A unique 77-year-old Tamil typewriter

K. N. Sundaresan and his unique Bijou Tamil typewriter.

● This article describes a Tamil typewriter that was acquired in 1937 by K.N. Sundaresan, a prolific writer of plays and poems in Tamil and English. The typewriter was manufactured in Germany. It had some novel, distinctive and ingenious features which are of historical and archival interest.

K.N. Sundaresan, or KNS (1899-1983), a gold medallist in M.A. (Mathematics) from Madras, worked as a teacher of Mathematics in Berhampur (now in Orissa) during 1921-1967. But his life-long passion was poetry, especially classical Tamil Sangam literature. He was a student of Sanskrit but had no formal training in Tamil; he taught himself the Tamil classics with the help of commentaries in English by eminent scholars. He wrote several hundred poems in Tamil – mostly in the format of Sangam poetry – on contemporary Tamil society and about a hundred fictional plays on famous historical characters of the Sangam period. Many of his Tamil poems are published in a series of books as collections of 'love poems'. Although a professor of Mathematics, he wished to be remembered as a poet. But he is also remembered as the owner of a unique Tamil typewriter.

On reading a news item in an English daily about a Tamil typewriter made in Germany, my father KNS was determined to buy one. There is an interesting background to the Tamil typewriter, which he related to me when I was 12. The German company had claimed that it would produce a typewriter in any language whose alphabet could be accommodated on a Standard English keyboard. After researching the letters of all the Indian languages, the company concluded that the only language suitable for a typewriter was Tamil because of its compact alphabet.

From a label pasted on the inside of the typewriter cover, we learn the following: the colour was maroon; it was delivered on January 19, 1937 and it cost Rs. 219. The cost included nine customised keys (Rs. 13.50), freight (Rs. 5.50), and the base price of Rs. 200. It was equal to KNS's salary for two to three months.

Only two persons have used the typewriter. My father was the sole user until 1943. At the urging of my father, I learnt to type in English in blind touch, at age 12 (1942). A year later I learnt to type in Tamil too, in blind touch, devising my own practice lessons. During the next several years I typed hundreds of pages in Tamil, mostly my father's writings. After I left my parents' home, my father used it exclusively until his death in 1983. The typewriter is now in my possession, a treasured family heirloom.

Is this Tamil typewriter the earliest or one of the oldest existing? Is it one of a kind, in other words, unique? The answer to the first question is not known since there is scant information about the history of Tamil typewriters. However, the answer to the second question is 'yes'. The keyboard is unique since it has nine custom-made keys that were not present in the original Bijou typewriter. I will now describe the keyboard and its design features.

* * *

The keyboard has 49 keys arranged in four rows. Of these, five are control keys (2 shift keys, shift-lock, Tab and backspace), two are for punctuation marks and the remaining 42 keys are for characters of the alphabet. Each key serves for two characters, the lower character without the shift key and the upper one with the shift key. The 84 characters include nine punctuation marks and three numerals 0, 6, 9, mostly in the top row as shift keys. The remaining 72 are for the alphabet. At the bottom is a spacebar.

The Tamil alphabet has 12 vowels and 18 consonants.

Vowels: அ (a) ஆ (a:) இ (i) ஈ (i:) உ (u) ஊ (u:)
எ (e) ஏ (e:) ஐ (ai) ஒ (o) ஓ (o:) ஔ (au)

Consonants: க (ka) ங (ng) ச (ca) ஞ (nja) ட (t:a) ண (n:a)
த (tha) ந (nha) ப (pa) ம (ma) ய (ya) ர (ra)
ல (la) வ (va) ழ (l-a) ள (l:a) ற (ra) ன (na)

They account for 30 characters. The number of vowel-consonants (such as ka:, ki, ki;, ku, ku: etc) is 12 x 18 = 216. Some of them are not in use or rarely used (such as ngi, ngu). The keyboard layout accommodates all the vowel-consonants with merely 42 characters. The rationale behind the Tamil typewriter is the compactness of the alphabet. How is this achieved?

The strategy used is eight-fold.

(1) Voiced and unvoiced characters. The symbol 'க' stands for one unvoiced (*ka*) and three voiced (*kha, ga, gha*) sounds; same is true for ச, ட, த, ப the other four hard consonants. Tamil is the only Indian language (including the sister Dravidian languages Telugu, Kannada and Malayalam) in which no distinction is made between them. In spoken language, however, the distinction is made depending on the position of a consonant in a word and the context. For example, when a consonant appears as the first letter in a word it is always unvoiced. So Tamil has 15 fewer (5 characters taking the place of 20) consonants than any other Indian language. Further, there are 180 (15 x 12) fewer vowel-consonants.

(2) Prefix and Suffix characters. Most of the vowel-consonants are formed by adding prefix or/and suffix symbols to the consonants. For instance the vowel-consonants for ம (ma) are

மா (ma:) மி (mi) மீ (mi:) மு (mu) மூ (mu:) மெ (me) மே (me:) மை (mai) மொ (mo) மோ (mo:) மௌ (mau)

There are three prefixes (ெ ே ை) and two suffixes (ா, ்) [in seven of them (shown in bold type)]. Since எ is already in the consonant list, only one new suffix is required. Thus, only four additional characters (ெ ே ா) are needed for 7 x 18 = 126 vowel consonants (row 2 keys 2,5,7 and row 3 key 4).

R2-K2   R2-K5   R2-K7   R3-K4
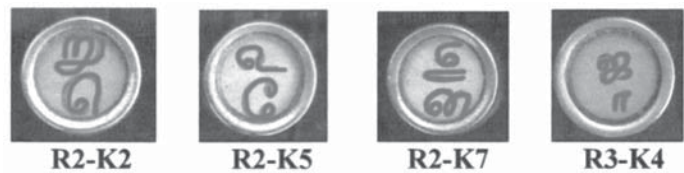
(3) Vowel-consonants (vowel = இ or ஈ). For instance in மி (mi) or மீ (mi:), the consonant has an additional sign, an inflection, riding on the top. However most consonants have the same inflections and the only exceptions are டி (ti) டீ (ti:). With the two inflections in a single extra key (row 2 key 2 from right) you can type 34 of the 36 characters of this kind. But this key is a so-called "dead" key since the typewriter carriage does not move when typed. For example, to get மி (mi), you type the cap (inflection) first and then ம (ma), in reverse order of the way it is written. When the cap is typed the carriage remains stationary and when ம is typed, it prints below the cap to form மி (mi). Dead-keys are indeed "key" innovations in the design of the keyboard.
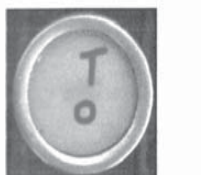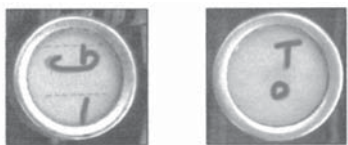

R3-K2 from Right

(4) Vowel-consonants (vowel = உ or ஊ). The most "expensive" vowel-consonants – in terms of extra keys needed – are the ones involving the vowels உ (u) or ஊ (u:). For example:

கு (ku) கூ (ku:) சு (cu) சூ (cu:) டு (tu) டூ (tu:) etc.

The consonants are radically modified when combined with உ or ஊ. So new characters are provided. Of the 36 vowel-consonants of this kind, new characters are required for 18; the other 18 are managed with three more dead-key characters (row 2 last key and row 3 key 2 from right). In the first two the inflections are below the consonant and in the third it is on the right side. A dead key is typed first followed by a consonant.

R2-Last K   R3-K2 from Right

(5) The dot, diacritical mark. (pul:l:i). In the 18 consonants listed (க ச ட த ப) the vowel sound அ is inherent. To remove the vowel from க, a dot (pul:l:i) is placed on the top (க்) (sometimes the consonants are represented as க் ச் ட் த் ப் ...etc. so that க can be regarded as க +அ). The symbol க் with the dot (a diacritical mark) is required in consonant-consonant combinations (e.g. க்க, த்த, ட்க ...etc). The dot is a dead key character (row 3 key 2 from right) and serves for all the consonant-consonant combinations.

(6) Grantha characters. The modern Tamil alphabet has six more consonants, called *Grantha* consonants, for writing words borrowed from Sanskrit. They are:

ஜ (j) ஷ (sh) ஸ (s) ஹ (h) க்ஷ (ksh) ஶ்ரீ (sri)

They are absent in classical Tamil. All except ஶ்ரீ (sri) are accommodated on the keyboard with four new characters of which two are for ஜ and ஸ (row 3 key 4, row 4 key 2 from right); the other two are the left and right halves of the character க்ஷ split in the middle (row 2 key 5 and row 1 key1). For other split characters see (8).

R3-K4   R4-K2 from Right   R2-K5   R1-K1

(7) Non-standard vowel-consonants. In classical Tamil some vowel-consonants (involving the vowels ஆ இ ஈ ஐ) have non-standard forms. Until 1970s the classical forms were in use. Subsequently the standard forms were adopted, ignoring the classical forms. This happened even before the keyboard layouts were driven by computer software. These vowel constants are listed below.

நா ணா ணா வா கி சி டி க்கீ ச்சீ லை ளை நை ஞை

The first three are represented in classical Tamil by the characters given in row 3 key 2, row 3 key 6, row 1 key 6. The next six involving the vowel இ and ஈ are different in classical Tamil; they have wider caps as inflections on the top of the consonant and are provided by a dead key (row 2 key 3). In the last four the common prefix 'ை' is replaced by a different symbol that looks like 'ω' rotated clockwise by 90 degrees (row 2 key 6). Conforming to the classical Tamil characters, the Bijou keyboard had provided the six extra characters mentioned above. They are not provided in modern keyboards.

R3-K2   R3-K6   R1-K6   R2-K3   R2-K6
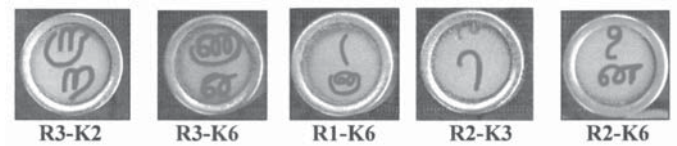
(8) Split Characters. Six characters are split in the middle and separate keys are provided for the left and right halves. They are

க்ஷ ஜ ஸ வ க்ஷ ஞ

In a given font size, these characters appear somewhat more 'squeezed' compared to others. Mainly for aesthetic reasons the designers of Bijou keyboard split each character into two. Usually the left and right halves are placed in adjacent keys. Interestingly, although the splitting creates 12 characters, only seven are distinct. So this innovation demands only one extra character, while enhancing the appearance of the six characters by doubling their width.


(ண) R3-K6+R3-K7   (ஜ) R2-K7+R2-K8   (ஸ) R2-K8 (up+low)

(ஷ) R2-K5+R1-K1   (க்ஷ) R2-K3 from Rt R1-K1   (ஞ) R2-K5+R3-K2low

**(9) Customisation by Prof. K.N. Sundaresan. Punctuation marks.** The original Bijou keyboard had only five punctuation marks: , . _ / ?. But KNS needed eight more : ; - ' " ( ) and *. So he sacrificed the seven numerals 1 2 3 4 5 7 8 and the rarely used vowel-consonant ரு. The ninth custom key was for the *Grantha* character ஜ, which was not in the original keyboard. KNS got new keys custom made at extra cost. They can be identified by their slightly different appearance (row 1 keys 2,3,4,5,6,8,9; row 2 key 1; and row 3 key 4). For the missing numerals KNS used the standard equivalents in Tamil:

Indo-Arabic: 1 2 3 4 5 7 8
Classical Tamil: க உ ங ச ரு ஆ அ

The equivalents are vowels, consonants or vowel-consonants already provided in the keyboard. The numerals 0 6 9 were retained as their equivalents were not in the standard alphabet. So the number 1946 will be typed in hybrid form க9ச6.

R1 - K2, K3, K4, K5, K6   R1-K8, K9

R2-K1   R3-K4
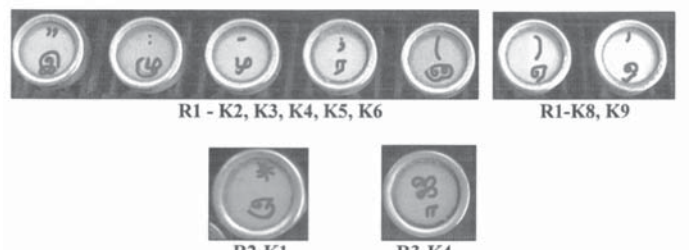
It has already been mentioned that the Bijou keyboard has 72 Tamil characters. They fall into eight classes: vowels (10), consonants (17), *Grantha* (2), dead-key (8), split (7), prefix (4), suffix (1) and vowel-consonants (23). Part of a Tamil poem typed on this typewriter is shown.
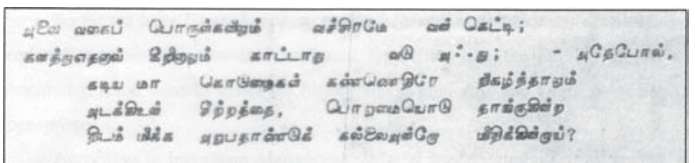
In summary, it is clear that the keyboard design covered all the Tamil characters and letters, but at the expense of some important punctuation marks. The custom-made keys proposed by KNS filled this lacuna. In this sense, the keyboard is certainly unique and therefore "one-of-a-kind".

The layout is user-friendly. The more commonly used characters are 'unshifted'. The "home-line" (row 3), used for blind-touch and the middle part of the keyboard used by the index and middle fingers, have the most frequently used letters.

So far we have focussed on how typing in classical and modern Tamil was rendered possible in a standard keyboard typewriter like the Bijou. Before concluding, some remarks about the history and evolution of the Tamil script are appropriate.

* * *

According to Iravatham Mahadevan, *Brahmi* was the mother of all scripts in India; Devnagari and Dravidian adapted it in their own ways to suit the language of the region (Iravatham Mahadevan in *Early Tamil Epigraphy from earliest times to 6th century AD*, Harvard Oriental Press, Volume 62, 2003, *Review by Indira Parthasarathy in The Hindu Review*, 3 August 2003[1]). The Tamil script evolved through centuries, like Sanskrit, through 5th Century AD (as *Vattezhuthu*), adding *Grantha* charcters around 6th Century and to modern Tamil in the 7th Century AD. There are some characters unique to Tamil, not found in *Brahmi*, such as the diacritical dot, ழ (l-a) ற (ra) ன

(na). One of the oldest characters is the dot (200 – 400 AD) dating to the earliest known classical work *Tholkappiyam*. The character ழ pronounced '*zha*', considered unique in Tamil, also occurs in Malayalam but is absent in Kannada and Telugu. The character ற is new and it is phonetically differentiated from ர (ra) by a slight change in the position of tongue (upper gum vs upper teeth). Similar distinction applies for the pair ள and ந but currently the two are allophonic and have no distinct pronunciations.

From the Internet we learn that Ramalingam Muttiah of Sri Lanka invented the Tamil typewriter sometime around the 1920s. It is said, "He designed, manufactured and distributed the first ever Tamil typewriter." It is not known if any such typewriter exists today. Around 1962 the then Chief Minsiter of Tamil Nadu (Kamaraj) introduced the Tamil typewriter in Government offices. Presumably it had the Remington typewriter keyboard, an early popular keyboard. Perhaps this was in use in Tamil Nadu Government offices until the Government adopted a new keyboard 'Tamil99', based on the PC keyboard. Tamil99 was recommended by the international Tamilnet99 conference (1999). Presumably it is the most popular keyboard layout currently in use.

Typing Tamil on a PC has become easy today with a large number of software packages available. Transliteration (English to Tamil) is also easy, for example on Google. Typing a spoken Tamil text in English reproduces the text on the fly in Tamil script. (For example typing '*indha*' produces இந்த. In this article I have not used the transliteration of English forms but mostly the "IPA" equivalents.

IPA stands for the International Phonetic Alphabet. The standard QWERTY keyboard on a PC is all that is required to type in Tamil. There is no need for vowel-consonant keys, dead-keys, prefix, suffix keys, split characters etc. The Bijou keyboard with modifications by KNS is appropriate for the pre-computer era. It is mainly of historic and archival interest[2].

For gathering more information on these aspects the following facts may be useful. The original name of the typewriter was 'Erika' manufactured by A.G. vorm Seidel Nauman. The typewriter was bought by KNS in 1937, two years before the start of the World War II and perhaps not many *Bijous* were sold. After the war the company was named VEB Schreibmaschinen Werke, Dresden. The local agent who sold the typewriter under the British brand name *Bijou* was The Typewriter Mart, 118 Armenian Street, Madras.

User preference is always for a typewriter the person is accustomed to use and non-standard keyboard layouts are unpopular. It will be interesting to know if there exist today any *Bijou* typewriters and if they are still in working condition, in fact actually in use. I hope this article stimulates the interest of some of *Madras Musings*' Tamil-speaking readers to unearth more information about the history and evolution of the Tamil typewriter.

S. Naranan
Chennai
email: snaranan@gmail.om

[1] See also R. Champakalakshmi, *Frontline* Vol. 20 (13), 2003.)
[2] There has been a revival of interest in Tamil language studies – classical and modern – its literature and evolution of its script from June 2010.