GROMARK (100-150 letters) (**GRO**nsfeld with **M**ixed **A**lphabet and **R**unning **K**ey)

Set up as a K2M with columns taken off the transposition block in alphabetical order (See Keywords in Chapter 8). A 5-digit primer is chosen and a running numerical key is formed by adding successive pairs of digits (dropping 10's). The 1st plus 2nd give the 6th, 2nd plus 3rd give 7th, etc. Applying the key to the plaintext, the digit determines how far to the right to count before finding the substitute in the cipher alphabet. Then the ciphertext is written in 5-letter groups with the primer before the first group and the last digit after the last letter as a check.

Key: ENIGMA (264351)
Primer: 23452

Transposition block

2	6	4	3	5	1
E	N	I	G	M	A
B	C	D	F	H	J
K	L	O	P	Q	R
S	T	U	V	W	X
Y	Z				

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

encipherment: **K:** 23452579772664982037023072537978066
          pt: thereareuptotensubstitutesperletter
          CT: NFYCKBTIJCNWZYCACJNAYNLQPWWSTWPJQFL

CT: 23452 NFYCK BTIJC NWZYC ACJNA YNLQP WWSTW PJQFL 6.

Note: If the keyword has repeated letters, then the transposition block should be determined by the keyword portion of the keyed alphabet. If REPEATED is used as the keyword, then REPATD, after the removal of the repeats of E, creates a transposition block the is 6 wide.

5	3	4	1	6	2
R	E	P	A	T	D
B	C	D	F	H	I
J	K	L	M	N	O
Q	S	U	V	W	X
Y	Z				