permitted to send a request for a repeat of the transmission of the message or of the garbled group within the message, to the remote site (Example 29^[P84]).

It is forbidden to send further communications in clear.

10.3. If after the repetition of the message, essentially the same error occurs, and it remains impossible to decipher the message, it is permitted to request the sending ciphering post to send a new version. (Example 30^[P84]).

It is forbidden to send further communications in clear.

This part of the message (whole words only) is then to be enciphered and sent by the sending ciphering post with a new Message Key.

11. Security regulations

11.1. General

(1) In particular occurrences, notification must be given prior to the initiation of emergency measures in accordance with the existing provisions.

(2) Notice of compromised keys, if sent by technical channels, is to be enciphered for transmission using a non-compromised Key Package.

(3) In the event of compromise of Key Packages or parts thereof, the following methods are to be used for enciphering this traffic using a non-compromised Key Package.

11.2 Incidents and Emergency measures

<u>Incidents</u>	<u>Emergency measures</u>
(1) Compromise of plain-text	
a) Before transmission:	Message to the message sender. Further processing only after consultation with this.
b) Through open communication or transmission:	Notification to the sender and recipient of the message.
-----	-----
(2) Compromise of a rotor or of a rotor set:	Message, but no immediate precautions are necessary.
-----	-----

(3) Compromise of a Daily Key or parts thereof: | Cancellation of all copies of the relevant series of the Daily Key. | Notice to all senders and receivers about the messages sent that day with that Daily Key.

----- | -----
(4) compromise of a Message Key |

a) Before transmission of the message being worked on: | Cancellation of the Message Key. |

b) After transmission of the message being worked on: | Cancellation of the Daily Key of the Key Area. | Notice to all senders and receivers of the Key Area about the messages sent that day with that key.

----- | -----
(5) Repeated use of the same Message Key during encipherment |

a) Before transmission of the messages being worked on: | Correct mistakes. |

b) After transmission of the messages being worked on: | Notification to sender and receiver about the compromised messages sent with the same Message Key. |

(6) Insertion of an
incorrect Identification
Group, Identification Group
missing.

a) Before transmission of
the message:

b) After transmission of
the message:

|
|
| Correct mistakes.
|
|

|
| If necessary, send in
| clear the proper
| Identification Group to
| the receiving cipher
| post.
|

(7) Enciphering with the
wrong Daily Key

a) Before transmission of
a message:

b) After transmission of
the message:

|
|
| Correct mistakes.
|
|

|
| Enciphering
| - of the same text
|
| - and the prefixed note
| "message no ... re-
| processed"
|
| with a valid Daily Key.
|

(8) Compromise of
Identification Groups:

|
| Message, but no immediate
| precautions are
| necessary.
|

12. Examples

Abbreviations: KT = Plain-text (originally „Klartext“).

hKT = plain-text that has been pre-edited for transmission (originally „hergerichteter Klartext“).

Example 1:

KT:... Karte **J** - 20 ...

hKT:... KARTE L (RUS) RPT L - 20...

or hKT:... KARTE L KL RUS KL RPT L STRICH ZWANZIG

Example 2:

KT:... XVIII/4 ...IX/X ...

hKT: ... XVIII/4 ...IX/X ... RPT

RÖM XVIII/4 ...RÖM IX/RÖM X

or hKT: ... 18/4 ...9/10 ...RPT RÖM

18/4 ... RÖM 9/RÖM 10...

or hKT: ... 18/4 ...9/10 ...RPT ROEM

18/4 ...ROEM 9/ROEM 10...

or hKT: ... 18 SSTRICH 4 ... 9 SSTRICH 10 ... RPT

ROEM 18 SSTRICH 4 ... ROEM 9 SSTRICH ROEM
10 ...

or hKT ... 18 SSTRICH 4 ... 9 SSTRICH 10 ... RPT

ROEM ACHTZEHN SSTRICH VIER ... ROEM NEUN
SSTRICH ROEM ZEHN ...

Example 3:

KT:

Positions-Nr.	Benennung	Nummer des Teils
16	Schneckenrad	16.374.001
17	Kegelrad	18.440.003
18	Zwischenwelle	18.464.000

hKT: LIES DREI SPALTEN A POSITIONS NR B BENENNUNG

C NUMMER DES TEILS A 16 B SCHNECKENRAD C

16 374 001 A 17 B KEGELRAD C 18 440 003

A 18 B ZVVISCHENVELLE C 18 464 000

Example 4:

KT: ...Ewald Kugeln ...
hKT: ... EWALD K Ü G E L N RPT KÜGELN
or hKT: ... EVVALD K UE G E L N RPT KUEGELN

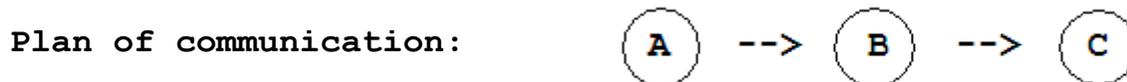
Example 5:

KT: ...Sztrzébiński ...
hKT: ...SZTREBNSKI NN SZTRZEBINSKI ...
...RPT SZTRZEKKKBINLLLSKI ...

Example 6:

KT: Meyerhöft an ...
hKT: MEYERHÖFT AN ... RPT MEYERHÖFT AN ...
or hKT: MEIERHOEFT AN ... RPT MEIPSERHOEFT AN ...
KT: Major Lawrenz, Major Moeller und Oberst
Majakow ...
hKT: MAJOR L A W R E N Z RPT LAWRENZ, MAJOR M
O E L L E R RPT MOELLER UND OBERST M A J
A K O W RPT MAJAKOW ...
or hKT: MAIOR L A VV R E N Z RPT LAVVRENZ MAIOR
M O E L L E R RPT MOEOELLER UND OBERST
M A I A K O VV RPT MAIOTAKOVV ...
KT: in Quitzow eintreffen ...
hKT: IN QUITZOW RPT QUITZOW EINTREFFEN ...
or hKT: IN KVUITZOVV RPT KVUITZOVV EINTREFFEN
KT: ... Ruf XKS an ...
hKT: ... RUF XKS RPT XKS AN ...
or hKT: ... RUF KSKS RPT KS KSKS AN ...

Example 7:



For enciphered plain-text as processed by point A:

VVVVV	Security Classification (VS-No.)	Receiver C	Text	Sender A
-------	----------------------------------	------------	------	----------

For enciphered plain-text as processed by point B:

Security Classification (VS-No.)	Receiver C	Text	Sender A
----------------------------------	------------	------	----------

Example 8:

KT: Kennzeichen IA 07 - 03 Typ...
 hKT: KENNZEICHEN IA 07 STRICH 03 TIP ...

KT: ... Ruf XKS an ...
 hKT: ... RUF KSKS RPT KS KSKS AN ...

KT: ... fährt über Baerenburg und ...
 hKT: ... FAEHRT UEBER BAEAERENBURG UND ...

KT: ... Quadrat ... Major ... W3 ...
 hKT: ... KQUADRAT ... MAIOR ... VV3 ...

Example 9:

KT: der 20. Jahrestag (Note: "." after a cardinal number is used for an ordinal number.)
 hKT: DER 20 PKT IAHRESTAG

Example 10:

KT: ... + ... § ...
 hKT: ...PLUS ...PARAGRAPH ...

Example 17:

	Rotor body with the marking
	И Д Ж З А В К Б Г Е
Set the setting mark on the setting ring to the	
letters ...	О С А Н Е Р Т Ь Б Ы
of the marker ring.	

Example 18:

	Rotor body with the marking
	И Д Ж З А В К Б Г Е
Assign the Inner wired disks with the	
letter...	Б Д В И А Г Е З К Ж
to the rotor body.	

Example 19:

	Inner wired disks marked
	Б Д В И А Г Е З К Ж
Insert the Inner wired disk with the side	
marked ...	2 I I 2 2 I 2 2 I 2
Facing outward in the rotor body ...	И Д Ж З А В К Б Г Е

Example 20:

	Inner wired disks marked
	Б Д В И А Г Е З К Ж
Set the setting mark of the inner wired disk	
to the letter ...	К У Л К Ю Ы Х В У Г
of the marker ring	
of the rotor body	И Д Ж З А В К Б Г Е

Example 21:

Set up the rotor bodies on their axle in the order specified in Example 16^[P80]. So, for example, the 4th rotor must have the label **3**, the setting mark of the adjusting ring must be set to the letter **H**: the inner wired disk must be used with **И2** showing outward in the rotor body **3**, and the alignment mark of the inner wired disk must match the character **K** of the marker ring of the rotor body **3**.

Example 22:

Daily Key Table: see Figure 2^[P23]

Key Setting: **Б Ж К А Г И Е В Д З**

Example 23:

Message Key 03 for individual traffic: see Fig. 4^[P25]

Key Setting: **П Р К Л М П О Х И Е**

Example 24:

Daily Key Table Fig. 2^[P23]: Table 14

initial position of the rotors on their axle:

Ф Р М К Е У З Ч Г Р

"Daily Key Table Figure 1^[P22]: **.О С А Н Е Р Т Ь Б Ы"**

Example 25:

Identification Group Tables: see Figure 5^[P26]

Message Key Table:	Corresponding Letter:	Identification Group Numbers:
01	УЧШХР	61449
03 (as Figure 4 ^[P25])	КВНОП	25477
06	ФИОКБ	56442
23	ХХЕЕЕ	66775

Example 26:

Today's date: 14th of the month

Identification Group Tables: see Figure 5^[P26]

Cipher-text: 121 groups

Third Message Key of the Message Key Package

(Fig. 4^[P25]): Table 03

Identification Group: **KBHOП**

or: **25477**

Letter text message:

AAAAA K2NOP*NL139 6ONBL TAJHZ VAJUN CZNV6 6D75Z A3K2U

HNMNB NROPC N3R63 EHU9Z 9I9NP 87KZR A4Z9R AR636 72...

.....

..... ...OK KF4B2 2K555 4M401 ANRGD B6039 2NTDA 8AMKC

3DK8M 2PRNZ R9AK7 HFGG2 JEEBC 6THEM 14123

Number text message:

11111 25477 63302 44262 88277 64492 33141 39823 11468

48486 37730 97543 82670 93926 52195 61910 49487 38...

..... ...06 03098 50265 36169 40209 16303 93463 78750

27720 31186 31383 27462 64827 92887 14245**

* KWNOP?

** 14123?

Example 27:

Today's date: 14th of the month

Cipher-text (general traffic): 239 groups

Identification Group: R2J3Z ZMROE or 17884 35165

Letter text message:

RRR22 2JJJ3 33ZZZ ZZZMM MRRRO OOEEO HAZAJ ZKC36 H3LS5

5TC6V STA7C 5FITH AFMKS 6BRIH HJ940 9G8U3 MLE5Z VD...

.....

..... ...BZ JF5PM BURAF 4PBP5 GUGAD DTER5 C3SAV AJ95P

RAF5V RUGVB 14245

Number text message:

11177 78888 88444 33355 51116 66555 63704 33488 62617
03922 33459 43051 76422 85069 96047 11284 06140 12 ..
..... ..
..... ...17 83651 91035 01330 11781 53211 79362 60228
57159 35274 14245

Example 28:

Date of the Daily Key: 8th of the month

Number of Groups: 79 (including Message Detail Groups but
excluding the Service Group)

Service Group: 08079

Example 29:

"Repeat Message No. ... "

or "Repeat Groups 30 to 40 of Message No ..."

Example 30:

"Repeat Groups 12 to 13 and 21 of Message No. ..."

TableSubstitution table for diacritics

Item no. No.	Diacritical Sign	Replacement unit	Examples of letters with diacritics
1 st	¨ (umlaut)	XXX	ä, ë, ï, ö, ü
2 nd	° (ring)	YYY	å, ù
3 rd	^ (Circumflex)	ZZZ	â, ê
4 th	ˇ (Caron)	TTT	č, ě, ň, ř, š
5 th	` (grave)	HHH	è
6 th	' (acute)	LLL	ć, é, ó, ź
7 th	· (dot)	KKK	ż
8 th	˙ (ogonek)	OOO	ą, ę
9 th	¸ (cedilla)	BBB	ç

See Example 5^[P78] for an example of the use of the replacement units.

Figure 6: Schlüsselscheibensatz.

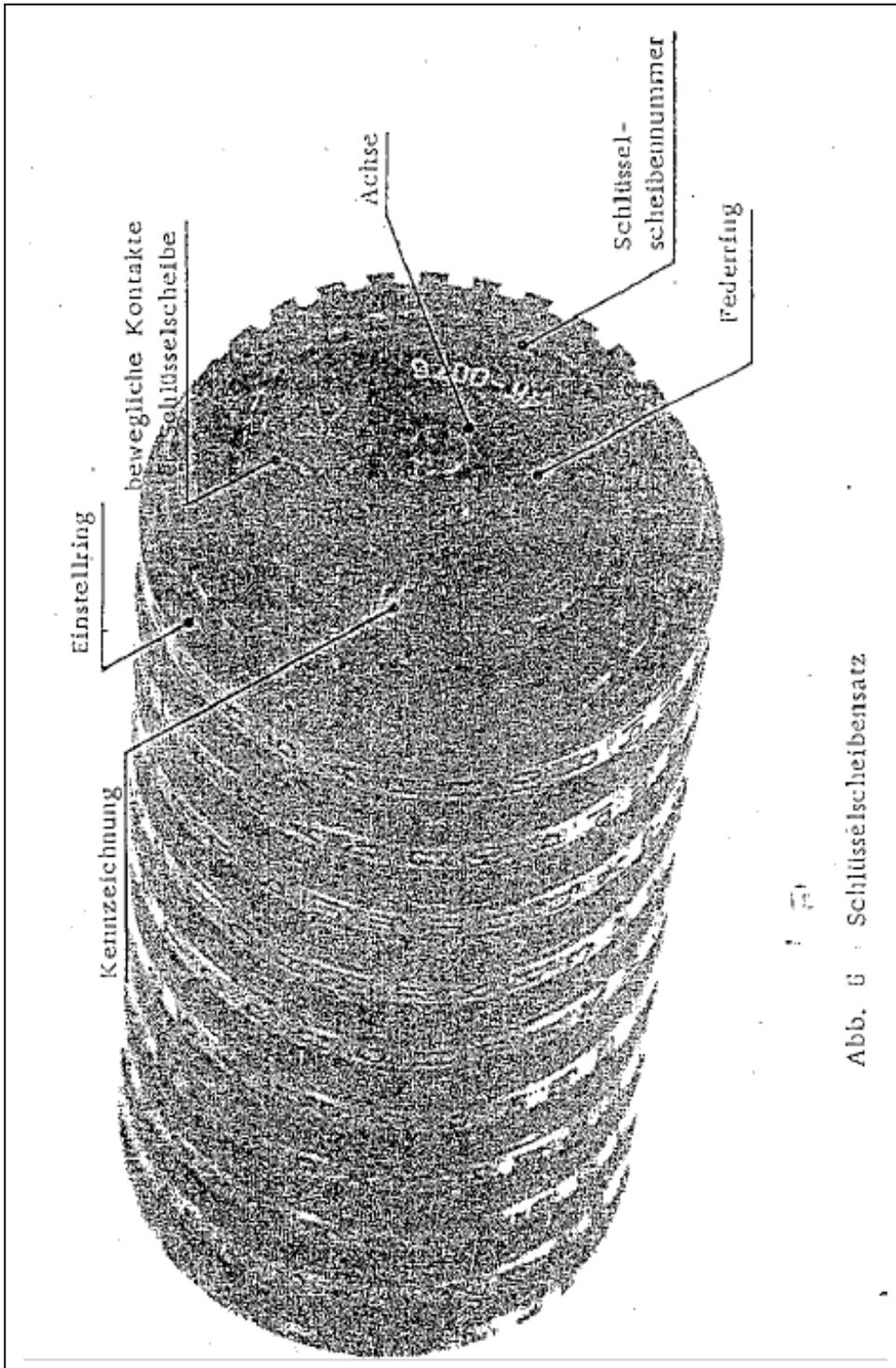


Abb. 6 - Schlüsselscheibensatz

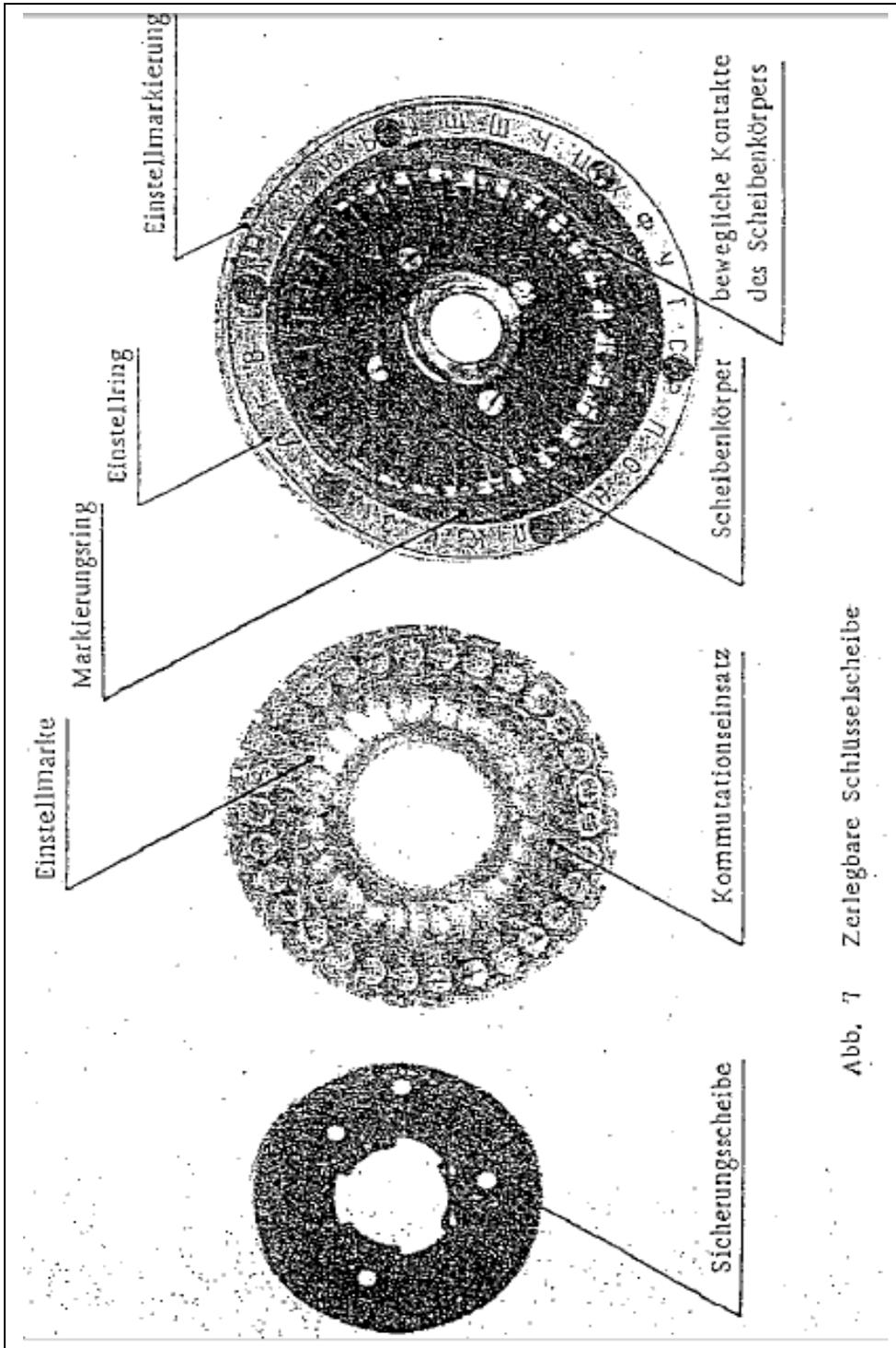


Abb. 7 Zerlegbare Schlüsselscheibe

Figure 7: Disassemblable rotor.

Figure 8: Cipher Machine Model M-125-3MN with its housing removed.

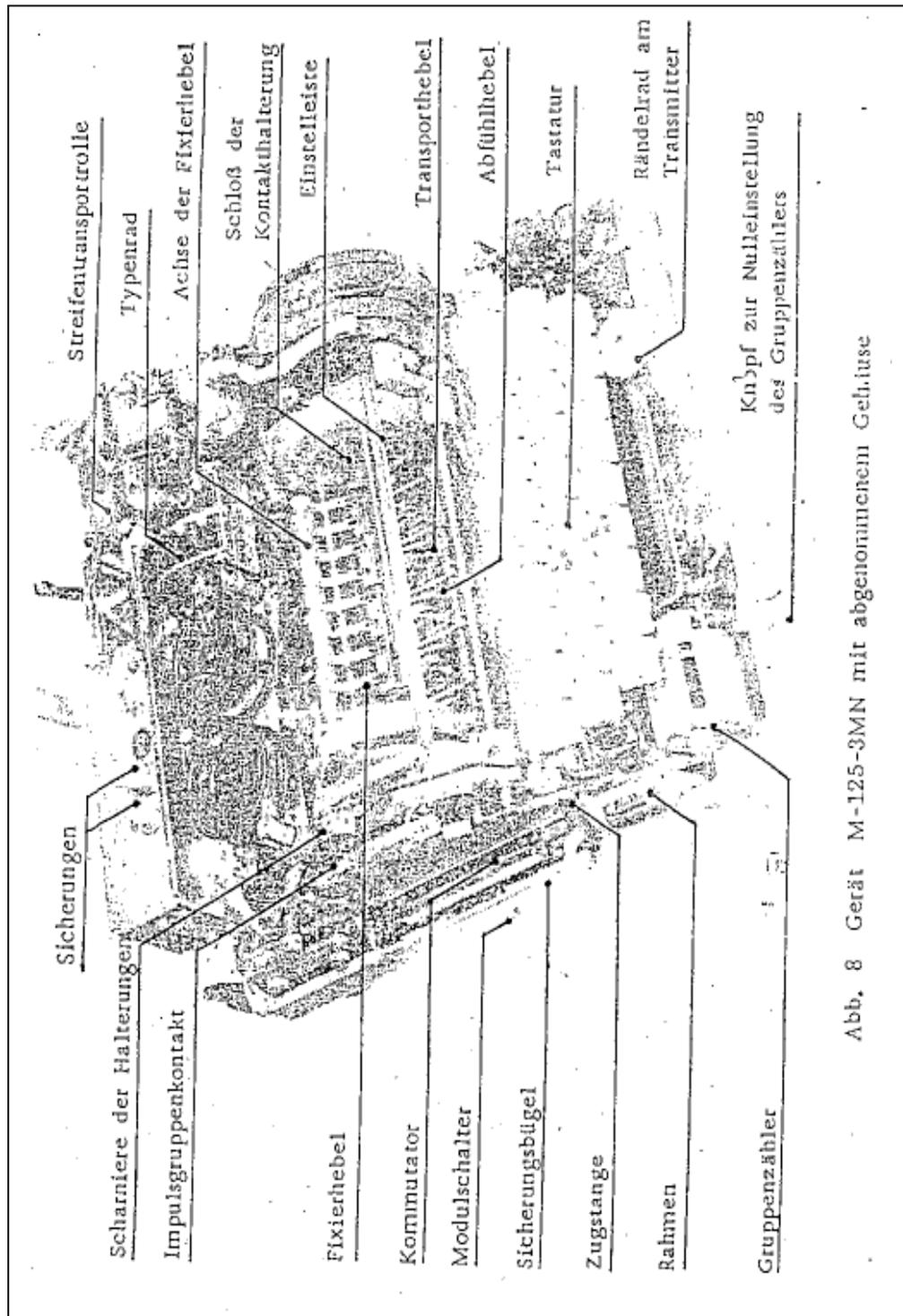


Abb. 8 Gerät M-125-3MN mit abgenommenem Gehäuse

Figure 9: Cipher Machine Model M-125-3MN.

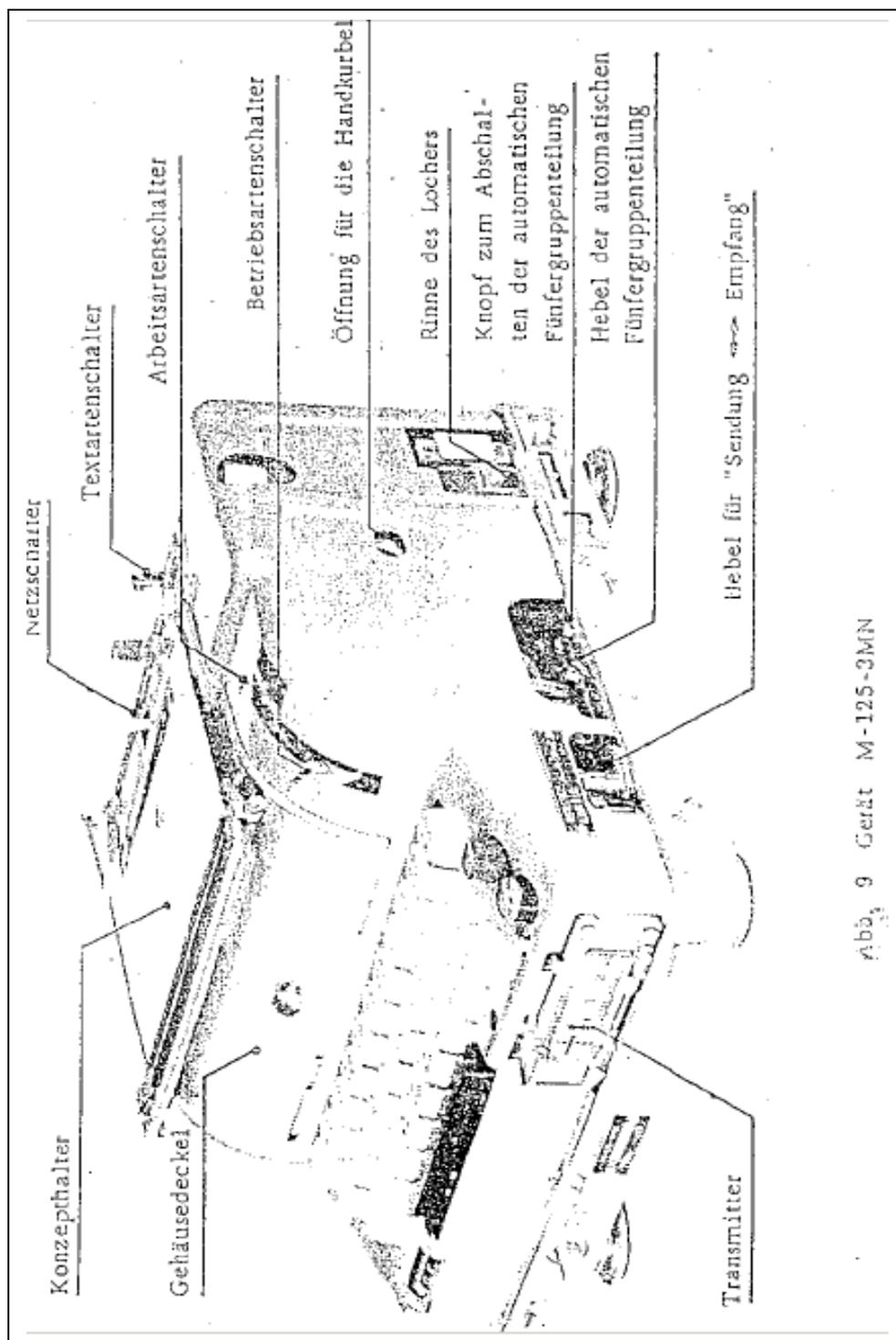


Abb. 9 Gerät M-125-3MN

Figure 10: The Paper-tape Punch

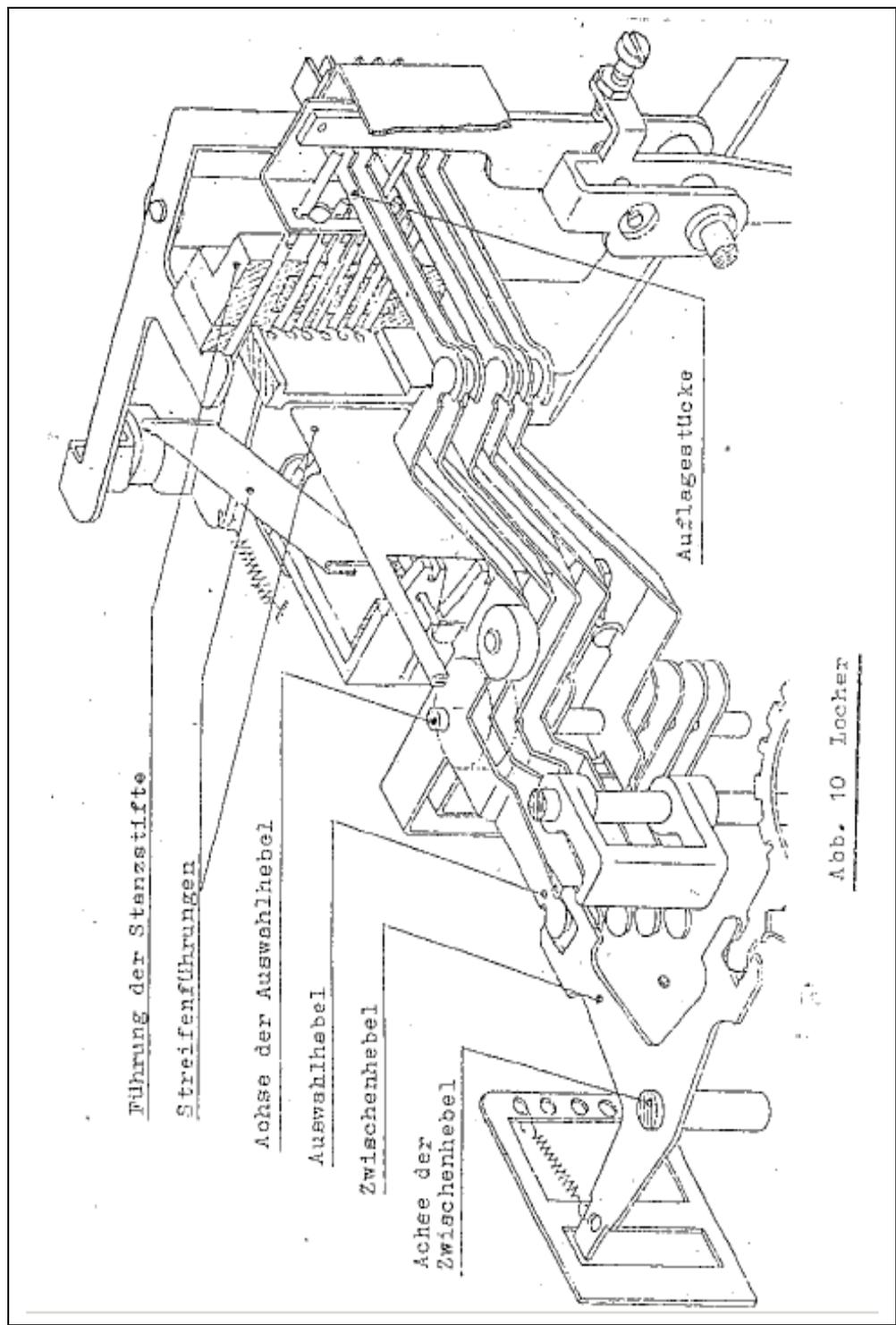
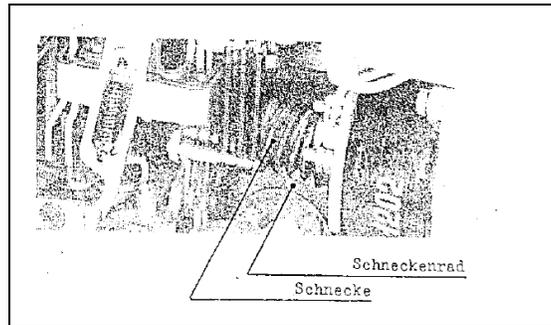


Figure 11 The power train of the Cipher Machine



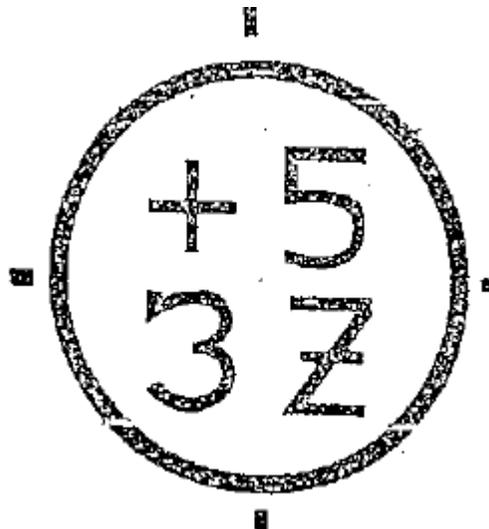
Russian
print-wheel

Text Mode switch in position -"Zi"
("I")
(10/30 Modulus switch to "10")
Button "1 .." depressed
→ "+"

Latin
print-wheel

Button "1 .." depressed

Text Mode switch in position -"Mi"
("C")
(10/30 Modulus switch to "30")
Button "A. ..." depressed
→ "3"



Text Mode switch in position "Mi"
("C")
(10/30 Modulus switch to "30")
Button "A. ..." depressed
→ "z"

- Text Mode switch in position "Bu" ("B")
(10/30 Modulus switch to "30")

Figure 12 Assignment of the print-wheel being used and the setting of the Text Mode switch for determining the effective keyboard segment in the cipher machine M-125-3MN.

Text
Mode

"Bu"
("B")

GGGGG88888666666KKKKKAAAAA99999

J 2 E R T Z U I O P 3 A S D F G H 4 K L 5 6 7 C V B N M 8 9 *
|
V
Space

"Mi"
("C")

J 2 E R T Z U I O P 3 A S D G H 4 K L 5 6 7 C B N M 8 9 *
| |
V V

Space Space

1 2 3 4 5 6 7 8 9 0 Q W V Ä Ü J () Ö F Y X / , . : - *

"Zi"
("I")

1 2 3 4 5 6 7 8 9 0 *

Testing text for Cipher Machine Model M-125-3MN

"Bu"
("B")

GGGGG88888666666KKKKKAAAAA99999

J 2 E R T Z U I O P 3 A S D F G H 4 K L 5 6 7 C V B N M 8 9 *
|
V
Space

Testing text for Cipher Machine Model M-125-MN

Figure 13 Testing texts(→: When deciphering resulting characters)

The commissioning of the equipment set according to Section 4^[P36 et seq].

Explanations: - : only for Model M-125-3MN
 o : only for Model M-125-MN
 * : for Models M-125-3MN and M-125-MN

<u>Operations</u> Switch to	W	A	G
↓ : on position			
↑ : off position			
Operations			
Check the power supply		*	
Establish the mains voltage		*	
Setting screw under the machine to "BKJ"		-	
Install Latin print-wheel		-	
Language Mode Plug to "LAT" ("JIAT")		o	
Set up the Daily Key		*	
Lever to „transmit“		-	
Insert paper-tape		*	
Power supply switch to "Netz~" ("СЕТЬ~")	*		
Power supply switch to "Netz=" ("СЕТЬ=")			*
Cipher Machine ↑	*		*
Connect the Cipher Machine to the Power Supply Unit	*		*
Regulator switch to "1" or "0"	*		
Connect the Power Supply Unit to the mains	*		
Connect the Power Supply Unit to the battery			*
Voltage selection switch ("НАПРЯЖЕНИЕ") to "250"	*		
Switch on the Power Supply Unit			*
Cipher Machine ↓	*		*
Output Mode switch to "DL" ("ДФ")	*		*
Operating Mode switch to "D" ("Р") or "C" ("З")	*		*
Press "On" ("ПУСК")			
on the tape-reader <u>Adjust the voltage</u>	*		
and Check the voltage			*
Cipher Machine ↑	*		*

W : A.C.
 A : Both A.C. and D.C.
 G : D.C.

Checking for proper functioning

<p>According to Section 5^[P39 et seq].</p> <p><u>Operations, Switch to</u></p> <p>↓ : pressed, on position</p> <p>↑ : off position</p>	<p><u>Explanations:</u></p> <p>- : only for Model M-125-3MN</p> <p>o : only for Model M-125-MN</p> <p>* : for Models M-125-3MN and M-125-MN</p> <p>Columns in order.</p>				
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5.</u>
Commission the equipment set	÷	÷	÷	÷	
Press "On" ("ПΥСК") on tape-reader ↓	*				
Text Mode switch to "Bu" ("Б")	-		-	-	-
10/30 Modulus switch to "30"	-		-	-	-
Language Mode Plug to "LAT" ("ЛІАТ")	o				
Cipher Machine ↑					*
Remove the tape from the tape-reader			*	*	*
Feed the tape just made and tear off.		*	*	*	*
Compare the tape just made with the control-text.			*		*
Put the tape just made into the tape-reader		*	*	*	
Set the wheels to 10 x A			*	*	
Output Mode switch to "D" ("ПЧ")		*		*	
Operating Mode switch to "D" ("Р")				*	
Text Mode switch to "Bu" ("Б")			-		
Output Mode switch to "DL" ("ПФ")			*		
Operating Mode switch to "C" ("З")			*		
Press "On" ("ПΥСК") on tape-reader ↓		*	*	*	
Operating Mode switch to "K" ("О")	*				
Cipher Machine ↓	*				
Type each 5 times: G, 8, 6, K, A, 9	*				
Press space-bar once ↓	*				
All keys alternating with space-bar ↓	*				
Move the tape on by one character	-				
Text Mode switch to "Mi" ("С")		-		-	
Key "On" ("ПΥСК") on tape-reader ↓		-	-	-	
All keys alternating with space-bar ↓					
except the 1... and A... keys	-				
Press "1..." key once ↓	-				
All keys alternating with space-bar ↓					
except the 1... and A... keys	-				
Move the tape on by one character	-				
Text Mode switch to "Zi" ("І")				-	
First row of keys alternating with space-bar ↓ except the J key	-				

Enciphering according to Section 7^[P48 et seq].

<u>Explanations:</u>	Paper						punched-tape.					
	all	ind.		all	ind.		all	ind.		all	ind.	
- : only for M-125-3MN	tra			tra			tra			tra		
o : only M-125-MN												
* : for Models M-125-3MN and M-125-MN	ffi			ffi			ffi			ffi		
, : Only for circular traffic	c			c			c			c		
Operations, Switch to	r	d	Z	r	d	Z	r	d	Z	r	d	Z
↓ : Data input, <u>on</u> position												
↑ : Data output, <u>off</u> position												
Install Russian print-wheel	-			-			-			-		
Language Mode Plug to "RUSS" ("PYC")	o			o			o			o		
Install Latin print-wheel		-			-			-			-	
Language Mode Plug to "LAT" ("JAT")		o			o			o		,	o	
10/30 Modulus switch to "30"	-			-			-			-		
10/30 Modulus switch to "10"												
Set up the Daily Key	*	*		*	*		*	*		*	*	
Create a Message Key	*	*					*	*				
Text Mode switch to "Bu" ("E")	-			-			-			-		
Text Mode switch to "Zi" ("II")												
Operating Mode switch to "K" ("O")	*	*		*	*		*	*		*	*	
Output Mode switch to "D" ("ПЧ")	*	*		*	*							
Output Mode switch to "DL" ("ПФ")							*	*		*	*	
Set ON the groups-of-5 switch ↓	*	*		*	*							
Set the mark on the paper-tape transport roller against the mark on the lever	*	*		*	*							
Cipher Machine ↓	*	*		*	*		*	*		*	*	
Feed the tape using the space-bar							*	*		*	*	
System Indicator Group ↓				*	*					*	*	
Traffic Type Group ↓				/	/	/				/	/	/
Identification Group ↓	*	*		*	*		*	*		*	*	
Feed the tape using the space-bar							*	*		*	*	
Operating Mode switch to "C" ("3")	*	*		*	*		*	*		*	*	
Clear the groups-of-5 counter	*	*		*	*		*	*		*	*	
Set OFF the groups-of-5 switch ↑	*	*		*	*							
Set up the Message Key	*	*		*	*		*	*		*	*	
Plain-text ↓	*	*		*	*		*	*		*	*	
Complete the group-of-5.	*	*		*	*		*	*		*	*	
Move the tape on by one character							*	*		*	*	
Operating Mode switch to "K" ("O")	*	*		*	*		*	*		*	*	
Press the space-bar once.	*	*		*	*							
Service-group ↓	*	*		*	*		*	*		*	*	
Feed the tape with the space-bar							*	*		*	*	
Cipher Machine ↑, Tear off the paper-tape and label	*	*		*	*		*	*		*	*	

r : Russian
d : German
Z : Numbers only

Deciphering according to Section 8^[P64 et seq].

Explanations:	From paper			From punched-tape.		
	all traffic	ind. & circ.		all traffic	ind. & circ.	
- : only for Model M-125-3MN						
o : only for Model M-125-MN						
* : for Models M-125-3MN and M-125-MN						
Operations, Switch to	r	d	Z	r	d	Z
↓ : Data input, on position						
↑ : Data output, off position						
Install Russian print-wheel Language Mode Plug to "RUSS" ("PYC")	-	o	-	-	o	-
Install Latin print-wheel Language Mode Plug to "LAT" ("JIAT")		-	o		-	o
10/30 Modulus switch to "30"	-	-	-	-	-	-
10/30 Modulus switch to "10"			-			-
Text Mode switch to "Bu" ("B")						-
Text Mode switch to "Zi" ("I")						-
Operating Mode switch to "K" ("O")					*	*
Output Mode switch to "D" ("IIY")					*	*
Place cipher-text paper-tape with first group into the reader					*	*
Cipher Machine ↓					*	*
Press "On" ("IIYCK") on tape-reader					*	*
↓					*	*
Place cipher-text paper-tape at first group after the no-holes character into the reader					*	*
Press "On" ("IIYCK") on tape-reader					*	*
↓					*	*
Cipher Machine ↑					*	*
Set up the Daily Key	*	*	-	*	*	-
Cipher Machine ↓	*	*	-	*	*	-
Determine the Identification Groups	*	*	-			
Seek out the Identification Groups				*	*	-
Set up the Message Key	*	*	-	*	*	-
Output Mode switch to "D" ("IIY") or "DL" ("IIY")	*	*	-	*	*	-
Clear the groups-of-5 counter	*	*	-	*	*	-
Operating Mode switch to "D" ("P")	*	*	-	*	*	-
Text Mode switch to "Zi" ("I")			-			-
Text Mode switch to "Mi" ("C") or "Bu" ("B")	*	*		*	*	
Enter the cipher-text	*	*	-	*	*	-
Cipher Machine ↑	*	*	-	*	*	-
Label the plain-text paper-tape	*	*	-	*	*	-
r : Russian						
d : German						
Z : Numbers only						

13. Pre-editing Russian-language plain-texts

13.1 General

Sections which are the same for the enciphering and deciphering of Russian and German plain-texts are not repeated below.

13.2 Enciphering a plain-text must be carried out in the same order as it stands:

Classification level (for non-classified plain-texts **HECEKPETHO**) - Receiver - reference (if applicable) - Text - VS-No. (For non-classified plain-texts FS-No.) - Signature - date of signature.

13.3. Figures in Letter Text Mode are be written in full.

Examples:

Cardinal Numbers

КТ:	hКТ:
9 -	ДЕВВВЯТЬ
10 -	ДЕССЯТЬ
19 -	ДЕВЯТНАДЦАТЬ
30 -	ТРИДЦАТЬ
79 -	СЕМЬДЕСЯТ ДЕВЯТЬ (<i>perhaps an error for</i> <i>ДЕВВВЯТЬ</i>)
509 -	ПЯТЬСОТ ДЕВВВЯТЬ
1220 -	ОДНА ТЫСЯЧА ДВЕСТИ ДВАДЦАТЬ
21010 -	ДВАДЦАТЬ ОДНА ТЫСЯЧА ДЕССЯТЬ
00105 -	НОЛЬ НОЛЬ СТО ПЯТЬ

Ordinal numbers associated with enumerations

КТ:	hКТ:
1 st -	ПЕРВОЕ ТЧК
2 nd -	ВТОРОЕ ТЧК
3 rd -	ТРЕТЬЕ ТЧК

4 th -	ЧЕТВЕРТОЕ ТЧК
5 th -	ПЯТОЕ ТЧК
6 th -	ШЕСТОЕ ТЧК
7 th -	СЕДЬМОЕ ТЧК
8 th -	ВОСЬМОЕ ТЧК
9 th -	ДЕВВЯТОЕ ТЧК
10 th -	ДЕССЯТОЕ ТЧК

Ordinal numbers in conjunction with nouns

КТ:	hКТ:
9 дивизия -	ДЕВВЯТАЯ ДИВИЗИЯ
51 полк -	ПЯТЬДЕСЯТ ПЕРВЫИ ПОЛК
13 отделение -	ТРИНАДЦАТОЕ ОТДЕЛЕНИЕ

Decimals

КТ:	hКТ:
29.7 -	ДВАДЦАТЬ ДЕВЯТЬ И СЕМЬ ДЕССЯТЫХ
9.19 -	ДЕВВЯТЬ И ДЕВЯТНАДЦАТЬ СОТЫХ
0.027 -	НОЛЬ И ДВАДЦАТЬ СЕМЬ ТЫСЯЧНЫХ

Common Fractions

КТ:	hКТ:
1/3 -	ОДНА ТРЕТЬЯ
5/9 -	ПЯТЬ ДЕВВЯТЫХ
10 2/5 -	ДЕССЯТЬ И ДВЕ ПЯТЫХ

Measurements

КТ:	25 x 15 x 5
hКТ:	ДВАДЦАТЬ ПЯТЬ НА ПЯТНАДЦАТЬ НА ПЯТЬ

Measurements on topographical maps

КТ:	hКТ:
1: 100000 -	СТО ТЫСЯЧНАЯ
1: 200000 -	ДВЕСТИ ТЫСЯЧНАЯ
1: 500000 -	ПЯТЬСОТ ТЫСЯЧНАЯ

After numbers already written out in full in the plain-text, the Service Code "ПРОПИСЬЮ", put in brackets, should be placed.

Example:

КТ: СЕМЬСОТ ПЯТЬДЕСЯТ

hКТ: СЕМЬСОТ ПЯТЬДЕСЯТ СКБ ПРОПИСЬЮ СКБ

Roman numerals are to be enciphered as they are spoken. After that the Service Code "РИМ" with parentheses.

Example:

КТ: II hКТ: ДВА СКБ РИМ СКБ

Numbers that are not separated by punctuation (e.g. in tables) are to be separated by the service-group "ИНТ".

Example:

КТ: 3850 5 10

hКТ: ТРИТЯСЯЧИ ВОСЕМЬСОТ ПЯТЬДЕСЯТ ИНТ ПЯТЬ
ИНТ ДЕСЯТЬ

13.4. In Letters text, the letters Й, Э and Ъ are to be replaced as follows:

Й -> И Э -> Е Ъ -> Ь

КТ : удар по объектам и войскам первого эшелона

hКТ : УДАР ПО ОБЪЕКТАМ И ВОЙСКАМ ПЕРВОГО ЕШЕЛОНА

In proper names (eg family names, call-signs, type-designations, geographical terms) are the explanatory Service Codes

- "КРТ" (краткое) (for letter "Й")
- "ОБР" (оборотное) (for letter "Э")
- "ТВРД" (твердый) (for letter "Ъ")

to be inserted, and if necessary,

proper names are to be repeated after the Service Code "ПВТ".

Examples:

КТ: The callsign СЪЭЙЕ

hКТ: СЪЕИЕ СКБ ТВРД ПЕРВОЕ ОБР КРТ СКБ ПВТ СЪЕИЕ

КТ: станция ЭРКНЕР

hКТ: СТАНЦИЯ ЕРКНЕР СКБ ПЕРВОЕ ОБР СКБ ПВТ ЕРКНЕР

КТ: ПЕТРОВСКИЙ Э. И.

hКТ: ПЕТРОВСКИИ Е СКБ ОБР СКБ И ПВТ ПЕТРОВСКИИ Е И

13.5. Service Codes (operational abbreviations), punctuation and other characters are to be used during enciphering in letters Text Mode as outlined below.

Точка	(point)	- ТЧК
Запятая	(comma)	- ЗПТ
Точка с запятой	(semicolon)	- ТЧКСЗПТ
Двоеточке	(colon)	- ДВТЧК
Скоба	(bracket)	- СКБ
Кавычки	(quotes)	- КВЧК
Дробная черта	(slash)	- ДРОБЬ
Номер	(number)	- НР
Абзац	(Section)	- АБЦ
Повторяю	(I repeat)	- ПВТ
Поправляю	(I correct)	- ППР
Краткое	(Й)	- КРТ
Оборотное	(Э)	- ОБР
Твердый	(Ъ)	- ТВРД
Латинская	(latin)	- ЛАТ
Римская	(roman numerals)	- РИМ
Интервал	(separation)	- ИНТ
Конец	(end)	- КНЦ
Получение подтвердите	(receipt confirmation)	- ПДТВ
Вручение подтвердите	(delivery confirmation)	- ВРЧ
сего года	(this year)	- СГ
Шифртелеграмма	(coded message)	- ШТ

Characters not in the tables are to be written in full:

Example:

KT: ...+ (Plus) ...§ (Paragraph)...- (Minus or Hyphen)

hKT: ...ПЛЮС.....ПАРАГРАФ.....МИНУС or ТИРЕ

13.6. Repetitions

In the repetition of proper names (family name, callsign, model names, geographical terms, individual letters, etc.) the Service Code "ПВТ" is to be inserted, enciphered, before the repeated name.

Where proper names are separated by punctuation marks, in repetitions, the punctuation marks are to be omitted.

Examples:

KT: Позывной самолета ШКМТЕ

hKT: ПОЗЫВНОЙ САМОЛЕТА ШКМТЕ ПВТ ШКМТЕ

KT: Изделие 8K65Y

hKT: ИЗДЕЛИЕ ВОСЕМЬ К ПВТ К ШЕСТЬДЕСЯТ ПЯТЬ У ПВТ У

hKT in the letter-digit-character text: ИЗДЕЛИЕ 8K65Y
ПВТ 8K65Y

KT: ШАРКОВО, КУДЕНЬ, МАГДИЦИ

hKT: ШАРКОВО ЗПТ КУДЕНЬ ЗПТ МАГДИЦИ ПВТ ШАРКОВО
КУДЕНЬ МАГДИЦИ

13.7. Doubling of certain letters.

For words in which the garbling of a single letter could lead to misunderstanding, these letters are to be doubled.

Examples:

КТ:		hКТ:
ИЮНЬ	-	ИЮННЬ
ИЮЛЬ	-	ИЮЛЛЬ
ФЕДОТ	-	ФЕДОТТ
ФЕДОР	-	ФЕДОРР
ИРАН	-	ИРАНН
ИРАК	-	ИРАКК
девять	-	ДЕВВЯТЬ
десять	-	ДЕССЯТЬ
наш	-	ННАШ
Ваш	-	ВВАШ

13.8. Dates are to be enciphered as they appear in the text. It is allowed to encipher the month instead of the ordinal number designating the month name. In the date of the current year, the Russian letters "СГ" are used for the year; in the past or future years are only the last two digits to be enciphered.

Examples:

КТ: 02. 03. this year
hКТ: ВТОРОГО ТРЕТЬЕГО СГ
or ВТОРОГО МАРТА СГ
hКТ: In Letter-Digit-Special character text:
02.03. СГ

КТ: 10. 06. 1964
hКТ: ДЕССЯТОГО ИЮННЯ ШЕСТЬДЕСЯТ ЧЕТВЕРТОГО ГОДА
or ДЕССЯТОГО ШЕСТОГО ШЕСТЬДЕСЯТ ЧЕТВЕРТОГО ГОДА

13.9. Times are to be enciphered including minutes.

Examples

КТ: 09.00 ч.
hКТ: ДЕВВЯТЬ ТЧК НОЛЬ НОЛЬ

КТ: 21.45 ч.

hKT: ДВАДЦАТЬ ОДИН ТЧК СОРОК ПЯТЬ

13.10. Hyphens within ranks are not to be enciphered.

Example:

КТ: генерал-майор

hKT: ГЕНЕРАЛ МАИОР

13.11. In the case of initials, period/full stop characters are not to be enciphered. The separation must be made by a single space. During the repetition of initials, the intermediate space is not to be enciphered.

Example:

КТ: Иванов А. И.

hKT: ИВАНОВ А И

or: ИВАНОВ А И ПВТ АИ

13.12. When specifying Unit Numbers, Field Post numbers, post office box numbers as well as latitude and longitude, the following abbreviations are used:

Войсковая часть	(Unit)	- ВЧ
Полевая почта	(Field Post)	- ПП
Почтовый ящик	(post box)	- ПЯ
Широта	(Width (latitude))	- Ш
Долгота	(Length (longitude))	- Д

Examples:

КТ: Командиру войсковой части полевая почта I5903

hKT: КОМАНДИРУ ВЧ ПП ПЯТНАДЦАТЬ ТЫСЯЧ ДЕВЯТЬСОТ ТРИ

КТ: Организация почтовый ящик 352

hKT: ОРГАНИЗАЦИЯ ПЯ ТРИСТА ПЯТЬДЕСЯТ ДВА

КТ: Широта I5° I0' долгота I2I° I3'

hKT: Ш ПЯТНАДЦАТЬ ГРАДУСОВ ДЕССЯТЬ МИНУТ Д СТО
ДВАДЦАТЬ ОДИН ГРАДУС ТРИНАДЦАТЬ МИНУТ

13.13. If, in the text, sizes and quantities are to be repeated, then the size and quantity terms can be abbreviated as follows:

процентов	(%)	- ПРОЦ
тысяч	(1000)	- ТЫС
рублей	(rubles)	- РУБ
минут	(minute)	- МИН
секунд	(second)	- СЕК
десятых	(tenth)	- ДЕС
метров в секунду	(m/sec)	- МСЕК
кабельтовых	(Cable length)	- КАБ
градусов	(degrees)	- ГР

13.14. The adjectives north, south, east and west in all their grammatical declension forms can be abbreviated as follows:

северная	(north)	- СЕВ
южная	(south)	- ЮЖН
восточная	(east)	- ВОСТ
западная	(west)	- ЗАП

13.15. Latin characters occurring in Russian texts are to be converted according to this table into Russian letters:

A B C D E F G H I J K L M N O P Q R S
А Б Ц Д Е Ф Г Х И Ш К Л М Н О П Я Р С

T U V W X Y Z
Т У Ж В Ъ Ы З

Latin letters which have been thus converted into Russian letters are to be indicated using the Service Code "ЛАТ". This Service Code is to be bracketted in parentheses.

Examples:

КТ: карта L - 20

hKT: КАРТА Л СКБ ЛАТ СКБ ПВТ Л ТИРЕ ДВАДЦАТЬ

КТ: ПОЗЫВНОЙ No. NRV

hKT: ПОЗЫВНОЙ НР НРЖ СКБ ЛАТ СКБ ПВТ НРЖ

13.16. Errors

If a typo occurs during enciphering, then the error-marker "ППР" is to be enciphered and then the incorrect word is to be repeated. Numbers are to be repeated in full. If necessary, the correctly repeated word (or number) can be repeated once more.

Examples:

КТ: ПОЛКОВНИК МЮЛЛЕР

hKT: ПОЛКОВНИК МЮЛЛЕН ППР МЮЛЛЕР

КТ: У БА

hKT: У БИ ППР У БА ПВТ У БА

КТ: 285

hKT: ДВЕСТИ ТРИДЦАТЬ ПЯТЬ ППР ДВЕСТИ ВОСЕМЬДЕСЯТ
ПЯТЬ

13.17. Continuations

Longer plain-texts are to be split when a message length of more than 300 groups is anticipated. Each part of the message is then to be processed separately, that is, using a new Message Key.

At the end of the first part a Control Section is to be enciphered in which the number of parts, the VS-No., the sender and the date of the signature will be communicated. In the following parts (except the last one), before the text, a Control Section is to be enciphered, in which the number of the part and the VS-No be informed, to which belongs this part.

In the last part of the message, before the text, a Control Section is to be enciphered, in which the end of the message and its VS-No. are to be sent.

If it becomes apparent that the plain-text consists of more or fewer

parts then was announced in the first part, then, at the end of the last part, a Control Section is to be enciphered, in which the exact number of parts is notified.

In unclassified plain-texts, the practice message No. or the FS-No. is to be enciphered.

Examples: Message in 2 parts

КТ:

Учебная No. 9
Командиру 10 мсд
Приказываю:
1. С 05.06. по 09.07.1978 года
.....
2. С 10.00 ч. до 14.00 ч. наступать
.....
15.07.1978 г. Мюллер
генерал-лейтнант

hКТ:

НЕСЕКРЕТНО УЧЕБНАЯ КОМАНДИРУ ДЕСЯТОИ МСД
ПРИКАЗЫВАЮ ДВТЧК ПЕРВОЕ ТЧК С ПЯТОГО ИЮНЯ ПО
ДЕВЯТОЕ ИЮЛЯ СГ ИЗ ДВУХ ЧАСТЕЙ НР ДЕВЯТЬ
ГЕНЕРАЛ ЛЕЙТНАНТ МЮЛЛЕР ПЯТНАДЦАТОГО ИЮЛЯ СГ

НЕСЕКРЕТНО УЧЕБНАЯ ЧАСТЬ ВТОРАЯ КНЦ НР ДЕВЯТЬ
ВТОРОЕ ТЧК С ДЕСЯТИ ТЧК НОЛЬ НОЛЬ ДО
ЧЕТЫРНАДЦАТИ ТЧК НОЛЬ НОЛЬ НАСТУПАТЬ

КТ: GVS ... aus 3 Teilen Nr. 105 Danilow 28.08.d. J,

hКТ: СОВ СЕКРЕТНО ...ИЗ ТРЕХ ЧАСТЕЙ НР СТО ПЯТЬ
ДАНИЛОВ ДВАДЦАТЬ ВОСМОГО АВГУСТА СГ

КТ: GVS Teil 2 Nr. 105 ...

hКТ: СОВ СЕКРЕТНО ЧАСТЬ ВТОРАЯ НР СТО ПЯТЬ ...

КТ: GVS Teil 3 Ende Nr. 105 ...

hКТ: СОВ СЕКРЕТНО ЧАСТЬ ТРЕТЬЯ КНЦ НР СТО ПЯТЬ ...

КТ: ...Absatz Fernschreiben wird nicht in 3,
sondern in 5 Teilen übertragen

hКТ: ...АБЦ ШТ ПЕРЕДАЕТСЯ НЕ ТРЕМЯ ЗПТ А ПЯТЬЮ
ЧАСТЯМИ

13.18. Cipherring of messages with circular and individual texts

If there is a message which is addressed to multiple recipients, while at the same time containing different text insertions, then, firstly, the text which is the same for all recipients is to be enciphered using the Message Key Tables for circular traffic.

The text insertions are to be announced by the signals "ВСТАВКА ПЕРВАЯ, ВСТАВКА ВТОРАЯ ..." (*first insertion, second insertion*) etc., or, if there is just a single text insertion, by the signal "ВСТАВКА" (*insertion*) only. If the text insertions are not intended for all recipients then at the end of the message communicate in a Control Section, for whom which text insertions are intended.

Text insertions which are different for each recipient, are to be enciphered, with the Message Key Tables for individual traffic; text insertions which are intended for a group of recipients are to be enciphered with the Message Key Tables for circular traffic.

At the beginning of the text insertion is the signal "К HP" and the VS-No., the signal "ВСТАВКА" (when there is just a single insertion) followed by the text insertion itself, or "ВСТАВКА ПЕРВАЯ", followed by the first text insertion, "ВСТАВКА ВТОРАЯ" followed by the second text insertion and so on, to be enciphered. When a particular text insertion is not intended for a particular recipient, then, for example, the signal "ВСТАВКА ПЕРВАЯ НЕТ" is to be enciphered.

Text insertions are to be treated as separate messages. Individual text insertions in General Traffic messages can also be processed using the same method.

13.19. Service Messages

If Service Messages between cipher stations become necessary (for example, communications about destructions of Keys, etc.), then they can be sent after operational

messages. For this purpose, the signal "АБЗАЦ" (АБЦ) is to be enciphered, and the Service Message is to be written in as short a form as possible.

The Service Message is to be recorded in the log book or in the message confirmation book and log book with reference to the FS-No. of the message, and confirmed by Head of the cipher post or by the duty operator by signature.

13.20 Special features for enciphering the Letter-Number-Special Character texts

When enciphering the letter-digit-character text can the letters and numbers, and characters of the first and second registers are used. It should be noted that the transition from the first to the second register, the shift key

1 . . .
Ф F

is pressed. During the transition from second to first register the shift key is pressed.

A . . .
Ж V

Example:

КТ: отражение

hKT: ОТПА

1 . . .
Ф F

 Ж (2.Register)

A . . .
Ж V

 ЕННЕ

13.21 Formation of the Service Group

During the formation of the Service Group, the numbers of the date of the encipherment are to be replaced by letters using the following table:

Numbers	1	2	3	4	5	6	7	8	9	0
	А	Б	В	Г	Д	Е	Ж	З	И	К

Example:

Date of enciphering: October 8
 Group number: 79
 Group numbers: 08079
 Service group: КЗКЖИ

13.22. Reception and delivery confirmations

13.22.1. Reception and delivery confirmations are to be given as follows:

- through an open message referring to the ES-No. of the enciphered message;
- through an enciphered message or Control Section of the following operational message with respect the VS-No.;
- through an open message with two groups of five.

13.22.2. The requirement for the receiving or delivery confirmation must be satisfied in a Control Section after a message by the following service group:

ПДТВ - receipt of the enciphered message

ВРЧ - delivery confirmation of the plain-text.

The transmission type is determined by the following Service Codes

ШМФРОМ - by ciphered message,

ГРУППОИ - by two groups.

If neither of the two Service Codes was transmitted, then, if requested, send the confirmation by an open message.

13.22.3. The formation of the above two groups of five has to be done by:

- The first four characters of the first group of five are to come from the first four characters of the Identification Group of the message to be confirmed.
- As the fifth character of the first group, and as the first character of the second group, the current day of the month is to be used.
- As the second to fifth characters of the second group, the time (hours, minutes) is to be used.

The digits of the date and of the time are to be converted into letters according to the table given in Section 13.21^[P108]. In this way, several messages can be

confirmed at the same time.

Example:

A message with the Identification Group **OKPMI** was received on the 09th day of the month at 15.20.

The two groups of five would be: **OKPMK ИАДБК**

13.23. De-garbling and check-back queries.

De-garbling according to Sections 9^[P69], and check-back queries according to Section 10^[P73], are to be performed in accordance with the following examples:

ПРОВЕРЬТЕ И ПОВТОРИТЕ ВАШ ТЛГ НР ...

(Check and repeat your message no)

or

**ПРОВЕРЬТЕ И ПОВТОРИТЕ ОТ...ДО ...ГРУППЫ ВАШЕГО ...
ТЛГ НР ...**

(Check and repeat groups from... to ... of your message no....)

Opening the Daily Key Package type "OSV-25-N" and "OSB-25-N"

Upon receipt and before the opening of the Daily Key Package check the integrity of the packaging, especially the seams.

Opening the Key Package:

- in the transparent film cut an opening which is bounded by the weld seam, the perforation of the casing and the opening of the brochure.
"broschuröffnung" (?) ;
- tear back the casing to the perforation;
- pull out the signature sheet;
- indicate the opening of the Daily Key Package by dating and signing the signature sheet.

Retrieval of the Daily Key Tables and the Punched Key-cards:

- tear the paper insert at the perforation and pull it out;
- tear off the Daily Key Table and the Punched Key-card at the perforation of the signature sheet;
- pull out the Daily Key Table and the Punched Key-card and label with the serial number;
- Confirm the removal of the Daily Key Tables and the Punched Key-cards by dating and signing the signature sheet.

To prevent damage during the removal of the Daily Key Tables and Punched Key-cards, the Key Package is to be held on the opposite edge of the perforation and to exert no pressure from above.

Figure 14. Daily Key Package

