

The Michela system



Antonio Michela Zucco

Scholar, inventor, teacher

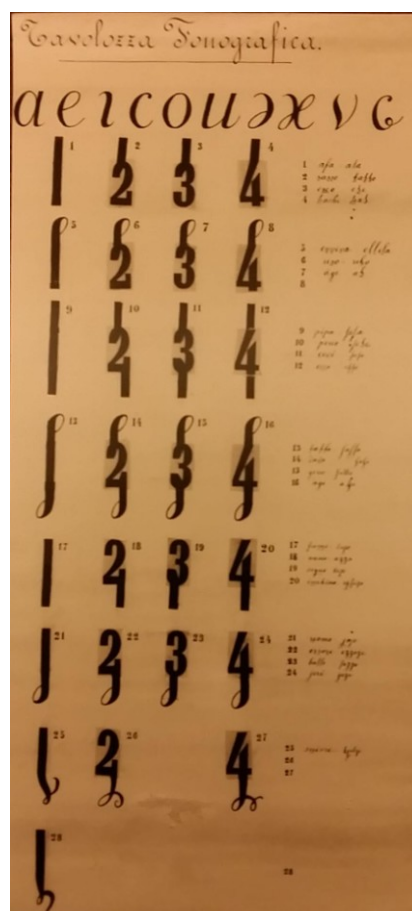


Antonio Michela Zucco was born on 1° February 1815 in Cortereggio, a small village in the municipality of San Giorgio Canavese, and died in Quassolo on 26 December 1886. With the exception of limited travel and travel to Paris for the Universal Exhibition of 1878, spent all his life in the Canavese lands, (North of Italy).

His natural tendency to mathematical and physical sciences, to technique and design, addressed his studies and led him to teaching: after studying at the Albertina

Academy of Turin he was for almost twenty years elementary teacher in various places (Aglié, Quassolo, Vestigné, Borgofranco, Ivrea) and then designer and architect teacher in Ivrea's technical schools. In Quassolo he also ran the adult night school.

Ever since he was young, he conceived the idea of a universal alphabet that «liked to unite men in their relationships, in their interests, in the expression of their feelings». He thoroughly studied the human vocal apparatus and all the sounds it produced, classified all the phonetic elements and gave each of them a graphic expression, summarizing them in a «Phonographic palette» (Tavolozza fonografica).



The Phonographic palette

The study of the structure of the syllable and its great passion for music did the rest; So it was from the theoretical studies that it came to practical application and in 1863 introduced for the first time to the participants of the Second Pedagogical

Congress (Milan, Palazzo Brera) its «instantaneous syllable process for universal use using small and portable keyboard apparatus».



Image of the exhibition held in the Sala Garibaldi of Palazzo Madama

Historical quotes: Giuseppe Garibaldi, on December 16, 1877, wrote: «I wish that the useful discovery of the illustrious Professor Michela is put into operation...». Senator Giorgini, relative of Alessandro Manzoni, Said: «I think I'm ahead of one of the greatest inventions of the century». Ruggero Bonghi exclaimed: «Well, there is the ingenuity in this apparatus, this machine will be lucky because it is a practical implementation» (S. Chiavenuto , *The Sunday Gazette*, 1885)

In 1878 came the Italian patent. In the course of a few years, patents for Austria-Hungary, Belgium, Germany, England and the United States of America were added to it.

In the same year the Michela - already so renamed - participated in the Great Universal Exposition in Paris where it was celebrated «as one of the glories of the Italian section». In Paris Professor Michela did not get the gold medal, but only the silver one: the jury considered that «the gold medal could not be granted to the founts of which the process was secret», which the inventor did not want to divulge. For the prestigious international recognition, Antonio Michela was received by the Italian king in Monza in October 1878, and was awarded of the Knight Cross of the Maurice Order.

The Turin Municipal Council was probably the first Italian collegial body to have an immediate stenographic record, starting from the sitting of January 20, 1879. In February and March the keyboard appeared to the Judiciary Court of Naples. In the same period, the first contacts with the two branches of Parliament were initiated, which led to the Senate's adoption of the Michela system from 1881.

Antonio Michela died on 24 December 1886 in Quassolo. There were numerous and moving attitudes of esteem and affection, beginning with his students and citizenship.

Evolution of the Michela system

«I wish that the useful discovery of the illustrious Professor Michela is put into operation...». Giuseppe Garibaldi, on December 16, 1877

This letter is one of the many awards that greeted the stenographic system conceived by Professor Antonio Michela Zucco, developed after decades of studies to find solutions that overcome the obstacle of the modest technical means available in the second half of the nineteenth century.

At the beginning of the 13th parliamentary term, Senate President Sebastiano Tecchio nominated a commission consisting of Senators Erin, Zini and Massarani to evaluate the suitability of the new system for the reassignment of the Senate's work, then entrusted to voluntary manual stenographers, coming from the scarce rows of parliamentary journalists available for such work. It was intended to set up in the best possible way the official office of parliamentary work. On January 30, 1880, the members of the Commission presented to the President an enthusiastic report and the adoption of the machine was decided by the Senate of the Italian kingdom.



The Michela keyboard

Since then Michela's keyboard (in the picture, one of the first models used at the Italian Senate) was the sure and faithful witness of the Italian parliamentary life passing through the Assembly and the Senate Commissions of the first kingdom of the Republic.

When the Michela keyboard began to operate, in the fierce parliamentary climate of the Cairoli, Depretis and Crispi governments, it recorded discussions on the abolition of ground tax, special law for Rome capital of Italy, election law without scrutiny list, child labor law, university reform.



A beautiful drawing on «Italian Illustration» of January 11, 1894 shows the machine in action during the discussion on civilian and military pensions.

And so, after the legislature, the history of Italy has passed on the keys of Michela: the Kingdom, the First World War, Fascism, the Second World War, the Republic, and all laws that have been enacted so far.

As proof of the importance of the system over the years, even at a european level, it is noted that a Michela stenographic machine was exhibited at the permanent exhibition «Les grandes heures du Parlement», realized in Paris at the Assemblée Nationale in Château de Versailles.

The Michela system has remained virtually unchanged for over a century: since 1974 a new mechanic version has been introduced, with the same Michela system but with a concept of innovative mechanical construction and since 1982 a subsequent electronic version, with which it has certainly facilitated the work of stenographers, which in these years has allowed them to achieve excellent results both in the Senate as in national and world competitions.

With the Michela, the Senate parliamentary reporters achieved a number of successes in the national (all Italian titles until they participated in the competitions from 1977 to 1996) and internationals contests. In the 1977, 1979, 1981 and 1983 editions of the world championships, Senate reporters have released two world titles and a second and a fourth place. In the Sofia (1985) championships, two Senate reporters got the world title and second place, both touching the extraordinary speed of 500 syllables per minute (over 200 words per minute). The absolute dominance of the Senate reporters continued in the following years with an unbroken set of rankings at the highest places in the various types of races and a new world championship title in Amsterdam in 1995. At the World championships in Beijing (2009) and in Budapest (2015), a Senate reporter reached with Michela keyboard 445 syllables in 2009 and 471 syllables in 2015, that is the highest writing speed among all competitors and all systems, including those with computerized voice recognition systems.

Technical notes

The most modern version of the Michela keyboard currently in use, while still relying on mechanisms not too dissimilar to those of the first specimens, has adopted

the latest state-of-the-art computer technology, becoming one of the fastest data entry mechanisms today existing. The keyboard is currently using the same softwares for decryption of stenographic notes in use at the United States Congress, adapted to the Italian language after long and in-depth studies, similar to what has been done in other major european languages (Spanish, French and German). The program in question has powerful artificial intelligence algorithms and represents the technology's top tip: it is used, for example, in the Canadian Senate to realize subtitling for non-listeners on the parliamentary television channel.

In addition to parliamentary matters (together with the US and Canada are to be remembered by the Australian Federal Parliament, the Argentinean Senate and various German regional parliaments) these transcription softwares are used in the US judicial system, military forces and television companies, as well as the International monetary fund and numerous UK resettlement and subtitling companies.



The Michela-MIDI keyboard currently in use

The latest versions of the machine use the MIDI protocol (the same of the musical keyboards) to connect with a personal computer that can produce instant transcription of perfectly synchronized speech with digital audio recording (which can be made available to users on the Internet or can be archived).

Description of Michela System

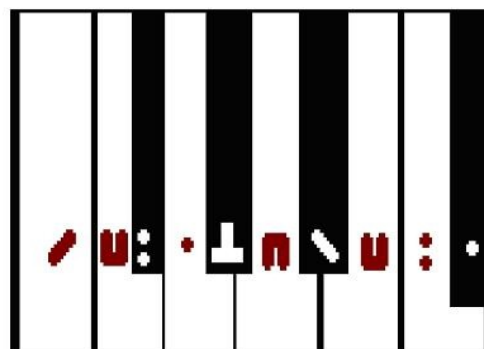
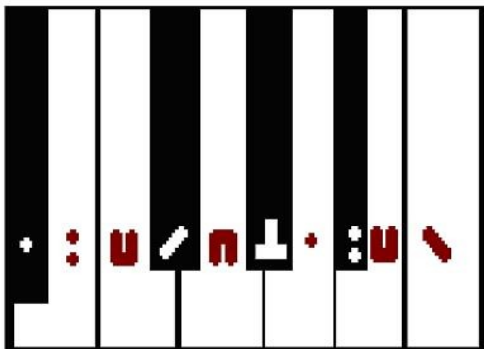
How are syllables written with the Michela phonetic keyboard?

Each syllable is composed of a set of sounds (phonemes), that Antonio Michela-Zucco, the Michela machine's inventor, classified into four phonic elements called “Serie” (series/banks):

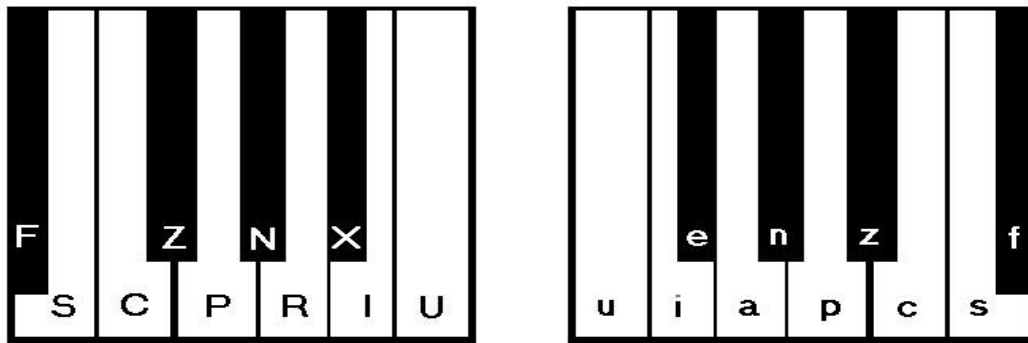
- I phonic element (initial sounds)
- II phonic element (subsequent sound)
- III main phonic element (tonic vowel)
- IV phonic element (ending sounds).

The phonetic writing

The Michela keyboard is formed by two distinct parts of 10 keys, one for the left hand and the other for the right hand (each finger has two specific keys assigned and can push only those). The original keyboard used six simple graphic signs to identify keyboard keys:

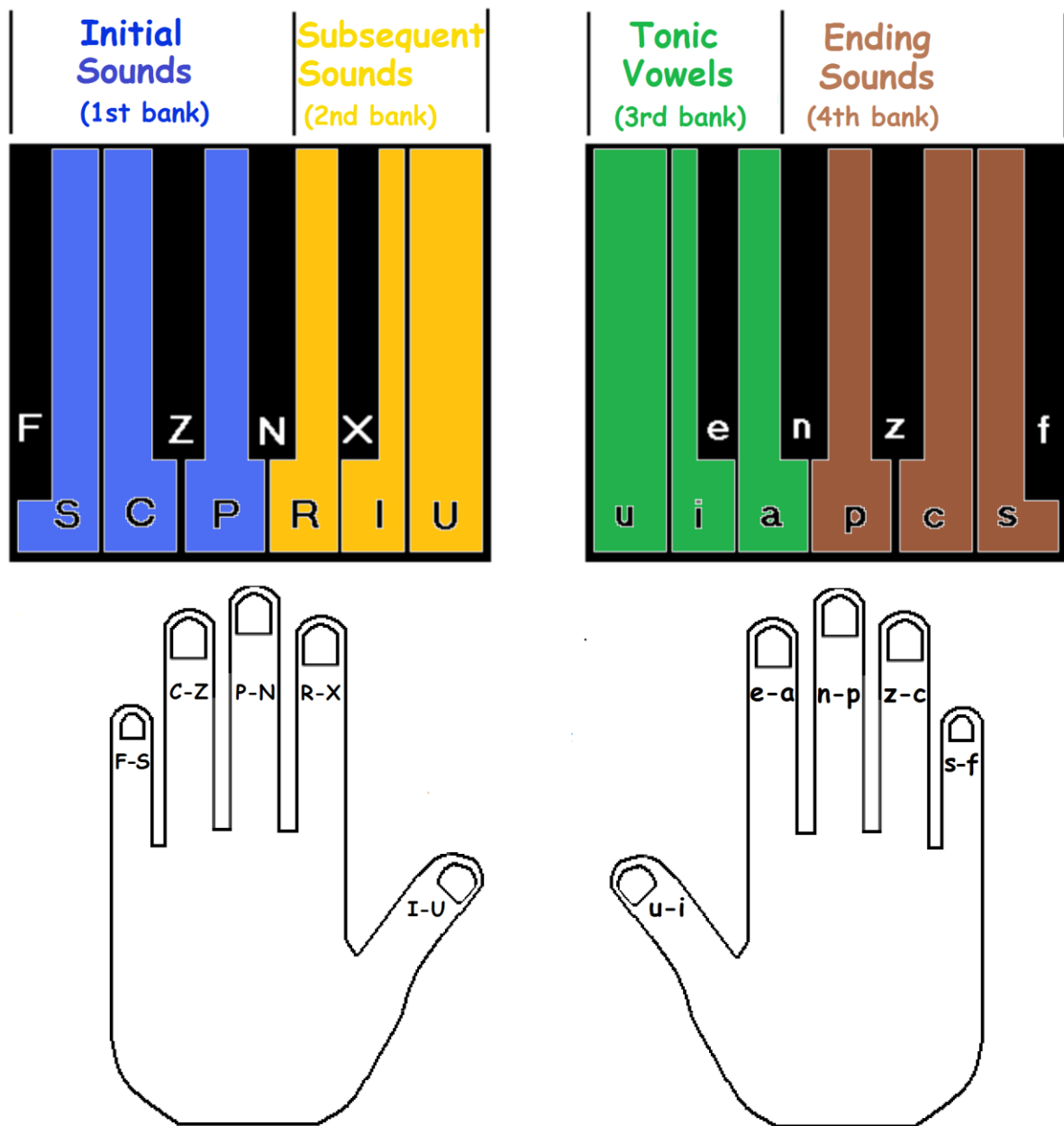


Then, in 1990, with the advent of computer assisted transcription (CAT) systems, the graphic signs have been replaced by alphabetical letters:



With the Michela keyboard it is first possible to write phonetically the syllables of any language, as if they were piano chords. In this mode (now only used for educational purposes) it records the sound of the spoken word like an audio recorder, but in writing. In this mode, each simultaneous pressing of one or more keys by the fingers of both hands corresponds to the sound of a syllable.

For example the syllable “SI” is made by the initial sound “S” and the main vowel sound “I”, while the syllable “TRAT” consists of the initial sound “T”, the subsequent sound “R”, the tonic/main vowel sound “A” and the ending sound “T”. As said, Michela machine repeats this structuring of the syllable and so its keyboard is ideally divided into four areas, called “serie” (series/banks), corresponding to the four parts in which each syllable can be ideally divided. The keyboard is then formed by two distinct parts of 10 keys, one for the left hand and the other for the right hand (each finger has two specific keys assigned and can push only those).



(Keyboard banks, phonic values and placement of the fingers)

As shown, each key represents a different phoneme, and it is associated with a literal symbol.

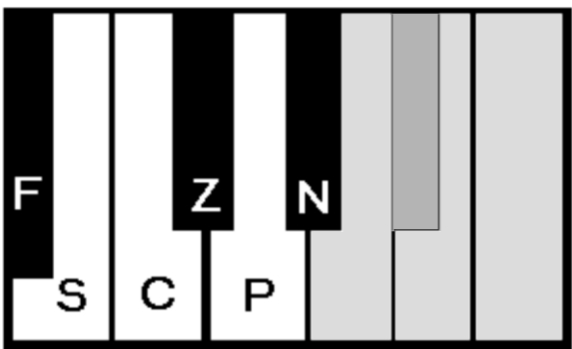
As it turns out, the sounds that can be represented in the four banks are not only those corresponding to the 20 keys; there are numerous others associated with key combinations (as if they were piano chords). Let's take a look.

Sounds of the 1st and 3rd banks

Using only the 1st and 3rd banks, it is already possible to phonetically represent many of the most basic syllables consisting of a single vowel sound (e.g., “a”, “i”) or a vowel sound preceded by a consonant (e.g. “va”, “lo”, “re” etc.). Below, the list of phonemes present in these banks, together with the key (or keys) which are associated:

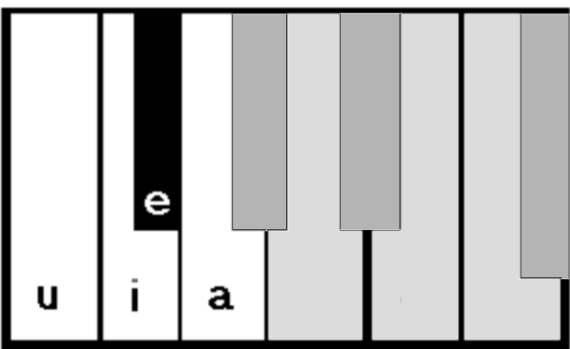
I

Initial
Sounds



III

Tonic
Vowels



B=FCP **H=FC** **S(harsh)=S**

C (soft)=SP **I=ZN** **S (soft)=Z**

C (hard)/K/Q=CP **J=FZ** **SC (soft)=C**

D=SCP **L=SCN** **T=FP**

F=F **M=SZP** **U=CN**

G(soft)=ZP **N=N** **V=SC**

G(hard)=FZP **NT(digr.)=FZN** **Z=SZ**

GL(digram)=SN **P=P**

GN(digram)=FN **R=FCN**

A=a **I=i**

E=e **O=ie**

È=ua **U=u**

Special vowel sounds

french E mute /italian mute sound = **ia**

french OI /italian UA = **uia**

french EU /german Ö /italian UE = **ue**

french OUI /italian UI = **uie**

french U / german Ü /italian UO = **ui**

* In the Italian language the “c” and “g” can have a soft sound or a hard sound. They are soft when they are followed by “e” or “i” (e.g. genesi, gente, dicembre, circo), are hard when followed by “a”, “o”, “u” (e.g. gatto, goccia, cane, cuore). The letter “s”, in turn, can have a sweet sound or a harsh

sound. It is sweet when it is mostly between vowels (e.g., viso, rosa, chiesa) or when it is followed by the consonants “b”, “d”, “g”, “l”, “m”, “n”, “r”, “v” (e.g.: sbarco, sdegno, sdoppiare); it is harsh mainly when it is preceded by another consonant (perso, falso), when it is at the beginning of the word followed by a vowel (sale, sole) or when it is double (rosso, assessore).

With these sounds, as said, it is already possible to write phonetically different words. For example, the word “pane” (bread) is formed from the syllables “pa” and “ne”: the first will be written by simultaneously pressing the keys “P” of the 1st bank and the vowel “a” of 3rd bank, and the second by simultaneously pressing the keys “N” in the 1st bank and “e” of the 3rd bank. So with phonetic writing, “pane” will be written with two combinations:

P	a	PA
N	e	NE

The keyboard then produces a succession of syllables (notes) that can be read by the operator on a strip of paper or translated by the computer to reconstruct the single words:

S	ZP	e	ME
F	P	i e	TO
SC	P	i e	DO
S	ZP	i	MI
C	P	e	CHE
SC	N	a	LA

The following are a few words with 1st and 3rd banks (phonetically written, without abbreviations).

Word		/	keys:
A	= a	FA/SE	= Fa/Ze
È	= ua	SA/NI	= Sa/Ni
IO	= ZNie	SO/NO	= Sie/Nie
LA	= SCNa	SCE/SO	= Ce/Zie
ME	= SZPe	CA/ME/RA	= CPa/SZPe/NCFa
VA	= SCa	FA/VO/RE	= Fa/Vie/FCNe
U/NA	= u/Na	PO/SI/TI/VA	= Pie/Zi/FPi/SCa
BE/NE	= FCPe/Ne	SENATO	= Se/Na/FPie

Sentences:

«Sono sani» = Sie/Nie/Sa/Ni

«Pino è fine» = Pi/Nie/ua/Fi/Ne

«Se ti va» = Se/FPi/SCa

«Una fase positiva» u/Na/Fa/Ze/Pie/Zi/Fpi SCa

«Una cena penosa» = u/Na/SPe/Na/Pe/Nie/Za

«È scesa la neve» = ua/Ce/Za/SCNa/Ne/SCe

«Me la sono cavata» = SZPe/SCNa/Sie/Nie/CPa/SCa/FPa

«Una mela bacata» =u/Na/SZPe/SCNa/FCPa/CPa/FPa

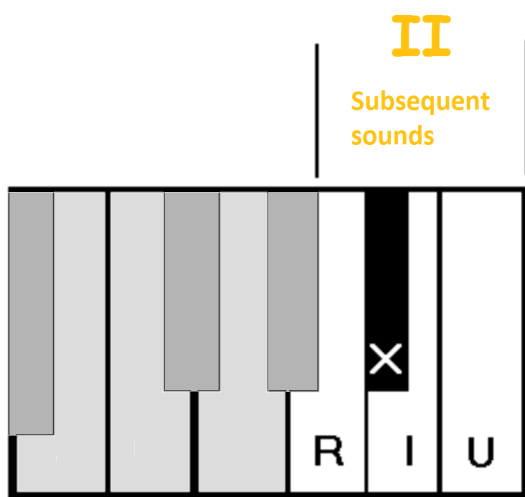
«Ada è venuta a Roma» = a/SCPa/ua/SCe/Nu/FPa/a/FCNie/SZPa

«Senato e Camera sono a favore» = Se/Na/FPie/e/CPa/SZPe/FCNa/Sie/Nie/a/Fa/SCie
FCNe».

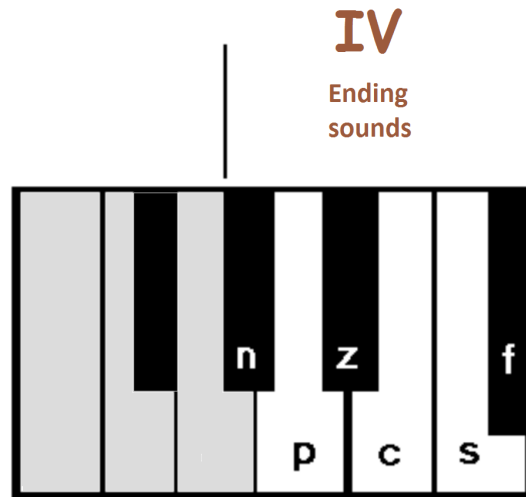
Sounds of the 2nd and 4th banks

In the syllable can then be additional sounds before and after the vowel sounds. They are represented with the 2nd and 4th banks.

Below a listing of the phonemes present in these banks (note that the 4th bank contains the same sounds of the 1st bank, although in reverse order, as if seen in a mirror).



C (hard)-G= XIU	P-B= IU
F-V= XI	R= R
I= I	S= X
L= RI	T-D= RIU
M= RU	U= U
N= XU	



B= pcf	H= cf	S (harsh)= s
C (soft)= ps	I= nz	S (soft)= z
C (hard)/K/Q= pc	J= zf	SC (soft)= c
D= pcs	L= nCS	T= pf
F= f	M= pzs	U= nc
G (soft)= pz	N= n	V= cs
G (hard)= pzf	NT (digr.)= nzf	Z= zs
GL (digram)= ns	P= p	
GN (digram)= nf	R= ncf	

Sentences (without abbreviations):

«Un primo piatto» = un/PRi/SZPie/PIapf/FPie

«Sono bravo con il piano» = Sie/Nie/FCPRa/Scie/CPien/incs/PIa/Nie

«Una scelta giusta» = u/Na/Cencs/FPa/ZPIus/FPa

«Avanti senza strappi» = a/SCan/FPi/Sen/SZas/FPRap/Pi. (*)

(* The consonant groups “STR”, “SCR”, “SPR” etc. (eg: strano, scrive, spruzzo etc.) are written anticipating the sound “S” in the preceding syllable (“lo strano”=SCNies/FPra/Nie; “si scrive”=Sis/CPRI/SCe etc.) or by placing the sound “S” in an autonomous combination with the e mute sound (ia) in the 3rd bank (“strano”=Sia/FPra/Nie; “scrive”=Sia/CPRI/SCe etc.) or using the specific sound “ST” provided by the encoding for the Latin language in substitution of the J sound (e.g. “strappo”=FZRap/Pie).

Abbreviations

For professional use, the reporter uses a lot of abbreviations and acronyms in place of phonetic writing. This highly reduces the number of combinations needed to represent syllabic words. The abbreviations system may include the elimination of the vocals in the central part of the words, using the powerful 2nd bank to write the subsequent consonant sound and the elimination of the ending vowels (following a series of criteria or rules to determine the plurals and genders).

Below, a few example, subdivided by grammatical categories.

NOUNS

bisogno = FCPXienf

Camera di deputati = CPXIUep

Commissione = CPRUis

corso = CPRies

deputati = SCPIUenz

deputato = SCPep

dibattito = SCPipcf

disegno di legge SCPRlepz

dovere = SCPXIencf

fase = Faz

favorevole = FXIiecs

frase = FRaz

Governo = FZPXIencf

lavori = SCNRIenz

livello = SCNXIencs

Paese = Piez

Parlamento = Papzs

passaggio = PXapz

posizione = PXizs

Presidente = PRuas

problema = PRiepcf

riduzione = FCNRIUuzs

Senato = SXUapf

senatore = SRUiencf

senatori = SRUienz

sfavorevole = ZXIiecs

signor = Sliencf

signori = Slienz

soluzione = SRIuzs

tassazione = FPXazs

VERBS

abbiamo = FCPIapzs

è = ua

ha = FCa

parlando = PRIanzs

parliamo = PRIapzs

possiamo = PUiepzs

possono = PUien

sarà = SRa

siamo = SIapzs

sono = SXUie

trovare = FPXIancf

verrà = SCRa

vorrei = SCRezf

PREPOSITIONS/ARTICLES/ARTICOLATED PREPOSITIONS

a = a

agli = SCNRIi

alla = SCNRIa

alle = SCNRie

allo = SCNRie

dagli = SCPXUIi

dalla = SCPXUIa

dalle = SCPXUIe

dallo = SCPXUIe

degli = SCPRIi (opp. SCPens)

dei = SCPenz

del = SCPencs

della = SCPRIa

delle = SCPRIe

dello = SCPRIe

di = SCPi

il = incs

la = SCNa

nel = Nencs

sugli = SRIe (opp. Suns)

sulla = SRIa

sulle = SRIe

sullo = SRlie

una = CNXUa

una = CNXUie

ADJECTIVES

grave = FZPRacs

internazionale = FZNXUancs

internazionali = FZNXUazf

morale = SZPRancs

questa = SZNa

queste = SZNe

questi = SZNi

questo = SZNie

tutta = FPRIUa

tutte = FPRIUe

tutti = FPRIUi

tutto = FPRIUie

tutto = FPRIUie

ADVERBS/CONJUNCTIONS

brevemente = FCPre/SCepzs

come = CPRUe (opp. CPUiepz)

in = in

infine = NXIin

invece = NXIeps

molto = SZPRIepf

non = Nien

perché = PXIUua

pertanto = PRIUanzf

quando = CPUanzs

SHORT FORMS

è approvato = Uap

non è approvato = Nuap

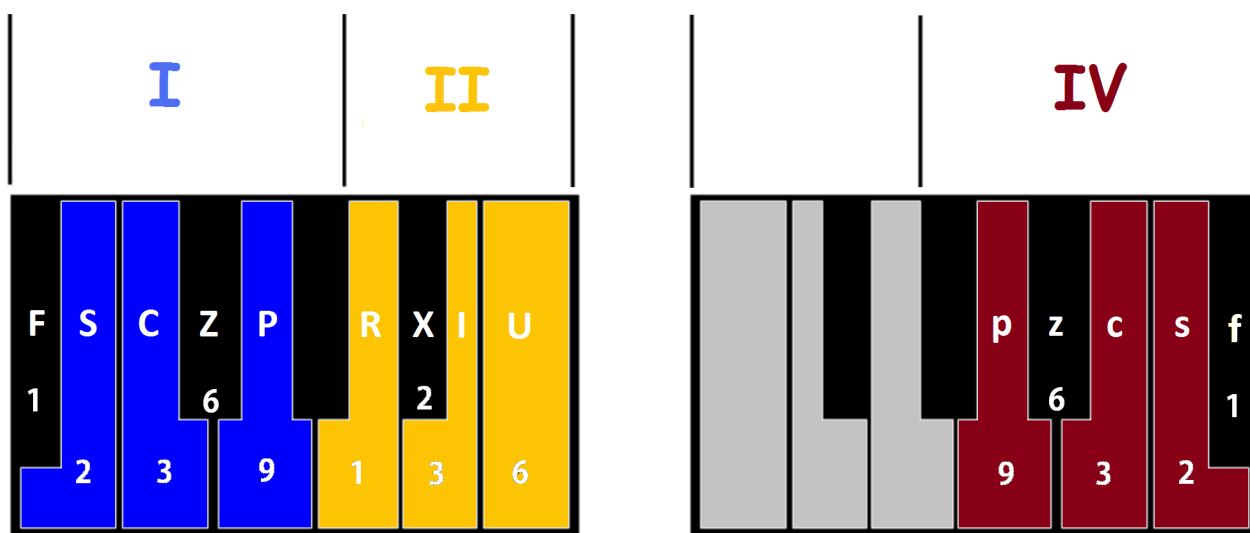
per quanto riguarda = PRipzf

Signor Presidente, onorevoli colleghi = SIUiepc

METHOD FOR WRITING NUMBERS

As regards the specific problem of writing the numbers, there are two possibilities, one of which is to write the words as they are spoken, according to the general procedure.

The second option is to use a number system that allows a significant reduction in strokes through the utilization of a specific numeric value assigned to each Michela key.



For the implementation of this method the first, the second and fourth banks are taken as specific locations, respectively, of the hundreds, tens and units, while the third bank (used for the vowels) is not used: this fact immediately distinguishes the notes which express digits from all the others, in which the bank of “vowel” is always utilized. Unrepresented numbers are obtained by adding the values of the other keys (e.g. $4=3+1$, $5=2+3$, $7=6+1$, $8=6+2$).

Below a diagram of the numbers up to 999.

f=1	R=10, Rf=11, Rs=12 (...)	F=100, Ff=101, Fs=102 (...)
s=2	X=20	S=200
c=3	I=30	C=300
cf=4	RI=40	FC=400
cs=5	XI=50	SC=500
z=6	U=60	Z=600
zf=7	RU=70	FZ=700
zs=8	XU=80	SZ=800
p=9	IU=90	P=900, PIU=990, PIUp=999 (...)

For numbers beyond 999, the following clarification applies. To each stroke in the number method corresponds a ternary group of numbers expressed with arabic numerals. Because the numbers are "upbeat", in groups of three digits, which gradually include the hundreds (999), the thousands 999.999), the millions (999.999.999), billions (999.999.999.999) and so on, the Michela number method conforms with this criterion: the horizontal "contiguity" horizontal of such groups does match a vertical "contiguity", in the sense that the ternary groups are expressed with successive strokes. For instance, the number 999.990 will be written with two strokes = PIUp/PIU, so the first stroke express the digit of 999 and soon after a second stroke will express the digit 990. If the strokes were three, the first would express obviously the value of the millions, the second the value of thousands, the third one the hundreds, and so on.

So, summing up, one stroke can express value numbers not exceeding 999; two strokes can express value numbers no more than 999.999, three strokes can express value numbers non more than 999.999.999 etc..

In the case in which there is a decimal number (e.g. 90,10), between the first stroke reproducing 90 (IU) and the one that express 10 (R) is inserted a third stroke, an “e” in the third bank that will indicate the comma, so 90,10=IU/e/R.

Examples:

$$f/F=1100$$

$$F/R=100.010$$

$$SCX_z/PI_zf=526.937$$

$$ZIs/FIUp=632.199$$

$$f/CRcf/SCU_{zs}/SI_z=1.314.568.236.$$

WRITING SYSTEMS FOR OTHER LANGUAGES

Due to the fact that the Michela system is totally phonetic is possible to use it to record other languages, also if not known by the reporter. In this case the reporter will just write the words as they sounds.

It's also possible to apply the system to other languages (in this case known by the operator), as shown by the following phonetic tables published by the inventor for using the system in other languages. (The tables for English and French, for convenience, have been translated in English; the tables for Spanish, Latin and Russian are instead still shown with the original graphic signs).

Stenographic alphabet for English

1st (and 4th) bank

F (f)	f, ph, gh	<i>father, prophet, enough, cough</i>	ZP (pz)	g, j	<i>giant, just</i>
			FZP (pzf)	g	<i>green, gold</i>
S (s)	s	<i>son, possession, less, this</i>	SZP (pzs)	m	<i>more, museum</i>
			N (n)	n	<i>niece, none</i>
C (c)	sh, ti, scr	<i>she, wish, scream, depredation</i>	FN (nf)	(open use) *proposed for: ins, uns nce	<i>unsecure, insist, entrance</i>
FC (cf)	h	<i>house, have, horse, hat, behind</i>		ng (gn)	<i>gnaws, writing, king</i>
SC (cs)	v	<i>vine, violent</i>	CN (nc)	w	<i>water, wine, wolf</i>
Z	s	<i>usage, useful, house, these, is</i>	FCN (ncf)	r	<i>refuse, reimburse</i>
FZ (zf)	th	<i>the, brother, earth, wealth</i>	SCN (ncs)	l	<i>lance, literal</i>
SZ (zs)	z	<i>horizon, dozen</i>		zn (nz)	<i>yester, yet, yes, boy</i>
P (p)	p	<i>people, reptile, paper</i>	FZN (nzf)	(open use) *proposed for: nt (n't)	<i>intense, entire can't, rent, font</i>
FP (pf)	t	<i>trifle, trade</i>		SZN (nzs)	<i>exit, fox, maximum</i>
SP (ps)	ch	<i>which, each</i>			
CP (pc)	c, k, q	<i>because, king</i>			
FCP (pcf)	b	<i>because</i>			
SCP (pcs)	d	<i>dear</i>			

2nd bank

R	r	great, trifle, gradual, scrape
X	s	observe, gipsy
I	i	italian, soldier
RI	l	glass, class, clew, plummer
XI	w, f	dwarf, dwell, twelve
U	u	habitual, gradual
RU	m	atmosphere, arithmetic
XU	n	gardener
UI	p, b	sport (with harsh s) (used also for briefs)
RIU	t, d	station (with harsh s) (used also for briefs)
XIU	c, g, k	scarf (with harsh s) (used also for briefs)

3rd bank

a	a	algebra, alive, after, breakfast
e	e, a, ea	federal, age, gate, earth, bread
i	i, y, ea, ee, eo	fiddle, fitly, feast, feel, people
ia	i, y	wine, I, why, myself
ie	o, a, au, aw	God, fortunate, small, bawble
u	u, oo	fruitful, fraudulent, wool
ua	u, eau	usage, useful, funeral, beautiful
ue	u, ou	umbrella, husband, but, chough, tough
ui	ou	our, without, thou
uia	(open use)	
uie	(open use) *proposed for Schwa sound (ə), no vowel	the, about

Example of shorthand notes in English

-e	A
S-encf	cer
FP-uien	tain
CP-ins	king
SZP-a	ma
CP-ins	king
CN-an	one
SCP-ezs	day
FC-iz	his
-en	en
FPR-anf	trance
-in	in
FP-u	to
-e	a
FP-uen	town
-apf	at
FP-u	two
-ie	'o
CPRI-iepc	clock
-in	in
FZ-ue	the
-af	af
FPXU-un	^ternoon

FZ-i	the
SNUapf	Senat e
S-enzf	sent
S-uepzs	some
SCP-uipe	depu
FP-is	ties
FP-u	to
CP-iepzs	com
PRI-e	ple
SZP-enzf	ment
FC-ipzs	him
-nzf	.
FZ-ue	the
CN-an	one
CN-u	who
CN-ies	was
FP-u	to
SIU-ipc	speak
FCPXIUan	began
FZ-ues	thus
NX	:
FN-nf	"
-a	A

CPN-e	le
SZN-an	xan
SCP-encf	der
FZ-ue	the
FZPR-ipf	great
FZN-nzf	,
FZ-ue	the
FZPR-ipf	great
-a	A
CPN-e	le
SZN-an	xan
SCP-encf	der
FN-nf	"
-nzf	and
SRIUiepc	stop
P-ueipcs	ped
C-uencf	shor
FP-ue	t
-nzf	.
FZ-ue	The
CP-ins	king
CN-u	who
CN-ies	was

Stenographic alphabet for French

1st (and 4th) bank

F (f)	f ph	<i>fait prophete</i>
S (s)	s c ç	savant societé
C (c)	sc ch	scène chose
FC (cf)	h	<i>hèros</i>
SC (cs)	v	vertu, veuve
Z	s	usage, aise
FZ (zf)	j g	<i>juge, jalousie</i>
SZ (zs)	z	<i>zèle</i>
P (p)	p	<i>paix, pape</i>
FP (pf)	t	<i>tête</i>
SP (ps)	(open use)	
CP (pc)	c, k, qu	<i>cave, qui</i>
FCP (pcf)	b	<i>bobine</i>
SCP (pcs)	d	<i>dédier</i>

ZP (pz)	(open use)	
FZP (pzf)	g	<i>guerre, glace</i>
SZP (pzs)	m	<i>maman</i>
N (n)	n	<i>non, nonne</i>
FN (nf)	gn	<i>gnome</i>
SN (ns)	il, eil	<i>oeil ouille</i>
CN (nc)	ou	<i>ouate</i>
FCN (ncf)	r	<i>rire</i>
SCN (ncs)	l	<i>légal</i>
ZN (nz)	hi, hy, i	<i>hypothèse</i>
FZN (nzf)	(open use)	
SZN (nzs)	x	<i>luxe, index</i>

2nd bank

R	r	<i>prêtre</i>
X	s	<i>pseudonyme</i>
l	i, e, a	<i>pitié, reel</i>
lI	l	<i>globe, bloc</i>
Xl	v, f, ph	<i>sphère</i>
U	u	<i>tuer</i>
RU	m	<i>revêtement</i>
XU	n	<i>tenir</i>
UI	p b	<i>repos, rebelle</i>
RIU	t, d	<i>retard, redite</i>
XIU	c, g, k	<i>recours</i>

3rd bank

a	a e	<i>apparence</i>
e	é, e, ai	<i>mer, vrai</i>
i	i, y	<i>liquide, jury</i>
ia	e (mute)	<i>enfle</i>
ie	o, au, eau	<i>oser, faux</i>
u	ou	<i>poupé</i>
ua	ê, è, ai, i	<i>être, frère, lin</i>
ue	eu, œ	<i>reux, cœur</i>
ui	u	<i>usurper</i>
uia	oi	<i>oiseau, mois</i>
uie	ui, oui	<i>bruit, éblouir</i>

Example of shorthand notes in French

SCP-e	Dés	PRI-ui	plus	SCPR-uia	droit
CP-ien	qu'on	C-uancf	cher	S-uincf	sur
a	a	SCP-an	dans	SCN-ia	le
an	an-	PRI-ui	plu	FCPRI-e	blé
N-ien	non	ZI-uencf	sieurs	-nzf	.
S-e	cé	SC-incs	villes	SCN-e	Les
-uin	une	SCP-i	d'i	SCPRUie	démo
SZP-ie	mau	FP-a	ta	CPRapf	crates
SCU-az	vaise	SCN-i	lie	CP-i	qui
FCN-e	ré	-uen	on	PR-ie	pro
CP-iencs	col	-a	a	FP-es	tes
FP-e	te	SCPRUan	deman	FP-ia	stent
SCP-ui	du	SCP-e	dé	FP-u	tou
FCPRI-e	blé	S-i	si	FZ-uncf	jours
-e	et	SCN-ia	le	CP-ien	con
CP-ua	que	SZPRUan	moment	FPR-e	tre
P-ancf	par	N-e	n'é	SCN-ancf	l'ar
SCN-a	là	FP-e	tait	FCP-i	bi
SCN-ua	le	P-a	pas	FPR-uancf	traire
P-en	pain	SCXUui	venu	SCP-e	des
-ua	est	SCPR-e	de ré	SCP-e	de
SCPXI-e	deve	SCP-uiencf	duire	CPre	créts
N-ui	nu	SCN-ia	le	SCN-uia	loi

LATIN

ALFABETO PER LA LINGUA LATINA

I E IV SERIE			II SERIE		
1 .	f ph	<i>fili phoebus</i>	1 .	r	<i>patres</i>
2 :	s	<i>pes — assis</i>	2 :	s	<i>scripsit</i>
3 ∪	sc	<i>suscipe</i>	3 ∪	i	<i>officio</i>
4 . ∪	h	<i>honor</i>	4 . ∪	l	<i>clangor</i>
5 : ∪	v	<i>vates</i>	5 : ∪	v	<i>adventus</i>
6 /	s	<i>musa</i>	6 \	u	<i>pueri</i>
7 . /	st	<i>post est</i>	7 . \	m	<i>smaragdus</i>
8 : /	z - t	<i>zona amicitia</i>	8 : \	n	<i>amnis</i>
9 ∪	p	<i>poena</i>	9 ∪	p	<i>spatium</i>
10 . ∪	t	<i>tribunus</i>	10 . ∪	t	<i>contemptum</i>
11 : ∪	c	<i>cedrus</i>	11 : ∪	c q	<i>scandere</i>
12 ∪ ∪	c ch	<i>causa christus</i>	III SERIE		
13 . ∪ ∪	b	<i>benevolus</i>			
14 : ∪ ∪	d	<i>dedit</i>			
15 / ∪	g	<i>gyrus genitrix</i>			
16 . / ∪	g gh	<i>gaius</i>			
17 : / ∪	m	<i>magnus</i>	1 .	a	<i>anima</i>
18 ⊥	n	<i>nitor nummus</i>	2 :	eæœ	<i>cena cælum</i>
19 . ⊥	gn	<i>magnus</i>	3 ∪	i y	<i>irides</i>
20 : ⊥			4 ∪ .		<i>mancanza di vocale</i>
21 ∪ ⊥	u	<i>cauda</i>	5 ∪ :	o	<i>officio</i>
22 . ∪ ⊥	r	<i>rumor</i>	6 /	u	<i>nummus</i>
23 : ∪ ⊥	l	<i>legatus</i>	7 / .		
24 / ⊥	i j	<i>jaceo — cui</i>	8 / :		
25 . / ⊥	nt	<i>colunt</i>	9 ∪		
26 : / ⊥	x	<i>vox — pax</i>	10 ∪ .		
			11 ∪ :		

Esempio di stenoscritto in lingua latina.

Her	de
cu	rent.
la	
nus,	
in	Ci
si	vi
gui	ta
san	te
cti	ca
ta	pta
te	ca
vir,	pi
	te
Pe	ca
ru	sus
si	est.
no	
rum	De
e	mor
pi	tui
sco	cor
pa	pus
tum	ex
ge	tra
re	mu
bat	ros
cum	pro
Go	ie
tho	ctum
rum	hu
co	ma
piac	nio
Pe	res
ru	se
siam	pul
o	tu
bsi	ra

SPANISH

ALFABETO PER LA LINGUA SPAGNUOLA

I E IV SERIE			II SERIE		
1.	f	forzar	1.	r	grueso
2 :	x c s	astucia	2 :	s	psalter
3 U	sc	discipulo	3 U	i	pie <u>d</u> ra
4 . U	h	homb <u>r</u> a	4 . U	l	pueb <u>l</u> o
5 :U	v b	aviso beato	5 :U	v f	
6 /	s	rosa	6 \	u	puente
7 . /	j g	jugar gitano	7 . \	m	mes <u>m</u> o
8 : /	z	alca <u>z</u> ar	8 : \	n	
9 U	p	pa <u>c</u> er	9 U	p	dispu <u>s</u> o
10 . U	t	te <u>n</u> der	10 . U	t	esta <u>r</u>
11 : U	ch	san <u>ch</u> o	11 /U:	c	discordia
12 U U	c q	canto querido	III SERIE		
13 . U U	b	ben <u>d</u> ecir			
14 :U U	d	de <u>c</u> ir			
15 /U					
16 . /U	g	gato - grande	1 .	a	aboli <u>r</u>
17 : /U	m	amola <u>r</u>	2 :	e	en <u>c</u> orar
18 U	n	ne <u>g</u> ar	3 U	i	in <u>f</u> erir
19 . U	ñ	ni <u>ñ</u> o	4 U .		mancanza di vocale
20 : U	ll	llo <u>v</u> er	5 U:	o	ole <u>r</u>
21 U U			6 /	u	cr <u>u</u> z
22 . U U	r	pe <u>r</u> o	7 / .		
23 :U U	l	lu <u>c</u> ir	8 / :		
24 / U	y	rayo	9 /U		
25 . / U			10 /U .		
26 : / U	x	exá <u>m</u> en	11 /U:		

Esempio di stenoscritto in lingua spagnuola.

En	:u	t	u:	:	los
va			u:		y
no		c	u:		pro
se	:u	c	u:		di
le	:u	/	u:	:	gios,
ta	:u	c			de
cha	:u	c		t	dar
de					á
di		/			ge
fu		t			ne
so					a
e	:u	t	u:		lo
im	:u	/	u:	:	gias,
por	:u	t		:	las
tu	:u	/		:	mas
no	:u				ve
en	:			:	ces
sus			u	t	in
di	:		u	t	cier
gre		c		:	tas
sio			u:		ó
nes					fa
de	:u	c	/		bu
cre	:u	t	u:		lo
er		/		:	sas,
co			/	t	un
mo	:u				va
u	:u	t	u:	t	lor
na			u:	c	im
vie		c	u:		pro
ja		c	u:		pio
en				t	en
sue	:u	t			la
ños		c	/		plu
o	:u	/			ma
ra	:u	c			de
en			/	t	un

GERMAN

ALFABETO PER LA LINGUA TEDESCA

I E IV SERIE				II SERIE		
1.	.	v ph f	von finden	1.	r	treppe
2	:	s ss	messen-sauer	2	:	s psalten
3	u	sch	<i>sch</i> riben	3	u	i diadem
4.	u	h	da <i>h</i> er	4.	u	l platten
5	:u	w	wiener	5	:u	w v f pfand
6	/	s	muse	6	\	u qualm
7.	/	ch	ich	7.	\	m schmal
8	: /	z tz	zog spit <i>z</i> e	8	: \	n gnade
9	u	p	<i>p</i> acken	9	u	p spitzig
10.	u	t	tilgen	10.	u	t stossen
11	: u	tsch	deutsche	III SERIE		
12	u u	ckk qu	könig			
13.	u u	b	bald			
14	:u u	d	des der			
15	/u					
16.	/u	g	gelb gold	1	.	a aber
17	: /u	m	mit	2	:	e den
18	u	n	nein	3	u	i y i e die
19.	u			4	u	mancanza di vocale
20	: u			5	u:	o ohren
21	u u	u	rau <i>f</i> er	6	/	u und
22.	u u	r	ritter	7	/	. ä spät
23	:u u	l	leben	8	/ :	ö œ schöne
24	/ u	j	jahr	9	u	ü üppiger
25.	/ u			10	u	. eu ei zwei
26	: / u	x	fix	11	u:	au auflage

Esempio di stenoscritto in lingua tedesca.

[illegible]

RUSSIAN

ALFABETO PER LA LINGUA RUSSA

I E IV SERIE

1 .	Ф ф	флейта
2 :	С с	сани
3 U	Ш ш	шалка
4 . U	Х х	хрѣвъ
5 :U	В в	вакса
6 /	Ж ж	жена
7 . /	Щ щ	щетка
8 : /	З з	замокъ
9 U	Н н	палка
10 . U	Т т	также
11 : U	Ч ч	часть
12 U U	К к	каминъ
13 . U U	Б б	бездъ
14 :U U	Д д	дача
15 U	Е е	огнистое
16 . U	Г г	гора
17 : U	М м	макъ
18 U	Н н	народъ
19 . U	Ц ц	цвѣтъ
20 : U	У у	уѣздъ
21 U U	Ю ю	случаются
22 . U U	Р р	развѣ
23 :U U	Л л	лазурь
24 / U	Й й	русскій
25 . / U		
26 : / U	Я я	доброя

II SERIE

1 .	Р р	кресла
2 :	С с Ч ч	случаться
3 U	И и І і	виолончель
4 . U	Л л	хлѣбъ
5 :U	Ф ф В в	дворъ
6 /	У у	вуаль
7 . /	М м	мѣстѣ
8 : /	Н н	лѣтній
9 U	П п	солнце
10 . U	Т т	кто
11 /U:	К к	кроткій

III SERIE

1 .	А а	адъ
2 :	Е е	едва
3 U	И и І і	игла
4 U .	Ы ы	мы
5 U:	О о	облако
6 /	У у	уголь
7 / .	Ъ ъ	ѣхать
8 / :	Э э	эхо
9 /U	Ю ю	югъ
10 /U .	Я я	ядро
11 /U:	Ѹ ѹ	вессоль

Esempio di stenoscritto in lingua russa.

на	Тѣ	на
дол	тній	дол
го	день	го
Съ са	Вылъ	Съ са
ма	пре	ма
го	кра	го
ран	сний	ран
ня	юль	ня
го	скій	го
у	день	у
тра	о	тра
не	дній	не
бо	изъ	бо
я	тѣхъ	я
сно	дней	сно
у	ко	у
трен	то	трен
ни	рше	ни
я	слу	я
за	чаю	за
ря	тся	ря
не	толь	не
ни	ко	ни
ла	тог	ла
еть	да	еть
по	но	по
жа	го	жа
ромъ	да	ромъ
о	у	о
на	ста	на
ра	но	ра
зли	ви	зли
вае	ласъ	вае
тсъ		тсъ