

Some consequences of an integral use of diacritical signs in the spelling of geographical names.

This short report of the Dutch Delegation is a first attempt to indicate possible solutions for the problem of spelling of geographical names using their proper diacritical signs. First an inventory is made of the diacritical signs and the possible combinations of these signs with letters (see Appendix 1).

In the latin alphabet diacritical signs have various positions with respect to the letter:

- I Signs above the letter
 - A centrally above with 13 different signs
 - B left side above with 1 different sign
 - C right side above with 2 different signs
- II Signs under the letter
 - A centrally below with 4 different signs
 - B right side below with 1 different sign
- III Signs across the letter
 - A centrally across the letter with 2 different signs

In total 23 different signs have been found, and these can be combined with various letters (see Appendix 1). A summation of the total number of sign-letter combinations results in 96 combinations.

The main point now is whether machines are available that can produce geographical names with all the required diacritical signs. To give a first indication to the solution of this problem, four main types of text producing machines have been distinguished:

1. Phototype setters
2. Typewriters
3. Type setters
4. Automatic drawing machines

add1. Phototype setters:

These machines are most widely used for cartographic purposes. With the help of a template or a disk with letters, signs and numbers (in negative) in a certain letter type, text is produced photographically. Examples of these machines are: DIATYPE, MORISAWA, MONOTYPE. The speed of the machine is slow and mainly for this reason cannot be used for normal production of text.

Although none of these machines have strips or disks that contain all the required diacritical signs, factories are willing to produce special strips or disks on request.

Most Phototype setters operate with variable distance between letters, i.e. each letter has its own typographical width (contrary to normal typewriters that have a uniform letter width). To be able to set letters with diacritical signs, the letter-sign combination has to be available, otherwise the diacritical signs will not be in their proper position above, below or across the letter. This means that the above mentioned 96 sign-letter combinations have to be present on the strip or disk.

The DIATYPE uses a disk with 195 letter positions. Assuming an alphabet of 26 letters, 52 positions have to be used (upper and lower case), so that 143 positions remain for letters with diacritical signs. 96 positions have to be reserved for letter + sign in the under case and the remaining 47 positions are for capital letters with their signs (it is not known at this stage how many of the letter-sign combinations also occur as capital letter). The use of two disks to solve the problem is not recommended, as changing of disks takes time and is risky (expensive glass disks).

The MORISAWA uses strips with 108 letter positions. To solve the problem two strips have to be used. Changing of strips however is very easy and fast.

The MONOTYPE uses disks. Three disks can be placed in the machine and by simple movement of a handle, the proper disk can be placed in position. As each disk has 100 letter positions, the problem of the diacritical signs can easily be solved.

ad 2. Typewriters

Normal typewriters have 46 keys on the keyboard and each key can produce 2 letters. For alphabets with 26 letters, 26 keys are needed to produce the letters in upper and lower case.

If the typewriter is only used to type geographical names, no numbers and punctuation marks are needed, so that the remaining 20 keys can be used for diacritical signs. As each letter that is typed with a typewriter has a constant width, diacritical signs can be separated from the letter. Consequently, the 23 diacritical signs will occupy 11½ keys and 8½ keys are still available for some special letter combinations, such as aa, oa, ij, etc.

The problem cannot be solved if the typewriter has to be used for typing of normal text as well, because than also numbers and punctuations marks are needed (about 10 keys).

The IBI-Composer works with a letterhead, havinf 86 letter positions. Letters have variable typographical letter width. For this reason it is more economic if the letter occurs in combination with its diacritical sign. Three letterheads are therefore needed to cover all the possible combinations.

Changing of letterheads however is simple and speedy.

Teletypes and Lineprinters used in automatic procedures, do not offer special possibilities. As on normal typewriters there is a limited number of keys. Adjustment of a teletype or lineprinter to the special needs of the production of geographical names limits the use of these instruments, which is most likely not feasible.

ad 3. Type setters

The possibilities for introducing diacritical signs in type setters as used by printers depends very much on the type of machine used. If text is produced through the intermediate of a normal typewriter keyboard, problems will arise as these have the limited number of keys (see above). In modern automatic type setters however, letters with their diacritical signs can simply be added to the total store of letters already available.

ad 4. Automatic drawing machines

Production of letters with diacritical signs is technically no problem. Extra diacritical signs can be added to the basic drafting routines. Obviously this requires extra space in the memory of the computer.

CONCLUSION

Although some machines have more diacritical signs than others, no machine has been found which could produce all the signs needed for a proper spelling of geographical names. However, it seems technically feasible to adjust some of the machines, especially the phototype setters used for cartographic purposes, to the special requirements.

Appendix 1

I Diacritical signs ABOVE letter

A. Centrally above

ǎ é ġ ĩ ĵ ó ȳ

ǎ ä ë ĩ ö ü

á á ć é í ó ś m n ŕ ś ú ý ź

ǎ ǎ ũ

à à è

ǎ ä ë ĩ ö ü

ǎ á ć ë ñ ö ŕ ś ź

ǎ ä ġ ĩ ö ü ë

ǎ ä ö ü

ǎ ä ö ñ

ǎ ä é ĩ ö ü

ǎ ġ

ǎ ü

B. Left above

ǎ 'a 'o 'u

C. Right above

ǎ 'h' k' p' t'

ǎ 'g' o' t' u'

II Diacritical signs BELOW letter

A. Centrally below

ǎ d h ĩ n r s t z

ǎ k ĩ n r s t

ǎ c s z

ǎ ĩ

B. Right below

ǎ a e u

III Diacritical signs THROUGH letter

o d t

IV Special letter COMBINATIONS

æ œ ii ij