

REPORT OF THE FINALISING COMMITTEE
WITH THE REPORT OF THE
HINDUSTANI SHORTHAND &
HINDI TYPEWRITER
STANDARDISATION
COMMITTEE.



सत्यमेव जयते

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PARLIAMENT SECRETARIAT
NEW DELHI.

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CONTENTS

	PAGES
Letter from the Chairman of the Finalising Committee to Hon'ble the Speaker of Parliament	
Report of the Finalising Committee of the Hindustani Shorthand and Hindi Typewriter Standardisation Committee	2—7
Report of the Hindustani Shorthand and Hindi Typewriter Standardisation Committee —	
Letter from the Chairman of the H.S.H.T. Committee to the President, Constituent Assembly of India	8—9
The Committee and its Terms of Reference and Personnel etc.	10—17
Section I—Shorthand systems	18—31
Section II—Typewriters	32—37
Section III—Telegraphic Code	38—41
Appendix A—	
Survey of Shorthand systems.	42—124
Results of the tests (Appendix E)	125
Appendix B—Devnagari letters and their Keyboards.	126—132
Frequency Chart (Appendix G)	133—134
A note on the Keyboard suggested.	135
Appendix C—Keyboard with 46 Keys.	136
Appendix D — Keyboard with 42 Keys.	137
Appendix C ₁ D ₁ — Revised Keyboard for 42, 43, 44, and 45 Keys (Supplied by the Finalising Committee).	138
Appendix H — Nagari consonants.	139
Appendix I —Nagari Half Consonants.	140
Appendix J —Nagari Vowels, orthodox and reformed.	141
Appendix K —Vowels, signs, Vowel Combinations and Numerals.	142
A note explaining the Nagari letter charts in Appendices H. I. J. K.	143—146
Questionnaires (Appendix F)	147—151
Letter from the Chairman of the Committee.	152—154

Dated 8th Feb., 1951.

To

THE HON'BLE SHRI G. V. MAVALANKAR,
SPEAKER, PARLIAMENT OF INDIA,
NEW DELHI.

DEAR SHRI SPEAKER,

I have the pleasure of presenting to you the report of the Committee appointed by you to finalise the report of the Hindustani Shorthand and the Typewriter Committee, together with the said report as finalised.

It was not possible for the Committee to meet immediately as the Chairman had to leave India on a cultural mission to East Africa. Difficulties of other members also came in the way. The Committee regrets this delay.

We met on the 16th and subsequent days of December 1950 and again on 6th and 7th of February, 1951 and finished our work. The main report of the Standardisation Committee is appended herewith.

Since Hindi is declared as our official language, and its role in various spheres is becoming increasingly important, there have been many and earnest enquiries for a Standard key-board. Its absence is causing innumerable difficulties. To-day a typist accustomed to typing on a particular make, has to unlearn what he has learnt when he has to use a typewriter of another make.

It is necessary, therefore, to release the report as early as possible ; and make the standard key-board (with slight variations according to the number of keys used from 42 to 46) as recommended by this Committee, available to manufacturers of type-writers. We need hardly add that manufacturers will be encouraged to utilise this key-board only if they are assured of the recognition and approval of it by the Union Government. We hope that necessary steps will be taken, therefore, to secure the same.

I thank you, Shri Speaker, on behalf of my colleagues and myself for giving us this opportunity of service.

Yours sincerely,
Kaka Kalelkar,
Chairman.

REPORT OF THE FINALISING COMMITTEE
OF THE HINDUSTANI SHORTHAND AND
HINDI TYPEWRITER STANDARDISATION
COMMITTEE.

The Committee for finalising the report of the Hindustani Shorthand and Hindi Type-writer Standardisation Committee met at 20 Akbar Road, New Delhi first, from the 16th to 20th December 1950 and second time at the same place on the 6th and 7th February, 1951.

The following were present :—

(for the First meeting from 16th to 20th December 1950)

1. Shri Kaka Saheb Kalelkar—*Chairman*;
2. Shri M. Satyanarayana—*Member*;

Shri Bisheshwar Nath was in attendance on the 16th only.

(for the Second meeting on the 6th and 7th February 1951)

1. Shri Kaka Saheb Kalelkar—*Chairman* ;
2. Shri M. Satyanarayana—*Member* ;
3. Dr. Babu Ram Saksena—*Member* ;

Shri Murlidhar Sabnis the Technical Adviser was present from the 5th to 10th February 1951 and was in attendance for the meeting of the Committee on the 6th and 7th February on special invitation of the Chairman.

The Committee went through the report on Shorthand and Type-writing of the H. S. H. T. Committee. It has nothing to add to the recommendation made in the main report regarding Short-hand. Four systems of Shorthand have been recommended. We would urge that a Board be appointed as recommended in our main report (Page 31 as early as possible, for (i) further study and research of the Shorthand systems leading to the evolution of an ideal system of Shorthand. The same Board may also be asked (ii) to test the proficiency of candidates of Shorthand and issue certificates and diplomas.

As regards Typewriter the Committee examined the only report it had received in respect of tests made on the proto-type of standard Key-board of the Standardisation Committee and

confirmed the utility of the Key-board as recommended by the H. S. H. T. Committee after incorporating the following minor changes—

- (1) The letter (YNA) ञ in the top row should be replaced by a visarg (:).
- (2) The letter (NG) ङ should be dropped and its place be given to ञ .
- (3) The place thus vacated by ङ should be given to ञ .
- (4) The place of ञ should be given to half (Sha)
- (5) and that of half ञ be given to half ङ Ksh.
- (6) the full and half letters ञ ङ and ञ ङ should exchange their keys.
- (7) In a Keyboard of 45 keys the place on the last key of the top row which was occupied by ञ [visarg (:)] should be given to slanting dash (/).

All these changes have been incorporated in the Key-board given with the report. (Appendix C₁ D₁.)

We examined two types of machines shown to us by the following Companies :—

- (1) Hermes—Volkart Bros. Bombay ;
- (2) Smith Corona—Smith Corona Agency, New Delhi.

This examination showed that the difficulties connected with the dead keys could be satisfactorily solved.

In Nagri typewriters some vowel-marks are written on the top of the letters while some are written below them. This necessitates the use of the dead Keys. A difficulty arises because the ' Matras ' on the dead Keys have got to be typed first and then the letters, to which the Matras belong. This is *abnormal*. In ordinary writing the letter is written first and its Matra is written afterwards.

Efforts have been made for a long time by various people to *normalise* this process. Various devices have been tried, for instance, guiding the type to a different position through a slit specially provided for.

None of these devices were however found to be satisfactory. Shri Ajit Singh, about whom mention was made

in the main report, had shown to the H. S. H. T. Committee an improvised model with two devices.

- (1) The first secured the normalisation of the typing of the dead keys.
- (2) The other was an ingenious device of separating the 'Pai' (the vertical line) of nearly 22 Nagri Pai-wala letters.

With this device a half-letter before it is struck on the ribbon takes a 'Pai' which is kept in attendance and prints a whole letter. The 'Pai' is withdrawn by a lever when it is not wanted. We were struck by the ingenuity and utility of this device but were not sure whether the device would work and whether the mechanism could stand the heavy pressure of typing.

The Hermes machine of Volkart Bros. showed this device of presenting and withdrawing the 'Pai' at will, in its mechanical setting. We are led to believe that this device is likely to succeed. We must therefore congratulate the patent-holder of this device.

As to the normalising of the typing of the dead keys Hermes has succeeded, but by bringing all the dead keys in the centre of the key-basket. Although it is easy to remember the position of the dead keys when they are brought in the centre, we could not accept this improvement because it would retard the speed of typing. The dead keys must occupy the places to which they are entitled, according to the scientific principle of 'order of frequency'.

Smith-Corona machine could keep the dead keys wherever we wanted them. It is said that this device for normalising typing was not a new invention. French and other languages, which have to use certain diacritical marks, required the use of dead keys and they were normalised long ago.

Another advantage which the Smith-Corona model showed was that the carrier is driven forward in two instalments by the use of the space bar. You press the space bar and the carrier is driven forward half a unit. You release the space bar and the carrier finishes the other half unit. This device is useful for printing diphthongs like æ. This device will be of great use to us when we accept the new mode of writing the 'Matras' after their letters and not on or below them, as is the practice today.

We recognise that the efforts of manufacturers of Hermes and Smith Corona machines have been in the right direction and hope that they will pursue their efforts to perfect these devices.

The Hermes machine has tried to mechanically perfect the independent striking of 'Pai' (Vertical line) providing a key for this. This 'Pai' normally is used as a part of full letter consisting of a vertical line. For the purpose of typing a half letter two releasers are provided on either side of the space bar (which is shortened to make room for them). The vertical line goes out of action whenever a releaser is pressed.

This device of providing a common 'Pai' for 22 letters is full of many potentialities. Some additional letters, signs and conjunct consonants could be provided for on the Keyboard if this device succeeds. But we must remember here that since the spread of literacy is a major national programme, the tendency of practical reformers always is to discard irregular and complicated conjunct consonants.

The 'Pai' device no doubt liberates space on many keys. This could be utilised by making the machine satisfy the needs of both the script-reformers and the orthodox group. We are not in favour of perpetuating irregular or complicated conjunct-consonants that have been always a handicap in learning the Nagri script.

We should suggest here a few lines along which further research and improvements could be made.

Composing and printing could be greatly facilitated and the cost of printing considerably reduced if the 'Matras' (the Vowel-signs) come after the letters and not above or below them. This reform will do away with the necessity of dead-keys on the typewriter.

But these 'Matras' that are appended to the letters would look very inartistic if they are given a full unit of space on the typewriter. Half unit or perhaps less than half is enough for the 'Matras'. Mechanical devices must be perfected by which each letter and matra (vowel-sign) will carry with it its own appropriate space, as in the case of the printing press where all types are not of the same width.

This reform that we are suggesting, namely of 'writing and printing of the matras after the letters' is in no way revolutionary. We are glad to note that this kind of improvement has been recommended even by an admittedly conservative body like the Script Reform Committee of the Government of the Uttar Pradesh. However, we suggest that even this improvement should be executed in two instalments allowing an interval of say two years in between.

The Nagri composing is described as a three-storied composing. Matras like ँ, ॠ, and ऌ occupy the top floor. Matras like ऀ, ॡ, ॢ occupy the bottom floor. Now as a first instalment we should dispense with the bottom floor by writing these latter matras after the letters instead of below them.

Another reform which is fast gaining ground in the country is the reform of the Vowels. This reform is now recognised by the name 'Swara-Khadi' स्वराखडी. In this, the vowel-marks are attached to the letter अ. This is no new innovation. It started with the vowel ओ in its present shape. The reform travelled to ऐ, ॐ in the Gujrati and Modi Scripts. Now they are completing the reforms as follows:

अि, अी, अु, अू, अृ, अे, अं, ओ, ओ

We are supplying along with the report three charts of letters. They give the exact shape, size and the style that is most suited to the typewriter.

The first chart gives full consonants, the second their half forms, and the third the Vowels in three rows. The first row gives the orthodox forms of the vowels with the addition of short ऐ and short ओ. The second row shows how the bottom storey of matras is removed. The third row is a mere suggestion of how all matras could be written after the letters. This suggestion will be of use when the 2nd instalment of reform will be thought of.

There is a note attached to these three charts explaining how and why minor changes were introduced in the form of the letters.

Special mention must be made of the new form of the letter 'Kha' ख. The form of ख which has been recommended by the H.S.H.T. Committee and which was accepted by the U. P. Committee we have placed in the first row. The 2nd form of ख (Kha) which the Bombay Committee have accepted is given in the beginning of the last row and placed very near to the letter Ksha क्ख with which it has affinity.

In the end we should like to repeat our suggestions that a *Board for Hindustani Shorthand* should be appointed as early as possible. Accurate reporting of the speeches both in the Parliament and in the State Assemblies makes it imperative that our shorthand systems should be considerably improved and an adequate number of Stenographers trained and examined as early as possible.

Our second suggestion is that the Hindi Key-board should be submitted to the Government and its approval secured so that manufacturers may be ready to manufacture and supply Hindi Typewriters with the standard Key-board as early as possible.

Thirdly, the telegraphic code given on pages 38 to 41 may be sent to the telegraphic department. They are, it is learnt, making experiments in Hindi telegraphic code.

काका कालेलकर

(KAKA KALELKAR)

M. SATYANARAYANA

BABU RAM SAKSENA

NEW DELHI ;

7th February, 1951.

REPORT OF THE HINDUSTANI SHORTHAND AND
HINDI TYPEWRITER STANDARDISATION
COMMITTEE

CONSTITUENT ASSEMBLY OF INDIA

(H. S. & H. T. Committee)

COUNCIL HOUSE,

New Delhi, the 17th January, 1949.

To

THE HON'BLE DR. RAJENDRA PRASAD,

President, Constituent Assembly,

New Delhi.

DEAR SHRI PRESIDENT,

I have the honour to present to you the report of the Committee appointed by you to recommend a keyboard for a Standard Hindi Typewriter and to suggest the best system for Hindustani Shorthand. The Committee was expected to submit its report by the end of October, 1948. It could not do so for various reasons. One was that during its discussions, it was proposed to us by the Devanagari Script Reform Committee appointed by the Government of U. P. that we should have joint discussions with them, so that, if possible, agreed recommendations could be made as regards the reforms of the Devanagari script which were to be incorporated in the keyboard. Our Committee, from its very outset was feeling the need for some necessary minimum changes in the Devanagari script. It, therefore, welcomed the suggestion of a joint session and, with your approval, arranged a joint sitting with that Committee. This could be possible only at the end of November, 1948, the delay so caused is, I feel, compensated for by the extent of agreement reached between the two Committees.

This report does not include any recommendations regarding the Hindi Teleprinter, though you had been pleased to allow the Committee to make recommendations on it as well. The Committee busied itself with the two main things assigned to it by you *viz.*: the keyboard for the Hindi Typewriter and the suggestions regarding the best Hindustani Shorthand system, because both these matters required an early decision on the part of the Government

We are also sending herewith, a Telegraphic Code for the Nagari script which may be used for all the Indian languages if they care to use the Nagari script. It can, without any difficulty, be modified to suit the Southern languages also. I must note here that the Committee took up this item at the fag end of its work, and therefore, the system of Telegraphic Code submitted herewith could not be fully discussed. It is signed by three of us. We submit it herewith simply because we think it will be useful to the Telegraphic department at least as a starting point.

The keyboard suggested has been prepared after a careful study, but it needs to be tested practically by taking trials on machines with this keyboard*. We could get such machines prepared with the help of certain private concerns that assemble or repair the present day typewriters. But that would amount to divulging the keyboard to one firm in advance. We, therefore, recommend that the Government take up the work of getting a few trial machines prepared on its own account. Some member of this Committee could, if necessary, cooperate with the Government in this task.

I also suggest that a patent of the Standard Keyboard recommended by us should be secured by the Government of India, and the use of the keyboard should be permitted only after the payment of a reasonable royalty to the Government. This arrangement is not supposed to bring any general revenues to the Government. The idea is that the amount may well be utilised in further research work relating to Hindustani Short-hand, Typewriters, Teleprinters and Telegraphic Code.

I must note here my gratitude for the uniform courtesy of the members of the Committee with whom I had the privilege of working and their generosity in putting up with my shortcomings.

Shri. Balkrishna, the Secretary of our Committee also deserves our Special thanks for his arduous work and active co-operation.

I must also thank you, Shri President, on behalf of my colleagues and myself for giving us this opportunity of service.

NEW DELHI,

The 17th January, 1949.

Yours sincerely,

KAKA KALELKAR,

Chairman of the Committee.

The Committee

The Committee, whose report we have the honour to present, came into existence as a result of a proposal made by the Hon'ble Dr. Rajendra Prasad, President, Constituent Assembly of India to the Hon'ble Pandit Jawahar Lal Nehru, the Prime Minister of India. In a letter addressed to the Prime Minister in April, 1948, Dr. Rajendra Prasad suggested that "a Committee of experts should be appointed to find out and recommend to the Government the most efficient system of Shorthand and the best arrangement of the keys of the Typewriter". He expressed in the same letter his intention to appoint such a Committee on behalf of the Constituent Assembly of India unless the Government preferred to appoint one itself. Pt. Jawahar Lal Nehru in his reply dated 11th April, 1948, expressed his agreement with this proposal and added "I think that you might appoint a Committee on behalf of the Constituent Assembly of India."

The Hon'ble President, therefore, appointed a Committee nominating the following to act on it :

1. Shri Kaka Saheb Kalelkar,
Vice President, Hindustani Prachar Sabha,
Wardha—(Chairman).
2. Shri M. Satya Narayan,
Secretary,
Dakshina Bharat Hindustani Prachar Sabha,
Thyagaray-Nagar, Madras.
3. Shri Kripa Nath Mishra,
Professor, Patna Science College,
Patna.
4. Acharya Shri Sriman Narayan Aggarwal,
Principal, Govind Ram Seksaria Commerce College,
Wardha.
5. Dr. Babu Ram Saksena,
Principal, Kayastha Pathshala University College,
Allahabad.
6. Bhadant Anand Kausalyayan,
Secretary, Rashtra Bhasha Prachar Samiti,
Wardha.

with Professor Balkrishna as its Secretary

The following were the terms of reference :—

“There are several systems of Hindustani (Hindi and Urdu) Shorthand which are being used in India at present. The use of Hindustani is growing and is bound to grow even more in the near future. Difficulty is experienced in finding shorthand writers in Hindustani for offices and newspaper reporters. Employers do not find it easy to judge between different systems.

“The use of Hindustani is however hampered very largely on account of the absence of a suitable typewriter with the necessary speed and other conveniences. Various manufacturers of typewriters have got their own separate arrangement of keys, so that if one learns typewriting on one Hindi Typewriter one cannot easily change over to another machine.

“It is therefore necessary to have an authoritative opinion about the suitability of a system of Shorthand and about the best arrangement of keys of a Hindi Typewriter which will give the greatest speed with the least labour.

“A Committee consisting of the following persons is appointed to report on the most suitable system of Hindustani Shorthand and to recommend changes which may be considered necessary in any existing system.

“The Committee will also report about the most efficient arrangement of keys for a Hindi Typewriter which will ensure reproduction of all sounds in use, and will give the best speed with the least possible labour and will be the best from the point of view of weight, durability, portability and cost.

“The Committee may consult and examine experts and manufacturers’ representatives and is expected to report as soon as possible.”

In reply to the Chairman’s enquiry the Committee was subsequently informed by Hon’ble the President that these terms covered “Teleprinting and Reform of Script”.

The Committee had thus before it the following three purposes :

- (i) The examination of the existing Hindustani Shorthand systems with a view to find which of these, if any, could prove useful for Government purposes and business offices.
- (ii) The selection of the sounds of the Indian languages which must be represented in the keyboard of the

Hindi Typewriter and preparation of a sketch of the keyboard which would most efficiently meet, in their opinion, the needs of the Hindustani language.

- (iii) The consideration how the Devanagari script could be fitted to the Teleprinter and the Typewriters and the preparation of a chart of the keyboard for the Hindi Teleprinter.

The Committee had also, incidentally, to formulate the best possible telegraphic code based on the Devanagari script.

The Importance of its Task

Before we proceed to state the method adopted by us to carry on our investigations we consider it necessary to state briefly the significance of the problems the Committee had been entrusted with.

It is well known that August 15, 1947 opened out the era of reconstruction of the economic and cultural life of the people of this ancient land. This reconstruction was long overdue.

One of the lines on which this reconstruction is to proceed is the gradual replacement of English as the State, University and Business language of this country by a language or languages which the masses understand and speak.

Mahatma Gandhi had perceived long ago the necessity of such a change. He had urged that Hindi or Hindustani alone could take the place of English as the State and national language since it could be understood by the people all over the Country. Whatever be the controversies of the day on the question, it cannot be disputed that Hindi or Hindustani is spoken and understood by the largest number of the Indian people. Moreover it is also true that Hindi or Hindustani occupies even today the position of an inter-provincial language for those people who do not speak English.

It is in the context of this increasing importance of Hindi or Hindustani that the two problems of devising Hindi Typewriters and Teleprinters and a suitable system of Hindustani Shorthand have come to possess a special significance in the scheme of our reconstruction.

Towards the close of the last century a group of political leader began to approach the masses for educating them

and getting their support for the Freedom Movement. The Government could not afford to remain unacquainted with what these leaders were talking to the masses. It had to get reports of their speeches and reports taken down in longhand were not satisfactory. The Rulers, therefore, began to encourage the adaptation of English Shorthand system to the needs of Hindustani. The Police reporters who made this adaptation had neither the training nor the incentive to carry on systematic and scientific work for the evolving of an efficient system of Shorthand for any Indian language. It was not paying, therefore, to try to evolve a system of Shorthand system of their own in the opening decade of this century and people found that their labours had gone to waste.

But the situation began to change soon after Gandhiji came at the helm of affairs of the Indian National Congress. He was the first great political leader who declared that Hindi or Hindustani alone could be the national language of India. With him it did not remain a mere declaration, he put it in actual practice. He himself used Hindi or Hindustani to address the classes and masses of this country. He tried to make Hindi or Hindustani the official language of the Indian National Congress. His precept and practice gave it a new dignity in the eyes of the people even though the Government continued to neglect it. It began to be used by thousands of public speakers. Consequently the Government, the various Parties and the Press began to realise the necessity of a suitable system of Hindustani Shorthand. It may not be known to many people that Mahatma Gandhi was keenly interested in the development of such a system.

Under this impulse a number of Shorthand systems based on Pitman were formulated. We propose to give a detailed analysis of these in this report. For the present we need only point out that the question of the formulation of an efficient system of Hindustani Shorthand continued to grow in importance with the progressive growth of the national and democratic movement. Our people began to realise its importance for keeping records of political statements, speeches and discussions. But even then there was no appreciable demand for Hindustani stenographers. They were not needed in the daily routine of offices—whether governmental or private. The Government, moreover, made no arrangement for the training of Hindustani stenographers. Universities and Colleges did not include it in the curriculum. It was supported and sustained only by the national sentiment

and by such non-official institutions as worked for the replacement of English by Hindi or Hindustani as the State language of the country. In 1937 an All India Conference was held at Wardha to consider how a short-hand system for Hindi could be evolved. We then find the Nagari Pracharni Sabha and the Hindi Sahitya Sammelan providing arrangements for the teaching of Hindi Shorthand. But this was slender nourishment. Consequently not much progress was made by these systems.

The story of the invention of a Hindi Typewriter is not very different. There was no thought of it so long as the national movement had not gathered momentum. But when the National Congress adopted Hindi as its language, national-minded people began to think of Hindi Typewriters. Bachraj & Co. were the pioneers in the matter of placing on the market a Hindi Typewriter the keyboard of which had been designed by Shri Airo. This Nagri Typewriter, however, could not make much headway precisely for the same reasons for which Hindustani Shorthand systems could not flourish. There was no demand for it in the Government offices, and very little in private business offices. But like the Shorthand systems, it was a child of Indian Nationalism—a child which played a significant part in the critical days of the national revolution.

The Method of Approach

The Committee realised this significance of the task. It, therefore, invited through the press all such institutions and individuals of the country as had given thought to these problems to send their considered suggestions to the Secretary of the Committee.

In its first meeting held on the 27th June, 1948, the Committee, drew up a questionnaire dealing with all the three problems stated above, with a view to enable people to canalise their thoughts in such a way as would enable the Committee to make the best use of them. The questionnaire would be found in *Appendix F* of this report. It was released to the Press in all parts of India. It was also sent to all the Ministries of the Government of India, to the Governments of all the Provinces, to all the Universities of India and to such selected individuals as, in the opinion of the Committee, could help it with the expression of their opinion on the questions raised.

At the request of the Committee, the President^c made available the honorary services of Shri Murlidhar Sabnis a teacher of Shorthand and Typewriting trained in Wardha as a Technical Adviser.

The Committee, in the second place collected all the published data dealing with Hindustani Shorthand systems and Hindi Typewriters. Shri Murlidhar Sabnis, was asked by the Committee to go through all this mass of data and submit his notes. Of course the Committee did not leave this study entirely to Shri Sabnis alone. The Committee divided itself into Sub-Committees—one consisting of the Chairman, Shri Kaka Saheb Kalelkar, Dr. Babu Ram Saksena and Shri Kripa Nath Misra to study the problems relating to the Hindi Typewriter and the second consisting of the Chairman Shri Kaka Saheb Kalelkar, Shri Satya Narayan, Bhadant Anand Kaushalyayan to study the problems connected with Hindustani Shorthand. Shri Sriman Narayan Agarwal was invited to join the second Sub-Committee subsequently. Each of the Sub-Committees with the Secretary Prof. Balkrishna went through the mass of the data that had been gathered in order to submit its recommendations to the Committee. Thus the Committee had an opportunity of giving an adequate consideration to both the problems.

But the Committee felt that a mere examination of the data would not by itself be a sound foundation on which its recommendations could rest. It, therefore, decided in the third place to test the efficacy of each shorthand system by means of a practical demonstration, held under the directions and supervision of the Committee, by the representatives of each of the existing Hindustani Shorthand systems. The Committee further discussed with the authors of Hindustani Shorthand systems irrespective of the consideration whether the system was old or newly devised, the relative significance of the devices employed by them.

The same attempt to collect data by practical experiments was made in relation to the Hindi Typewriters.

The Committee further analysed the nature of the Indian languages from the viewpoint of their phonetic arrangement and grammatical structure. It was found that it would be possible to have a Shorthand system which could be used with minor modifications for all the regional languages of India. It was evident to the Committee that in any future administrative system of India each Provincial Government or State would have to use two languages, one, the national language of India and the other its own regional language. In such circumstances it would be desirable to have a system of Shorthand for the national language which could be used with a few necessary modifications for each of the regional languages as well. The

same consideration applied to the Hindi Typewriter also. Moreover it was evident that no system of Shorthand nor any typewriter could be said to be useful which was not in harmony with the linguistic peculiarities of Hindustani. It was, therefore, essential for the Committee to examine the structure of Hindustani before formulating its recommendations.

Finally, the Committee always kept before its view the love of the Indian people for their Devanagari script. Devanagari is very near to perfection in so far as the arrangement and classification of its sounds are concerned. But the Committee also felt that the characters of Devanagari and specially its system of vowel marks was not suited to such modern machines as Typewriters, Teleprinter and Linotype. The Committee thought that it should investigate this problem in detail. It was with this view that the Committee held a joint meeting with the Devanagari Script Reform Committee which had been appointed by the Government of the United Provinces. It was felt that if the two Committees could make agreed recommendations it would be easy to secure popular acceptance of the reforms proposed to be effected in the Devanagari script.

The Committee have thus made an effort, within the time and means at their disposal, to tackle the problems under investigation with as great an objectivity as could possibly be secured. It is true that it could not undertake certain tests which, though necessary, required considerable time to be undertaken and completed. But it is the belief of the Committee that even if it had been possible to make these experiments the conclusions would not have differed materially.

1. The Committee assembled at Delhi for its first meeting on the 27th June, 1948. This meeting was devoted to the consideration and analysis of the terms of reference. The Committee also prepared a questionnaire for being issued to the public and for being circulated among the Ministries of Central and Provincial Governments and among such other public bodies as may have interest in the matter.

2. The Committee again reassembled on the 16th August, 1948 and continued to meet daily both in the morning and the afternoon up to the 19th. In this meeting it undertook the analysis of the suggestions received. Most of the time was devoted to the analysis of the suggested keyboards of the Hindi Typewriter. The Committee, however, had to

adjourn on the 19th after dividing itself into two Sub-Committees—one for Shorthand and the other for Typewriter, each one of which was directed to study the material further and to submit its suggestions.

3. The Shorthand Sub-Committee met on the 23rd September, 1948 and continued to meet up to the 28th. It decided to hold a practical test of the speed that could be reached by the best student of each existing Hindustani Shorthand system. It also discussed at length the speed devices which the Hindustani Shorthand systems should have.

4. The Committee as also the two Sub-Committees re-assembled on the 25th October, 1948, and sittings continued up to the 30th. The Committee held the test on the 26th as had been previously arranged. The report of the examiners and the results are given in *Appendix E* of this report. On behalf of the Committee, the test was supervised by Shri Anand Kaushalyayan assisted by Shri Krishna Murty, Stenographer. The Committee then invited each representative of the inventors of existing Shorthand systems to discuss the relative merits of their systems. This discussion continued up to the 28th October.

5. The Committee adjourned on the 30th to reassemble on the 8th November, 1948, to finalise its recommendations after having had joint discussions with the Devanagari Script Reform Committee of the United Provinces Government. But the joint meeting could not take place as had been proposed and the Secretary and the Chairman of the latter Committee who attended the meeting of our Committee desired that before this Committee finalised its recommendations, it should have a joint meeting at Lucknow with their Committee on 30th November and 1st December, 1948.

6. The Committee met at Lucknow as arranged. It reassembled on the 3rd December, 1948 at Delhi and formulated its views.

The Committee here records its appreciation of the willing and able assistance given by its technical adviser Shri Murlidhar Sabnis.

The Committee would like to record its thanks for all those who responded to its invitation and helped it to complete its labour. In particular the Committee would like to express its appreciation for the help rendered by the Secretary and his staff, interviewers, inventors of the various systems and those who have responded to the questionnaire.

Section I—Shorthand Systems

PART I

Object of Shorthand Writing

The object of Shorthand writing is to devise a script which will record human voice sufficiently effectively, with accuracy and speed. The target and limitation being the speed with which a man can speak out his thoughts for the benefit of others. The ideal script, therefore, would perhaps be an enlargement of the line scratched on the gramophone plate which records not only the articulate sounds of man in any language but also records and reproduces the individual pitch and timbre almost to perfection. But man has neither devised a method of tracing this script with the hand nor of reading it with the eye. Reporting of speeches, which is our main concern, does not need a script of such perfection. Future generations may, however, devise a script on the basis of the gramophone records, and if a script of this nature could be read with ease, there would be no necessity of transcription in long hand. In fact the gramophone script would be the universal script for all human tongues. It may perhaps replace the modern musical notations also.

Man has, however, proceeded in quite a different direction. He analysed his articulate voice into vowels and consonants, and gave each of them an arbitrary sign. These put together became his script. So long as recording of human voice was an occupation of leisure, speed in writing was not a necessary element of any script.

The Chinese, on the other hand, did not pursue the problem on the basis of sound. They analysed language into its component ideas and gave a sign to each. We have done the same thing in the matter of our numerals and mathematical and other signs. The letters of the alphabet k, p, t, etc. represent particular sounds and they are not expected to convey any meaning apart from the sound they represent. Whereas +, ∴, ∵, ×, !, ?, etc., convey definite ideas and they are not expected to convey any definite sound. In fact they represent different words in different languages. And yet they conform to a definite meaning ∴, +, ×, 1, 2, 3, 0, these signs are understood universally but they are vocalised differently in different languages.

अक and लिपि therefore, are two separate distinct approaches to the problem of language recording. (We have dwelt on this point at some length because it has a bearing on an important suggestion of ours for evolving an ideal system of Shorthand for Hindustani).

Having evolved a script with arbitrary signs, man has to acquire ease of writing. The headlines in the Nagari script and the cursiveness of the Italic script are instances in point. The Bengali, the Gujrati and the Mody scripts (to mention only a few) have evolved cursiveness in their own way and thus made the Nagari script as fluid as possible consistent with the accuracy of representation of all consonants and vowels. The Arabic or the Persian script on the other hand, aimed at fluency and grace and did not hesitate to sacrifice accuracy and distinctness.

Modern Shorthand systems have all naturally aimed at speed and have followed the Persian example in sacrificing accuracy and completeness of representation. The merchants of the medieval ages often sacrificed vowel signs in their records and accounts. The Mody script of Maharashtra, largely used in correspondence and official records, evolved a number of logograms and phraseograms and thus secured speed through abridgement of words. Shorthand systems of modern times have, all of them resorted to this artifice in order to save time.

Position-writing also is not unknown to the longhand scripts. A dot placed on the top of a letter conveys a different meaning from what it conveys when placed at the middle or at the bottom of the same letter, e.g., ङ, ञ and ङ, ज and ज.

Thus there is no device in Shorthand systems which was not known and used by the longhand systems or scripts. The triumph of shorthand writing consists chiefly in devising shortest and easiest elementary distinct lines and curves to represent various sounds and thereby saving as much time as is humanly possible. Artifices like doubling, halving, thickening, cutting, position-writing and changing the direction of strokes, etc., have all been used to shorten writing. And these are all powerful aids in saving time and energy.

The Roman (English) alphabet is arranged haphazard. The Persian alphabet has brought together letters of the same shape. The Nagari family of scripts, on the other hand, has arranged vowels and consonants *sounds* with utmost scientific precision. *Letters* corresponding to these sounds, however, show no scientific arrangement. Combinations of vowels and consonants, however, follow a scientific arrangement and are known as बाराबड़ी or ककहरा.

Languages like Persian and English have not got the same elaboration of vowels that the Nagari family has. We cannot ignore with impunity, the vowel signs in our scripts. The attempt of the medieval merchants to ignore the vowels has been

the laughing stock everywhere and people are never tired of repeating the celebrated sentence क क अ ज म र ग य. But it must be conceded to the credit of the mercantile or Mudia script that although they drop the vowels sign, there has never been any dispute of interpretation when their books are submitted in any case before a court of law.

With the advent of Democracy, discussions of public affairs became all important in human life, and recording of speeches and addresses has become an imperative necessity. The Parliament is the official gathering place of those who talk. The pulpit and the platform are the places where power is built and destinies of nations controlled.

Reporting of speeches, therefore, has become a necessary art and shorthand writing an accomplishment universally prized. The old devices of discarding the vowel signs, the *ghaseet* (घसीट) of Urdu and the phraseograms of Modi won't suffice. We must use the elementary geometrical figures for quick writing, and use the standard devices of putting vowels and consonants together.

Brief Historical Survey

As referred to above Indian business offices have been using for centuries a kind of Shorthand in their business correspondence. It is the Muriya form of writing. It effects a saving of time and an increase in speed by simplifying the forms of the Nagari letters, by omitting to put the head line which those letters usually carry, as also by dropping the vowel marks (*matras*). This form of writing, however was in use in no other sphere of life. The Government offices during the Muslim rule in India used the Urdu script, while under the British rule English language with its Roman script was used in the offices. The question of the use of Muriya by the Government did not therefore arise at all. They started with the Pitman system.

It is interesting to note that the system of English Shorthand that came to be used in the offices of the Indian Government had been formulated by Sir Isaac Pitman who seems to have been influenced by the Indian phonetic method of writing. Sir Isaac was influenced by the phonetic arrangement of the Devanagari letters.

The result of the superiority of the English system of Shorthand was that when need began to be felt of the formulation of a Hindustani Shorthand no one thought of adopting

the Muriya as the starting point. On the contrary the English Shorthand system was taken as the basis.

It is not ascertainable from the material at our disposal when and by whom the first step was taken for the formulation of a Hindustani Shorthand. It is said that some forty years ago the Government of the United Provinces having realised the necessity of Hindustani reports by police officers of the speeches of popular leaders delivered in Hindustani, directed the Christian School of Commerce, Lucknow to train Police Reporters in Hindustani reporting by the Pitman system of English Shorthand. Thus Pitman system became the initial base on which were to be reared subsequently the different structures of the several Hindustani Shorthand systems. It does not appear, however, that anyone in the School immediately realised the type of changes to be necessarily made in the Pitman system to make it suitable for Hindustani which is almost entirely dissimilar to English in its grammar, sound structure, phrases and idioms. The teachers in this school seem to have learnt by actual experience of the difficulties that arose. Thus it appears that the Pitman system continued to be modified for years in response to difficulties encountered. It is for this reason probably that we do not find any systematically formulated Hindustani system of Shorthand except one of Urdu and another of Hindi published during this period of experiment and adaptation.

The period of fermentation in our opinion came to a close by the year 1920 and that of germination began.

In Northern India we find that Shri Nishkameshwar Misra, Shri Radhe Lal Trivedi, Shri Poonam Chand Jain and Shri Rishi Lal Agarwal all claim that their systems were perfected between 1920 and 1938. Shri Nishkameshwar Misra was the first to publish his system. He did it in 1920. Shri Radhe Lal Trivedi, published his Brahmakshar Prakash in 1926. Shri Poonam Chand Jain published his system in 1931. Of those that came later we may mention two—Shri Rishi Lal Agarwal who was able to publish his system in 1938 and Shri S. P. Singh in 1939.

The Rashtrabhasha Prachar Samiti of Wardha convened in 1937 an All India Conference for evolving a suitable shorthand system, for the Hindustani language. In this Conference a young genius, from Bombay, Shri Dabke took part. He had proceeded to modify the Pitman's Shorthand system to suit the Indian languages. Shri Dabke counted thousands of sounds from all varieties of Marathi literature and formulated a table of frequency of the sounds used in

that language. Then accepting the repertory of Pitman's signs, he assigned the simplest and easiest signs to the most frequent sounds.

When he came to stay at Wardha Shri Dabke counted the frequency of the sounds in Hindustani and modified his system to suit the needs of the national language. He had not proceeded far when his life was cut short under tragic circumstances.

Shri Murlidhar Sabnis, who took his lessons from Dabke, took up this work and has gradually evolved a system which, he has called Wardha Pranali, a system based mainly on the same principle of frequency.

The evolution of an Indian system of Short-hand was considerably accelerated after the establishment of national government at the Centre in the year 1946. Those who had already formulated their systems began to teach them with greater hope and enthusiasm. Others began to think of having new systems of their own. We find that during the space of two years a number of other systems have been published. We thus, find that Rashtriya Hindi Shorthand of Shri Sidheswar Nath was published in 1947. The same year we find Mahesh Chandra Gupta publishing his Gupta Pranali and Shri Kedar Nath Choubey his Ashu Lipi. Apart from the systems that have been published there are others which have been completed and may be published later. The following systems, viz. 'Gajanan Pranali' by Shri Gaj Singh, Jodhpur; 'Hindustani Shorthand' by Shri Ram Prasad, Gaya; 'Sarva Bhasha Sanket Lipi' by Shri J. K. Tandon and Shri P. S. Mehra of Ajmer; 'Hindi Sanket Lipi' by Shri Vishnu Datt Uniyal of Almora; 'Rita Lipi' by Shri Sarat Chandra Dhanger, Sagar, C. P.; 'Hindi Ashu Lipi' by Shri N. D. Khanna of Lucknow; 'Hindi Shigra Lekhan' by Shri H. P. Moholkar, Teacher Hindi and Marathi Shorthand, Padhey's Institute, Bombay; 'Nigam Pranali' by Shri M. S. Nigam, Delhi; 'Hindi Shorthand' by Shri Mathura Prasad, Vice-Principal, Commercial Institute, Muzaffarpur; 'Sharma Lipi' by Shri G. M. Gokhale and 'Shri Sahasrabudhe Shuksham Lipi' by Prof. N. S. Nigam, Kanpore, have been submitted to us for consideration. There are some persons who claim to have formulated their own systems of shorthand such as Shri E. W. Lall, St. John's College, Agra; Shri K. N. Verma, Commercial Service Jatiwara, Delhi; Shri Dharam Prakash, Bharat Typewriting School, Gwalior; Shri Brij Krishna Bhatnagar of Motihari Commercial Institute, Delhi; Shri Saroj Ghosh, All Language Shorthand, Accountancy Training Centre, Calcutta; Shri V. S. Bondrey, Poona; Shri Baboo Singh, P. S. I.,

Rao Baroli (Avadh); Shri P. G. Subramanie Iyer, Tanjore; Shri Jagdish Chandra, Polytechnic, Delli; Shri D. N. P. Shrivastava, Head Commerce Teacher, Sanatan Dharma Inter College, Etawah ; Shri Kamoshwar Prasad Sarishtedar, Distt. Judge Court, Bhagalpur ; Shri M. S. S. Iyer, Dindigul ; Shri Ram Adhar Singh, Sitapur ; Shri H. V. Parekh, Calcutta ; Shri K. S. Rap, Principal, Bright College of Commerce, Mysore; Prof. B. M. Kale, A. S. of P. T. Poona Camp. But none of them sent his completed system to the Committee. Some of them sent only a few sketches of the symbols adopted by them to represent the Hindustani sounds while the others did not care even to do that, even though they were given ample opportunity to do so. It is, however, a matter of satisfaction that the problem should be receiving this much attention from so many people.

Material submitted to the Committee

The development we have traced above is reflected in the material submitted to the Committee for its consideration. This may be classified as follows :

- (a) Printed Books,
- (b) Manuscripts,
- (c) Letters which contain some sketchy proposal about the symbols and rules to be used in the Hindustani Shorthand,
- (d) Letters merely suggesting which of the present Hindustani Shorthand systems should be recommended by the Committee as a standard system,
- (e) Letters recommending that one or the other of the English systems should be adopted as the basis of the Hindustani Shorthand system.

Of these (a) and (b) *Printed Books and Manuscripts* : may again be divided into:

- (i) Books and manuscripts based on the Pitman system of English Shorthand,
- (ii) Books and manuscripts based on the Sloan Duployan system of English Shorthand,
- (iii) Books and manuscripts which contain a Hindustani Shorthand system entirely original in character.

A detailed analysis of these is given in *Appendix 4*.

PART II

Before we proceed to make our recommendations about the system or systems that deserve recognition by the State it seems necessary to state the considerations that have guided us in arriving at our conclusions in this respect. The first consideration that has weighed with us is the historic fact that in India of today the Pitman system of Shorthand holds almost unrivalled sway. The stenographers working in Government offices, Press and Business Houses are almost all the followers of the Pitman system. This system came to have this position on account of the patronage of the Britishers. This link with the recent past cannot be broken without dislocation in the work of offices, whether public or private. It is plain that with the introduction of Hindi or Hindustani as the state language of India the stenographers now in the pay of the Government or private corporations would be required to learn a system of Hindustani Shorthand. These people would naturally find it easier to learn a Hindustani Shorthand system based on Pitman than one which is altogether different. It has, therefore, been felt by us that for the time being we cannot think of altogether ignoring the Pitman system even if we felt that it is not possible to adapt it so well as other systems to the genius of the Hindustani language. It may well be that as time passes and a new generation of stenographers trained on new systems grows up the Pitman system or its Hindustani adaptations may be displaced.

Moreover during the period of transition the stenographers working in offices would be required to know both the English and Hindustani systems of Shorthand, and this again makes it difficult to discard the Pitman system immediately.

The second consideration that has weighed with us is the multilingual character of our country. Each of the States of the Indian Union would like to make the regional language its official language. At the same time each State would have to use the federal language also in its offices. Thus there would be the necessity of stenographers who know the Shorthand of the regional language as also that of the federal language. This implies that the Hindustani Shorthand should be such as can be easily adapted to the genius of the regional languages. We are aware that there are several difficulties which have to be overcome if this desideratum is to be realised. The frequency of sounds, for example, varies from language to language spoken in our country. Consequently it is not easy to allocate the same symbols for the same

consonants and vowels of the federal language and the regional languages. A difference in the grammatical structure also would involve a difference between the shorthand systems of these languages. It appeared to us, however, that we in this country are a bit more fortunately placed than people of other multilingual countries. In the first place the phonetic system of almost all the regional languages of India is the same. The grammatical structure also of almost all Indian languages has certain important points of similarity. The prefixes and suffixes used in the Indian languages are generally similar. Consequently, it is possible to have a common structure of these prefixes and suffixes for all Indian languages. A further advantage that we possess owing to our common culture is that many phrases and idioms, and technical terms are almost the same in all our languages. This would enable us to prepare a large number of phraseograms and logograms common to the federal and the regional languages. Finally it is possible to have common symbols which indicate the termination of nouns and verbs, and which can be transcribed according to the particular terminations of each language. Thus we felt that each system submitted to us for consideration should be examined from this point of view also.

A third consideration is the result shown by the several systems in actual practice. Therefore, we considered it essential that the formulators of the systems be asked to give a practical demonstration of their systems to the Committee. A test was held for this purpose on the 25th November, 1948, and the results of this test are given in *Appendix E* to this report.

A fourth consideration before us has been the suitability of a system to the genius of the Hindustani language. Hindustani is different from the English language in several respects. In the first place the phonetic structure of Hindustani is different from that of English. For example, the Hindustani phonetic structure contains as many as ten aspirate consonants (*Mahaprana*). These do not have any separate symbols provided in the English Shorthand system, whereas the absence of special symbols for the aspirate consonants in the Hindustani language would create confusion and mistakes.

This, however, is a minor difference in comparison to the difference that exists in the use of vowels in the two languages. The importance of vowels in Hindustani is very great. A change in one of the vowels in a word may change the gender and number of the noun, verb, etc. Similarly, an additional vowel or two effects a negative sense and the various words

derived from the same root indicating qualified meaning are brought out by changes in a vowel or two with or without an addition of a consonant. Apart from this role of the vowels it may be emphasised that in the Hindustani language the occurrence of two, three or even four consecutive vowels is found quite often. There may be words which may consist of vowels only. Thus the word आइए consists of only vowels. In the English language such diphthongs are rare. This difference in the role of vowels between the two languages demands that a shorthand system for Hindustani should have an adequate provision for the representation of vowels. Another vital distinction between Hindustani and the English phonetics is the greater frequency of double consonants in the former as compared with that of the latter. Moreover, the frequency of the same sounds in the English and Hindustani languages is considerably different. We find for example a very high frequency of T in the English language whereas in the Hindustani language its frequency is very low.

Finally, the grammatical difference between English and Hindustani is very great. For instance, English has prepositions while Hindustani has post-positions.

The fifth consideration has been the frequency of sounds as the basis of assignment of symbols for those sounds. This consideration becomes all the more important because most of the Hindustani Shorthand systems are based on English Shorthand systems, and the frequency of sounds in Hindustani and English varies considerably.

Finally we have kept in our mind the essential elements of a good shorthand script. A shorthand script cannot be considered to be good unless its symbols are simple in form and can easily and speedily be written. These characteristics are possessed by the geometrical symbols which consist mainly of straight and curved lines and of hooks, loops, circles, ticks, dots, dashes, and small angular marks. But the use of such symbols in any system of Shorthand is not by itself enough. The assignment of these symbols to the different consonants and vowels should be such as to permit the most facile joining of one symbol with another.

These considerations constitute, so to say, our measuring rod. We proceed to indicate now the conclusions we have arrived at on the basis of these considerations.

PART III

Conclusions and Recommendations.

It is clear from the survey that the existing systems are (1) either modifications of Pitman (2) or of Sloan Duployan (3) or Original in character. We find, however, that none of these systems can be said to satisfy all the characteristics of a good Hindustani Shorthand system. We shall briefly give our reasons for this conclusion.

The systems which are either modifications of Pitman or of Sloan Duployan could have made, in our opinion, a better use of the devices and principles suggested or formulated by the English system. We may note certain salient features of those systems in this connection. The systems based on Pitman have all made use of the principles of halving and doubling. But while Pitman makes use of these principles to serve a number of needs of the English language as shown in the survey, these systems have, more or less mechanically followed Pitman in the matter of using these principles for the Hindustani language. Pitman for example adds T or D by means of the principle of halving to the consonant halved. But T or D are not only very frequent sounds in the English words, they are also the usual terminations of the English verbs in the past tense. This latter fact seems to have escaped the attention of those who have attempted to adapt Pitman for the Hindustani language. The authors should have tried to see if this principle could be used for a better purpose than that of adding त् or थ् or द् or ध् sounds which are not so very frequent in Hindustani as the sounds of T or D are in English. We may say that the same remarks apply with respect to the use of the principle of doubling. The author of *Wardha Pranali* has no doubt made an attempt to make a new use of this principle. But it is doubtful if it is the best use of this principle. We believe that the same remarks can be repeated in respect of the use of the vital devices of circles, loops, hooks and position writing.

Those who have sought to adapt the Sloan-Duployan system for Hindustani Shorthand have done no better. It is clear from the survey that these adaptations of the Sloan-Duployan system have made practically no change in the use of the basic principles and devices of the system formulated or suggested for the English language. The symbols for the conjunct consonants, which constitute a special feature of the Sloan-Duployan system, have been kept in Hindustani for the same conjunct consonants. No attempt seems to have been

made to find out whether these conjunct consonants have any corresponding frequency in the Hindustani language or not.

Even the original systems submitted to us do not fulfil our expectations. The Jain system is more or less contracted alphabet only. It has not made any use of the other devices whereby speed could be increased. The most that can be said about it is that it has tried to remain as close as possible to the Deva-nagari script (Indian Phonetic System) in the matter of its symbols. It is not, and we are afraid cannot be, a successful system of Hindustani Shorthand unless it is appreciably improved and introduces speed devices in which case it can serve as a basis of shorthand for all Indian languages.

The Gajanan Lipi is yet in a state of formation. The All languages Shorthand of Tandon and Mehra, in our opinion, has made a notable attempt to use the Shorthand symbols and shorthand principles in an original manner. But it is too early to pronounce any opinion about it because the theory has not been sufficiently practised. Moreover we are afraid that some of the theoretical propositions are so complex that it is doubtful whether these will prove useful in actual practice. Our conclusion that these Hindustani Shorthand systems not being sufficiently adapted to suit the genius of the language is further supported by the results of the test held by us.

The representatives of only four systems managed to take down dictation at high speeds. None of them, however, reached the required standard.

The order in which they succeeded to some extent in the test is as follows:—

1. Hindi Ashu Lipi—by Shri Kedar Nath Chaubey.
2. Wardha Pranali—by Shri Murlidhar Sabnis.
3. Nishkam Pranali—by Shri Nishkameshwar Misra.
4. Rishi Pranali—by Shri Rishi Lal Agarwal.

We recognise that this order does not necessarily imply the relative superiority of these systems over one another.

We feel that the results of the test should be viewed in the light of the other characteristics of these systems. We proceed to give them below :—

The Hindi Ashu Lipi by Shri Kedar Nath Choubey is almost a copy of the Sloan-Duployan system. The only important novelty in it is the author's peculiar use of position writing. But we think this use of position writing has very little to do with the genius of the Hindustani language. It is, however, the one system based on the joined-vowel system that did

manage to achieve some results in the test. We may add here that a system which accepts the principle of joining vowels to the consonants would in our opinion be better suited to the genius of the Hindustani language than one which omits vowels altogether in high speed writing. But we cannot give to this system the first place in our order of priority, because of other considerations also. These we have enumerated in para 2.

The Wardha Pranali that comes next in the test, is an adaptation of the Pitman system to the Hindustani language.

We, recognise however, that it is not a blind imitation of Pitman. The author has made an attempt to use the principles of Pitman in a new manner which was more suited to the genius of the Hindustani language. We may cite, as a case in point his use of the doubling principle. Again he is the only one among the followers of the Pitman system who has considered it necessary to adopt the principle of joining all initial vowels to the consonants. The Nishkam Pranali has also the credit of making this innovation, but we feel that it did not adopt the principle of joining initial vowels to the extent the author of the Wardha Pranali has done. Again his symbol for the indication of the initial vowels is simple and can be used successfully in high speed writing as well. It appears to us that it has potentialities for the future. The other considerations that we have detailed in Part II also do not in any way affect its position adversely. We, therefore, feel that the position achieved by it in the test is well-deserved.

The Nishkam Pranali is the oldest system of Hindustani Shorthand. Although our remarks about the nature of its adaptability to the genius of Hindustani apply to it as well, we recognise that it was the earliest system which made an attempt to modify Pitman to an appreciable extent. It was the first system that introduced the principle of joining vowels to the consonants in certain cases. It also used the principle of doubling to indicate some other verb terminations as also some case terminations. It is thus evident that this system made an attempt to make the Pitman system suitable to the Hindustani language. The greatest contribution that we feel it has made is in relation to the indication of the *Mahaprana* consonant of the Hindustani language. Its principle of curving the symbol for non-*Mahaprana* consonants in order to indicate their corresponding *Mahapranas* in our opinion, makes it possible to write the *Mahaprana* even in high speed writing. We have shown how this is necessary for a correct transcription of Shorthand notes of Hindustani speeches or dictation.

This contribution, in our opinion, entitles it to greater esteem than what it has secured by means of its position in the test. We feel that it can be considered of equal worth to the Wardha Pranali on account of the original contributions made by it to the system of Hindustani Shorthand.

We arrive at a similar conclusion about the Rishi Pranali. It is a system that appears to be practised by a large number of Hindustani stenographers today. Moreover it is a system that has tried to build up systematically a large number of logograms and phraseograms. It has sought to adjust the Pitman system to the genius of the Hindustani language. In certain respects this system has gone into more details than the others. Thus it seeks to indicate the terminations न, नी, ने and त्त, ती, ते by means of the न and त्त hooks. This appears to us to be quite a feasible use of the hooks to indicate the terminations of Hindustani verbs as also of some nouns. It also makes provision for the joining of initial vowels under certain circumstances.

We thus come to the conclusion that the three systems based on Pitman and the one system based on Sloan Duployan can be considered to have demonstrated their usefulness, however limited it may be, for the Hindustani language. The other systems, in our opinion, in their present form, do not possess even this use.

Recommendation No. 1

According to the terms of reference we were asked 'to report on the most suitable system of Shorthand and to recommend changes which may be considered necessary in any existing system.'

Having examined all the systems that have been submitted to us, both in the theoretical and practical aspects we have been able to select the following four systems for Government recognition :

1. Ashu Lipi.
2. Wardha Pranali.
3. Nishkam Pranali.
4. Rishi Pranali.

Their relative merits have been discussed and evaluated at some length; but we should refrain from mentioning one of these four as the most suitable. They all have potentialities

for growth and achievement. All the four that we are recognising have created a field for themselves and it would be much better if all of them are allowed to grow in an atmosphere of healthy emulation.

Recommendation No. 2

We suggest that the Union Government should take steps to set up a Board consisting of scholars of the phonetics and Grammar of Hindustani and other Indian languages as also a few experts in Shorthand. This Board may proceed to examine exhaustively the nature of all Indian languages from the viewpoint of the needs of a Shorthand system. It may help to evolve a system of Shorthand best suited to the official federal language and also, with required modifications, to the several regional languages.

Recommendation No. 3

We recommend that the Board mentioned above should also conduct examinations on an All India basis, for testing students of Hindustani Shorthand and for awarding certificates to the successful candidates. The Certificate of this Board alone should be recognised by the Union and the State Governments. This, in our opinion, would secure uniform standards of teaching and academic and practical proficiency in respect of the shorthand system of the federal language in all parts of the Union.

KAKA KALELKAR,

Chairman.

S. N. AGARWAL.

BABU RAM SAXENA.

M. SATYA NARAYAN.

ANAND KAUSHALYAYAN,

K. N. MISRA.

NEW DELHI : (Subject to a note of dissent)*.
The 15th January, 1949.

*This note was never submitted.

Section II—Typewriters

PART I

The Statement of the Problem

Before we proceed to give our conclusions regarding the Standard Keyboard for a Hindi Typewriter, it would be desirable to state the problem *viz.* how to fit the Devanagari script to Typewriters? As it is, the existing typewriters in use in India and elsewhere were designed primarily to serve the needs of the Roman script. Roman and Devanagari, however, differ from each other to such an extent that the machines useful for the former are found of not much use for the latter. In the circumstances we are faced with a dual problem. We can work for the invention of new kinds of Typewriters which without sacrificing the advantages possessed by the present ones, may serve all the needs of the Devanagari script as it is today. We may, in the alternative, try to fit in the Devanagari script, with such changes as may be necessary, to the existing typewriters.

We have decided to adopt the second course for the following reasons :—

In the first place the invention and manufacture of new machines would require a pretty long time for being perfected and put on the market. We contacted some manufacturers for this purpose. We found that none of them could undertake such a work. It would also be evident from the survey of suggestions that we have given in *Appendix B* that practically every one has urged that the existing standard machine should be accepted for the Devanagari Typewriter also. Only Sati Ajit Singh of Patna has shown us a mechanism which when completed can, according to his claim, provide for 108 characters on 42 keys. But we are afraid that we cannot recommend its adoption unless its mechanism has been thoroughly tested from the viewpoint of speed and durability.

Apart from the above consideration we have also been influenced by the fact that the adoption of the second course is likely to save the Government and the country a heavy outlay on the purchase of new Hindi Typewriters. The Government of the Union and the States have today thousands if not lacs, of English Typewriters. Many of them are likely to become superfluous with the introduction of Devanagari as the script of the Union and some of the States. It would be possible to convert these superfluous English Typewriters into Devanagari ones if there is no difference in the mechanism

of the two. This would mean the saving of millions of rupees for the Government. The same would be the position with the Business Offices of the country. Moreover the new machines specially invented to suit the genius of the Devanagari script are bound to be costlier as they would have to make provision for a greater number of characters and would also have to provide for a more complicated mechanism. Moreover these machines would have a limited market for no other country except the Indian Union would need them.

PART II

Complexities of the task

Even the adoption of the second course, however, is not easy. In the first place, the number of Nagari Letters is fifty-two while the Roman Script has only twenty-six. The designer of a Hindi Typewriter has, therefore, to provide this large number of letters on the limited number of keys in the existing standard typewriter. It may, however, appear at first that this number need not create any complexity because Nagari does not make any distinction between capital and small letters—a distinction as a result of which the designers of the typewriters for the Roman script have also to make provision for 52 letters, 26 Capital and 26 small, on the keyboard. But the fact is that the distinction between capital and small, while it increases the number of characters to be provided on the keyboard does not in reality add much to the complexity of the task, the reason being that the capital letters are in the first place very infrequent and they are placed on the upper shift of the same key on which their corresponding small ones are placed. They are typed with the use of the shift key. This introduces only a slight mechanical complexity and does not put any great strain on the mind of the typist nor does it materially interfere with the speed of the typewriter. But if two different letters, each one of which occurs frequently in the Indian languages, were to be placed one on the upper shift and the other on the lower one, the typist would lose speed not only as a result of the frequent use of the shift key but also on account of the heavy psychological strain put on his mind by the necessity of remembering two distinct characters on the same key. Consequently, the largeness of number of characters in Nagari does present a difficulty in the task of fitting them on the existing typewriter.

Another difficulty that has to be faced is the number of vowel marks and the practice of putting them above, below, before or after a letter, as the case may be. Some of these

require the provision of dead keys in the Hindi Typewriter. But while this, by itself, may not appreciably interfere with speed and efficiency of the machine, it causes very great strain on the mind of the typist because he has first to type the vowel mark and then the letter, whereas in actual writing by hand the practice is just the reverse. This psychological strain fatigues the typist and reduces his efficiency with the consequent decrease in his speed.

In Nagari consonants are combined with one another to represent compound sounds. This is done by writing not the full outline of the consonants but only some part of them except the last. These may be termed as 'half letters', and a provision has to be made for them. Therefore, the number of the letters to be provided for on the Hindi Typewriter is considerably increased. Moreover these consonants are combined with others by writing the half consonant either above the full letter, or before it. The full consonant with which the half combines sometimes changes its form or even position. Such a complexity in the combination of letters creates a great difficulty for the designer of the Hindi Typewriter. Thus if half 'ए' is combined to 'अ' the latter is written below 'अ'. This means that dead keys have to be provided in the Hindi Typewriter for providing these conjunct consonants.

In our approach to this problem we have kept the following considerations in view :—

Firstly, the basic character of the script should not be radically altered in the solutions that we propose.

Secondly, we have aimed at securing uniformity as much as beauty in the characters to be provided on the keyboard of the Hindi Typewriter. We have, today, two faces of Nagari letters, one known as the Calcutta type and the other as the Bombay type. We preferred to include in our keyboard those faces of the characters which appeared to be more popularly used and beautiful in forms, whether they belonged to the Bombay or the Calcutta types.

Thirdly, as the Hindi Standard Typewriter is likely to be used in the offices of the State Governments also, it should meet the needs of the regional languages, some of which contain certain sounds for which there are no appropriate symbols in the Nagari script. This deficiency of Nagari should be removed if the Hindi Typewriter is to fulfil the demands of those regional languages which may prefer to use the Nagari script.

Fourthly, we have recognised that an essential quality of a typewriter should be the attainment of high speed. The psychological strain that is produced on the mind of the typist by any particular arrangement of letters has to be minimized.

Fifthly, we have kept in view the several considerations on which the positions of letters are fixed on the keyboard of a Typewriter. We may specifically state some of them. We caused to be calculated the frequency of letters in the Hindi—Hindustani. Thirty thousand words were examined for this purpose by 3 different groups at Delhi, Wardha and Allahabad, the result of this calculation is given in *Appendix G*. We also caused to be calculated the number of strokes that could be given per minute on any particular key. In addition, we considered the respective strength of fingers as well as their capacity to cooperate with one another.

Keeping in view the above considerations, we have put the half letters in the upper case, but on the same key on which the full is also given.

PART III

Conclusions and Recommendations

We may now proceed to state the conclusions arrived at by us. In the first place, the Hindi Standard Typewriter should not have more than 46 keys and the Hindi Portable Typewriter not more than 42 keys. We have no option but to fit the Devanagari script to the existing Standard Typewriters. It is internationally accepted that the Standard Typewriters should not have more than 46 keys. This is the utmost limit to which the touch-system of typing can be extended.

Secondly, the keyboard of the Hindi Typewriter should provide for the sounds of short 'ए' and short 'ऐ' which are found in the languages of the Deccan as well as in the Braj and Avadhi dialects of Hindi. The letter 'ऌ' which occurs in Marathi, Gujrati, Uriya, Rajasthani and the four South Indian languages, has also been provided.

We have also come to the conclusion that we should not accept the radical proposals for changes in the Devanagari script, which have been submitted to us and have been summarised in the *Appendix B* of this report.

Four changes have, however, been provided for. The first is the shape of the vowel mark for short ' i '. The practice so far has been to put it before the consonant with which it combines. But this is not in accordance with the order of pronunciation. It is not possible to put the existing shape of the mark after the consonant as it may lead to confusion.

We, therefore, provide for the vowel mark in the form of

falling after the consonant and not before it. The second change is in the form of the letter ' ख '. The form, in which it is written now is not free from confusion. It could be read as ' र ख ' (rawa) instead of ' ख ' (kha). Opinion was divided as to the new form. Consequently we have given it the form ' ख ' that distinguishes it from a combination of ' र ' and ' ख ' but which is still very similar to the old one. The third change is in the form of the vowel ' ऋ '. This will be formed by putting the vowel mark for ' ऋ ' () below ' अ ' as ' अृ '.

We disapprove of the use of ' ः ', although we have provided for it in the keyboard, because often it does not occupy its proper place in the order of pronunciation. We, therefore, recommend the use of ' र ' [with 'hal' sign] in place of the ' ः ' for which also we have made provision.

All these changes are the result of joint discussions and agreement between the members of this Committee and the Devanagari Script Reform Committee of the U. P. Government.

We wished to avoid the use of the dead key by putting the vowel mark not on or below the letters but after them, because the use of the dead keys involves an unusual way of typing, namely, typewriting the vowel marks first and then the letters. At present we have eliminated the lower vowel marks viz. *a* by putting them after the letters and not below them.

Therefore, our recommendations are as below :—

No. 1—The Standard Hindi Typewriter should have forty-six keys* in the maximum and the Portable Hindi Typewriter should have 42 keys in the minimum.

No. 2—The keyboard of the Standard Hindi Typewriter should have the 92 characters shown in the chart given in *Appendix C* to this report. The

*Later changed to 45. See pages 136 and 137.

Portable Typewriter should have 84 characters as shown in the chart given in *Appendix D₁*. The arrangement of these characters should be as shown in the charts and their forms as in the special charts given in *Appendices H. I. J. K.*

KAKA KALELKAR,
M. SATYA NARAYAN,
S. N. AGARWAL,
BABU RAM SAXENA,
ANAND KAUSHALYAYAN,

NEW DELHI: K. N. MISRA.
The 15th January, 1949. (Subject to a note of dissent)*.

*During the discussion Prof. Misra at no stage placed the points raised in this note before the Committee. The reason for this according to him, was that he had applied for a patent right for a keyboard of his own. The Committee, therefore, did not think it proper to append this note to this report as a note of dissent.

Section III—The Telegraphic Code

विद्युल्लिपि "Vidyullipi" or the Telegraphic Code for those of the Indian languages that can use the Nagari script, is not a difficult proposition. The sounds represented in the Nagari script are all scientifically arranged. A Telegraphic Code can easily be remembered and manipulated with ease if it takes full advantage of this scientific arrangement.

The Code for signalling and that for teleprinting are naturally different. In teleprinting each letter or sign must have the same number of units all throughout. The signalling Code uses the dot and the dash in permutations of 1, 2, 3, 4, and 5 units. We thus get in all 2 plus 4 plus 8 plus 16 plus 32 i.e. 62 signs in all. There is plenty of room, therefore, for accommodating Nagari vowel signs and consonants.

Conjunct consonants must, of course, be represented by the use of *Halant*.

The three important schemes that we have received, have all very wisely accepted the reformed system of writing vowels known as स्वराखड़ी Swarakhadi. अि, औ, अ्र, अृ, अ, अं, अँ. They have all recommended the use of *Halant* for representing conjunct consonants.

We would have very much liked to use the principle of frequency in assigning code signs to the letters and vowel signs of the Nagari alphabet but the Telegraphic Code is extremely limited in its resources. A dot and a dash makes up its whole repertory. Every assistance must be given to the signaller, and more than the signaller to the receiver, for remembering the signs. We have, therefore, made a very limited use of the principle of frequency and depended mainly on the scientific arrangement of the Nagari letters.

Thus short अ and other short and frequent vowel signs are made up of two units only. Most of the vowel signs (*matra*) have only three digit signs.

Unaspirate letters like क, च, ट, त, प, and ग, ज, ड, द, ब, are represented by signs of four digits. The latter invariably end with a dash.

Aspirate letters, numerals and a few important service instructions have assigned to them signs of five digits. The heavy sounding *Mahaprana* letters, namely, झ, ञ, ङ, ष, फ and घ, ङ, ञ, ष, ङ, have all five digits. They all, moreover, end with a dash.

Shri Devedeen Trivedi has an ingenious method of reversing the signs for pairs of similar sounds. Sometimes he inverts one sign into another. We were tempted to make use of these devices in the scheme suggested by us, they are so useful in remembering the signs. But our arrangement shows the difference in the pairs by the last stroke which is better useful to the receiver. The subjoined is so arranged that the whole scheme explains itself. Provision is made here for short *अ* and short *ए* which are necessary for Southern languages. Special Urdu sounds also are provided for.

KAKA KALELKAR.

SRIMAN NARAYAN AGARWAL.

BABU RAM SAXENA.

NEW DELHI ;
The 15th July, 1948.

नागरी की विद्युत्लिपि

ह्रस्व ० {

अ ००	। ०००	०००० क	{	००००० क	५
		००००१ ख		०००००१ ख	
		००००१ ग	{	००००१० ग	३
		००००११ घ		००००११ घ	
	ी ०००१	०००१० र	{	०००१०० र	२
		०००१०१ ङ		०००१०१ ङ	
		०००११ ल	{	०००११० ?	
		०००१११ क		०००१११ क	
	ी ००१०	००१०० ख	{	००१००० ख	१
		००१००१ छ		००१००१ छ	
		००१०१ ज	{	००१०१० ग, ज	
		००१०११ झ		००१०११ झ	
। ००१	००११	००११० य	{	००११०० ङ	१
		००११०१ ङ		००११०१ ङ	
		००१११ व	{	००१११०	
		००११११ ङ		००११११ ङ	
	००१०	००१०० फ	{	००१००० फ	३
		००१००१ क		००१००१ क	
		००१०१ ब	{	००१०१० ब	
		००१०११ भ		००१०११ भ	
००	००११	००११० न	{	००११००	५
		००११०१ ङ		००११०१ ङ	
		००१११ द	{	००१११०	
		००११११ द	{	००११११ द	

v : ह
महाप्राण

०	v	vv	vv	vvoo ट	vvooo ष	७
		vvvv	vvvoo न	vvvooo स	८	
						vvvvv ण
	vvvvv ण	vvvvov ष	१०			
				vvvvv ण	vvvvoo ष	११
	vvvvv ण	vvvvov ष	१२			
				vvvvv ण	vvvvoo ष	१३
	vvvvv ण	vvvvov ष	१४			
				vvvvv ण	vvvvoo ष	१५
vvvvv ण	vvvvov ष	१६				

APPENDIX A

SURVEY OF SHORTHAND SYSTEMS

Our analysis of the Pitman system has led us to form the following ideas about its pattern scheme of organisation :—

(1) It is divided into two sections one meant for the beginners and the other for the advanced students. But the second section is so interwoven with the first that it is difficult to say where the one ends and the other begins. Even then we can say that the first section consists of the basic script and grammar of the Shorthand system, while the second gives the special rules and script which an advanced student can use in order to increase his speed.

(2) It draws the basic script of the Shorthand system in such a way as to make it easily understood and remembered by anyone seeking to use it to represent the spoken words. It appears that these symbols have been determined by the consideration of maximum speed in writing. It has determined that these symbols should be simple and small so that they may be easily penned.

These requisites could be fulfilled by using simple geometrical straight and curved lines for preparing these symbols. It can be said with great truth that this idea of using geometrical lines to represent spoken sounds alone made possible the formulation of Shorthand systems. Pitman derives these lines from the following three figures :—

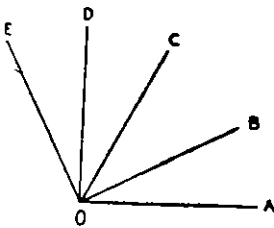


Fig. 1

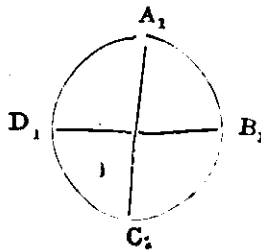


Fig. 2

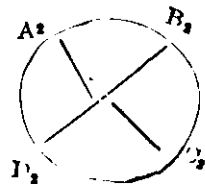


Fig. 3

From the above three figures it is clear that there can be thirteen symbols formed without any danger of confusion arising in their use. These thirteen symbols consist of five straight strokes and eight curved strokes. The five straight strokes are AO, BO, CO, DO, & EO, while the eight curved strokes are $A_1 D_1$, $A_1 B_1$, $B_1 C_1$, $D_1 C_1$ and $A_2 D_2$, $A_2 B_2$, $B_2 C_2$ and $D_2 C_2$.

Apart from these basic signs of the Shorthand Script there are some special signs which are used by Pitman. These special signs usually indicate the addition of a vowel or a consonant sound to that represented by one of the basic signs of the script. These special signs are six in number, a dot, a dash, a loop, a hook, a circle, and a tick.

These signs have been allotted to the basic human sounds according to a special arrangement. This is the classification of the sounds into a number of groups. These groups according to Pitman are :

(i) The *Explodents*:—The consonants in pronouncing which “the outgoing breath is forced in a sudden gust through barriers previously closed”. क, च, ट, त, प

(ii) The *continuants* in uttering which “the outgoing breath, instead of being expelled suddenly is allowed to escape in a continuous stream through similar barriers partially open”. स, श, ष, फ, य, द, भ, ज

(iii) The *nasals* which “are produced by closing the successive barriers in the mouth against the outgoing air stream so that it has to escape through the nose”. म, न, ण, ब, ङ

(iv) The ‘*Liquids*’ which ‘flow into union with other consonants and thus make double consonants’. य, व, र

(v) The ‘*aspirate*’ which is a breathing upon a following vowel. ह



The explodents consist of eight consonants and the continuants also consist of eight consonants. Moreover each of these groups are sub-divided into 4 sub-groups each sub-group consisting of 2 consonants. “The articulations in these pairs are the same, but the sound is light in the first consonant of each pair and heavy in the second”. Thus these sixteen consonants are put into 8 similar pairs as shown below:—

P . — B	}	Explodents	F — V	}	Continuants
T — D			TH — TH		
Ch — J			S — Z		
K — G.			Sh — Zh		

Apart from these the Liquids, the nasals and the aspirate are as follows :—

M, N, NG	:	NASALS
L, R	:	LIQUIDS
W, Y	:	COALESCENTS
H	:	ASPIRATE

This classification of consonants makes it clear that the basic sounds according to Pitman system are the first sixteen consonants as arranged above. But the basic signs are only 13. This disparity between the number of signs and sounds makes the Pitman system to follow certain rules whereby it may be overcome. This leads us to the third feature of the system—its grammar.

(3) (a) The first rule of importance is the principle of thickening of the stroke. It is based on the fact that the second consonant in each of the pairs given above has a heavier sound than the first one. The lighter sound is represented by a light stroke and the heavier sound by a heavy or thick stroke of the same form. Thus  represents P and  represents B.

(b) On the basis of this rule the system assigns *straight strokes* to the *Explodents*. Only one straight stroke—OB in Fig. 1 is not used for this purpose. Each straight stroke is assigned to 1 pair of the Explodents. Thus EO for P pair, DO for T pair, CO for CH pair and AO for K pair, this order being determined by the place in the vocal organ from which these consonants are pronounced—and it is from the lips backward to the throat.

The continuants are assigned curved strokes—two being taken from the Fig. 2 that is D_1C_1 , and B_1C_1 , and two from Fig. 3 that is A_2D_2 , B_2C_2 , (c) the remaining strokes are allotted to the Nasals and the Liquids while the Coalescents and the aspirate are given some new and we should say special signs—for the first group hooked signs and for the latter looped signs.


(4) Another striking feature of the system is its rules for vowel representation. The system assumes that the basic sounds of any language are the consonants and that the vowels are needed only to give accent and emphasis to the consonants. This accent and emphasis can be detected in any combination of consonants by any one familiar with the language even if the vowels indicating them are not specially shown in the combination. In other words the vowels that perform this function

may be dropped without any grave danger of any word being misread. On this assumption the system gives in the first section the number of vowels used in the English Language and the rules according to which they are to be shown in the Shorthand Script.

The system divides the vowels needed for the English Language into 2 broad groups—one of long vowels and the other consisting of light vowels corresponding to the long ones. Each group is further sub-divided into two sub-groups as follows:—

	Sub-group 1	Sub-group 2
Long vowels :	ah a e	aw o oo
Short vowels :	a e i	o u oo

Sub-group 1 of each class is represented by a dot, while sub-group 2 by a dash. Signs for the light vowels are light, while those for the long vowels are heavy. Thus the system seeks to represent all the twelve vowels by two signs alone. This miracle is achieved by the principle of position writing—which constitutes the distinguishing feature of the Pitman system.

Position writing for us has a double significance. In the first place it implies position marking. Thus the system describes how each line, straight or curved, has three positions—the first, the medial and the final as shown in this figure.  Vowel marks given in the first place represent the first vowel of each sub-group, the mark in the second place, the second vowel and the mark in the third place the third vowel. Moreover if the mark is on the left side or above the outline it would come before the consonant represented by the outline, and if it is to the right or below it would be pronounced after the consonant.

Secondly the system gives three positions in which the outline of a word can commence. "The first position is above the line, the second position is on the line, and the third position is through the line. The first sounded vowel in the word determines the position of the outline". When the first sounded vowel in a word is a first place vowel the outline is written in the first position. Similarly for a second place vowel it is written in the second position and for a third place vowel in the third position.

Diphthongs, which according to the system are four in number in the English Language that is I, OW, OI, U are represented by a special sign v, a, L or U given in different places. The vowel following a diphthong is represented by a tick attached to the Diphthong sign.

(5) The next feature of the system consists of the use of special signs for representing certain sounds which occur in the English Language very frequently. Thus the sound S and Z occur very frequently in the English Language because the singular of verbs and the plural of many nouns is made up by adding S to the word. Apart from this peculiarity of the English Language the sibilants have quite a good frequency in the English Language as also in some other languages. Pitman makes provision for this special frequency of S or Z by giving a special sign that is to be added to the sign for the main consonant in combination with which the S sound occurs. By this device the system makes provision for the plural or singular of nouns and verbs as also for the frequency of S and Z in the other words of the Language. We must emphasise its use for indicating the singular or plural in the English Language as it would help us in assessing how far the systems of Hindustani Shorthand based on Pitman have grasped this significance of the special sign for S which Pitman provides. Again another method of forming plurals is to add 'es' to words which end in S. Thus many words in English have 'ses' sound in the end. This is provided for by the system by the enlargement of the special sign, that is the small circle provided for S. Incidentally this big circle is also used to indicate the conversion of the sound S into the sound SW. Thus by means of the small and big circle Pitman system covers the plurals of sounds singular of verbs and the sounds S and SW in many other words besides.

Again another sound that is frequently found in the English Language is 'Shun'. Its frequency is there because the verbal nouns are formed by means of the addition 'tion' or 'shun' etc. to the verbs. We found that in two hundred verbs selected at random about 180 formed their verbal nouns by the addition of 'tion', 'sion'. Pitman makes provision for the addition of the 'shun' sound to any preceding consonant by means of a large hook. Thus this hook enables the representation of a verbal noun with great ease. Incidentally this hook also permits the easy representation of the many other words which end in the 'shun' sound.

Another sound too often found in the English Language is the terminal 'T' or 'D'. These sounds occur because the past tense and the past participle of verbs are often formed by the addition of T or 'ed' to the verb in question. We found that about 90% verbs form their past tense in this way. Pitman provided for the addition of this sound to consonant by

means of the 'halving principle'. Thus by this principle a provision is made for the formation of past tense of the English verbs. Incidentally many other words having T or D also can be represented with ease by means of this principle.

Similarly concrete nouns are formed by the addition of 'er' in many verbs. Many verbs end in Y and D in English. Consequently the terminations 'der' or 'ter' or 'thr' are often found in many English words. Thus this type of formation is provided for by the Doubling principle whereby ter, der, or thr are added to any consonant.

We examined this mode of forming a concrete noun. We took the first 100 verbs beginning with 'a' that we came across in the Webster Dictionary and found that 56 verbs formed concrete nouns or adjectives having 'ter' or 'der' as a termination. We believe that this would be the case also with the other verbs. Thus this special device for the addition of these sounds permits an easy representation of the nouns so formed. It also enables an easy representation of the many words which have this sound in the English Language such as, matter, patter, chatter, etc., etc. It is not clear whether these considerations were kept or not when the special devices were provided for. But the position remains that these devices ultimately have their significance in terms of the rule of the English Grammar.

Specially Pitman system provides special devices for certain Prefixes and Suffixes. The Prefixes and Suffixes chosen are those which very frequently occur in the English Language. Thus the Pitman system whether deliberately or by implication has kept not only the frequency of sounds in view but also the grammatical rules that make these sounds frequent.

(6) Further the system makes special provision for such sounds as frequently mingle with other sounds. These are the liquids, the nasals and the aspirates. Pitman provides for representation of these sounds by hooks while loops are provided to indicate the addition of the 'str' sound.

Thus these constitute the first section of the Pitman system. In the second section may be placed the devices of contraction, inter-section, the use of Phrascograms and Logograms and the dropping of vowels. All these are adopted to increase the speed of the writer. This section puts greater burden on memory than the first for in it there are no well defined scientific rules as in the first part for the formation of the Logograms and Phrascograms which constitute the main device for increasing speed.

Before we take up the analysis of the Hindustani system based on Pitman in the light of the features given above it would not be out of place to point out that the Pitman system follows the Phonetic arrangement of the Devanagari Script, though with important differences. It divides the consonants into groups just as Devanagari does. Devanagari divides the consonants into five groups—the group K, the group Ch, the Group T (Palatal), group Ta (Dental), group P, each group consisting of letters which are pronounced from a particular place in the vocal apparatus of man. While Pitman system arranges the consonants on the same principle, it divides the aforesaid consonants into 4 pairs as compared to the Devanagari which divides them into 5 groups each group consisting of 4 consonants and one nasal that combines with the consonants of that group. There is thus a slight difference between the phonetic arrangement of the two. Again each group in Devanagari has an aspirated consonant, corresponding to the light and heavy consonants in each group. Thus the arrangement of Pitman for the consonantal sound is not by itself adequate for the Devanagari sounds, though it is quite adequate for the needs of the English language. Thus this difference between the English tongue and the Hindustani tongue demands some modification of the Pitman system if it is to suit the latter.

Not only Devanagari uses many more sounds than English but it also uses the letter ङ as a distinct sound by itself. In the English tongue H is not generally pronounced. But in the Hindustani tongue it is pronounced by itself. Thus the symbols and rules for the aspirate H in the Pitman system come to be of little value for Hindustani. Further the part-sounds in Hindustani word are of a different type than what they are in English. Thus 'tr' or 'dr' or 'str' are not very frequent in the Hindustani tongue. Moreover the Hindustani tongue employs vowels by themselves whereas in the English tongue that is not a frequent phenomenon. Finally the grammatical structure and phrase content of the Hindustani language, as is bound to be the case, are entirely different. Consequently the bodily adoption of Pitman for Hindustani is impossible. Its rules and symbols can serve the purpose of Hindustani only if it has been modified in the light of all the considerations given above.

We have given this long analysis of the Pitman system in order to put its Hindustani modifications in a proper perspective. Our purpose would be served if we examine the Hindustani modifications from the view points of the use made by them of (1) Pitman Shorthand Script (2) the principle of thickening (3) the principle of halving (4) the principle of Doubling

(5) the principle of position writing (6) the principle of contractions (7) the device of intersection (8) the Loop—small and big (9) the circle—small and big (10) the hook—small and big (11) the other special devices used by Pitman (12) the principles on which Pitman constructs Phrasegrams and Logograms.

The first modification that we take into consideration is the Nishkam Pranali. It was first published, as already noticed in the year 1920. Its teaching was started soon after. It is now being taught in the Shorthand School that is being run under the control of the Nagari Pracharani Sabha. Quite a good number of students have been taught this system of Shorthand since the date of its publication. Many of these students are serving as Reporters in the Legislative Councils and Assemblies and one of them has the proud distinction of being a member of the Constituent Assembly. Students trained in this system appeared in the test held by the Committee and the results that the system showed would be clear from the report of the Supervisors of the test which is given as *Appendix E* to this report.

The structure of this system may now be examined under heads we have already listed.

(1) This system makes use of the Shorthand Script devised by Pitman. But it introduces two modifications in the use of this script in order to meet the needs of the Hindustani Language. In the first place it uses the sign of Pitman for Palatal T to indicate the Dental T (ठ) of the Hindustani Language. The reason for introducing this change is not given by the author. But presumably the change was felt to be necessary because the Dental T is much more frequent in the Hindustani Language than Palatal T, while the reverse is the case in the English Language. Further the Nishkam Pranali indicates the Palatal T group by a shorthand symbol which was devised by Pitman but used by the latter for indicating ऩ. Again the author does not give any reason why this particular symbol was chosen by him to indicate the hard T group. Another change that he makes in the use of the Pitman Script is that he indicates the *Mahapranas* of the Hindustani Language—the second and fourth letters of each of the four out of the five groups into which the Devanagari consonants are usually arranged—that is for ख, घ, छ, झ, ञ, च, ष, फ, भ by curving the stroke indicating the first letter of each of these groups. Thus — represents क and — represents ख. The author does not give any reason why this device has been adopted for this purpose. It appears that

the author felt that if this device was adopted the Hindustani *Mahapranas* could be written without any lift of the hand. If this was the reason in the mind of the author, evidently it indicated that he was fully conscious of the implications of speed writing in any system of shorthand. But while this method of writing the *Mahapranas* would facilitate easy joining with other letters of the Shorthand Script, it reduces the number of signs that can be used to indicate the other sounds. Thus we find that this system does not provide alternative symbols for such sounds as the R and H which mingle too often with other sounds and which consequently need, for purposes of facile joinings, alternative forms. These, then, are the main differences between the basic script of the Nishkam Pranali and that of the Pitman system.

(2) The Nishkam Pranali employs the principle of thickening for the same purpose for which Pitman employs it—that is to indicate the heavy sound of each group of the consonants that have been given above. This system also follows the same practice. Thus a thin horizontal stroke represents क and this stroke when thickened represents ग.

(3) The principle of halving is employed by this system, but its use is slightly different from that of Pitman. The latter uses it to add the sounds of Palatal T or D to the consonant halved. It has been shown above that Pitman uses this principle also to indicate addition of T or D which are the terminations of the verbs in the Past Tense. But this system uses it to indicate the addition of the sounds त, द, ता, ती, ते to the consonant halved. The sounds त, ता, ती, ते represent, according to the author of the system, the “Vibhaktis” that are added to indicate the present and the past tense of the verbs.

This system, thus keeps in view the fact that the Dental T is far more frequent in Hindustani as compared to hard T, and that the Hindustani verbs usually carry त, ता, ती, ते as their endings.

(4) *The doubling principle.*—This system used the principle of doubling but the sounds added to the consonants doubled are somewhat different from those which Pitman adds by the use of this principle. According to the Nishkam Pranali Doubling of the stroke for a consonant adds at its end the sounds of Palatal T (ट) and Palatal D (ड) and also the sounds ना, नी, ने. The author does not indicate the reason why he has made this modification. It appears however that he sought to use the principle to indicate the frequently occurring case terminations and the frequent ending of Hindustani verb in the ना or नी, ने sounds. He appears to

have recognised that the sounds τ and δ are not very frequent in the Hindustani Language, and for this reason makes a provision that in case the sounds τ and \na occur successively, the doubling principle should be used in such a case to add the sound \na and not the sound τ .

(5) The system uses also the principle of position writing, but in a modified form. "There are three positions, says the author for commencing the outlines—the first above the line, the second on the line and the third through the line. If the outline of a word commences above the line the vowel sound \aa is indicated in between the consonants, if it commences on the second position the vowel sounds \aa, \ii, \ee, \ee are indicated in between the consonants, and if it does so in the third position the vowel sounds \uau, \uau, \au, \au are indicated in between the consonants. Thus for indicating medial vowels the Nishkam Pranali uses the principle of position writing. It, however, departs from Pitman in making a provision for the joining of the vowel symbol to the consonant symbol in case vowel occurs initially or finally. "In taking down speeches" remarks the author "the vowels are not indicated. But there may be some words which may not be transcribed correctly if the vowel marks have been entirely left out". He makes a provision that in such words the vowel signs be added to eliminate the possibility of ambiguity. He gives the marks which indicate the addition of different kinds of vowels. Thus small half bracket mark (and)—indicates the addition of \aa and \aa in the beginning of a word. Again the signs for \uau, \uau, \au, \au occurring initially are indicated by the signs \sim or \sim again / and / add the vowels \ii, \ee, \ee in the beginning of the word.

The author assigns symbols for the following vowels $\aa, \aa, \ii, \ee, \ee, \au, \au, \au, \au, \aa$. These symbols are given for the medial vowels, for the author makes a different provision for the initial and final vowels. It is thus plain that the author does not accept in its entirety the principle of position marking of the Pitman system. This system also accepts the principle that in High speed writing vowel symbols need not be given unless, of course, there is a danger of confusion in transcribing the outline. It is evident from what has been said above that this system makes a radical departure from Pitman in adopting the principle of joining the initial and final vowel, to the consonants. The reason which led the author to make this departure has already been given. We do not know if the author knew that such a departure from

Pitman was also necessary in view of the genius of the Hindustani Language in which the vowels occur quite frequently and in which the practice of joining vowels to the consonants-sounds has prevailed for centuries. But whatever may have been the reason of the author the fact remains, that this principle of joined vowel writing brings it nearer to the genius of the Hindustani Language.

Apart from this use of position writing the author uses it also for another purpose.

It is to differentiate between words which have almost an identical outline. "There are in Hindi many words, specially mono-syllabic which have identical outlines in Shorthand. Such words can easily be distinguished by writing them in the first, the second and third positions according to the predominant vowel in them". It is, of course, true that this object is a mere corollary, of the principle of indicating the vowels by means of position writing, but even this corollary gives it added significance.

(6) *The principle of contractions.*—The system does not make use of the principle of contractions except for the purpose of forming logograms and phrascograms. It is well known that the Hindustani Language does not suppress sounds in the way the English Language does. On the other hand the Hindustani Language requires that each sound in any particular word be clearly pronounced. Naturally the principle of contractions as used by Pitman for general purposes is not applicable for the Hindustani Language.

(7) *Intersection.*—The author uses the principle of intersection to add a word to the word whose outline has been intersected by the letter symbol standing for the former word. Thus if the symbol for S intersects the preceding consonant it adds the word "Sabha" to the previous word. Again it is used to indicate that antonym follows a particular word such as हानि, लाभ; जीवन, मरण etc. etc.

(8) The system uses loops for the purpose of adding certain sounds to the consonant looped. But the sounds added differ from those which a loop adds to a consonant in the Pitman system.

Thus in the Pitman system a loop half the length of the stroke adds St to it. But according to the Nishkam Pranali such a loop adds स or सन at the beginning of the stroke, स or स in the middle and स at the end of the stroke.

It is evident that the Nishkam Pranali agrees with Pitman to a certain extent in respect of the sounds added medially and finally by such a loop. It however, differs from it in adding **स** or **स** in the beginning. The author does not give any reason why this change has been introduced. Probably it has been done in order to make a special provision for **स** and **स** which occur very frequently in Hindustani words as prefixes.

The system also uses the large loop. This loop adds either **स्तर** or **स्तर** or **स्वर** to the consonant looped. Here again there is difference between this system and Pitman though very slight. The latter provides for the addition of "Str" only by means of such loop but the former also adds sounds resembling it. The author does not indicate why this departure is made, unless it be said that in the Hindustani Language the Palatal T is not of frequent occurrence. But even then the use of the loop for the addition of **स्तर**, **स्वर** etc., remains to be justified as a special device should be employed only for the representation of a sound of very frequent occurrence. The author does not, however, say that this sound is of very frequent occurrence in the Hindustani Language. It appears to us that he followed the usage of Pitman without considering it necessary to examine adequately the frequency of particular syllabic sounds in the Hindustani Language.

The plural number of the words the outlines of which are looped is indicated in this system by not ending the curve of the loop on the line but by intersecting the line and taking it a little further.

(9) *Circle—small and big.*—This system, like Pitman, uses the small circle to indicate the **स** or **स** sounds. Again it uses the large circle to indicate the addition of the **ञ**, **ज** or **स्व** sounds in the beginning of the consonants and **ञ** or **ज** only in between and at the end of the consonants. Further the system provided that if the circle instead of ending on the line cuts it and goes beyond it a little, the sounds **ना**, **नो**, **नी**, **ने** are added to the consonant. Thus this system makes a provision for representing the **न** sound which occurs frequently in Hindustani terminations and verbs.

(10) *Small and large hooks.*—The system makes use of hooks small and large, and practically in the same way as does Pitman. But the following difference may be noted in this respect. Pitman indicates the addition of **L** to the consonant which has been initially hooked by the left motion, while this system provides that by this initial hook **य** would be added

to the consonant. Again Pitman adds F or V by a small final hook struck by the left motion. But Nishkam Pranali provides that ल is added by such a hook. Apart from these differences the Nishkam system provides that a large final hook to a curved stroke adds ह to it.

(11) The Nishkam system gives some special signs for the addition of the case terminations, and some auxiliary verbs. Thus a small dot after a word-outline indicates the addition of the sounds का, की, के. Similarly a thin vertical line at the end of verb-outlines indicates the addition of है, हं, हैं, हों. Again a small semicircle after verb-outlines adds था, थी, थे. A thin and small horizontal line after the verb-outlines indicates the addition of गा, गी, गे while a small and thin slanting line after any word-outline indicates the addition of को to that word. Similarly the system gives special signs for the addition of Prefixes and Suffixes. Provision has been made for the following sounds to be added under the heading of prefixes and other sounds:

१. अंक, अंग
२. फ ब व
३. आत अति अन आत आव हात हाद
४. प
५. च
६. कम वाय गम गाय कन कान
७. तक ताक
८. अन इन अनु
९. बे. बा
१०. महा
११. हम
१२. यथा
१३. रहा है, रहा था, रहेगा, कर
१४. या, या हं, या था, ये गा, या करे
१५. करेगा, करता है, करती थी, लेगा, ले सकेगा, होगा, हों सकेगा, होगा, हों सकेगा
१६. डालता, डालती, डालते, डालेगा, डालेंगी, डालता था, डालती थी, डालता हूं, डालती हूं, डालना
१७. लेगा, पडता, पडा था, पडा, पडती थी
१८. का, की, के

The sounds indicated in No. 13 to 17 would be added if their appropriate sign is added at the end of a stroke standing for verb.

Under the heading of suffixes he makes special provision for the following sounds to be added:

- | | |
|---|--------------|
| १. नेवाला, ने हारा | |
| २. त्त, ता, त्ते, द, दा, दे, द्दे, त्य, ग, त्त-ता, द्रता, त्ते, दना, त्ते, द्दे | |
| ३. था | ९. आत्मक |
| ४. रर, लर, रल, लल | १०. उत्पादक |
| ५. मान, वान | ११. रहित |
| ६. गृह, गार | १२. दायक |
| ७. अवस्था | १३. आतं, आथं |
| ८. पूर्वक | |

An analysis of these reveals that no scientific arrangement or principle has been followed in selecting them. It appears that the learned author took them because they occurred to him to be such as needed special signs. There is no data given by him to show the frequency of their occurrence in the Hindustani tongue. We do not, thereby, suggest that they do not occur frequently. We only feel that it would be better if the principles of selection were clearly formulated and the arrangement made scientific.


As it stands it would not be easy for any person to remember at all times the special signs provided for them. Moreover a glance on the signs provided shows that they are not easy to write. All of them are written either before the outline of the word, or in the middle position above or below the outline, or after the outline. Thus there would be in many cases a backward movement of the hand and the pen would have to be lifted in any case. Consequently speed would not be increased to the extent expected. It is true that the same kind of disjoining or lifting of hand is provided for the Pitman system. But it appears to us that Pitman is more scientific in the selection of both Prefixes and Suffixes than the Nishkam system.

It is no doubt true that this particular feature of the system makes it useful for Hindustani Language in which sounds peculiar to English, Urdu and Sanskrit or Hindi all occur. But we feel that there is considerable scope for improvement in the arrangement.

(12) *Logograms and Phraseograms*.—This system like Pitman, has prepared Logograms and Phraseograms. The principles adopted are practically the same as those of Pitman. The author gives nearly 1400 such logograms and phraseograms in his book "Hindi Shorthand (1948)". The Gramma logues include words which in the opinion of the author ar

used by the Hindustani speaking people now-a-days. A glance over them shows that they are a mixed lot—words of Sanskrit origin, words of Arabic Persian origin and words of English origin. The author makes a recommendation that the student should prepare his own logograms and phraseograms and this would enable him to reach a minimum speed of 160 words per minute.

The next system to be placed before the public was the Brahmakshar Prakash. Its author Shri Radhe Lal Trivedi has a considerable experience in stenography. He published his book in 1926. His book has been recently recommended for the Hindi Shorthand course in the Intermediate examination by the Board of High School and Intermediate Education, United Provinces. But the author does not state there since when his system has been taught to the students. We are not in a position to say what speed can be actually reached by a stenographer who learns shorthand according to his system. We give below an analysis of the system.

1. *The Shorthand Script.*—This system employs the shorthand script devised by Pitman. It does so, however, with very minor modifications. Firstly it uses Pitman's symbol for Palatal T group to denote the Dental T (त) group of Hindustani. Secondly, it uses Pitman's symbol for TH (Thigh-Thy) group to denote the hard T group of Hindustani. Its device for representing the *Mahapranas* of the Hindustani language is to give a tick in the middle of the symbol. It gives special symbols for the क, ग of Urdu and ङ, ञ of Hind—and these are . It is thus plain that the shorthand script of this system is almost wholly borrowed from Pitman.

The author also adopts almost without any change the other important principles of Pitman, and almost for the same purpose.

2. He uses, like Pitman, the principle of thickening to denote the heavy consonant of each group of consonants.

3. Similarly he uses like Pitman the principle of halving to add certain sounds to the consonants halved. The sounds so added are, however त, थ, द, ध. The first two are added if the consonant-stroke halved is thin and the latter two are added if the consonant-stroke halved is thick. Any one of the four may be added to a consonant under certain specified conditions, that is when the word is poly-syllabic or when its outline is hooked at the end. The author says that these

sounds have been selected for being added by this principle because of their very frequent occurrence in the Hindi words. It may be remarked, however, that the author did not consider it worthwhile to consider if this principle could also be used as is done by Pitman to indicate the past tense of the verbs.

4. The principle of Doubling is also used by this system to add the sounds, तर, टर, दर, धर, तार, धार, दार to the consonant doubled. Further if a beautiful outline can be formed this principle may be employed to indicate the addition of sounds त्र, प्र, तुर, द्रि to the consonant doubled. The author gives no reason to show why he has selected these sounds the addition of which is to be indicated by the Doubling principle. It appears that he has followed Pitman in this respect. Pitman provides for the addition of the Tr or Dr sounds by this principle. The author of Brahmaksher Prakash has however included also such sounds as differ very slightly from these two within the purview of the Doubling principle. It is no doubt true that a number of Hindustani words end in धार, दार or तर. But the number of these words cannot be very large. In the case of English the Ter or Der ending is very frequent for the reason already given. Naturally the Doubling principle as used by Pitman does good service for English. We are afraid that the same cannot be said of it as used by the author of Brahmaksher Prakash.

5. *Position-writing*.—The Brahmaksher Prakash follows Pitman completely in so far as the principle of position-writing is concerned. The truth is that in so far as the representation of vowels is concerned there is practically no difference between the two systems except for the provision of joining the special vowel symbol to the outline of the word in cases in which these outlines, in high speed writing would be such as would cause confusion in transcription unless the initial vowel was indicated. He also makes a provision for the joining of the special vowel marks he gives in the medial position. The vowels for which this principle of joining has been suggested are आ, आई and अ and their special marks are permitted to be joined only under specified conditions. Thus the author does not accept to any appreciable degree the principle of joining vowels to consonants.

6. The system provides for contractions in case the outlines for the whole word are not good. Thus he recommends that in such cases the middle ट, त, ह and nasals as also medial ञ and ह्र may be deleted. If the same letter is immediately repeated, only one is written.

7. The system makes provision for the principle of intersection. It is employed to indicate a term that usually accompanies another. The use of this principle is on the same lines as that of Pitman.

8. Loops (small and big) are used by the system to represent the addition of certain sounds to the consonant looped. The small loop, in this system, at the end of a stroke indicates the addition of the sounds स्त, स्थ, स्ट, श्त, श्ट at the end of the strokes looped. These sounds resemble more or less the sound 'st' which Pitman adds by means of this loop. Similarly this system uses a large loop to add the sounds सतर, शतर, सटर, शटर to the stroke looped. These sounds again are more or less similar to the sound 'str' that Pitman adds by the use of the large loop. Evidently the author of the system has selected these sounds for being added by means of this loop, not on the basis of their frequency at the end of the Hindustani words, but on that of the usage of Pitman. It is not indicated by the author whether the sounds स्त, स्थ, स्ट, श्त, श्ट occur very frequently in the beginning or in the end. The frequency of the सतर, शतर, सटर, शटर sounds at the end of Hindustani words is very low. Use is also made, of the circle small and big but for the indication of the same sounds as are indicated by Pitman by means of these special symbols. The only difference that the author makes is that the large circle is also used to denote the sound ज, ज and ज्व. But the author does not give any reason for following Pitman in the particular use of the circle nor for the slight difference that he makes in the usage of the large circle. Pitman makes use of this special device because of the great frequency of the sound S in the English language. But the author does not seem to have given consideration to this aspect of the problem.

9. The use of the hooks small and large is also almost the same as that of Pitman. The special final hook is also used by him to indicate the termination शन, षण, सन, जन. This system, however, makes use of a large final hook to indicate the addition of the sounds ट and ड. It may be remarked here that the addition of these sounds is provided for by Pitman by means of the halving principle. Since this system, as already indicated, uses the halving principle for adding the sound त, द etc., it makes this special provision for the addition of ट and ड. It is not, however, shown why the author felt the necessity of making use of this special device for the indication of ट and ड. Probably he has done so to follow Pitman as closely as he possibly could.

10 *Other Special Devices.*—This system provides for special signs for the prefixes and suffixes or for such words as frequently occur before or after Hindustani names. Thus he makes provision for :

१. श्री, सर, सर्व, शेख, शाह, इत्यादि
२. स्वामी, शिव, संयुद्ध
३. भीमती
४. अखिल अहित
५. ब, बाई
६. महाराजा
७. पूज्यपाद, देश भक्त, परम पूज्य, आर्य वीर, परम हंस, परिव्रजकाचार्य, राय साहिब, राय बहादुर, खान साहिब, खान बहादुर,
८. प्राति, यथा, नि, अन, हर, बे, अति, अधि, कम, खुश, गैर, ना, बद, वा, सह
९. मुहम्मद
१०. प्रोफेसर

Similarly he makes provision for special symbols for sounds that frequently occur at the end or after the Hindustani words or names. Thus he makes provision for the following :

- | | |
|---------------------------------------|------------------|
| १. बाल, बाला, वाली, बाले | २. खान, खाना |
| ३. साहब, शास्त्री, इस्लाम, इस्लामियां | ४. जी, बाज, बाजी |
| ५. जी महाराज | ६. बहादुर |
| ७. अभ्यास | ८. अर्थ |
| ९. अन्तर | १०. अनुसार |
| ११. अर्पण | १२. आगत |
| १३. आनन | १४. आनन्द |
| १५. आलय | १६. आशय |
| १७. आसन | १८. इन्द्र |
| १९. ईश | २०. ईश्वर |
| २१. उचित | २२. उत्सव |
| २३. उदय | २४. उपकार |
| २५. ऋषि | २६. ऐश्वर्य |
| २७. कृत | २८. च्युत |
| २९. शस्त | ३०. गति |
| ३१. जनक | ३२. दत्त |
| ३३. नाथ | ३४. पूर्वक |
| ३५. प्रसाद, परगाद | ३६. भक्ति |
| ३७. मय | ३८. मुक्त |
| ३९. या | ४०. यात्रा |








४१. लाल
 ४३. युक्त
 ४५. वाद
 ४७. वाया
 ४९. शहर
 ५१. शाला
 ५३. सागर

४२. वंत
 ४४. बतार
 ४६. वान
 ४८. विषय
 ५०. शास्त्र
 ५२. ष्टता
 ५४. सिंह

It is evident from the above list that there is no principle according to which they have been selected, unless of course, the opinion of the author about their frequency in the Hindustani language be considered such a determining principle. We have not come across any other special devices to make this system specially suitable to the Hindustani language. It does not take into view the peculiarities of Hindustani syntax nor does it give much consideration to its grammar and phonetics.

11. The system has also given logograms and phraseograms. These are about 1,000 in number. A scrutiny reveals that words of Arabo-Persian, English and Sanskrit origins have all been provided for. But words from the first two sources predominate.

12. The Rishi Pranali was first published in book form in the year 1938. It is now being taught in the Shorthand School that is being run under the auspices of the Hindi Sahitya Sammelan, Prayag. Its text book known as "Hindi Sanket Lipi" has also been approved for purposes of the teaching of Hindi Shorthand in schools and colleges of United Provinces and the Central Provinces. By now quite a good number of Council and Police Reporters have learnt this system of Hindustani Shorthand.

This system, like those noticed above makes use of the shorthand script devised by Pitman. It, however, makes some modifications of and additions to this script. One modification is in reference to the sign for म and न. Pitman does not give alternative forms of the symbols for म and न while this system gives alternative forms. Thus in it M may be expressed either by  or by  and 'N' may be expressed by  or . Another is in reference to the symbol for स. Pitman represents स by  while this system represents it by  or . The additions, of course, include the symbol for the Mahapranas and the symbol for ड, ढ. The Mahapranas are represented by a tick in the middle of the symbol

for Hindustani consonants. A tick in the middle of the symbol for R makes them represent ढ and—a tick in the middle of the symbols for ह makes them represent ढ while the symbol) is used as an alternative symbol for the Dental T. It does not give any symbol for ञ or ज. The author says that difference has not been maintained between स and ञ because it is always evident from the context which is meant. But if it be necessary to observe this distinction at any place it would be sufficient to give a tick in the middle of the symbol for स in order to indicate that ञ is meant. Again for representing ज the author suggests that symbols for स can be thickened. In the case of the Dental T group, it uses Pitman symbol for थ to indicate त. Again it provides alternative symbols or forms for the consonants of the Dental T group. The author states that these alternative forms have been provided “in order that there should be no difficulty in the joining of consonants and the speed may not be retarded.” It is noteworthy in this connection that the author of this system did not consider it necessary to use Pitman symbol for T to indicate the ञ group of Hindustani consonants. The frequency of त in Hindustani is much greater than that of ट as would be evident from *Appendix G*. In English however, the frequency of T is much greater. Ordinarily it would be expected that the symbol for T in English should be used for the Hindustani त. But the Rishi Pranali does not do so.

2. The principle of thickening is used by the Rishi Pranali for the same purpose for which Pitman uses it. It also uses the principle of thickening to add the sound ढ to the consonants य, down stroke र, ल, व, स and ह. Similarly if M symbol is thickened the sounds ष or ञ are added to it.

3. *Principle of Halving*.—It uses the principle of halving for the purpose of indicating the addition of any of the sounds ञ, ङ to the consonant the symbol of which has been halved. Again when any of the consonants having thick symbols and य, downward र, ल, व, स, म, न, ह after having been thickened, are halved the sound ढ is added to the consonants so halved. The principles on which the particular sounds to be added to a consonant by means of the halving principle have been selected are not stated by the author. It may, however, be that he was guided to select these sounds because of their frequency in the Hindustani language.

4. *The Principle of Doubling*.—The system uses the principle of doubling to add the sounds ञर, ढर, टर or डर to the consonant doubled. Sometimes this principle is also used to

add the sounds आतुर, टर or डर to the consonant doubled. Farther म् or ष् when doubled add र at the end and न when both thickened and doubled adds र to itself. It may, however, be noted that the last use of the principle is not likely to be free from confusion, because न when thickened also represents ङ . It is not stated by the author why these particular sounds were selected by him to be added by means of this principle. It may be presumed that he followed Pitman in doing so, and that he did not consider whether any other better use could be made of the principle of Doubling or not.

5 This system makes use of position writing to indicate the vowels in words. The vowels for which it makes provision are अ, ए, इ (heavy dot) ; आ, ओ, ऊ (heavy dash) ; ऐ, औ, ई (light dot); आइ, या, आई, अं, उ (light dash). In the case of the nasal अं, it is provided that if it occurs after a vowel and before a consonant it would be indicated by a minute circle or zero put at the place where the vowel is to be indicated. The provision for the representation of Diphthongs is the same as that of Pitman. There is, however, a slight provision for the adding of vowels in certain cases. Thus if the vowel अ or आ precedes or the vowel ई comes at the end of the small circle indicating S, a small dash may be joined to the outline for the circle for अ and आ in the beginning and a small dash may be joined to the outline of the circle at the end to indicate ई. The additions of ई is indicated in the same way at the end of the words looped for the addition of दार, धार or न sounds or स्व, स्त, स्य sounds.

These are the only provisions for the joining of vowel signs to the outlines of the words. The author of the system no doubt says in the Preface that " the principle of joining vowel symbols to the consonant appeared to be easier to us and therefore we have included this principle also in our system ". But it does not appear that he has made use of this principle because it appeared to be more suited to the genius of the Hindustani language. Moreover his adoption of this principle is not for all initial and final vowels, but only for those already indicated. The author gives no reason why he has not adopted this principle for other initial and final vowels. It may be that he felt that joining for other vowels could not be easy and legible, and consequently there could not be any gain by providing for such joinings. The fact, however, remains that the attempt of the author to include the principle of joining vowels to the consonants remains half hearted.

6. *Contractions.*—It does not use the principle of *general* contractions.

7. It uses the principle of intersection for the purpose of indicating such technical words as occur very frequently in the Hindustani language and that also in association with other words, the technical term following the latter. This is also the purpose for which Pitman uses it. Again this principle is used to form abstract nouns or adjectives of many words. Thus if the symbol for क intersects the symbol for त in सत्ता it would mean that सत्तात्मक is indicated. Similarly if the symbol for क intersects the symbol for न in दिन it would imply that दैनिक is indicated. Again the principle of intersection is used to indicate contrary pair of words such as आदि-अंत, क्रय-विक्रय etc. etc. "In Hindi" says the author of the Hindi Sanket Lipi (Rishi Pranali), "there are used many pairs of words which consist of a word and its antonym." These are taken down in shorthand by means of the principle of intersection. Again this principle is used also to indicate pairs of words which consist of the same word repeated twice and of a *vibhakti* in between the two words. It may be added here that the system makes a rule that a pair of words which consists of a word repeated twice is indicated by the sign S written after the outline of the first word, and a pair of such words but in which ह्नि occurs in between the two words is indicated by the addition of the last consonant of the second word to the circle S which is in its turn added to the end of the first word. This circle, in such cases, represents ह्र, स्र, सी and sometimes और, apart from हो as stated above. An attempt has thus been made to make use of this principle for making provision for certain peculiarities of the Hindustani language.

8. Loops, small and big, are also used by this system to indicate the addition of certain sounds to the consonants looped. The small loop at the beginning or at the end of a consonant indicates the addition of either स्त or स्थ or ष्ट. The large loop, at the end of a consonant indicates the addition of the sounds दार, धार or त्र to the consonant. In the case of a single consonant outline it usually indicates the addition of the St sound. In the beginning of a consonant this large loop indicates that before the consonant त्र or त्रि sound is to be added. In this respect it is clear that the author does not depart from Pitman system to any appreciable extent.

9. Like Pitman this system also indicates ष, श, ज by means of a small circle. The large circle is used again in the beginning of a word to indicate स्व. It is evident that in this respect the system faithfully follows Pitman.

10. Hooks small and large are used by this system to indicate the addition of certain sounds to the consonant hooked. The sounds that are added by means of these hooks are somewhat different. When a hook by the left motion is added at the end of a straight stroke the sound त is added to the consonant. At the end of a word which is a verb this hook indicates ता, ती, ते. Similarly a hook at the end of a stroke added by the right motion adds like Pitman न to the stroke hooked, but if this comes at the end of a word which is a verb it indicates the addition of ना, नी, ने. To avoid confusion between न hook and त hook in curved strokes, it is provided that to the त hook should be added a dash at the end. The system follows Pitman in the matter of R and L hooks. Large hook at the end indicates in this system the addition of षण, छन, षन. Again large hook in the beginning of क and ख to make them क्व and ख्व, ग and घ into ग्व and घ्व. This hook is added by the same motion as the small hook for ल. It may be added in the beginning or in the middle of an outline as the case may require.

11. *Other Special Signs and Devices.*—This system gives special signs also for the addition of व, ब, ज and ह. If व is to be added at the beginning of any consonant the sign v is added at its beginning. All these signs are added in the beginning and not in the middle or at the end. The author does not give any reason why it was felt necessary to provide special signs for these consonants. Again ह is indicated at the end of a word by means of a large circle added at the end. Again the system provides special signs for व and य also. These signs may be added in the beginning and at the end as the case may be and if the use of the special signs is considered convenient. The sign for व can also be used in the middle. The system also gives special signs for Suffixes and Prefixes and for words which occur like these in compound words. Thus it makes provision for the following suffixes or words used like Suffixes.

१. आगर	२. कर	३. कारक
४. कारी	५. अर्थी	६. आलय
७. शील	८. शाली	९. हर,
१०. हार	११. वाला	१२. अहार
१३. वान	१४. हारी	१५. जनक
१६. क	१७. हीन	१८. बट
१९. हट	२०. गुना	२१. वां
२२. पन	२३. मान	२४. त्व
२५. दाता	२६. मन्द	२७. वीन

२८. पूर्वक	२९. पूर्ण	३०. ता
३१. रूपी	३२. सागर	३३. सार
३४. पति	३५. बाहा	३६. ताना
३७. प्रद	३८. नामा	३९. शाली
४०. वादी		

The following prefixes or words used like them are provided for :

१. प्र	२. परा	३. अप
४. उप	५. अनु	६. नि, इन
७. निस	८. निर	९. आ
१०. अति	११. न	१२. सम, समा, सन
१३. स, सु	१४. सह	१५. सत्
१६. स्व	१७. दुस	१८. दुर
१९. कृ	२०. चिर	२१. भर
२२. बद्	२३. कम, कान	२४. हर
२५. हम	२६. अध	२७. वि
२८. बे	२९. बा	३०. कुल
३१. जीवन	३२. यथा	

An examination of these shows that the system makes an attempt to provide for the frequently occurring initial or terminal sounds. It is, however, noteworthy that no systematic classification has been made of the Prefixes and Suffixes of the Hindustani language in order to make a provision for them.

This system again makes special provision for the representation of verbal forms. It gives special signs to indicate the active and passive voice, the transitive and intransitive verbs. The special signs are the न hook, त hook, and special signs for उ, ओ, इये and वे and the one that may be required is added to the outline of the verb. Again the system makes provision for indicating in a special way the present, past and future tenses of the Hindustani verbs.

It is provided that to indicate the present indefinite त is deleted and the last consonant is halved. In transcription है, हूं, हो etc. are added with reference to context. In the present continuous the last consonant of the main verb is doubled. Again for the present perfect the last consonant of the main verb is intersected by the symbol for क and च is deleted altogether. In this way provision is also made for the past and the future tenses. Again the system gives a number of rules according to which the frequently occurring हो in Hindustani verbs is to be indicated by the circle स or by circle ह.

Similarly it provides that if a semi-circle is added to the outline of the verb, it means the addition of चाहिये to the verb, while न in the verb is deleted. Again if the verb outline is intersected by the symbol for D, डाला is added to the verb, and if intersected by the symbol for र, रखा is added to the verb, if intersected by ष, षडा is added to the verb, and if intersected by ल, लगा is added to the verb. This is a bold attempt made by the system to make it suitable for the Hindustani language. It is another question how far this attempt has succeeded.

Again the system makes a special provision for the representation of compound words that occur so frequently in Hindi. It lays down that the first word should be written in full while the first letter of the word that enters into union with the first should be written in the first, second or third position before or after but near the first word.

It also makes a special provision that the mark for ऋ that is a thick dash can be joined before a circle or a loop, and so can the vowel mark for ई be joined at the end. It makes a special provision that in words of English origin ष or ष are added at the end of the consonant by means of the Doubling principle.

It gives special forms for the Hindustani Pronouns. But we are afraid that these special forms may be a load on memory rather than an aid in increasing speed. This is likely to be the result because these forms have been devised 'not according to any intelligible principle but merely according to the whim of the author.

12. This system has also prepared quite a good number of logograms and phraseograms. An examination of these reveals that the words selected are such as are at present used in the Hindustani language quite frequently. They are of Sanskrit, Perso-Arabic and English origins.

Another adaptation of the Pitman system to Hindustani was made in 1930 by Shri S. P. Singh, Professor of English, Urdu and Hindi Shorthand in Lucknow Christian School of Commerce, Christian College, Lucknow. Shri S. P. Singh has brought this adaptation in book form in the year 1939. This Hindi adaptation became necessary "when the Government of Bihar and Orissa deputed the first batch of Sub-Inspectors of Police to Lucknow Christian School of Commerce for training in Hindi Shorthand". This system is being taught in this school, and by now numerous students, many of whom are working as Reporters in the Legislature and the Police Department have been trained in the practice of this system of Hindustani Shorthand. The results achieved by the students of this system in the test held by the Committee are given in *Appendix E*.

This system uses the Shorthand Script devised by Pitman, but with very slight modifications and additions. The main modifications are that (1) symbol prescribed by Pitman for Palatal T group is used by this system to indicate the त group of the Hindustani language, and (2) the symbol used by Pitman for the Th (थ and द) group is used by this system to indicate the ट group of the Hindustani language. This system indicates the Mahapranas of the Hindustani language by giving a tick in the middle of the symbols for the non-Mahapranas of that group. Further it gives rules for the indication of certain special letters. Thus व्य is represented by doubling the hook in the stroke of व; स्व is represented by thickening the symbol for M; लल is indicated by thickening the downward stroke of ल; अड is indicated by thickening the symbol for अर which is \ .

2. This system uses the principle of thickening for the same purpose for which Pitman uses it. Apart from this, some of the uses which this system makes of the principle of thickening have already been given.

3 *Principle of Halving.*—This system uses the principle of halving to indicate the addition of the sound त or थ to the consonant halved. But if the consonant halved has a thickened symbol, the sound added would be द or ध under certain conditions, however, the sound added may be त or थ or द or ध or ट, ड and these conditions are :

(a) when the word is poly-syllabic,

(b) when the word has a hook at its end,

(c) the rules for the use of this principle are practically the same as those of Pitman.

4. *The Principle of Doubling.*—It uses this principle to indicate the addition of the sound तर or दर or दार to the consonant doubled. Again the sound पर or बर or कर or गर is added if the symbol for अम्प or ड is doubled. Thus if अम्प be doubled it would read as अम्पर or अम्बर. It is evident that the use of two principles of halving and doubling is practically the same as that of Pitman. There are no doubt, slight modifications, and these modifications reflect the needs of the Hindustani language. But at the same time it is also true that the author has not considered whether the sounds added by means of these principles are really so frequent as to demand special devices for their indication.

5. The principle of position writing is also used by this system to indicate vowels. This system follows Pitman very faithfully in this respect. The vowels for which provision is made are अ, आ, इ, ई, उ, ऊ, ए, ऐ, ओ, औ and in the same manner and by the same symbols as those of Pitman. The provision and symbols for Diphthongs are the same as those of Pitman. This system provides that the diphthong for अय or आव can be joined at the beginning of the downward strokes, and the diphthong for आई can be joined at the end of the strokes for कग, य, र, ल, व, न and upward ह. But with this exception the system does not provide for the joining of vowel marks to the consonant symbols.

The principle of Contractions is used by this system to obtain beautiful outlines. "The outlines of some words, if fully written, are so bad that it becomes desirable to delete some letters from them". When such a need arises त, ह, य, or व may be dropped from the word. Again when a sound is immediately repeated in a word, the symbol for it is written only once and not twice.

The principle of intersections is used by this system for the same purpose for which Pitman uses it, that is, to indicate a technical word or any other word which occurs very frequently in combination with some other word. Further it is used in the same way in which Pitman uses it. This principle is also used for the easy and swift indication of pairs of words which are used either for indicating emphasis or which consist of antonyms. This is, no doubt, an attempt to adapt itself to the genius of the Hindustani language but it is rather half hearted and feeble.

This system makes use of the small and large loops which Pitman uses. It uses the small loop to indicate the addition of the sound स्त or स्थ or स्ट or स्ट, स्त, स्थ, ष्ट, इट, अस्त or इस्त or उस्त or अष्ट or इष्ट or उष्ट to the consonant looped. The large loop indicates, in this system सतर or स्तर or शतर, शटर. It would be seen that these sounds are only slightly different from the sounds St. and Str. which the small loop and large loop indicate respectively in the Pitman system. We cannot help remarking that so many variants of one basic sound are given by this and other Hindustani systems for being indicated by these loops simply because the authors of these systems did not have the patience to analyse whether the basic sound, which Pitman had selected for its frequency in the English language had a high frequency in the Hindustani language also or not. As the St. or Str. sounds are not by themselves very frequent in the Hindustani

language the authors of the Hindustani Shorthand systems described above, who did not like to make any radical departure from Pitman in the matter of the use of his ordinary and special symbols, found it necessary to try to indicate a number of sounds which closely resemble the St. or Str. sounds selected and provided for by Pitman. But such an attempt cannot improve matters for it is bound to produce considerable difficulty in transcribing the Shorthand notes taken down according to any one of these systems. This system seeks to indicate by one device a large number of sounds, which though no doubt closely similar are yet different. Consequently it maximises the danger of confusion and erroneous reading at the time of transcription of the Shorthand script into longhand.

This system makes use of the small and the large circle for the special indication of certain sounds. The small circle is used to indicate स while the large circle is used to indicate स्व or ज. or ज़. The large circle when used at the beginning of a word outline indicates स्व while when used medially or terminally it may indicate स्व or ज. When the large circle occurs in the beginning before व, ह, ल, ज़, य, it indicates ज or ज़. Again if a dot be put in the centre of this circle it indicates झ. Here again it is evident that these special symbols are used by this system practically for the same purpose and in the same manner for and in which Pitman uses them.

Again this system makes use of hooks both small and big. An initial right hand motion hook to straight strokes indicates the addition of र, व, ड to the consonant. Again a small hook by the left motion indicates the addition of ल to the consonant. In curved strokes a small initial hook indicates the addition of र, and a high initial hook the addition of ल. Similarly a small final hook by the right hand motion adds न to straight strokes. Similarly a small final hook by the left hand motion adds ण or फ to straight strokes. In curved strokes the small hook indicates the addition of न. A large final hook indicates the addition of ट or ड to the consonant hooked. It would be observed that this system departs from Pitman in the use of the large final hook. Pitman uses it to indicate the termination 'Shun'. But this system uses it to indicate the addition of ट or ड. The author does not state why this departure has been made, nor does he give any reason why he considered it necessary to provide a special device for the addition of such infrequent sounds as ट or ड. We need not stress the point that special devices in shorthand are used only to save time taken in indicating sounds which are of very frequent occurrence. In English,

as emphasised earlier, the Shun sound and the sibilants are very frequent. But it cannot be said that ष or ङ are very frequently occurring sounds in Hindustani. One cannot see, then, the reason that led the author to make this special provision for these sounds unless it was that he felt that as he had used the principle of halving to add ण or ङ instead of adding ष or ङ as is done by Pitman, so he must adopt some other special device to indicate the addition of these sounds of ष and ङ for which Pitman considered it necessary to make a special provision. We do not know how far we are justified in making this assumption. But if that was actually the case it only shows how eager the adapters of Pitman have been to remain faithful to the original even at the cost of making their adaptations less valuable than what they could have been otherwise.

The system makes an attempt to make special provision for indicating ष, षी, षे. A small dot after the word indicates ष and a small fine dash at the end of the word indicates षे, षी.

This system does not provide any special symbol for Hindustani Prefixes. The Hindustani Suffixes, barring a few, also have not been provided any special symbols. The only Suffixes and other words used like suffixes for which provision has been made are :

१. वाला, वाली, वाले, वालों, वालियों
२. खां, खाना
३. बाज, बाजी
४. शास्त्री, इस्लाम-मी
५. अनुसार

The large circle is sometimes used to indicate वजह. It is when the outlines of words have been joined. Again sometimes the doubling of a stroke adds तौर to it. But all these special devices, if these may be so called, are not adopted on the basis of any scientific analysis of the Hindustani Language. These are more in the nature of makeshifts which seem to have been adopted to meet any difficulty that might have been encountered during the practice of this system.

This system has also prepared a few hundred logograms and phraseograms, but these do not appear to be adequately numerous. The words selected are of all types—English, Perso-Arabic, Sanskrit and other words used in Hindustani. It can, therefore, be said that these phraseograms and logograms can serve the need of Hindustani as spoken today. We may, however, doubt if these logograms or phraseograms would meet the

needs of the Hindustani language if its development proceeds, as it is bound to proceed, under the determining influence of Sanskrit Grammar, phonetics and vocabulary.

The Nagari Shighra Lipi or Gupta Praxali has been published by its author in the year 1948. It appears that the author is privately coaching some students according to this system. But the fact that he has not so far been able to train students according to this system became evident when he informed us that none of his students was going to appear in the test as none had at the moment a speed of more than 100 words.

This system uses the Shorthand Script devised by Pitman, but makes some slight departure in the matter of assigning them to different groups of consonants. He uses Pitman symbol for T group to indicate the त group of Hindustani. Again he uses Pitman's symbol for Th group (थ : द) to indicate the ट group of the Hindustani. Further he uses Pitman's symbols for S and Z as alternative symbols for the ढ group of the Hindustani language. Along with the ordinary symbol for म, न, व and स he gives also alternative symbols for them. They are as follows :—

म	न	य	व	स
⌒	⌒	✓	⌒)

He indicates इ and ऋ by thickening the symbols for र. He indicates the Hindustani Mahaprana consonants by giving a tick to the non-Mahaprana consonants of the group. It may be added that this tick is left out in high speed writing. He also gives a symbol for ण which is ३. It is evident that his use of the Pitman Script of Shorthand does not reveal any radical departure from those which have been made by the systems described above. Moreover it is not stated by the author what led him to make in this respect even the slight departure that he has made from the other systems.

This system makes use of the principle of thickening and for the same purpose for which Pitman uses it. Moreover he uses this principle to indicate म्, न्, व्, स्. When the first symbol for म is thickened these sounds are indicated by the thickened symbol. Again if the symbol for न् is thickened र is added to it.

This system also makes use of the principle of halving to indicate the addition of either त or द or ड or ढ to the consonant halved. It provides that the light strokes are halved to add त and the heavy strokes are halved to add द or ड. Further where ढ ढ hook cannot be used these are to be added by the principle of halving. When words are poly-syllabic either त or ढ or द or ड may be added. This would also be the case when a stroke is hooked for न or ण. The strokes म or न are halved only for the addition of त, ढ but when these are halved after having been thickened द, ड are added to them. It is evident that the particular sound which is added by the principle of halving has been selected not so much in view of the needs of the Hindustani language as to remain faithful to the Pitman system which adds by means of halving the sounds T or D.

The principle of doubling is again used by this system to indicate the addition of either तर or दर or तार or दार to the stroke doubled. But if the symbol for म् or म्ब is doubled it adds र to itself. Again ड or न are doubled to add कर or गर to themselves. M is also doubled to add वर to itself. It is plain that in this respect also the system closely follows Pitman. The slight changes that have been made are open to the same criticism which we have already given in connection with the Singh Pranali. The principle of position writing is also used by this system and practically for the same purpose for which Pitman uses it. Following Pitman he provided for twelve vowels—6 short and 6 long—and these are अ, इ, उ, आ, ई, ऊ (short vowels) and ए, ओ, आ, ई, ऐ, औ, अं (long vowels). It is rather surprising to find आ, ई and ऊ being placed in the short vowel group. The arrangement for the indication of diphthongs is practically the same as that of Pitman.

6. *Contractions.*—The principle of ordinary contraction is used by this system to delete न, य or ढ from many words. But otherwise it is used to form logograms for grammalogues rather than for shortening the outline of certain words in which certain consonants are slightly pronounced and consequently need not be indicated in the outline. The principle of intersection is used by this system and precisely for the same purpose for which Pitman uses it.

It uses loop, both small and large. The small loop indicates the addition of सत, स्त or सय or स्त or ष्त to the stroke looped. The large hook indicates the addition of स्तर or स्तर to the stroke looped. It is evident that the author has followed Pitman

very closely in the matter of the selection of these sounds, but is open to the criticism for having not taken into consideration the needs of the Hindustani language in making this selection as also opening the way for confusion and errors in transcription of short-hand notes.

This system uses the small circle to indicate, as does Pitman, स, ज, क्ष and ज. A dot in the centre of this circle would make it indicate ज. Here again slight change made by the author is likely to prove source of confusion and errors. The large circle is used to indicate, as does Pitman, the स्व sound in the beginning of a word outline.

The system makes use of hooks small and large. The initial small hooks are used for the same purpose as that of Pitman that is to add र or ल. The only modification is that 'r' hook can be used also to indicate the addition of ड and ढ. The small final hook is again used as by Pitman to add न. The only departure from Pitman is in the matter of the small final hook written by the left motion. In this system this hook indicates the addition of ट or ठ to the straight strokes. If this hook be made large it indicates the addition of ट only to the curved strokes. If the ल hook is enlarged and given in the beginning of the straight strokes for क, ख or ग it indicates क्या, ख्या, जा respectively. A large hook at the end of straight strokes indicates the addition of the sound औ. But if this large hook occurs in the middle it indicates the addition of व sound. Sometimes this hook indicates व even when it has been put at the end. In this respect this system has made a radical departure from Pitman and other Hindustani shorthand systems. Pitman uses it for the 'Shun' termination. But this system uses it for औ—a sound which occurs in the plural number of almost all Hindustani nouns. Thus by this hook the plural number of the Hindustani words can easily be indicated.

Other Special Devices.—It gives special symbols for some Suffixes and Prefixes and words used as such. The following prefixes are provided for :

१. अण	१०. कूल	१९. निर	२८. यथा
२. अनु	११. कम, कन	२०. ना	२९. वि
३. अति	१२. गैर	२१. प्र	३०. सम, समा
४. अत्र	१३. चिर	२२. परा	३१. सह
५. अभि	१४. जीवन	२३. प्रति	३२. स्व
६. अधि	१५. दुस	२४. बद	३३. हर
७. आ	१६. दुर	२५. बा	३४. हम
८. उप	१७. नि	२६. वे	
९. कु	१८. निग	२७. भर	

The following suffixes are provided for :

१. आर्थी	२३. बीन
२. आलय	२४. मन्द
३. आगार	२५. मय
४. क	२६. मान
५. कर, कार	२७. रूपी
६. कारी	२८. वाला
७. कारक	२९. वान
८. खाना	३०. वट
९. चारी	३१. वाहा
१०. जनक	३२. वादी
११. ता	३३. वाद
१२. त्व	३४. सागर
१३. दायक	३५. सार
१४. नन्द	३६. साजी
१५. नामा	३७. शास्त्री
१६. नीय	३८. शील
१७. पन	३९. हट
१८. पति	४०. हर, हार, हागी
१९. पूर्वक	४१. हीन
२०. पूर्ण	४२. गुना
२१. ब्रह्म	४३. वां
२२. पात	४४. दाता

A glance at these reveals that the author has made an attempt to include as many Sanskrit prefixes and suffixes as he could think of. Considering that the use of the Sanskrit Prefixes and Suffixes is bound to grow in future, there is distinct advantage in making provision for as many of them as can possibly be provided for. It appears to us that from this point of view this system makes a welcome attempt.

This system also gives its own logograms and phraseograms. The number appears to be appreciable and words and phrases in use in various walks of life are provided for. The selection of the words and the phrases seems to have been done with care and considerable labour.

“Hindustani Shorthand by Ishwar Das Magu” is another adaptation of the Pitman system for the Hindustani language. This was made in the year 1940. It is in Urdu Script and is meant

for taking down notes in Urdu. The author states that he is privately teaching Shorthand to students according to his system. But there does not appear to be any institution where this system is being taught. No one appeared on behalf of this system in the test held by the Committee.

It uses the Pitman Script of Shorthand and practically without any modification worth mentioning.

The principle of thickening is used for the same purpose for which Pitman uses it.

The principle of halving is used by this system to add ष or ङ or ञ to the consonant halved. The only additional sound he adds is ञ, and this we suppose would not make much of a difference in the matter of the suitability of the system for the Hindustani language.

The principle of doubling is used by this system to indicate the addition of the sounds तर or डर or दर or डर to the consonant doubled. In the English words now current in Hindustani he adds also वर by this principle. Further he uses it to add र to अण् or अन् when written without any addition, and तर or तड़ or दर or डर when these are looped finally. It is evident that in this respect also he remains very close to Pitman. The additional sounds that he adds by it do not imply any radical departure from Pitman.

The system uses the principle of position writing and this also in the same manner and for the same object in and for which Pitman uses it. Even the vowels provided for and the arrangement for the Diphthongs are the same as that of Pitman.

The System Uses Loops.—Small and large. The small loop adds स्र or सट and the large loop adds सतर, सडर. It is plain that in the use of these loops he makes practically no modification.

It uses the small and large circles, and for the addition of those very sounds for which Pitman uses them.

This system makes use of initial, medial and final hooks. The use of initial hooks is the same as that of Pitman—and so is the case of the final hooks. In this connection it may be added that the author uses the large final hook to add the 'Shun' sound. He, however, admits that "this sound occurs frequently in English only." He also provides that this large final hook can be used also to add शन or नशीन at the end of words. But he does not indicate how this modification would make the use of this device really useful to the Hindustani language.

The system uses the principle of contractions to omit certain imperceptibly pronounced consonants in words and the consonants recommended for omission are precisely those as are recommended for omission by Pitman. The only exception is that the nasal ङ is recommended to be omitted when it occurs after म or occurs in between consonants.

The principle of interception is used by this system and precisely for the same purpose for which it is used by Pitman.

This system makes special provision for the indication of the Suffixes or Prefixes or words used as such. The Prefixes provided for are :—

१. कम, काम, कन, कान
२. इन

The following Suffixes provided for are :—

१. वार, वारी
२. तार, तारी, दार, दारी
३. खाना
४. खाने
५. लानों
६. वाला, वाले, वाली
७. वर, वार, वरी, वारी
८. वालों, वालियों, वालियां
९. आवर, आवरी
१०. मन्द, मन्दी
११. बाज, बाजी
१२. अंग
१३. ओं, अँ, अयां
१४. साज, साजी
१५. अहमद
१६. मुहम्मद

Certain medial sounds *e. g.* अह्, उह् or ऊह् in words are also provided for. It is evident that all these are Persian or Arabic prefixes or suffixes used in Urdu language. These cannot make the system well adapted to the Hindustani language, in which in the nature of things, Sanskrit prefixes and suffixes are bound to predominate.

Apart from these the system makes special provision that the sounds तेरा, तेरी, तेरे, तरह, या तौर can be added to a word by doubling the last consonant.

Again it provides that आयेंगे, आयेंगी, आऊंगा, आऊंगी may be indicated by the N hook and the ग stroke.

This system has also made a few Logograms and Phraseograms, but these are quite insufficient to serve the needs of the Hindustani language.

The following manuscripts based on Pitman have been received by the Committee :—

- (1) Wardha Pranali by Shri Murlidhar Sabnis.
- (2) Hindi Sanket Lipi by Shri Vishnu Dutt Uniyal.
- (3) Hindi Shorthand by Shri Mathura Prasad.
- (4) Shri Suksham Lipi by Professor N. S. Nigam,
M.A., M.Com., Daya Nand College, Cawnpore.
- (5) Sharma Sanket Lipi by Shri G. M. Gokhale.

(1) *Wardha Pranali*—Wardha Pranali was devised by Shri Murlidhar Sabnis in the year 1938. He utilised the material that Shri Dabkey had collected for preparing his Hindustani Shorthand system but which the latter could not complete on account of his untimely death. The author in his preface says that he studied the other shorthand systems before devising his own. We found that the system on which Shri Dabkey was working was mainly based on the Pitman system. But Shri Dabkey had formed the conclusion and with this the author agrees, that signs should be assigned to the Hindustani letters according to the frequency of their occurrence in the Hindustani language. This, no doubt appears to the author to be new and to be one that had not occurred to the authors of the then existing Hindustani Shorthand system. He says that he worked out frequency of the Hindustani letters from about 30 thousand words. He also determined the number of times each shorthand sign can be written per minute. On the basis of the results obtained he assigned the most easily written sign to the most frequent letter. He also admits that the system which he formulated is based on Pitman system. Under the auspices of the Rashtra Bhasha Prachar Samiti, Wardha he held classes of students for teaching Hindustani Shorthand with the help of his

system in the years 1939-40 and 1941, but had to discontinue his work on account of the 1942 movement in which he took active part. He has again started coaching students according to his system in the Govind Ran Seksaria Commerce College, Wardha and has been doing so since 1946. The Provincial Governments have been sending students for learning Hindustani Shorthand according to this system to the said college. The author claims that a student can reach a speed of 100 to 120 words per minute in a period of 6 to 8 months training. He also describes how his system can be used with very minor modifications for all the languages of India. He also says that his system for Marathi is being taught in the Commerce College, Wardha and Abhyankar Shorthand and Type-writing Institute in Bombay and the students have been able to reach a speed of 120 words per minute even though as yet it does not have logograms and phraseograms. One of his students appeared in the test held by this Committee and the results achieved by him are given in Appendix No. E. Some of his students are now working as reporters in the Legislatures and in the Police Departments.

He makes use of the Shorthand Script devised by Pitman. He, however, modifies slightly the assignment by the symbols to the different consonant groups of Hindustani. He assigns Pitman's straight symbol for R to the र group of Hindustani consonants and Pitman's symbol for the T group to the त group of Hindustani consonants, Pitman's symbol for 'Sh' to श and Pitman's symbol for Th group to थ and ञ. He gives a new symbol for ह, which is, ॥. He represents the Māhā-pranas of the Hindustani language by means of giving a small straight line at the beginning of the letter, but it is provided that this line need not be written until it is very necessary to make the distinction between the aspirated and non-aspirated letters in any particular word outline. The changes that he had introduced in the assignment of the symbol have been introduced, according to him on the basis that easily written symbols be assigned to the most frequent letters. In his reply to the Questionnaire he states that he found that the frequency of the letters in Hindustani was taken into consideration by him in making this assignment and he has also given a table of the frequency worked out by him. The Committee has worked out its own frequency of the letters in the Hindustani language and the chart of the frequency so worked out is given as Appendix G to this report. It would appear that the results obtained in the office of the Committee agree more or less with those obtained by Shri Murlidhar Sabnis. Consequently it can be said that his results about the frequency of the letters are more or less correct.

He also gives the number of times each symbol can be written by a number of students in one minute. His results are as follows—

—	250
/	230
	250
\	240
/	180
(220
—	205
—	200
(220
\	224
)	200
(220

The speed of thick signs is according to him 20 to 25 per cent less than the light signs.

Further he says that after having worked out these results he took into consideration the occurrence of the letters in the initial, the medial and the final positions and on the basis of these considerations he assigned the symbols to the letters. He also says that he tried to avoid to keep any alternative symbol for the same letter so that he may not have to give rules and sub-rules for the use of the alternative signs. By doing so he has made it possible to teach the system to a student easily and in a shorter time than otherwise, as also he has been able to remove the psychological strain which remains on the minds of the Stenographers, as a consequence of many alternative symbols in the Hindustani Shorthand script. It may be said that the author has tried to give a rational and plausible justification for the assignment of the symbols to the different consonant groups. It is another question how far this principle is sound, and we discuss it elsewhere.

He makes use of the principle of thickening for the same purpose for which Pitman uses it, that is each thickened sign to represent the third letter of the several consonant groups of the Hindustani.

He makes use of the principle of halving for the purpose to add ऋ or ॠ or ऌ or ॡ to the consonant halved. Generally ऌ or ॡ are added but sometimes ऋ is also added by this principle.

But he has limited the use of halving principle only for nouns. In his answer to questionnaire he has expressed his opinion to omit this device totally as it requires laying down rules and exceptions for its use. Here again it seems he wants to depart from Pitman.

He uses the principle of doubling for entirely new purposes as compared to that for which Pitman uses it. He used it for indicating a word that has been repeated twice. One would have liked to know what was the frequency of such words in the Hindustani language which could have shown whether or not the use of a special device of this importance for this particular purpose was justified. We agree that the use of the doubling principle for the addition of such sounds as ऋ, ॠ does not appear to be justified as the sounds ऋ, ॠ are of very infrequent occurrence in the Hindustani language. But we do feel that the doubling principle can be used more profitably for other purposes than the one for which it has been used by the author of the Wardha Pranali. We must admit that the author of the Wardha Pranali seems the only one among the authors of the Hindustani Shorthand systems who has seen that the use of the doubling principle for the addition of sounds which are the same as are added by Pitman by means of this principle is not profitable from the view point of the Hindustani language and he has made a bold attempt to make a profitable use of the Doubling principle. It is another question as to how far he has succeeded in his attempt.

The author makes use of the position writing for the indication of the vowels. He gives the same symbols for the short and long vowels as are given by Pitman but with altogether a changed order he makes provision for the following vowels :

आ, इ, उ, महाप्राण, ए, ओ
अं, ई, ऊ, ः, ऐ, औ

which are represented by means of position writing. He, however makes a provision that the initial vowels are to be joined to the consonants that follow. He has given his symbol which indicates the initial vowels. Moreover this sign also indicates different vowels according to the position of the outline. He has not made any provision for the joining of the medial and final vowels because he says that in high speed writing the medial vowel has to be omitted under all circumstances, while the final vowel can be indicated by means of dot or dash with-

out the speed being retarded. It may be emphasised that this system makes provision for the joining of all initial vowels and not merely a few as has been done by the systems discussed above.

It may thus be said that from this point of view the author has made an attempt to harmonise the Pitman system to the genius of the Hindustani language. It may also be added that by giving a simple sign which indicates different vowels according to the position of outline he has made it possible really to use the principle of joining vowels in actual practice. In the matters of Diphthongs, however, he adopts the special signs provided for by Pitman for their indication.

We have not found any rules regarding the omitting of such consonants as are slightly pronounced in words. From this point of view the author does not make use of the principle of contractions. Of course, he uses it like others to form Logograms and Phraseograms.

He uses the principle of intersection and for the same purpose for which it is used by Pitman.

He uses the small loop to indicate the addition of certain sounds to the consonants looped. The sounds added under this system by means of this loop are स्त, स्ट, स्थ, ष्ट, त्य. In his answer to the Questionnaire he states that the most frequently combining consonants in Hindustani are :— स, य, र, ल, व, ञ, म, न. If this view be accepted, it may be understandable that a special provision be made for स. But it does not appear from his answer what frequency in the Hindustani language the sounds he selects for addition by means of this principle actually have. It appears to us that in this respect he has simply followed Pitman, and has given only a few resembling sounds to be added by means of this loop. He uses the large loop to indicate the addition of the स्त्र or स्तर or स्ट्र or स्टर or स्थर. Here again he has not stated what frequency these sounds have in the Hindustani language, and it would be too much to assume that he selected these sounds in order to remain faithful to the principle of frequency which he has made the cornerstone of his system. It appears to us that in the selection of these sounds he was simply following Pitman for these are but slightly varying modifications of the sound 'Str' which the latter added by the large loop.

This system also uses the circles both small and large. The small circle in this system indicates the स, ञ sounds—provided it is on the right side of the stroke and the sound ञ when it is on the left side of the stroke. The latter may be used

initially and finally but never medially. In curved strokes the त circle is enlarged to distinguish it from the स circle. The large initial circle on the right side of the straight strokes indicates the sound स्व. Moreover the स circle, if written like a sphere or a big dot, indicates सम or सन or सं. It is evident that the author has remained close to Pitman in the matter of the representation of स and स्व sounds. He, however, makes a radical departure about the indication of त by means of the circle. Moreover we would have liked to know what led the author to select स्व for being indicated by this special device. It appears to us that in this case also the author remained faithful to Pitman rather than to his own principle of frequency.

He also uses the hooks both small and large. The use of small hooks practically is the same as in Pitman except that the final hook by the left motion indicates य, and व instead of F.V. Moreover he indicates य, व in curved strokes by the addition of a special sign which is V. The न hook is used to indicate the nominative case termination ने and the terminal न, ना, नी, ने of the verbs while the य, व hook is used to indicate the terminal sounds या, यी, ये or वा, वी, वे. Thus he makes an attempt to use these hooks for the special needs of the Hindustani language also. The large final hook to the left side of a straight stroke of a verb indicates the future tense of that verb. Again the same large hook to the right side indicates the indefinite tense of the verb. Thus the author has tried to make a special provision for the different tenses of verbs of the Hindustani language.

Special devices and signs are used by him to indicate the words used as Prefixes and Suffixes. Provision has been made for the following words used as Prefixes:—

- | | |
|----------------|---------------------|
| १. प्र, परा | ११. वा |
| २. प्रत, प्रति | १२. वे |
| ३. अप, उप | १३. यथा |
| ४. अन, अनु | १४. सु |
| ५. निर, निरा | १५. अभि |
| ६. कप | १६. अप्र, अपर, अपरा |
| ७. हर | १७. उत |
| ८. हम | |
| ९. अत्र | |
| १०. वि | |

The following words used as Suffixes are provided for :

१. अर्थ, अर्थी	१३. पति	२५. वान
२. आगर, गार, गृह	१४. पन	२६. वाहा
३. आलय	१५. पूर्व	२७. वाला
४. कर, कार	१६. पूर्वक	२८. सागर
५. कारी	१७. प्रद	२९. साजी
६. कारक	१८. बीन	३०. सार
७. खाना	१९. मान, मानी	३१. शील, शाली
८. गुना	२०. मन्द	३२. हट
९. जनक, जान	२१. रूप, रूपी	३३. हर, हार, हारी
१०. स्व, त्व	२२. वट	३४. हीन
११. ना	२३. वां	
१२. नामा	२४. वाद, वादी	

A review of these shows that the author has tried to include the Sanskrit prefixes and suffixes even though he does not seem to have done so very scientifically.

Another special provision is for the representation of various tenses and moods of the verbs. For example he would use the ळ hook to indicate ले, लूंग etc.

Again if the circle स does not end on the line, but is projected a little through it the sounds गां, सां, शों, सों, सन, सान, शन, शान are added to the consonant to which the circle is given. Similarly if the loop instead of ending on the line is projected a little through the line the sounds न, ना are added to the स्त sound which in its turn is added to the consonant looped.

When the loop is added to verbs it indicates the addition of ता or था sound to the consonant looped on the left side, ता है on the right side. A fine dot opposite or below the consonant stroke denotes the plural of the nouns and the verbs. He denotes the frequent ही with a light tick and भी with a heavy tick. He also makes provision for the representation of the case terminations, का, की, के, को, भे, पर, से.

He has prepared quite a good number of logograms and phraseograms. A review of these reveals that he has made provision for all kinds of words and phrases. These seem to have been selected with care and skill.

The Hindi Sanket Lipi by Shri Vishnu Datt Uniyal is another adaptation of Pitman system to the Hindustani language. The author in his answers to the Questionnaire stated that this system is being taught by him privately to some students at Almora. He claims that a speed of two hundred words per minute can be reached by a student who learns shorthand according to his system.

This system uses the Shorthand Script devised by Pitman but with slight modifications. He changes the symbols assigned by Pitman to M, N, Y, W, H, Sh, S, R, the change consists mainly of the interchange of symbols between these consonants. Thus Pitman's curved symbol for R is assigned by this system to N and Pitman's straight symbol for R is assigned by it to M. Again Pitman's symbol for N is assigned by it to ण and the former's symbol for M is assigned by the latter to R. The symbol assigned by Pitman to NG is assigned by this system to ङ and the former's symbol for Sh is assigned by the latter to ष while the symbol for F is assigned by the latter to श, ष, ण. Apart from these interchanges of symbols, the system gives an alternative symbol to the ण group of Hindustani consonants and this alternative symbol is the one assigned by Pitman to S group. The author does not give any reason why he considered to make these interchanges. In the answer to the Questionnaire he states that he has avoided the use of such symbols as can be written in a number of directions. He has done so in order to "secure facile outlines, high speed and the avoidance of any exceptions in regard to the joining of the dependent consonants." By dependent consonants he means certain single consonants and conjoint consonants which are found joined to other consonants of the Hindustani language. But this does not show the reason why he should have interchanged the symbol of N and R.

The Mahapranas of the Hindustani language he represents by adding a small tick to the Non-Mahapranas letters of the group concerned. It is, however, quite possible that this tick may prove to be a source of great confusion in actual transcription for the joining of such symbols would not always be an easy affair. It is also likely to have an adverse effect on the speed.

This system makes use of the principle of thickening and for the same purpose for which Pitman uses it.

It also makes use of the principle of halving to add the sound ण or ञ or ङ or ञ to the consonant halved. In this respect the author seems to be following more or less Rishi Pranali discussed above.

This system again uses the principle of doubling for the addition of the sounds तर, टर, दर, डर, दार. In this respect the author is following Pitman and the other Hindustani Shorthand systems discussed above. He gives no reason why he selected these sounds for being added by means of this principle.

The author uses the principle of position-writing for the indication of the vowels and practically in the same way as is done by Pitman. The vowels for which he makes provision are अ, आ, अं ; ए, ऐ, ओ, औ ; इ, ई, उ, ऊ the first group being written on the first position, the second group on the second and the third on the third position. The symbols and provision for Diphthongs and Diphthongs followed by a vowel are practically the same as those in Pitman.

The principle of contractions for the purpose of deleting from the word outline certain lightly sounded consonants in any word is not used by this system, for nowhere is this discussed in the manuscript.

He uses the principle of intersection to indicate pairs of words which may consist of a word repeated twice or of a word and its antonym, or of a word and another used to emphasise the first or of a technical word and its accompanying adjective.

This system uses small loops. The small loop indicates the addition of the sounds स्त, ष्ट, स्व. It is plain that in this respect also this system does not make any fruitful contribution to the Hindustani Shorthand art.

This system also uses circles both small and large. The small circle indicates स or श or य or ज as the case may require. The large initial or final circle indicates ह. This is a departure from Pitman. The author however does not give any reason for this important departure.

Again this system uses hooks small and large. The initial small hooks in straight strokes are used to add the same sounds which Pitman adds by them that is र and ल. The small initial hook in the curved strokes, if given a small tick indicates ल. A large initial hook by the left motion indicates the addition of स्व before the independent consonants. Again an initial hook by the right motion indicates व after the consonant hooked. In other words these initial hooks are used to indicate mostly the conjunction of य, र, ल and व to the other consonants. It may be stated that these three letters

join other consonants quite often and special provision for indicating them is quite justified. But in this respect the author has not made any original or significant contribution of his own.

The final small hook by the left motion indicates न. The large hook at the end indicates ञ, ष, सन. In both these respects the author closely follows Pitman. The final small hook by the right motion indicates त and in curved strokes the न hook when given a tick indicates त. The author indicates the ता, ती, ते and ना, नी, ने terminal sounds of the Hindustani verbs by the त and न hooks respectively. Further if the verb is followed by any of the several forms of the verb हो the न and त hooks are also deleted. Thus the author seeks to use the hooks according to the genius of Hindustani. But here again it may be noted that he does not make any original contribution in this respect either, for such an arrangement had already been made by the Rishi Pranali.

The author provides for the indication of initial व or व by means of a small semi-circle. Again he indicates the initial न by a special sign √ and initial म by Λ. He provides that a word when repeated twice may be indicated by putting z after the outline of the first word.

The author has prepared a number of logograms and phraseograms. The words selected are such as are frequently used in various walks of life. But the number of these does not appear to be quite adequate.

The 'Hindi Shorthand' is an adaptation made by Shri Mathura Prashad, Principal, Commercial Institute, Muzaffarpur, Bihar. The author does not state whether his system is being taught in any educational institution or not. No one appeared on his behalf in the test. He had not sent his manuscript in time and we were not in a position to judge whether his system was worth testing. On our writing to him he agreed to send his manuscript. A brief review of this would show that he has nothing new to contribute.

He uses the Pitman Shorthand Script as modified by the Nishkam Pranali. He only gives special signs for ह and व which are , and √ respectively. He uses the thickening principle for the same purposes for which Pitman uses it.

The halving principle is used by this system to all न or ढ to the consonant whether medial or final, which has been halved. The consonant, the symbol of which is thin and न to itself and that of which the symbol is thick and ढ to itself.

It uses the doubling principle to add न, नी, ने to the last consonant of the word and ट or ड to the consonant whether medial or final. It may be added that this use of this principle is exactly the same as that made by the Nishkam Pranali.

The author does not indicate if he would use the principle of position writing in his system. In fact provision for the indication of vowels is not given fully. He indicates that there are three positions on which the vowel marks can be given, and that the particular mark in the first position indicates the first vowel of a particular group, and that in the second it indicates the second vowel of that group, and in the third position it indicates the third vowel of the group. But he does not go further and does not provide for the indication of the vowel from the position in which the outline of a word commences. It appears that he has not worked out his system in all possible details.

The provision for Diphthongs and Diphthongs followed by vowels is given and is almost the same as that of Pitman.

We are not in a position to say whether he provides for the principle of contractions and intersections in his system or not.

The system makes use of the loops small and large and almost exactly for the same purposes for which the Nishkam Pranali uses them.

The system makes use of the circles—small and large and this is also the same as that of the Nishkam Pranali.

The large circle is used for the same purpose for which it is used by Pitman and the Nishkam Pranali. He also would indicate the plural number by carrying the end of the circle a little beyond the line instead of resting on it.

The small initial and final hooks are used almost in the same manner in which Nishkam Pranali uses them. The only difference appears to be that the initial large hook in curved stroke indicates ञ.

We are not in a position to say whether he makes special provision for prefixes and suffixes or not. But he makes a provision for the indication of verbal terminations and case terminations. But these are exactly those given by the Nishkam Pranali.

There are a few Logograms and Phraseograms, but these do not appear to have been worked out in such numbers as to be adequate for the needs of the Hindustani language. On the whole it appears that this is but a pale version of the Nishkam Pranali.

“Shri Suksham Lipi” is another Hindustani Shorthand system. It has been devised on the basis of the Pitman system by Prof. Nanak Sharan Nigam of the Dayanand College, Cawnpore. He sent his manuscript very late. We were not aware of his work in this sphere and therefore, the question of his being invited to send his representatives to appear in the test did not arise. He has, as a matter of fact, devised this system very recently and naturally he has not been able to test its efficacy by actual practice. We consider it proper, however, to give a brief statement of its main features.

It uses the shorthand script devised by Pitman. He however adds three new symbols for ड, ञ and ण and these are

Ω, ∩, U respectively. Further he makes some changes

in the symbols for व, र, ल, व. He uses Pitman’s symbol for l to indicate the Hindustani व. He thickens the symbol for व and indicates ल. Again he does not use Pitman’s straight symbol for र. The curved symbol for र he thickens for व. He indicates ह by thickening the symbol for स and ञ is indicated by the thickened symbol for ञ. Again he allots Pitman’s straight stroke for R to the ट group of the Hindustani consonants. The device for the representation of Hindustani Mahaprana letters is the same as that of the Nishkam Pranali. The author does not state the reasons why he has decided to introduce any changes in Pitman’s assignment of symbols to the different consonant group.

The author uses the principle of thickening and for the same purpose for which Pitman uses it. But it appears to us that his use is not as scientific as that of Pitman. He indicates व by thickening the symbol for र. But there is no affinity between these two. Similarly he indicates ह by thickening the symbol for स but here again there is not much affinity between the two.

He uses the principle of halving to add or व, द or ष sounds to the consonants halved. If the consonant halved is thin ण or ष are added to it, if it is thick द or ष are added to it. This is what some systems discussed also provide. There is thus nothing new in this respect.

Again, he uses the principle of doubling to add the sound र to the consonant doubled. This is a radical departure from all other systems. The author says that he has made

this use of the doubling principle because the τ hook cannot be used under his system in the medial position for fear of being confused with the symbol for the vowel अ. The use of doubling principle for adding τ practically adds very little to speed. Moreover it would create confusion in the mind of the stenographer for he would have to decide each time whether he should use the τ stroke or the doubling principle. But in Hindustani τ occurs quite frequently in the medial and final positions. It appears to be desirable that there should be a special device to indicate it in these positions and this, it is evident, could not be done by means of a final hook.

This system departs very radically in the matter of the indication of vowels. It does not do so by means of position writing or by putting the vowel marks in the three positions which Pitman gives in relation to a consonant symbol. On the contrary it accepts unreservedly the principle of joining vowels to the consonant. It prescribes, however, some rules how a particular vowel mark would represent the vowel अ or इ according to the position in which outline of the consonant to which the vowel mark is given commences. Thus he prescribes that a small straight line represents the vowel अ if it is joined to the consonant whose outline begins or rests on the line, but this very mark represents इ if the consonant to which it is joined commences or rests a little above the line, and it represents उ if it is joined to a consonant whose outline intersects the line. Thus an attempt is made by the author to make position writing the basis of the principle of joining vowels to the consonants. But the mark given above cannot easily be joined to horizontal strokes. We are afraid that difficulties of this type would arise in the case of the other vowel marks given by him. In the first place in high speed writing it would not be possible to keep these marks distinguishable from other strokes, and in the second place it would not be possible to join them to the consonant outlines. There is likely to be a considerable retardation of speed if these marks are actually used. It appears that it was to avoid this kind of difficulty that the Sloan Duplicoyan system prescribed circular marks for the indication of vowels. We may, however, indicate the different symbols he prescribes for the vowels.

These are as follows :—

अ, इ, उ—used in reference to position writing.

ई ऊ ए ऐ ओ औ अं

U ∩ ^ O .

given separately to the outline of the consonant.

From these signs it is clear that it would not be easy to write them in high speed writing.

This system uses the principle of contractions for shortening the outlines of the words when the full outline would be bad. But it does not make provision for the deletion of such sounds in a word as are lightly pronounced. The principle of intersection is used for the same purpose for which Pitman uses it. Moreover he also indicates by this principle such pairs of words as frequently occur in the Hindustani language. For example the pair **सोच विचार** would be indicated by intersecting the last consonant of first word by the first consonant of the second word.

This system makes use of the large loop to indicate the addition of **तर** or **तार** or **दर** or **दार** or **धर** or **धार** to the consonant looped. If the vowel **आ** or **ई** intervenes between these sounds and the consonant it is indicated by a dot put in the centre of the loop, and if the vowels **ऊ** or **ए** occur they are indicated by a small line in the centre.

This system uses the circle small and large. The small circle is used for the same purpose for which Pitman uses it. The large circle as already stated is used to indicate the vowel **ओ**.

This system uses hooks small and large. The initial small hook indicates **र** and the initial large hook **ल**. This is slightly different from Pitman, but is not such as to make the system more adaptable to Hindustani language than it would have been otherwise. The final small hook indicates **न** and the large hook **ह**.

The system makes some special provision for the indication of verb terminations. The provision made is for:

ऊंगा, वेंगे, हूंगा, एगा, एंगे, होएगा, होएंगे, होवेगा, ओगे, होगा, होगी, हगे, होंगे, होंगी.

The feminine gender of the verbs is indicated by giving the vowel mark for **ई**. Again he gives a special mark for the initial or terminal **ना**. He makes provision for the words used as prefixes and suffixes. The following words used as prefixes are provided for :--

१. के •
२. सम, सं

३. व्य

The following words used as Suffixes are provided for
४. ६.

The system gives a few logograms and phraseograms. But as was to be expected these are very few.

This system is still in the stage of formation, and naturally its potentialities cannot be accurately judged. But we have grave doubts about the success of the device of joining all vowels in the initial, medial and final positions as is suggested, with exceptions of course, by this system.

“The Sharma Sanket Lipi” is a Hindustani Shorthand system formulated by Shri G. M. Gokhale of Ghasitola, Banares. The author sent his manuscript rather late, and we could not consequently request him to send his representatives to appear in the test held by the Committee. The fact of the matter is that his system is still in the formative stage for he has sent another manuscript supplementing and correcting the first one he had submitted to us. It is plain that his system is not being taught in any institution. If, at all, the author may have given a few private lessons to some students. It cannot, therefore, be said that the system has passed the stage of formation. We give a brief review of this system to indicate its main features.

It adopts Pitman’s Shorthand Script for indicating consonants, but does so after considerable modification. In fact it completely changes the Pitman’s assignment of symbols to the different consonant groups. Thus Pitman’s symbol for Ch is used by this system for क, the former’s symbol for T is used by it for च, the former’s symbol for P is used by it for ट and the former’s symbol for N is used by it for ण, the former’s symbol for Th is used for स. Apart from these even some symbols used by Pitman are altogether omitted by this system, and in their place some new symbols are used by it to indicate the remaining consonants.

It gives a special symbol for the Marathi क as also for क्ष, ज्ञ. Apart from these changes and additions it indicates the Hindustani *Mahapranas* by placing a small dot above or below the middle point of the stroke. Further if the *Mahaprana* consonant occurs at the very beginning it is to be indicated by the addition of an initial small circle to the *non-Mahaprana* consonant of that group. Further it indicates the unaccented (Halant) consonants by putting a small dot against the terminal point of a stroke. An attempt is thus made by this system to make a special provision for the frequently occurring unaccented consonants of the Hindustani language.

Further it provides that when two consonants coalesce, the fact of coalescence is indicated by giving a dot against the point on which the consonant symbols meet to form an angle. It appears to us however that this device would not prove of any great practical use for in high speed writing it would not be possible to give that dot at the place indicated. The author asserts that the symbols have been so devised that the consonants which occur very frequently should have as simple symbols as possible. According to him त्र is very frequent and has, therefore, been assigned the stroke that can be written most easily.

This system uses the principle of thickening for the same purpose for which Pitman uses it, but of course, with an important modification. It does not indicate the heavy consonant of the त्र and वृ group by means of the principle of thickening. On the contrary it assigns special symbols for them.

It also uses this principle to indicate र by thickening the symbol of र. In the first manuscript the author provided that thickening of a symbol except those of र and त्र indicated the addition of र to it. But this principle has been dropped in the second manuscript sent to us. Again it is not explained by the author why he considered it necessary not to use this principle for the त्र and वृ groups of Hindustani consonants. The order and symmetry which Pitman maintains is lost on account of this exception made by the author to the principle of thickening.

This system does not use the principle of halving. This system uses not only the principle of doubling but also the principle of trebling and quadrupling. If a consonant of क, च, ट groups is doubled it indicates its repetition or the addition of र to it. The symbols of other groups are only to be thickened for the addition of र. Trebling a consonant of क, च, ट groups and doubling of other signs indicates the addition of य or doubling of the consonant. Trebling of a consonant other than क, च, ट groups indicates में, ना, नी, ने finally and quadrupling a consonant other than the first three groups implies the addition of त्र, ह to it. It is plain that the system makes an attempt to use these principles for the peculiar needs of Hindustani. It will be very difficult to remember all these rules and exceptions.

Moreover, the author provides that when two strokes written in the same directions are to be joined they should be joined with a slight bend at the point of joining. Thus क, क,

(क) should be written as Evidently this is done to

avoid confusion between a quadrupled stroke and an outline which a number of consonants written in the same directions have joined to form. It appears to us, however, that the device is not likely to prove of much use inasmuch as the time taken to treble and quadruple a stroke will not be less than the time taken in indicating the word by the ordinary strokes. Further it appears to us that it would be difficult to maintain the nice distinction between the trebled and quadrupled strokes as well as it seems impossible to write trebled and quadrupled strokes within a limited space found out on a ruled paper.

The principle of position writing is used by the author but in a radically different manner than that of Pitman. This difference arises because the author accepts the principle of joining vowels to the consonants.

He makes use of position writing to indicate the vowels that have been left out from the word outline. There are four positions according to this system. The first above the line, the second on the line, the third through the line and the fourth below the line.

The author divides the vowels into four classes, and that vowel of each class would be deemed to have been omitted according to the position of the consonant concerned. He uses circles, loops and hooks to indicate the vowels and prescribes for their being joined to the consonants. But he realises that barring the initial vowel, the others can be left out of the word outline in high speed writing.

The author provides for the deletion of such consonants as can be guessed even though they have not been indicated in the word outline. It may thus be said that, in a way, this author also accepts the principle of contractions understood in the sense that slightly pronounced consonants are to be dropped from the word outline. Of course, he also uses the principle of contractions in the wider sense of the term as well, that is, to form phraseograms and logograms.

The author uses the principle of intersection and practically for the same purpose for which Pitman uses it.

The author makes use of the loops—small and large : to indicate the vowels उ and ओ respectively. When the initial vowel is left out the उ loop indicates the addition of ँ, ऋ by the right motion and ऀ or ड by the left motion. Similarly the ओ loop is used to indicate the addition of ः or ण by the

right motion and ज, ङ by the left motion. When thickened these consonants in such cases also add 'Anuswar' to the प, फ, ग, घ as the case may be. Similarly this system uses the circles small and large to indicate the vowels अ and ए and ऐ respectively. A small circle given to the consonants क, ट, त, न, म, प, स, व, ल in the direction opposite to that in which it is given for indicating vowels indicates the figures from 1 to 9 and zero. When the initial vowel is left out the circle ए is used to add स, ष by the right motion and द, ध by the left motion to the consonant, that follows. Further if this circle is thickened the 'Anuswar' is added to स, ष, श. Similarly the ऐ circle is used to indicate the addition of म by the right motion and य by the left motion. When it is thickened the 'Anuswar' is also added to the म or य as the case may be.

Again this system uses hooks to indicate vowels as also consonants. The hook is used to indicate the vowel. This hook may be initial or final. Rules are given how it is to be joined to the straight and curved strokes. When the initial vowel is left out the ह् hook is used to indicate the addition of र by the left motion. The large initial hook is used to indicate the addition of ल by the right motion. When these hooks are thickened the 'Anuswar' is also added to र or ल as the case may be.

Thus the author seeks to use the circles, the loops and the hooks for indicating vowels as also the liquid and coalescing consonants. But we are afraid that this double use is likely to prove a source of confusion, notwithstanding the rules of position writing given by the author. In this connection we may add that the fourth position suggested by the author would be a source of endless confusion for no one would be certain whether the outline in the fourth position was related to the line above or to the line below. It may be very fine to suggest such devices but we are afraid that these devices would break down in actual practice.

This system also makes some special provisions for the indication of prefixes and suffixes and words used as such. Prefixes provided for are the following :—

- | | |
|-----------------------|---------------|
| १. नि, निस, निर, निरा | ८. उप |
| २. सु, सह, सा | ९. परि, पलि |
| ३. अन, अव, अप | १०. काम, कान |
| ४. सम, सन, सं, संग | ११. यथा |
| ५. प्र, प्रस, पर | १२. महा |
| ६. अति, अधि, अन् | १३. व, वे, वा |
| ७. अन्तर | १४. स्वयं |
| | १५. स्व |

Here again the author makes use of circles and ticks among his special signs. It appears to us that this use of the circles and the ticks, which are used for other purposes also, is likely to prove a source of confusion and errors in transcription.

The following suffixes and other words are provided for :

१. हारा, हारी
२. वाली, वाला
३. बट, हट
४. ता, त्व
५. आव
६. जाति
७. तय
८. मान, वान
९. अवस्था
१०. पूर्वक
११. आत्मक
१२. उत्पादन
१३. कारक
१४. रहित
१५. दायक
१६. प्रकार
१७. दल
१८. समिति
१९. लीग
२०. विभाग
२१. बिल
२२. सम्भव

The author also gives some special signs for indicating the following verbal expressions :

- | | |
|--------------------|------------|
| १. रहा था, रही थी, | ३. डालेगा. |
| २. लगा, लगी, लगे, | |

Again he makes special provision for the following sounds often found in Hindustani language :

- | | |
|------------|-----------------|
| १. से | ५. तरह |
| २. से, में | ६. तीरपर |
| ३. ने, से | ७. ने, के, दिये |
| ४. ने, में | ८. ने, वाला |

Again he provides that to indicate the immediate repetition of a word, a line or as many lines as the number of times it is repeated be given below it :

A dot given after the word outline indicates the addition of रहा है, रही है, रहे हैं, रहा हूँ and the symbol र in that place indicates that रहा था, रही थी, रहे थे, होता है, etc. follow

the word. It may be added that the author provides for the use of the dot in the same position for other purposes also. We are afraid that this would open out the way for confusion and errors in transcription.

The author also gives a number of Logograms and Phraseograms. But these are, as could be expected, very few in number. We feel that the author has made an ingenious attempt to combine the principles, of position writing and joining vowels but ultimately it amounts to nothing more than the joining of initial vowels to the consonants for he himself provides that in high speed writing the medial and final vowels are to be omitted. But the joining of initial vowels could be provided for otherwise as well, and there appears to be no need to impart the amount of confusion that is likely to arise from the complexity of this system.

Shri P. N. Moholkar, Tilak Chowk, Katyan has sent to us a very small manuscript containing what he calls his Hindi Sheeghra Lekhan. We need not say much about it, for the author himself does not consider it proper to give his system, if one may call it so, in all its details.

He adopts the shorthand script devised by Pitman but with minor modifications and additions. He indicates the *Mahapranas* by giving a dot a little apart from the letter and near its middle position.

He uses the principle of halving to indicate the addition of 'Anuswar' or the unaccented consonant, but this rule is not followed in the case of क group of consonants.

He uses the principle of doubling to indicate the addition of ञ or ञ to a consonant or a vowel.

It is not clear whether he would use the principle of position writing for any purpose or not. He adopts the principle of joining vowels and gives special signs for the vowels अ, आ, इ, ई, उ, ऊ, ए, ऐ, ओ, औ, अं, अः. But he does not say whether these are to be joined in all positions or not.

It is not clear whether he would make use of the principles of contractions and intersections or not.

He makes use of the loop to add य to the consonant looped.

It is not clear whether he would use circles to indicate the addition of any consonant or not.

He uses the final small hook to add ण or ञ and the large hook to add ञ.

He indicates the addition of τ to any consonant by means of a tick which intersects the consonant in the middle. Again a tick at the end of a consonant indicates its repetition. ξ is also indicated by a small tick near the symbol.

He gives some logograms and phraseograms but as could be expected these are extremely few in numbers.

The other system of English Shorthand which has formed the basis of a number of Hindustani Shorthand systems submitted for our consideration is the Sloan Duployan system. This system practically uses the same symbols which Pitman uses, but its assignment of these symbols is considerably different. This assignment may be explained here. The three figures from which the symbols are derived are :

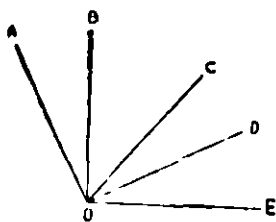


Fig. 1

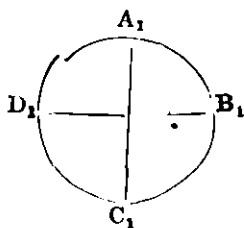


Fig. 2

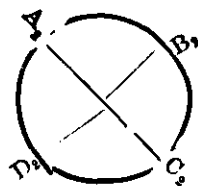


Fig. 3

Sloan assigns AO to FV group, BO to PB group, CO to KG group, DO to LR group and OE to TD group of consonants. The first consonant of the group is indicated by the stroke of the normal size while the second of the group is represented by the doubled stroke. When of normal size, A_1D_1 indicates W, D_1C_1 SM, A_1B_1 ST and B_1C_1 Q. When doubled these strokes indicate respectively Y, SW, SST and SK or SKM. These are downward strokes. But A_1D_1 and B_1C_1 are also written upward. When these are upward strokes they indicate TS and SP respectively. When doubled they indicate DS and SL respectively. When of normal size A_2B_2 indicates M, B_2C_2 S, A_2D_2 H, and D_2C_2 N. When doubled these indicate MM, SS, Ch, and NG or ND respectively. Thus the Sloan shorthand script gives symbols not only for the ordinary consonants but also for such conjunct consonants as have a high frequency in the English language. Sloan had to make this arrangement because he uses the circles, hooks and loops for other purposes.

This system uses the principle of thickening but only to add "R" either initially or medially or finally. Strokes derived from the Fig. 1 and Fig. 2 when thickened add a final R to themselves. Symbols derived from Fig. 3 except the

doubled symbol B_2C_2 , when thickened add an initial R to themselves while the doubled symbol B_2C_2 when thickened adds a R in the medial position. Moreover medial R is also added to the two upward strokes, *i.e.* TS and DS, when these are thickened. Thus it is evident that Sloan's use of the thickening principle is to add R to other single or conjunct consonants. In English the frequency of R is very high and consequently the use of a special device for indicating its addition is justified.

The principle of halving is not used in this system. The principle of doubling is used to indicate the heavy consonant of each group as also to indicate certain conjunct consonants, and also to indicate the repetition of certain consonantal sounds.

This system has no use for the principle of position writing. Sloan takes it for granted that vowels are as important in any word as are the consonants. It does not, therefore, provide for the omission of vowels or their being put separately from the consonants. On the contrary it provides for the joining of the vowels to the consonants.

This system makes use of the principles of contractions and intersections—the latter being on a very limited scale.

It also gives special signs for the indication of prefixes and suffixes and finally it gives Logograms and Phraseograms. The principles on which the last two are constituted is that the outline of the logogram or phraseogram should contain, in whatever small size it may be, the basic symbols that would otherwise be added to indicate the word or phrase in full.

The Sloan system claims that it has certain advantages not possessed by others. It can be written even on unlined paper. Moreover the strokes being mostly curved these can be written with a fluency with which they could not be written otherwise. Above all it claims to avoid all possibility of confusion or errors in transcription as it joins the vowels to consonants.

This system makes use of hooks, loops and circles but only for the indication of vowels. If, however, these are written in an opposite direction to that in which they are to be normally written, they also add an initial R to themselves.

The Hindustani adaptations of this system which have been submitted for our consideration may be examined under two heads:

1. Printed and Published Books.
2. Manuscripts.

(1) Under this sub-head the following two books have been received by us:

- (i) Hindi Ashu Lipi by Shri Kedar Nath Chaubey.
- (ii) Rashtriya Hindi Shorthand by Shri Siddheshwar Nath.

(2) The following manuscripts have been received by us:

- Sarala Hindi Ashu Lipi by Shri Narayan Das Khanna.
 Hindi Sanket Lipi (Nigam Pranali) by Dr. M. S. Nigam, Delhi.
 Hindustani Shorthand by Ram Sharan Prasad.

We shall briefly state the main features of these adaptations.

The Hindi Ashu Lipi.—Adopts the Shorthand script of the Sloan Duployan system but with a slight modification. Sloan Duployan's symbol for V is used by this system to indicate व, the former's symbol for SK for सक and the former's symbol for SH to indicate ह. It indicates the Hindustani Mahapranas by giving a dot a little apart from the non-aspirate consonant of the group.

This system, however, does not give any special symbol for the ष group of Hindustani consonants. The ष group is indicated by an additional dot placed below the symbols assigned to the ष group of the consonants. This dot cannot be maintained in high speed. We are afraid that this is likely to create confusion in transcription.

This system uses the principle of thickening exactly as it is used by the Sloan-Duployan system.

Again it uses the principle of doubling also exactly as Sloan-Duployan uses it.

There is no position writing in Sloan-Duployan system, but this system uses position writing to a very limited extent and for the purpose of indicating the addition of an initial र to consonants to which ordinary thickening adds a final र. Thus it is provided that if र is to be added initially to such consonants the vertical and inclining consonants should be written through the line and the horizontal consonants under the line. The curved strokes which normally add final र to themselves should also be written intersecting the line if it is intended to add र to them.

This system makes use of the principle of abbreviations in the same way as it is used by the Sloan-Duployan system.

It does not make any use of the principle of intersections.

It gives four special symbols like those of Sloan-Duployan to indicate certain part sounds of words. इन, इम, ईन, ईम, ऐ, अन, अं, आन, आं, आन, आं, आम, अंग, अंज and अन्त are indicated by the Downward symbol () while the upward symbol indicates उन, उम, ऊम, ऊं, ऊं, ऊं, ओन, ओम, ओ, ओन, उन्त, उन्द.

These sounds have been accepted by the author to remain close to the Sloan Duployan system and not because he had formed a conclusion that they are frequent in the Hindustani language. But he does say that in practice he has found that these symbols help considerably in increasing the speed of a Hindustani Shorthand writer for one comes across the sound indicated by them quite often in the Hindustani Language. This assertion, however, does not appear to us to be a sound one.

It is also provided that if the symbol for आ is added to these special symbols they indicate आइन, आइयां, आऐं, आऊं.

The system makes a special provision for the indication of certain Hindustani Prefixes and Suffixes and words used as such. The following Prefixes or words used as such are specially provided for :

१. अय, अरु, अश, अक, अख, अग, ओप
२. अप, अमि, अमी, अव, अवि, आव, अवा, आवा, इव
३. अधि, आधु, अधो, अद, अदा, उद, अदावत, अदालती, अधम, अधिकार
४. अन्त, इन्त, इन्द
५. आत्म
६. हर, हरा, हरी, ऐरे, आरी, अरा
७. उप, उपा, उत
८. कु, को, कल, कान, कन, काम, कम, काम, कह, ख, खुल, खिल, खान, खाम
९. मृत, मत
१०. टक, तक तिल
११. डिस्ट्रिक्ट, डिस, तव, तस, तक, ताज, पॅस, पेस
१२. तर्ज, दर्स, तर्स
१३. दस्त
१४. नम, नाम, नव, मिस, निस, निम्न
१५. प्रति, प्रतिभा

१६. मज, मज्य, मस, मश
 १७. विव, व्यय, विप, विभ
 १८. मुम, सर, सर्व, सार्व, स्व, सब, जेर
 १९. मुल, मिल, मिस्ल

The following suffixes or words used as such are provided for :

- | | |
|--------------------------|------------------------------|
| १. जाय | २५. वाजी, वासी, भाषी |
| २. जावे | २६. भाषा, भाषी |
| ३. जाऊं | २७. सूचक |
| ४. जावें | २८. वासियों |
| ५. जायेंगे | २९. वाल |
| ६. जावेंगे | ३०. वाला |
| ७. जायेगा | ३१. वाली, आली, वाले |
| ८. जाना, जाता, जाया | ३२. जनक |
| ९. जाने के बाद | ३३. दस्त |
| १०. जाने पर | ३४. वस्ता, दस्ता, जा सकता था |
| ११. जाया करता | ३५. दस्ती |
| १२. वक्त, वत, वट | ३६. सकेंगा |
| १३. बात | ३७. सकेंगे |
| १४. जाति, जाती, वती, वटी | ३८. करने के लिये |
| १५. जाता था | ३९. कराने के लिये |
| १६. जाती थी | ४०. उन्मुख |
| १७. जाओ | ४१. नशीन |
| १८. वान | ४२. तः |
| १९. बाद | ४३. नामा |
| २०. वादी | ४४. बद्ध |
| २१. नाक या आत्मक | ४५. पा, शील, शीलता |
| २२. पूर्वक | ४६. बाजी |
| २३. बाज, वास, जा सकता | ४७. पूर्वक |
| २४. भाषा, शाली, शाला | ४८. तव्य, त्व |

It is evident that the author has mixed verb tenses and prefixes or suffixes indiscriminately. The Suffixes or Prefixes selected are on no scientific basis. They seem to have been picked up according to the fancy of the author. Moreover the vowel symbols are also used to indicate these prefixes. We are afraid that this provision, specially in cases in which the prefixes or suffixes are permitted to be joined to the word outlines, would be an endless source of confusion and errors.

Again it is provided by the author that if जाता था, जाती थी, जाते थे, करता था, करती थी, etc. are to be written, it is not necessary to write the full outline of any one of them but only to give a dot over the त symbol of each one of them to indicate that it is followed by था, थी.

This system also gives quite a good number of logograms and phraseograms. It was claimed by the author that these were prepared on the principle that the abbreviated outline should contain, so to say, in germ form the outline of the sounds in the grammalogue or the phrase for which any logogram or phraseogram as the case may be, was meant. But we do not feel that the germ can be easily detected and we feel that these would have to be remembered by heart. Of course the words and phrases selected reveal that the author has kept in view the need of providing for the words whether of Persian, Sanskrit, or English origin, that are now current among the literate people of the country.

The author himself appeared in the test held by the Committee and the result achieved by him is given in *Appendix E*. He does not state whether this system is being taught anywhere or in any institution. We may assume that he had no student of his own who could appear from the fact that he would not have liked to appear in the test if he had any. This assumption finds support from the fact that his system has been brought out only very recently that is, in 1948. It is, therefore, a system the potentialities of which have not as yet been tested in practice.

Another adaptation of the Sloan Duployan system for Hindustani is contained in the book *Rashtriya Hindi Shorthand*. Its author Shri Siddheshwar Nath is a Reporter in the Criminal Intelligence Department, Bihar. He has brought out his book in the year 1948 to meet the rising demand for Hindustani Shorthand. He does not state whether this system is being taught anywhere. But he does claim that his system is being used by the C.I.D. Bihar, and the Bihar Legislative Council Reporters. The result achieved by his representatives in the test is given in *Appendix E*.

The main features of his system are the following :

He adopts the Sloan Duployan shorthand script with slight modifications. He assigns the latter's symbol for F-V to ह and ज respectively. The latter's symbol for Q is assigned by this system to अघ. The Hindustani Mahapranas

are represented by a dot given a little apart from the unaspirated consonant of the same group. The principle of thickening is used to indicate the addition of र in exactly the same manner as is done by the Sloan Duployan system.

The principle of halving is not used at all.

The principle of doubling is used exactly as Sloan Duployan system uses it.

It gives the same vowel symbols as are given by the Sloan Duployan system and joins them to the consonants. Again like Sloan Duployan system, if the vowel symbols are given in the direction opposite to that in which these are ordinarily given, र is added before the vowel. It makes no use of position writing, and is thus strictly speaking closer to the Sloan Duployan system than the 'Hindi Ashu Lipi' of Shri Kedar Nath Chauley.

It does not make any use of the principle of intersection. It uses the principle of contractions and in the same way as is done by Sloan Duployan.

The loops, the circles and the hooks are used for vowel indication, and not for the indication of consonants that frequently coalesce with others. The only exception, and it has already been stated, is that if these marks are written in a direction outside to that in which they indicate vowel they also indicate the addition of र before the vowel which they indicate.

The author gives the four special small symbols given by Sloan Duployan and uses them practically for the indication of the same sounds. Thus the down strokes indicate आन, एन, इन and the upward strokes indicate the addition of अन, ओन, औन. Moreover if a word ends in अम, अम, औम the symbol for अन is used to indicate these terminal sounds. Again if the word ends in एंगे, एंगी this sound is indicated by giving the symbol for इन below the outline of the remaining word, and if the terminal sound is ऊंग it is indicated by the symbol for अन written below the outline of the words. They indicate the addition of स also. Again if अ or आ are reversed in joining to a consonant it indicates आऊ.

It also makes provision for the part words added in the beginning or at the end of words to give a new meaning

The provision made for Prefixes and words used as such is for the following :

१. उत, उप, उद, अभि, आव	१४. अन्तरं
२. सन, शन, सनस	१५. परिवर
३. कम, काम, कान, काल	१६. खुशामद
४. तव, तक	१७. बदतर
५. दर	१८. खास
६. सब, सम, सट, सभ्य	१९. खुशी
७. आन, अनु, अना, अत, मनो	२०. सुवि
८. ना	२१. जवर
९. शासन	२२. साधारण, सहानु
१०. न, व, ज, दा	२३. व्याय, बहु, व्यव
११. राज	२४. शोच, शव
१२. महत्व	२५. माननीय
१३. हिन्	२६. श्रीयुत

The author gives logograms and phraseograms but these are not very many. Of course, the words selected are of all types and such as are of frequent occurrence.

Hindi Sanket Lipi or Nigam Pranali is another adaptation of the Sloan Duployan system to the needs of Hindustani. The author does not say whether this system is being taught anywhere. Moreover he sent his manuscript rather late so that we were not in a position to judge whether he should be invited to send his representatives to appear in the test that was held by the Committee. This system, therefore, cannot be said to have passed the test of actual practice.

He adopts the Sloan Duployan Script but with slight modifications. He gives a new symbol for य, द and ह and indicates सव by the symbol which the Sloan Duployan system uses to indicate Y. Apart from this he indicates ण and ष by doubling the symbol for क and in addition giving a tick in the middle of this doubled symbol. He also seeks to distinguish ट group from the त group by giving a tick in the middle of the symbols for त group. The Mahapranas 'b' indicates by giving a dot a little apart from the symbols for the non-aspirated consonant of that group.

He uses the principle of Thickening and the principal of Doubling exactly as these are used by the Sloan Duployan system. He does not use the principle of halving, nor that is

position writing. Like Sloan Duployan he gives symbols for the vowels and provides that these are to be joined to the consonants. These symbols consist of loops, circles and hooks and consequently he makes use of these devices for indicating vowels only. He also adopts the principle that if the vowel mark is written in the reverse direction, it adds र also to itself.

He does not use the principle of intersection but uses the principle of abbreviations to form logograms and phraseograms. He has prepared some of them but evidently they are not very numerous.

He uses the special symbols as devised by Sloan Duployan system and to indicate practically the same sounds. Thus the downward strokes add: अन or एन or इन or उन or ओन or ऐन and also अम or इम or ओम.

He also gives special provision for words used as prefixes and suffixes. The following words used as prefixes are provided for:

१. अ, आ, अव, अप, अफ
२. अन, अम
३. अनु
४. मा, वि, वा, वी, वे
५. विद्या, वद, व्य, वर्त
६. दर, दुर, धर्म
७. द, दा, दल, दस, दुस
८. ना, निस
९. सा, शा, सब, सु
१०. सन, सल, सह, साही, सर
११. का, खा, कम, को, कल
१२. कुल, कु
१३. ला, लो
१४. अध, आध, अधि, अभी, अति
१५. यथा, या
१६. खुश
१७. राज
१८. हा, ही
१९. हम
२०. खिर, घरा, चार
२१. गैर, गर, गिर

२२. गा, गुल, ग
 २३. वर, वार
 २४. जीवन
 २५. मस, मध्यम, महा
 २६. मास, परि, प्रति, पर, परा
 २७. उत, उप, ओ

The following words used as suffixes are provided for :

१. माप, मंडल, भेद, भार
 २. सान, सागर, सार, साहब
 ३. पूर्ण, पूर्वक, पार्टी
 ४. पाल, पन, पति
 ५. सिंह, सरूप, साजी
 ६. नाट, नामा
 ७. गण, गुना, गुण, गाह
 ८. गार, आगार
 ९. शाला, शील, शाली, स्वरीय
 १०. दान, दल, दाता
 ११. दार
 १२. वाने, वानी, वादी
 १३. बहादुर, वन्त, वीन
 १४. दान, दायक, दास
 १५. हारा, पारा, हार, हीन
 १६. वारक, खाना
 १७. कार, कारी
 १८. वट, हट, हा, पट
 १९. तब, आर्थी, हायात
 २०. रूपी, रानी, डियाँ
 २१. आत्मा
 २२. लाल, लू
 २३. वाना, वाह, वार्च
 २४. वीर, वार, आवर
 २५. आसन, जाना, अंजन, अन्तर
 २६. आगए, ओगी, शोंगी, एंगे
 २७. ऊंगा, एगा, ओगा
 २८. आलू
 २९. स्थान
 ३०. आओ, आयेगा, आ ला, ओना

३१. इसी, इसा, एसा, एरा
 ३२. आई, यों, एया, ओ, अति
 ३३. हिद

A glance over these would show that no principle has been used to determine the selection of these part words. Moreover one common sign for each group would, instead of adding to the efficiency of the system, cause any amount of confusion in transcription.

“Sarla Hindi Ashu Lipi” by Shri Narayan Das Khanna is another adaptation of the Sloan Duployan system for the Hindustani Language. The author says that he has been teaching shorthand to his students for the last twelve years but he could not bring out a text-book of his system so far on account of some unforeseeable circumstances. He has now taken the permission of the present representatives of the Sloan Duployan system to publish the adaptation that he has made of their system. In his answer to the Questionnaire he states that he has recently started teaching students with the help of his system and claims that his students have reached a speed of 150 words within six months. Moreover he believes that a student working two hours a day will take about 3 months to pick up business correspondence and about 1 year to pick up journalistic reporting.

The author uses the shorthand script of the Sloan Duployan system but with slight modifications. Thus he assigns the Sloan Duployan’s symbol for F to Hindustani ज. Again he assigns Sloan Duployan’s symbol for T group to the Hindustani त group. He changes the Sloan Duployan’s symbol for Y and assigns to the Hindustani य a new symbol. He represents फ as could be expected, by giving a fine dot a little apart from the symbol for P. He assigns to श the symbol which Sloan Duployan gives for H while he assigns to स, the symbol which Sloan Duployan assigns to W. Again he assigns Sloan Duployan’s symbol for Y to Hindustani स व or स्व. He indicates सन by giving a tick and सः by giving a dot to the Sloan Duployan’s symbol for St or सत. Similarly, he represents सस ष and सस ठ by means of Sloan’s symbol for स्त (St.). He assigns Sloan Duployan’s symbol for Q to Hindustani क व. The changes that he makes are therefore found to be of a very minor order. Again he gives the four upward symbols and they indicate practically the same words as they do in Sloan Duployan. It is significant that he seeks to represent both the त and ट groups of Hindustani consonants by the symbol assigned to the त group—and this because Sloan Duployan made provision only for the palatal T group.

His provision for Mahapranas is that in some cases he gives a tick in the middle of the symbol while in others a dot a little apart from the symbol for the unspirated consonant of the group. He does not appear to have made any significant departure in this respect from Sloan Daployan or other published Hindustani adaptations of Sloan Daployan.

He uses, like Sloan Daployan, the principle of thickening to add R either in the beginning or at the end of words. In the use of this principle also he introduces some modifications. Thus र is added before all the symbols derived from Fig. 3, unlike Sloan Daployan system in which र is medially added to the stroke for SS. Moreover unlike Sloan Daployan system the upward strokes are not thickened to add र. He makes use of the principle of Doubling but exactly in the same manner and for the same purpose for which Sloan Daployan system uses it. He does not make use of the principles of halving and position writing. He follows Sloan Daployan system in the matter of joining vowels to consonants. He, however, makes the special provision for Diphthongs which occur very frequently in the Hindustani Language.

He makes use of the principle of contractions. He provides that त or ट may be omitted when they occur after क, घ and न. Again no consonant of the ट or त group is written when it occurs after the special short symbols. At places he would like the omission of the Anuswar. So also he recommends the omission of न, नी, ने which occur at the end of words. त or ट occurring after ल are also to be omitted. He extends this principle of contractions or abbreviations for shortening the outlines of words of considerable length.

Loops, circles and hooks are used by him as already stated, to indicate the vowels. Moreover he follows the rule that when these symbols are written in a direction opposite to that in which they are usually written they indicate the addition of र. But he makes a special provision that by a change of the position of the loop, circle or the hook as the case may be, र may be added at the end to strokes to which it is normally added at the beginning on their symbols being thickened. Similarly a hook when reversed indicates a medial or final अर, हर or उर. Again in words in which on their being thickened, र is added at the end, a reversed circle or hook indicates the addition of र in the beginning. Thus the reversed writing of these symbols is utilised by the author to indicate the addition of र in a position in which it would not ordinarily have been added.

This system makes some special provision for the गा, गी, गे terminations of Hindustani verbs. A small straight line below the word outline indicates such addition. Again a special symbol indicates अन्, आ, औन्, आउं, ओं. It is not stated by the author why he has selected these words for such representation. Presumably it has been done because he felt that these words are of frequent occurrence in the Hindustani Language. It is evident that the last two words are of frequent occurrence but it may be doubted whether the आउ, ओम् words are also frequent in the language.

The special small strokes are also used by the author. The downward strokes of this type indicate आन्, अन्, एन्, इन्, ईन् while the upward strokes indicate ओन्, अन्, ऊन्, ऊन् while all of them indicate the अ sound. He also makes a provision for त्, ती, ते the frequently occurring sounds of Hindustani words and that is to give a small circle at the end of the words. He also provides for the indication of श् by intersection of the preceding or following symbol at the beginning, the middle and the last positions. Apart from these special provisions the system makes special provision for prefixes and suffixes and words used as such. The prefixes provided are the following :

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| १. अह्, अंक, अंत | २. अप, अक, उप |
| ३. अम, अद, अन | ४. अध |
| ५. आत्म | ६. को, कम, कन, कल, कह |
| ७. ध्यव, धिय, ध्यय, विय, धिप | ८. तक, हक, तय, तस, तज, तत, तद, तल |
| ९. त्रास, त्रिस, तर्स | १०. मस, मश, मज् |
| ११. डिस्ट्रिक्ट, दस्त, दस, देश | १२. पा, पक, पाक |
| १३. प्रति, परम, परी, पार्ट | १४. वत, वद, बा, बे |
| १५. मन, मान, मौन | १६. मह, मद, मत |
| १७. नम, नाम, नीम, नियम, निय | १८. निश, निस, निरी, नारा |
| १९. सज, सप, सब, सह | २०. सट, लट |
| २१. सुप्र, सुपरि | २२. अन्त, हन्त, अन्द, अन्ध |
| २३. अन्तर | २४. हिन्, हिन्द, हिन्दुस्तान |

The following suffixes have been provided for :

- | | |
|-------------------------------|------------|
| १. चुकता, चुकती, चुकना, चुकते | ६. विभाग |
| २. ना सकना | ७. वा, बान |
| ३. सम्पादक | ८. समिति |
| ४. उत्पादक, प्रद | ९. शीलता |
| ५. पूर्वक, पूर्ण, पश् | १०. हत्या |

A number of other suffixes are also provided for.

The author has made his own logograms and phraseograms but these are few in number though they deal with words and phrases frequently used in all walks of life. He follows the same principle for preparing them which Sloan Duployan system follows.

On the whole it may be said that the author has made some attempt to make the Sloan Duployan system suitable to the genius of the Hindustani language. But we are afraid that his system brings in by the back door the very evil of the Pitman system to eliminate which the Sloan Duployan system was formulated.

“Hindustani Shorthand” by Shri Ram Saran Prasad is another adaptation of the Sloan system for the Hindustani language. The author states that he has taken eighteen years to devise this system, but this seems to be strange considering the fact that he has practically made few changes in the Sloan system. He does not have any arrangement for the teaching of his system nor has he yet trained any student in the use of his system. No one appeared on his behalf in the test held by the Committee. He claims that students can reach a speed of about 200 words per minute. But as no proof of this is forthcoming we cannot say how far this claim can be considered tenable.

This system uses the Shorthand script devised by the Sloan Duployan system but with some minor modifications. The main modifications are as follows :

He indicates the Mahapranas of the Hindustani language by means of a tick given in the middle of the strokes for the Non-Mahaprana consonant of each group. Again he seeks to represent the sounds स and ऋ by the symbol for स. He would indicate सष, सद, सघ, सह, सठ sounds by giving ticks in varying positions and inclinations to the symbol for स त. Again he seeks to utilise to indicate ससथ, ससद, ससध, ससठ, ससट, ससड, ससठ, ससट by giving a tick in various positions and inclinations to the symbol for ससत. Similarly he seeks to extend the use of व्व symbol for सव, खव, ग्व, गव, घव. This type of modifications and extension is sought to be effected in the case of other symbols for compound or conjunct consonants. But it is very doubtful if this device can be of much use for it implies a lift of the hand and thereby would imply a loss of speed. Later on the author provides that these ticks can be omitted. This shows how his attempt to give symbols for as many conjunct consonants as are possible would break down in actual practice.

He uses the principles of Doubling and Thickening exactly as these are used by Sloan Duployan.

He uses the principle of halving to indicate the addition of ϵ , ϕ , δ , ψ , τ , θ , ζ , ξ after m or n as also the sound s in the case of certain consonants.

He uses position writing for the purpose of the omission of medial and final vowels. But at the same time he advocates the principle of joining vowels to the consonants. When he permits the omission of vowels in certain cases he makes a reservation that the initial vowel should never be dropped.

He uses loops, circles and hooks for the indication of the vowels. But when the circle or the loop is given in a direction opposite to that in which these are normally given these indicate the addition of r in a position in which it is not normally added by means of the principle of Thickening.

He uses the principle of abbreviations and recommends the omission of certain pronounced consonants from the word outline.

He makes special provision for the indication of v and w sounds by means of large hooks given separately as also for the nasal and the aspirate. He would indicate the addition of m or n to certain consonants by intersecting the outline of these consonants by means of a hook-like symbol.

He makes special provision more or less on the lines of the Sloan Duployan system, for quite a number of Prefixes and Suffixes and words used as such. The list is rather too long and we are, therefore, not giving it here. But a glance through it shows that all kinds of terminal and initial sounds have been provided for. Such a multiplicity of special signs for prefixes, we are afraid, is not likely to be of much use.

The author has prepared his own logograms and phraseograms and these are quite appreciable in number. The words and phrases covered are of all types.

The author claims to have made a special contribution by giving special symbols for the frequently occurring Diphthongs and three consecutive vowels in the Hindustani language. But the symbols are but combinations of the vowel symbols devised by Sloan Duployan. Moreover even he recommends the omission of all such vowels except the one which plays the determining part in the pronunciation of the word.

We may now proceed to survey the systems which are entirely original or are so radically different from both Pitman and Sloan Duployan as to appear to be altogether original.

In this class may be placed the following three systems :

1. "The Sanket Lipi" by Shri L. P. Jain, Beawar.
2. "The Gajanan Lipi" by Shri Gaj Singh Rathore, Jodhpur State.
3. "Sarva Bhasha Sanket Lipi" by Shri J. K. Tandon and P. S. Mehra.

The Sanket Lipi by Shri L. P. Jain may be said to occupy the pride of place in this class for the simple reason that it was the earliest system of Hindustani Shorthand which was drawn up on original lines by an Indian. In his answers to the questionnaire the author states that the maximum speed reached by students practising his system is 150 words per minute. Further he claims that a student can reach a speed of 100 words per minute after a study of one year. The teaching of the system was first begun in the year 1938 when students from a number of Indian States joined the class being run under the auspices of Shri Jain Veer Ashram, Beawar. This system is being taught in many educational institutions and has, by now trained up quite a number of students who are working as Hindi Stenographers in different places. The author has also brought out Marathi, Gujrati, Tamil and Telugu editions of his Shorthand system.

One great peculiarity claimed by this system is that it is entirely phonetic in character and can, therefore, be used for any language in India or outside. This system, has, therefore, been very carefully considered by us. We give below the main features of this system.

It appears to us that the Shorthand script of this system is in certain respects very near to the existing Devanagari Script. Thus its symbols for the vowels are :

अ	इ	उ	ऋ
⌋	⌋	○	⌋

It is evident that the symbol for अ is only a part of it so are the symbols for the other three vowels. In other words it simply reduces the size of the symbol so that it may be written in less time taken in writing the full vowel-symbol of the Devanagari Script.

The system assigns AO to ष group BO to ऋ, CO to र, DO to ऌ, A¹B¹ to ह, B¹C¹ to व, D¹C¹ to ण, A¹D¹ to द, A²C²B² to ञ and A²D²B² to ण. A small sphere at the end of the straight strokes gives new symbols which are assigned as follows :

च	ळ	त	ड	ब	य	ण	ळ	व	म	ह	क्ष
१	२	→	—	५	६	७	८	९	०	(=

The Mahapranas are represented by putting a dot below the non-aspirated consonants of each group.

The system gives rules how these letters are to be joined to one another. These rules seem to have been formulated with a view to secure facile joinings.

It also indicates how the Hindustani conjunct consonants are to be written. The mark \wedge placed below any letter indicates that it is unaccented. Again when the consonant occurs in its conjunct form it is written only once and the mark \vee placed below it indicates that it is doubled. When a consonant of any group mingles with an aspirate of the same group, the non-aspirate is written and a mark $<$ below it indicates that it is in conjunction with its aspirated consonant. When a consonant joins full τ the latter is indicated as in the Devanagari script by the mark τ written below the former. Similarly the Hindustani ऋ is joined to other consonants as in Devanagari by the mark ऋ written below the consonant. The unaccented τ or ref is indicated as in Devanagari by the mark ̆ given above the consonant.

This system does not use any of the other principles which the English and other Hindustani systems use. There is no thickening, halving, doubling, of consonant symbols, nor is there position writing. It does not use the principle of contractions, inter-section nor has it prepared any Logograms nor even any phraseograms.

This system, as could be expected has not enabled its students to reach high speeds. The representatives of this system could not take down notes even at a speed of 150 words per minute. Naturally, whatever its advantages be from other view points, it does not have the supreme advantage which any system of Shorthand must have—that is, the advantage of high speed.

“Gajanan Lipi” by Shri Gaja Singh Rathore, Jodhpur is another shorthand system that appears to have been formulated on original lines. He admits that his system has not yet passed the formative stage. But he claims that even aa

it is this system can enable a student to reach a speed of 170 words per minute within a period of six months and about 200 words per minute within a year. He admits that he has not trained any student in his system till the time he submitted his manuscript to us for consideration. It is evident that this system has thus not passed the test of practice. It, however, possesses certain interesting features.

Its shorthand script consists of fourteen basic symbols which are as follows :—

क	स	ज	ट	ड	न	त	प	म	य	र	व	ह	श्
—	(\		U	>)	/	^	<	U	^	,	<

The Mahaprana are represented by thickening of the non-aspirate consonant and the heavy consonants by doubling and giving a slant to the light consonants of each group of Hindustani consonants. Further he includes in his shorthand script also symbols which stand for the various forms which each consonant of each group assumes when it combines with the basic vowels.

Thus he gives symbols for का, की, कु, के, को. An examination of these symbols shows that they consist of the stroke for the consonant with an additional mark such as a fine small sphere or a small or large circle added at its end. In effect he adopts the system of joining vowels to the consonant marks. But here it is necessary to make it clear that his symbols for vowels are different from his symbols for Matras. Probably the author thought that it is wrong to indicate क् by the addition of the symbol for अ to क for that would be read in Hindustani as कअ and not as क . It may be stated that in Hindustani it often happens that a full vowel follows an accented consonant, and consequently it would be good if a distinction could be made between the symbols for the full vowel and the symbol for the vowel mark. The author asserts that फ is not फइ but an independent form by itself and needs an independent symbol for itself. This may be unscientific but it does point to a difficulty that is met in the case of Hindustani language *i.e.* of predominance of Diphthongs and Diphthongs followed by vowels. But the author has not worked out the question of the indication of vowels in any detail. As a matter of fact, while he provides that the long vowel need be indicated only by their vowel mark he does not state what rules should be followed in the matter of the indication of the other vowels.

He seeks to represent the various forms of any verb with its subject by means of putting the symbol for the numbers one to seventeen. If the number one mark is placed to the left side of the stroke for the verb root, it indicates that the verb occurs in relation to first person, if it is placed above it indicates that the verb occurs in relation to the second person and if it is placed to the right, it indicates that the verb occurs in relation to the third person. Thus he would represent the expression मैं पढ़ता हूँ by √ the outline being for पढ़ and the small dash to the left indicating that the verb occurs in the indefinite tense and in relation to the first person. One may doubt if this device would effect any increase of speed for the putting of this mark would involve the lifting of hand and thus a break in speed. But this is a suggestion that can prove helpful in having a common shorthand system which can be useful for all the languages of India for then the words following the main root can be joined by the stenographer according to the particular grammar of the regional language.

Again the author seeks to indicate by special symbols the number and the case terminations of the nouns. If these marks are placed just above the middle, they would also indicate that the noun or pronoun is in second number and if above the terminal point, it would indicate that the noun or pronoun is in plural number.

Another device that he suggests to increase speed is not to write all the words of an expression in which the main object is a verbal noun occurring in relation to its own verb. Thus लड़ाई लड़ी जा रही है can be indicated by putting the figure indicating the tense over the outline of the object itself.

Apart from these devices he suggests the formation of Logograms and Phraseograms for certain very frequently occurring words, as also special symbols for the prefixes and suffixes. In this connection it would not be out of place to point out that the author had learnt Hindustani Shorthand on the basis of Jain Lipi system and felt the necessity of devising his own because he could not obtain high speed with the help of the Jain system. The Jain system has no Logograms or Phraseograms nor any special provisions for prefixes and suffixes. The suggestion of this author shows how the Jain system may be able to register progress in the matter of speed if these come to use Logograms and Phraseograms.

The All Languages Shorthand or 'Sarva Bhasha Sanket Lipi' by Shri J. K. Tandon and P. S. Mehra is another system that seems to have been formulated on original lines. Shri J. K. Tandon says that he practised the Jain Lipi for a number of years but found that it did not permit him to reach high speed. The other Hindustani Shorthand systems did not satisfy him because they could not be of any use to persons desiring to use the system concerned for a language other than Hindustani. It is needless to lay stress, says the author in his answer to the questionnaire, 'that for the efficient running of the Administration the call is now for at least tri-lingual stenographers due to Hindi and Urdū having been declared as *lingua franca* by some of the units of the country. English has of necessity to be on our curriculum for the transition period. To employ different sets of stenographers for different languages is both expensive and inconvenient. The authors, therefore, felt that a system which would serve for a number of languages was urgently needed, and so they have formulated this system'. It may be added that Shri J. K. Tandon claims to have been working on this system for the last eight years. Even then it does not appear that he along with his colleague have finalised it for the time being. The authors have sent in some new changes they propose to make in their system. Further, this system has not as yet passed the test of practice. No one appeared on behalf of this system in the test held by the Committee. The authors claim to be teaching this system in their institute but it does not appear that it is as yet being taught anywhere else.

This system has devised a shorthand script of its own. It is no doubt true that it uses the geometrical symbols to indicate the basic sounds of the human speech. Further many of these symbols resemble those which are used by the other systems whether English or Hindustani. But there are certain symbols which are not to be found in other systems. Further the assignment of the symbols to the several consonant groups is entirely original. It would be seen that this assignment in no way resembles that of any one of the systems considered above. But while this originality may be conceded it appears to us that there does not appear to us to be any method or principle behind this assignment. It appears to have been made according to the whim of the authors and consequently a student would find it rather difficult to understand and remember the symbols assigned to each consonant group. The authors, no doubt divide the consonants into two

groups—the Light and the Heavy consonants. The light consonants are treated as the basic sounds and the system assigns basic symbols to them, while the heavy consonants are represented by putting a small dot, below the symbol for the light consonant of each group. This, in a way, introduces some method in the assignment of symbols. But except this there is no other method in the fixation of symbols. Thus the third consonant of each group of consonants into which the Hindustani consonants have been divided is not shown to be related in any way to the first consonant of that group. Similarly the system does not seem to recognise any relationship between ऋ and ऌ or between the Hindustani य, र, ल, व which so often mingle with other consonants and which may have a sound of a consonant or a vowel in different combinations. As against the scientific Devanagari classification of consonants, this system arbitrarily pairs the light consonants. Thus the system gives the following pairs of consonants :

१. क : त	४. ज : य	७. ए : ष
२. ग : द	५. ट : ल	८. न : ह
३. च : म	६. ड : व	९. स : ह

leaving व to stand by itself. One would have liked to know the principle on which this pairing has been effected. We, at least, do not find any principle in this arrangement and feel that this system of pairing would remain a load on the memory of the student.

The system uses the principle of thickening. But unlike Pitman it uses this principle to indicate the second consonant of some of the pairs given above. While Pitman has some justification to express the heavier consonant of each group by means of this principle there does not seem to be much justification for this system to use this principle to indicate another light consonant of an entirely different group. But herein also no similarity is followed. Thus in the case of the ग : द pair, it is ग which is thick while द is obtained by thinning the stroke for ग. This is again the case with च : म pair while in the ऋ : य pair the latter is obtained by thickening the symbol of the former. Thus it is obvious that the authors have not felt it necessary to follow a uniform method for the use of this principle. There is another use of this principle of thickening. When the unaccented र *i. e.* in its unchanged form is joined from outside to a word outline it indicates the sound ररट or ररुट or ररुट or ररुट. Another use of this principle is to thicken व when it is to be joined to च which follows it. And in order to join ह with व it is written through the line. व is thickened

in order to distinguish बच from बह. While the authors have made a novel use of the principle of thickening it is difficult to say how far it will work out successfully in actual practice. We feel that it cannot be better than the use of this principle made by either Pitman or Sloan.

The authors also make use of the principle of doubling to indicate the immediate recurrence of a light consonant. Thus क is — and कक is ——. But this use of this principle is not made in the case of the heavy consonant, a small inverted crescent below the symbol for the heavy consonant. Again this system also makes a provision for the triple successive occurrence of a light or heavy consonant. In the case of the light consonant this is done by putting the sign (v) below the consonant symbol, while in the case of heavy consonant it is done by putting a mark (Λ) below the consonant symbol. The authors thus seek to provide for the double consonant sounds which occur quite often in the Hindustani language. But this is not altogether a novel use for we have already seen this use of the principle.

The system uses position writing to indicate the vowel marks in the Logograms. It may be pointed out that this is but a modified use of Pitman's principle of position writing. The authors provide that there are three positions for the logograms, one above the line, second on the line and the third through the line. The vowel अ is indicated in the first, इ or ई are indicated in the third while the other vowels are indicated in the second position. By writing the logograms in these positions a shortening of outlines is obtained as the vowel marks are not indicated. It may, however, be doubted how far the omission of vowel marks from the logograms can be of use for increasing the speed of a stenographer. It would be observed that Logograms are arbitrary outlines standing for words very frequently occurring in any language. Consequently there is no necessity even ordinarily to give vowel marks in the outlines of the Logograms. Consequently there does not appear to be any need for making a special provision for the omission of a vowel mark from such logograms. Apart from this use of position writing there is also one other use made of this device. It is to indicate the addition of certain consonant to some other groups of consonants. Thus ह is added after the चः म, यः ण pairs and व when any of these is written through the line. Thus म is c and मह is & would also be added if the conjunct consonants चर and मन are written through the line. Again व is added after the pairs

सह and टळ if any one of these is written through the line. Similarly if ग, ज, द, प and their corresponding heavy consonants are written below the line र is added to them. Similarly if द follows any of the vowels it is indicated by writing the preceding vowel through the line. Similarly द or ष is deemed to be added when a vowel given a small circle for न is written through the line. ह is also added to वय or वयव if these are written through the line. Thus position writing is made to serve a dual purpose. It helps in the formation of Logograms. Again it helps in the indication of the conjunction or coalescence of certain consonants. But we are afraid that consonants where conjunction is specially provided are not those which frequently conjoin.

The system indicates vowels by means of special symbols. It appears अ, इ and उ as the basic vowels and derives the other vowels by adding appropriate vowel marks to these three vowels. The symbols for the initial vowels are joined to the consonants. When the vowels coalesce with the consonant, they are indicated by vowel marks. The vowel marks are given above or to the right of the light consonant and below the heavy consonant. Further the system provides for the doubling of vowel symbol in case a similar vowel occurs with two light consonants. This rule, however, does not apply if one consonant is light and the other heavy. Further rules are given for the indication of Matras in words. This system makes special provision for the indication of Diphthongs and Diphthongs followed by vowels.

This system uses small circle, and hook to indicate the merging of some consonants to others. The small circle is used for indicating certain conjunct consonants. Thus if ल follows म or ट follows च, the former consonants are indicated by the addition of a small circle to the stroke for the latter consonant. ल is joined to ट and क to ट in a similar manner. Again if व follows the pair कःत or ज it may be indicated by the small circle given at the end of the stroke for the consonants कल or ज. In the case of the former two strokes it would be given below while in the case of the third it would be given to the left side of the stroke. The same rule would be followed if व follows ल. Again if full or semi-nasal न follows, it is indicated by a small circle given at the beginning of the vowel symbol. When it follows any of the consonants of the pair स्म, it is indicated by a small circle given to the left side of the stroke for either of the consonants. Again if ल follows the consonants of the pair कत it is indicated by a small circle given at the end of the stroke and it is added upward.

If ल follows a vowel it is indicated by a small circle given to the outward side of the vowel stroke. This rule would also apply if ल follows the consonants, द, प, फ; व, ब. Again if the consonants of the pair ग द are followed by प, the addition of प is indicated by a small circle given to the right side of the stroke for ग or द. If द follows the consonant प it is indicated by a small circle given to the left side of the stroke for प. If ङ follows any of the consonants of the pairs स ह- and ज ग, it is indicated by a small circle given within the stroke for स or ह and to the right of the stroke for ग. If ञ follows any of the consonants of the pair न र, it is indicated by a small circle given by the left motion at the head of the stroke for न or र. If त follows vowels, it is indicated by the small circle given within the strokes for the vowels. Again if either स or श or ष follows any of the consonants of the pair च ण स or श or ष is indicated by a small circle given within the stroke for च or ण. The initial small circle indicates in this system the unaccented स, इस, इश and इष. The author shows how this initial small circle is to be added to any particular stroke.

It is thus evident that this system seeks to make a varied and wide use of the small circle. But while such a use, if it could be practised successfully, would increase the flexibility of the system we are afraid that it would also put a considerable load on the memory of the writer. The authors assert that they have made use of the small circles to indicate the joining of only such consonants and these also to such other consonants as frequently join one another in the spoken languages. But they do not give any data to justify this assertion. But even if this be accepted it yet remains to be said that the multiplicity of consonants is likely to prove a source of considerable strain and confusion.

This system uses the big circle to indicate the addition of certain consonants to certain others. Two rules are given for the use of this circle. In the first place if a consonant of any of the eight pairs into which consonants are divided, follows the other consonant of the same pair it is indicated by the addition of the circle at the end of the stroke for the other consonant. The second rule is that if a light or heavy consonant is immediately followed by a corresponding heavy or light consonant, the latter is indicated by a circle added at the end of the stroke for the former consonant. Under the first rule the circle would be added to the right, upward or inward side as the case may be of a stroke while that added under the second rule would be to the left, downward or outward side as the case may be, of a stroke. Again the initial circle indicates the addition of the sound स्व or सव or श्व or ष्व as the case may be.

The use of the circle also is as to give the system great flexibility. It is evident that each language has its own particular consonants that frequently join others. Consequently if a special device stood for indicating the joining of one particular consonant to another, that device may not prove useful for another language. But this system makes an attempt to avoid this shortcoming in the matter of the use of its special devices. It is, however, an attempt that has to be tested in actual practice and may be commended only if it is found really workable and useful specially from the view point of High Speed.

This system also uses the halving principle but only to a slight extent. Thus if म follows स or ह its addition to स or ह is indicated by halving the outline of the consonant concerned. Again when ग, ज, द, प and their corresponding heavy consonants are written below the line and are also halved they do not add र which they do when written in full.

Further if गर, जर, दर, पर, घर, ऋर, धर or फर follow म or र halving the outline of ग, ज, द, प, थ, ऋ, ध or फ would indicate that र is also added to the stroke halved.

It may be added that the use of the halving principle is rather intricate and may not easily be remembered.

This system also uses large hooks. If ह follows any of the consonants of the pair र: न it is indicated by a large hook given to the right side of the stroke of र or न. Again if ह precedes any of the consonants of the pairs ज:प or ऋ:प, a large hook to the left side of the stroke indicates it. If ह precedes any vowel the vowel symbol should be hooked. It appears that the system does not make any extended use of the hooks because its vowel symbols as also some of its consonant symbols have some resemblance to hooks.

This system uses the principle of intersection to indicate any pair which consists of a word and its antonym or of a word repeated to give emphasis to it.

This system makes special provision for the indication of prefixes and suffixes, for tenses and case terminations.

Thus the following provisions are made for the tenses. The verbs which have a circle at the end add है, है, हो, हों if the circle is converted into a loop. In other verbs these sounds are added by giving the symbol of half र below the outline of the verb. Again if a verb ends in ता है, ती है, ते है its main stroke may be intersected to indicate the addition of these sounds.

The following prefixes are specially provided for :—

अप
आप
आपी
उप
उपा

The following suffixes are specially provided for :—

सन
शन
षन
एण
ऐन्स
उन्स
ऽति

It is evident that in this respect the authors do not seem to have made any special effort. The suffixes provided for are such as occur frequently on the admission of the authors themselves in the English language only.

The authors have prepared quite a good number of Logograms and Phraseograms. These cover words and phrases that frequently occur in important walks of social life.

The system on the whole makes a bold attempt to make a wide provision for the conjunct consonant, but it is not yet possible to say how it will work out in actual practice.

We have given above a survey of the systems that have been submitted to us. There are, however, a number of suggestions submitted to us, which though not amounting to systems by themselves, do contain the Shorthand Script that should be accepted for the Hindustani Shorthand system. An examination of all these suggestions has led us to the conclusion that there is nothing original about the scripts suggested and that consequently these need not be analysed here.

We may, however, refer here to a suggestion made by Mrs. A. Peterson, Librarian, Adyar Library, Madras. She feels that the Shorthand systems so far devised rest on the assumption that the consonants constitute the basic sounds of any language. But in her opinion it is not the consonants but the vowels which constitute the basic sounds. Consequently she pleads for the evolution of a shorthand system in which the basic symbols of the shorthand script are assigned to the basic vowels and the

consonants are represented merely by special signs added to the vowels. Original as this suggestion is, we are not in a position to work it out. We feel that this question be taken up and considered by the Research Body the setting up of which is included in our recommendations.

Many persons who answered the Questionnaire issued by us, contented themselves by recommending which of the existing Hindustani systems they would like to be considered as the Standard Hindustani Shorthand system. An immense majority of these persons recommends the adoption of Rishi Pranali as the Standard system. A smaller number, but quite appreciable, recommends the adoption of the Nishkam Pranali as the Standard system. A few recommend a system based on the Sloan Duployan system. The preference shown for a Hindustani system based on Pitman is not a matter of surprise nor is it a proof of the superiority of the Pitman system over its rivals. It is but the indication of the fact that an immense majority of the persons who learnt shorthand happened to have learnt it through the Pitman system.

RESULTS OF THE TESTS (APPENDIX E)

Serial No.	System	Name of Representative	Mistakes committed in the Dictation given at the speed of					Examiner's Remark
			140	150	160	170	180	
			pr. mt.	pr. mt.	pr. mt.	pr. mt.	pr. mt.	
1.	Kedar Pranali .	1. Shri K. N. Choubey .	12	50	75	50	65	158/190 I
2.	Wardha Pranali .	1. Shri Madhukar Belgaonkar .	39	110	86	42	84	156/160 II
3.	Nishkam Pranali .	{ 1. Shri Om Prakash Gupta . 2. Shri Sri Ram .	38	65	96	74	100	147/180 III
4.	Rishi Pranali .	{ 1. Shri Shiv Prasad Agarwal . 2. Shri Kashi Prasad . 3. Shri Jagdish Narayan Sharma	30	56	101	77	117	144/200 IV
5.	Shri Siddheshwar Nath	Shri Brinder Pratap Singh .	21	125	—	—	—	—
6.	Vishnu Pranali .	{ 1. Shri Vishnu Dutt Uriyal . 2. Shri G. C. Pandey .	—	—	—	—	—	—
7.	Shri H.P. Moholkar .	Shri H. P. Moholkar .	—	—	—	—	—	—
8.	Rit Pranali .	Shri Sarat Chandar Dhangar .	—	—	—	—	—	—
9.	Singh Pranali .	Shri Bishamber Dutt Sharma .	—	—	—	—	—	—
10.	Sain Pranali .	{ 1. Shri Prem Raj . 2. Shri Bansi Lal . 3. Shri Moti Lal .	Not appeared.		—	—	—	—

NOTE.—"—" indicates that the mistakes were so many that it was not considered worthwhile to make up their total.

APPENDIX B

DEVANAGARI LETTERS AND THEIR KEYBOARDS

Survey of the Material Submitted

The material submitted to us for consideration may be divided into the following classes :—

- (1) Schemes for the reform of the Devanagari Script
- (2) Sketches for the Keyboard of the Hindi Typewriters
- (3) The suggestions regarding the acceptance of new mechanical devices for the inclusion of all the characters of the Devanagari Script in the proposed Keyboard of the Hindi Typewriters.

We summarise below the material of each class in the order in which they have been given above.

Scheme for the Reform of the Devanagari Script

Pamphlets and articles advocating important reforms in the Devanagari Script have been sent to us by the following people :—

- (2) Mudran Sukar Devanagari Lipi— by Shri Vasudeve Dhondo Gurjar ;
- (3) Some suggestions for the reform of the Script—by Shri Satyendra Kumar Gupta ;
- (4) A new scheme of the Devanagari Script—by Shri Shankar Narhar Joshi ;
- (5) Prati Sanskrit Devanagari Lipi—by Shri Shriniwas ;
- (6) Reformed Devanagari Script—by Shri M. D. Manohar ;
- (7) Balbodh Lipi—by Shri Vaman Ramkrishna ;
- (8) Borda's Lipi—by Shri Keshva Chandra Barua ;
- (9) Vishwa Nagari—by Shri Moti Lal Gurtu ;
- (10) Reform of the Nagari Script—by Shri Hari Saran Singh ;
- (11) A new scheme of the Devanagari Script—by Shri Bansidhar Manohar Lal Lanwele.

Lok-Nagari—by Shri Vinoba Bhave of Wardha

This is a suggestion of a very scientific nature for the implementation of Nagari to suit its spread among masses as also the convenience of writing and printing.

The reforms suggested are the following :—

(1) The headline may be retained in printing but should be dropped in writing.

(2) There should be provision for a short ए and short ओ.

(3) The dento-labials like च, ज, and ञ be indicated by dots underneath the letters.

(4) The *Mahapranas* of म, न, व, ण etc. which are erroneously represented today as conjunct consonants म्ह, न्ह, व्ह, ण्ह should be represented by merely indexing an apostrophe to the letters concerned.

(5) All conjunct consonants should be uniformly represented by a 'halant' sign added to the first member.

(6) There should be two dots one of which should be below to represent the difference between nasals.

(7) The letter क्ष should be changed to क्ष.

(8) The vowel signs for short and long इ should be respectively १, २.

(9) The vowels should all be represented in the form of Swarakhadi vowels. आ, अि, अी, अु, अू, अृ, अे, अै, अो, औ, अं, अः.

Shri Vasudeva Dhondo Gurjar considers that the main defects of the Devanagari Script, from the view point of printing are :—

(1) The practice of the vowel marks falling above, below, before or after the letter. (2) The same practice in the use of a consonant combining with one another. He, therefore, suggests that the Devanagari Script can be made quite suitable for the printing and typing machines if the following reforms are effected in it :—

(a) All the vowels must be indicated by adding the appropriate vowel mark to the basic vowel-indicator स्वराधार.

(b) All the vowel marks must be put after the letter and not above, below or before it.

(c) All the consonants which do not have the vertical line at their end should be given a vertical line—thus क should be written as क ड as ड and छ as छ and so on. When any of them is to be combined with another, the vertical line should be dropped from the consonant without the vowel while the consonant with the vowel is written immediately after it.

(d) The 'Raf' should be written as र. He thus seeks to keep the new script as near as possible to the existing Devanagari Script.

Shri Satyendra Kumar Gupta in his 'Some suggestions for the reform of the Script' suggests that, Devanagari would become quite suitable to the printing press if the following reforms are accepted :—

(a) The consonant or consonants combining with another should be written one after the other instead of above or below as is done now.

(b) 'र' when it combines with other consonants is written as 'ऱ' as is done in Marathi and when other consonants combine with it, it is written as 'ॠ' and not र.

Shri Gangadhar Awaji Bhagwat in his new Scheme for the Devanagari Script suggests the following two reforms :

(a) The long vowel to be indicated by writing a mark circular 'o' after or before the short vowel

(b) The vowel marks be abolished. When consonants are to be combined with vowels, the half form of the consonant should be combined to the vowel symbol. Thus *khi* should be written as 'क्ह'.

Shri Shrinivas in his *Prati Sanskrit Devanagari Lipi* suggests that the Devanagari Script can become suitable to the printing and typing machines if the following reforms are effected in it :—

(a) The basic vowel symbol or indicator should be the symbol 'अ'.

(b) New symbols be included for the short 'ए' and 'ओ'.

(c) The second part of the vowel symbol should be distinct and be considered its matra. Thus the present अ should be अ and इ should be अँ and so on.

(d) The *Mahaprana* consonants of each group should be indicated by adding) symbol to the non-*Mahaprana* consonant. Thus ष to be written as ष̄.

(e) The letter क should be written as क and the letter ञ as ञ and र as र.

(f) sign should indicate the short vowel and in its absence the long vowel.

(g) The vowel marks should be according to their order of pronunciation. All these marks should be given after the letter and not above, below or before it.

(h) The combining consonants should be written before the consonant with which it may be combining.

(i) The sign 'o' should be added to the third consonant of the first three and to the first of the last two groups of consonants to indicate the fifth letter of each group.

(j) The consonants which do not have the vertical line at the end should be provided with one.

Mr. M. D. Manohar in his 'Reformed Devanagari Script' suggests that the Devanagari Script would be suitable to printing, typing and teleprinting machines if the following reforms are effected in it :

(a) The basic vowel indicator should be the symbol ङ and different vowel-symbols should be formed by combining the distinctive vowel mark of each to it. The vowel marks are to be put after the letter, and he gives in his book the different vowel marks that are to be added to this indicator.

(b) He would add the short 'ए' and short 'ओ' vowels to the Devanagari Script.

(c) He would add the vertical line to all the consonant letters which do not have the vertical line at the end.

(d) He would represent 'Mahaprana' by adding a small circle to the 'Non-Mahaprana' consonants of each group. This circle may be added below or above the particular letter. Thus ष would be written as ष .

(e) He would write क्ष by the combination of क and ष.

(f) He changes the form of क, ग, ङ and ड in order to put the vertical line at the end.

In his opinion he thinks that with these changes in Devanagari Script, it would be printed without any difficulty whatsoever.

Shri Vaman Ramkrishna in his 'Balbodh Lipi' suggests that the Script can be made suitable for printing if the following reforms are effected in it :—

(a) All consonants not having vertical lines at their end are given a vertical line at the end. Thus क should be written as क . In certain cases he would write the letter in a new form in order to give this vertical line at the end. Thus ट would be ष.

(b) He would like that all the vowels should be indicated by adding a vowel mark to the basic vowel-indicator which is अ.

(c) The combining consonants should be written in order in which they occur. The ॑ should be written in its proper place of pronunciation. Thus अर्ष should be written as अर्ष.

Shri Keshva Chandra Barua in his "Borda's Lipi" thinks that the following reform would make the Devanagari Script quite adaptable to modern means of Lithography:—

(a) All the vowels should be indicated by giving the proper vowel mark to the basic vowel-indicator ऋ.

(b) The vowel marks should be altered so as to make them fall after the letter with which they combine.

(c) The consonants when they combine should base between them a Sanyukt sign which is ॡ.

Shri Motilal Gurtu claims that there can be one language for the whole world and this can be written in a basic script that shall be the language of the world. We are not concerning ourselves with his ideas of *World Script* but we would give below his ideas about the *Vishva Nagari*.

He thinks that the following changes must be effected in Devanagari in order to enable it to maintain its existence in a progressive world:—

(a) There should be only one basic vowel-indicator ॠ and all the vowels must be indicated by giving proper vowel-marks to this basic vowel-indicator.

(b) All the vowel marks should be made to fall to the right side of the letter and not above, below or before it.

(c) The Mahapran consonants must be indicated by giving the ॡ at their end, for this is the mark which converts ॠ into ॡ and can therefore be said to be the basic symbol that converts a non-Mahapran in 'Mahapran'.

(d) He also suggests a change in the shape of the letters so as to make them more fit for printing purposes.

As a result of his proposals he thinks that the total number of letters in the Devanagari Script would be reduced to 20 in all and thus Devanagari would become very suitable for all the languages of India.

Shri Hari Sharan Singh thinks that the following reforms should be made in the Devanagari Script :—

(a) Short ॠ and ॡ should be included in the Devanagari Script.

(b) All the vowels must be indicated by putting a proper vowel-mark to the basic vowel-indicator ॠ.

(c) The vowel-mark for short '३' should fall after the letter and not before it and should be changed a little.

(d) The vowel marks for उ and ऊ and ऋ should fall a little after the letter.

Shri Bansidhar Manoharlal suggests that the following reform would make the Devanagari Script very suitable for printing :—

(a) All the consonants which do not have the vertical line at the end should be provided with the vertical line and if necessary the way of writing of some of these letters should be changed.

(b) The consonants should combine in their order of occurrence and the half letter can be written by just omitting the vertical line which stands for the vowel.

Apart from these printed pamphlets and books many people have made similar suggestions in the letters that they have sent to the Committee. It is found that these suggestions are of the following kinds :—

(1) Those which provide for the use of the *Basic vowel-indicator* for forming all the vowels of the Devanagari Script by the addition of proper vowel marks, almost all those who have advocated a reform in Devanagari Script have proposed this change.

(2) The vowel marks should fall not as they do now above, below, before and after the letter with which they combine, but only after the letter. This proposal is made by some of those who would like to make Devanagari Script as suitable to the existing printing and typing machines as the Roman Script is.

(3) A few have made suggestions that the Mahaprana consonants should be indicated by the addition of a particular sign.

(4) Many have made suggestions that all the consonants of Devanagari have the vertical line at the end and those which do not have the vertical line now should be provided with vertical line either in their present form or by changing the way of their writing.

The people who have written letters making suggestions of reform do not propose any other change than those given above and therefore, a detailed statement of their suggestions need not be given here.

A number of Manufacturing Concerns and many persons and Institutions interested in the development of an efficient Hindi Typewriter have sent in to us the sketches of keyboards which they consider would be suitable for the Hindi Typewriters.

Except one sketch which makes a provision for 126 letters on the keyboard of the Hindi Typewriter all others are either for 96 characters or for 88. The main difference that consists in the sketches that have been supplied to us is in relation to the position of the letters of the different keys. Moreover there is also a difference about the inclusion or exclusion of certain conjoint consonants or even full consonants in the keyboard of the Hindi Typewriter. Some of them include only one symbol for the vowel and it is suggested that the other vowels are to be formed by adding the appropriate vowel marks to that particular symbol. Again some of the authors of the sketches of the keyboards suggest that the *matras* should fall after the consonants with which they combine. A few sketches provide for the inclusion of the Indian symbols used for Rs., as. and pies.

A few suggestions have been received by us about the mechanical improvement that should be effected in the Typewriter in order that all the letters of the Devanagari Script be provided in it and also for normalising the typing of the *matras*.


FREQUENCY CHART (APPENDIX G)

क्रमांक	अक्षर	प्राचुर्य गणना	क्रमांक	अक्षर	प्राचुर्य गणना	क्रमांक	अक्षर	प्राचुर्य गणना	क्रमांक	अक्षर	प्राचुर्य गणना
१.	।	८.६२	२.	क	७.४६	३.	ख	६.३९		अक्षर	प्राचुर्य गणना
४.	र	४.६२	५.	फ	४.३५	६.	ह	४.२२			
७.	स	४.२	८.	ग	३.८८	९.	घ, त	३.७			
१०.	म	३.५	११.	न	३.३५	१२.	ड	२.९			
१३.	न	२.५	१४.	प	२.४५	१५.	ड	२.३५			
१६.	द	२.१९	१७.	ज	२.०५	१८.	अ	२.०२५			
१९.	व	१.८८	२०.	ड	.६५	२१.	ब	१.५			
२२.	ग	१.३३	२३.		१.१४	२४.	ब	१.००			
२५.	उ	.९	२६.	ए	.७३	२७.	भ	.७			
२८.	इ	.६७५	२९.	ः	.६५५	३०.	न	.६५			
३१.	थ	.६५	३२.	श	.६४	३३.	च	.६			
३४.	ए, ष	.५५	३५.	ख	.५१	३६.		.५			
३७.	स्	.४८	३८.	औ	.४६	३९.	ई	.४३			
४०.	त्	.३८	४१.	ष	.३७	४२.	ट, फ	.३६			
४३.	ण	.३३	४४.	ए	.३१	४५.	व	.३०५			

क्रमांक	अक्षर	प्राचुर्य गणना	क्रमांक	अक्षर	प्राचुर्य गणना	क्रमांक	अक्षर	प्राचुर्य गणना
४६.	ड	३	४७.	झ	.२७	४८.	व	.२६
४९.	औ	.२३	५०.	व्, छ	.२२५	५१.	ण	.२२
५२.	ल्	.२१५	५३.	म्	.१९५	५४.	ष	.१८
५५.	श्	.१५५	५६.	ध्	.११५	५७.	ष्	.११
५८.	ज्ञ, ठ	.१०५	५९.	क्, ऐ, क्ष	.१	६०.	ख्	.०९७५
६१.	त्र, ढ	.०९	६२.	श्च	.०८	६३.	:	.०७५
६४.	घ्	.०६५५	६५.	प्	.०६५	६६.	ऊ	.०४५
६७.	अं, इ, ट्	.०४	६८.	व्	.०३९	६९.	ग	.०३७५
७०.	ड्	.०३५५	७१.	क्ष्	.०३५	७२.	ब	.०३४
७३.	ग्	.०३२५	७४.	भ्	.०२७	७५.	ज	.०२५
७६.	ञ्	.०२	७७.	य्	.०१२	७८.	ङ्	.०१२
७९.	क, फ	.११	८०.	ऋ	.००९	८१.	य्	.००५५
८२.	,	०.६५	८३.	(०.४	८४.)	०.४
८५.	—	०.३६	८६.		०.६२	८७.	,	०.०८
८८.	“	१.०						

A NOTE ON THE KEYBOARD SUGGESTED

(1) We have changed the arrangement of the numerals on the Keyboard and have given 0 and 1 a very prominent position as against the existing practice. This has been done, because 0, 1 and 5 have a very high frequency and consequently 0 and 1 have been assigned to Index finger of the left hand while 5 to that of the right hand.

(2) The symbol, , has been included so that ॠ may be formed from ॠ, ॡ from ॡ and long ॢ from short ॢ. But the provision for the formation of ॣ from ॣ in this manner has been made only for the orthodox people, as it was felt that the other form of ॣ is more appropriate for the Typewriter, because it is very frequently used in Marathi language. The half form of Marathi ॣ is, therefore, given on the keyboard and the full ॣ will be formed by the addition of the *Pai*, i.e., the vertical line which stands for ॣ in the consonants.

(3) The *Pai* has been provided to complete the form of the consonants ॥, १, २, because their half forms only have been provided on the keyboard.


(4) The symbol ^२ has been provided on the keyboard for two purposes. It may be used for 'Ref' as also to form the long ॥ from the short ॥, the symbol of which has been provided on the keyboard. This provision has been made for the orthodox people who do not either like to give up the use of 'Ref' or the present shape of vowels.

(5) The 'halant' mark will be used for those consonants of which half forms have not been provided on the keyboard. Half forms have been omitted only in such cases in which frequency is very little or nil.

(6) A loop has been provided to ॣ and ॣ at the beginning of their outlines in order to distinguish them from ॣ and ॣ.

(7) A dot has been provided for indicating such Urdu sounds as ॣ, ॣ, ॣ, ॣ and such Hindi sounds as ॣ, ॣ.

(8) ^३ has been provided for short ॣ and short ॣ.

(9)  This symbol has been provided for the vowel mark for short ॣ and shall fall after the consonant.

(10) ॣ has been changed in order to remove the confusion between ॣ and the combination of ॣ and ॣ.

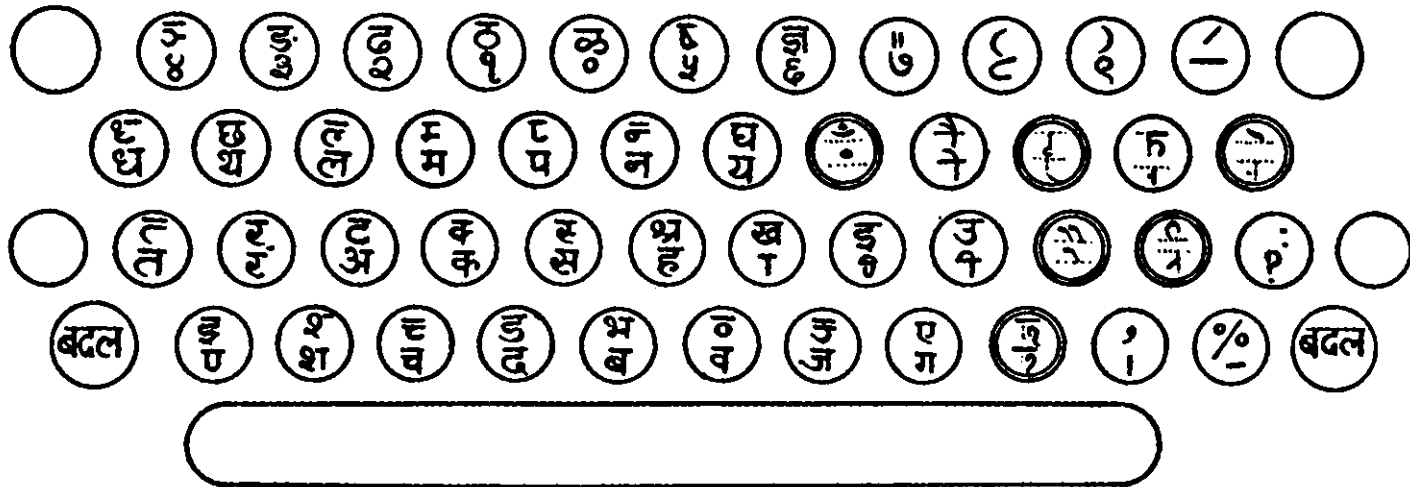
(11) *ॣ has not been provided a place on the keyboard, because it should be written as ॣॣ.

(12) ॣ has been provided on the keyboard, because its frequency is likely to be very high.

(13) Keys in double circles are dead keys.

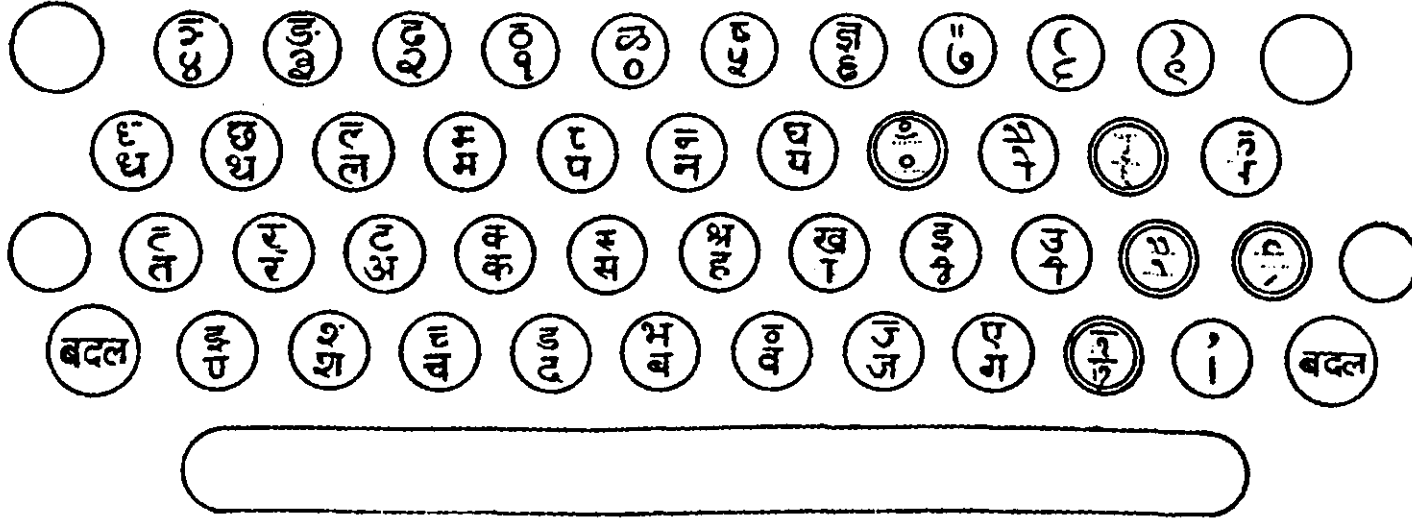
*In the final keyboard half ॣ is provided for.

APPENDIX C
(KEYBOARD WITH 46 KEYS)



APPENDIX D

(KEYBOARD WITH 42 KEYS)



APPENDIX H
NAGARI CONSONANTS

क ख ग घ ङ
 च छ ज झ ञ
 ट ठ ड ढ ण
 त थ द ध न
 प फ ब भ म
 य व र ल ळ
 श ष स ह
 क्ष क्ष ज्ञ श्र ॐ

APPENDIX I

HALF FORMS OF NAGARI CONSONANTS USED IN YUKTASHRAS

क	ख	ग	घ	ङ
च	छ	ज	झ	ञ
ट	ठ	ड	ड्ह	ण
त	थ	द	ध	न
प	फ	ब	भ	म
य	र	ल	व	श
स	ह	र	स	ह्रि

APPENDIX J

(1) THE FIRST ROW IS THE ORTHODOX VOWELS OF NAGARI, WITH THE ADDITION OF SHORT ए AND SHORT ओ OF THE SOUTHERN LANGUAGES.

(2) THE SECOND ROW IS THE FORM OF NAGARI VOWELS REFORMED

(3) THE THIRD ROW IS A MERE SUGGESTION OF THE ULTIMATE FORMS OF NAGARI VOWELS FURTHER REFORMED.

अ आ इ ई उ ऊ ऋ ॠ ए ऐ ओ औ अं अः

अ आ अ^१ आ अ_१ अ_२ अ_३ ऐ ऐ औ औ औ अं अः

अ आ अ^१ आ अ_१ अ_२ अ_३ अ^१ अ^२ अ^३ आ आ आ अं अः

APPENDIX K

VOWELS SIGNS, VOWEL COMBINATIONS AND NUMERALS

० १ २ ३ ४ ५ ६ ७ ८ ९

स सा सौ सी सः सः सः स' स' स' सा सा साँ सः सः

द दा दौ दी दः दः दः द' द' द' दा दा दाँ दः दः

ट टा टौ टी टः टः टः ट' ट' ट' टा टा टाँ टः टः

र रा रौ री रः रः रः रे रे रे रो रो रौ रं रं

। ७ १ २ ३ ४ ५ ६ ७ ८ ९ ० १ २ ३ ४ ५ ६ ७ ८ ९

५ ७ ७ १ १ १ ० ०

NOTE EXPLAINING THE NAGARI LETTER CHARTS IN APPENDICES H, I, J, K.

Hindi typewriters have suffered as much from a lack of beautiful and correct Devnagari letters as from a lack of a scientific arrangement of the keyboard leading to maximum of speed.

The exigencies of the typewriter demand that letters should have, as far as possible, the same width, consistent with the unit of distance the carrier travels with each stroke. Letters, therefore, have to be given a shape consistent with this exigency, without in any way impairing the beauty and grace that is peculiar to the Nagari letters. The shape and contour of the letters must also be convenient for the printing press with its modern advantages of the monotype and the linotype.

The exigencies of teleprinting have also got to be considered.

We are giving here three charts. The first gives the shape of consonants. In this chart are incorporated all the improvements suggested by our committee. It also conforms to the suggestions of the Script Reform committee of the Government of Bombay. The following points may be mentioned in this connection.

(1) The letters 'अ' and 'आ' are given a loop at the beginning, so as to make them easily distinguishable from 'अ' and 'आ' whether the writers use the Shirrekha (headline) or not.

(2) The letters 'अ' and 'आ' are standardised by accepting the Bombay type.

(3) The letter ङ is standardised by rejecting the Bombay type ङ because it has no payi—vertical line—at the end.

(4) The letters 'उ' and 'ऊ' have also been simplified and standardised by rejecting the Bombay type.

(5) The old letter 'ख' has been rejected as it has been universally condemned. In its place, two new shapes are given—one accepted by our committee and approved by the U. P. committee.

The other shape is the one recommended by the Bombay committee. It is simpler, more elegant and very much nearer to the shape of 'ख' in Kaithi (Bihar), Modi (Maharashtra) and Gujarati.

(6) The contours of the letters 'र', 'ळ' and 'ह' are made to conform to the general height and width of the Nagari letters without in any way disturbing the style of the font.

The second chart gives what are called 'half letters'. Here also every care is taken to see that the width of the letters is not less than three-fourth of the whole letters. The typewriter manufacturer can easily manage these half letters, for giving conjunct consonants, without sacrificing the beauty of proportion.

Letters without the Payi, cannot be halved by mutilating them. The Nagari script therefore uses all subterfuges to supply the conjunct consonants. They are a stumbling block in the spread of literacy. They are also a headache to the printing press and the typewriter. One way of simplifying these conjunct letters is by putting a halant sign at the end of these 'payi'-less letters. But the halant sign (\) is not supposed to join letters. It separates them. We have therefore, accepted the suggestion of the Hindi Sahitya Sammelan, and provided a horizontal link (ॡ) of conjunction. This is known as 'जोड़चिन्ह' Jod chinha which simply means a link.

Thus ट, ठ, ड, ढ, ढ and ह are halved with a jod chinha when they take another letter after them to form a conjunct consonant. The letter 'ळ' also could be given a similar link but there is no necessity of halving it because it is rarely found to be the first member of a conjunct consonant.

Half letters, when they come at the end of a word should of course be shown to be so by the usual halant sign which can be called तोड चिन्ह tod chinha. This is known in Marathi as payi-mod-chinha (literally a sign that breaks or cancels the payi).

The letters र and य when they come as the last member of a conjunct consonant are obliging enough to change their own shape, thus leaving their antecedent payi-less letters undisturbed. प्र य

Half र as a first member of a conjunct consonant is generally written on the top of the succeeding letter in which case it is known as ref (रेफ). It is admitted that this position of the ref sometimes becomes unscientific because it does not come in the order of pronunciation. It is very inconvenient to the printing press as well as to the typewriter. It is much better to discard this ref and use, in its place a ready-made type of 'र' with a halant as suggested in chart No. 2.

In chart No. 3 we have given the vowels in three rows: the first or the top row gives the orthodox shapes of the vowels with the addition of short 'अ' and short 'आ'. These two vowels are very frequent in the Dravidian languages; where it is a practice to show them as such.

The letters 'अ' and 'आ' are really not the short and long of each other. There is a long 'अ' in Konkani, the sound short 'आ' is also heard but it is not shown in spelling. We have not, therefore, made provision for this nicety. Konkani will have to raise the payi of 'अ' in order to make it long 'अ'.

The third row is merely a suggestion of the shapes of the vowels if the reform of vowels which is fast being accepted in the country, is accepted for typewriters.

The middle row gives the alternate vowel signs. They show short 'अ' and long 'आ' as also of 'अ' (अः) as they are accepted by our committee.

It has been universally accepted that the present three-storied composing of Nagari letters is its greatest handicap. Vowel signs for 'अ', 'आ', 'इ', 'ई' and the anuswar — are written on the top of letters, thus creating the necessity of the top floor. The ref also occupies the top floor. The vowel signs for 'अ', 'आ' and 'इ' and the sign for 'इ' as in 'इः' and the nukta are placed below the letters—thus necessitating the bottom floor. It is accepted that these vowel signs etc. should be written after the letters and not above or below the letters. There is no objection if these vowel signs go above the headline as in the case of 'अः' provided they do not come on the top of a letter.

It is proposed, therefore, as the first instalment in script reform, to remove the bottom floor by writing signs for short 'अ' long 'आ' and 'इ' after the letters and not below them. This has been accepted by our committee and the U.P. committee. I have slightly changed the angle of 'अ', 'आ' so that they may look better and occupy some space after the letter. Otherwise the blank space becomes quite ugly, the vowel signs must clearly show to what letter they belong. This shape is accepted by our committee as also by the Bombay committee.

Further changes in the vowel signs at the top are as I said, mere suggestions, they can be considered when it is time for the second instalment in script reform.

It is necessary even after accepting the reform of writing the vowel signs after their letters, to make them go up the headline and slightly below the length of the payi, to give relief to the eye and make them easy to read.

We may remember here that some of the small letters in the Roman—*i.e.* the English script, raise their heads and some others go below the middle line as in 'leg', 'quick' etc.

NEW DELHI;
7th February, 1951.

KAKA KALELKAR,
Chairman..

QUESTIONNAIRES (APPENDIX F)

CONSTITUENT ASSEMBLY OF INDIA

PRESS COMMUNIQUE

The Hindustani Shorthand and Devanagari Typewriters Committee has issued the following questionnaires regarding Hindustani Shorthand and Hindi Typewriters. The answers to these questionnaires should be sent to the Secretary of the Committee at Council House, New Delhi.

A (1)—Standardisation of Shorthand: General Questionnaire.

1. What in your opinion are the qualities and basic principles of a good shorthand system ?
2. Keeping in view the qualities and principles that you suggest, do you think it possible to make any of the existing English shorthand systems the basis of the Hindustani Shorthand system ? If the answer be in the affirmative, state which can be so adopted and how.
3. Keeping in view the peculiarity of the Hindustani language do you think it essential to adopt a new system, basically and entirely different from the existing English systems ? If so state the grounds of your opinion.
4. Do you think it possible to adopt without any change any of the existing English Shorthand systems from the phonetic point of view for Hindustani ? If the answer be in the affirmative, state to what extent is this possible .
5. What devices of the existing English Shorthand systems can be adopted to make the Hindustani Shorthand system complete in itself ? How are these devices to be employed ?
6. What are your views about the adoption of the standard shorthand system for all the Indian languages ? If such a shorthand system can be made, to what extent in your opinion would it have uniformity all over India ?

7. Which of the two systems, i.e., Phonetic System and the Letter-symbol-system, do you think suited for a good shorthand system ?

What devices and arrangements would you adopt for the vowels and consonants of Hindustani keeping in view its sequence of vowels and consonants ?

'A' (2)

Questionnaire addressed to the Inventors of Hindustani Shorthand Systems.

NOTE :—Please answer the following questions about your shorthand system.

1. How many words per minute can be taken down with the help of your system ? [Case terminations may be counted as separate words in making the calculation.]
2. How would you remove the defects found in the existing shorthand system in respect of speed, accuracy and legibility ?
3. On what principle or principles have you assigned a particular symbol to a particular letter ?
4. What devices have you adopted for expressing the vowels occurring in the beginning of a word and for diphthong ?
5. To what extent and with what results have you followed the principles of thick and thin lines, halving and doubling and writing the vowel jointly or separately or of putting the signs over the line, on the line or across the line ?
6. Have you prepared Logograms, contractions and phraseograms in accordance with your system ? If you have, what has been the increase in speed with their help ?
7. Is your system being followed anywhere, and if so can you submit accurate and verifiable statistics about its extent of use and success ? If you can, please submit the same.

8. What time is taken by students to pick up Business correspondence and Journalistic reporting according to your system ?
9. Do you claim that your system can be used for Indian Languages other than Hindustani ? If it be in use for other Languages, please give a detailed statement of the speed reached and other particulars about it.
10. Would you be able to come for interview to Delhi if the Committee wants to obtain additional information and to test efficiency of your system ?

‘B’

Questionnaire regarding Teleprintery.

1. The Telegraph Department uses Creed machine for teleprinting in English. If we want to adopt this machine for Hindi can you suggest a proper keyboard which will take in the most important letters and the numerals and other signs required for this purpose ?
2. If you consider the Creed machine inadequate can you suggest any improvement over the same or any other machine or model to meet the requirement of Nagari which does not interfere with the existing limitations of the equipment ?
3. If you have any keyboard in Hindi prepared by you for the teleprinter will you give the details of the same with detailed sketch ? Please also state whether you can submit it for an examination and scrutiny if the Committee wants it.
4. Can you suggest any special device for avoiding conjunct consonants with a view to minimise the number of letters in Hindi keyboard ?
5. To avoid dead-keys necessary for obtaining back movement in typing vowel mark can you suggest any other alternative ?
6. What is your opinion for avoiding the conjunct consonant using the mark of Halant for unaccentuating a consonant, if this minimises the number of letters in Hindi ?
7. Can you suggest any suitable telegraphic code for Nagari script ?

STANDARDISATION OF TYPEWRITERS.

Questionnaire regarding the Standard Hindi Typewriters

1. Which letters and vowel-marks would you include in a standardised and efficient Hindi Typewriter ?
2. If a standard Hindi (Nagari) Typewriter be meant to serve all the Indian languages what other sound-symbols would you include in it ?
3. What reforms do you propose to introduce in the Nagari Script to make it more suitable for Typewriters ? Please give a detailed statement of your proposals.
4. What other signs for punctuations etc. would you desire to include in a Hindi Typewriter in addition to the letters and vowel marks ?
5. How many keys should there be in a Hindi Typewriter keeping in view its speed, size, cheapness, low cost and efficient service ?
6. What defects do you find in the existing Hindi Typewriters ? Kindly give a detailed statement of your researches in this respect.
7. Can you suggest for the Hindi Typewriter a new machine which is different from those of the existing Hindi and Roman Typewriters ? Can you suggest any mechanical improvement in the existing typewriters so as to increase both the speed and the number of keys and lessen the strain in typewriting ? If so please submit a detailed statement of your suggestions
8. Can you make any suggestion to lessen the optical, mental and physical strain which a typist has to bear on account of the number of letters, conjunct-consonants and the other complexities of the Nagari Script ?
9. Have you prepared a keyboard for a standard Hindi typewriter ? If so, kindly send its sketch and also enclose therewith a detailed statement of the principles that have guided you in fixing the positions of the letters and signs ? If you have also examined its speed, kindly give a statement of the result achieved.

10. Which of the various styles of letters that are now in use in the Press and typewriters would you prefer from the view point of their beauty and readability ? If you do not approve of any of these types please describe the type you would like to have.
11. What shape or form of the Nagari numerical figures would you prefer if they were to be made standard for the whole of India ? Can you suggest any reform in Nagari figures to make them suitable for all Indian Languages ? What is your opinion about the adoption of Roman numerical figures in place of the Nagari ones ?
12. How many different sizes should there be of the Hindi typewriter ? Would you like to keep any difference in the key-board of standard and popular size machines ? If so what ?
13. Can the existing Roman Typewriters be converted into Hindi ones ? If you consider this necessary or feasible from the point of convenience, availability, and usefulness, kindly give your suggestions in this respect.
14. What effect would your suggestions have on the weight, cost and size of the typewriter ?

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- NOTE.—
1. While making your suggestions please keep in view that the existing Nagari script would have to be retained as far as possible.
 2. No typewriter suggested by you should be of too large a size or of too high a cost.
 3. Any suggestion in regard to the improvement in machines should not increase their complexity. Further the suggestions should be compatible with large scale manufacture.
 4. Answers to the Questionnaire should reach the Secretary of the Committee by the 22nd July, 1948.

152

C. A. 103/HSHT/49.

Dated, 16th August, 1949.

DEAR SHREE PRESIDENT,

We have considered the reference made by you with regard to certain points that had been raised by the Engineering Section of the Directorate-General of the Ministry of Industry and Supply. Our unanimous conclusions are submitted herewith.

Yours sincerely,

KAKA KALELKAR,

Chairman.

Hon'ble Dr. Rajendra Prasad,
President,
Constituent Assembly of India,
1, Queen Victoria Road,
NEW DELHI:

No. 1726

In the circumstances pointed out in the letter of Directorate-General of Industry and Supply, Ministry of I and S., we recommend two keyboards of forty-four and forty-five keys as indicated in the keyboards appended to this report.

We have tried to bring about this reduction in the number of keys without disturbing the arrangement of the keyboard and without causing any corresponding reduction in the speed or the efficiency of the machine. The keyboard having 44 keys has been devised by providing that four signs (1) ? , (2) % , (3) ———, (4) , which had been assigned distinct places in the keyboard originally recommended shall not have any distinct place for themselves, but shall be typed with the help of other marks or letters already provided on the keyboard. Thus question mark can be typed by first typing the numeral (?) and then typing the dot (.), both of which are provided for on the keyboard. Similarly % will be typed by three strokes—first the 'Zero', then the oblique line and then the Zero again *i.e.* 0/0. (3) The sign of underline can be typed by spacing and typing the 'Hyphen sign' continuously. (4) Lastly (,) *comma* can be shown by typing either short (,) or (/).

In the keyboard of 45 keys, the signs of (—) *underline* and (,) *comma* are to be retained and hence that key is placed in such a position that it can be removed without any infringement in the internal arrangement.

It may further be emphasised that the recommendation of the Hindustani Shorthand and Hindi Typewriter Standardisation Committee with regard to the typing of vowel marks should be kept in view in the manufacture of the Hindi Standard Typewriters.

We repeat here our recommendation that half a dozen typewriter machines may be prepared and supplied to us according to the new keyboard of 45 keys suggested, so that the utility of the keyboard may be tested by us by actual practice at 3 places, *viz.*, Wardha, Madras and Allahabad. We find it necessary to use two typewriters at each place, so that the trial may be adequate.

We will be in a position to give the results of our trial within about a period of six weeks.

The 16th Aug., 1949.

KAKA KALELKAR,
Chairman,

M. SATYANARAYANA,
Member.

B. R. SAKSENA,
Member.

MINUTES OF THE MEETING

(Held on 14th, 15th and 16th Aug., 1949.)

PRESENT:

- | | | |
|---------------------------|----|-----------|
| (1) Shri Kaka Kalelkar | .. | Chairman. |
| (2) Shri M. Satyanarayana | .. | Member. |
| (3) Shri B. R. Saksena | .. | Member. |

IN ATTENDANCE:

- | | | |
|---------------------------|----|------------|
| (1) Shri Balkrishna | .. | Secretary. |
| (2) Shri Murlidhar Sabnis | .. | Adviser. |

The letter of Directorate-General of the Ministry of Industry and Supply and the order of Hon'ble the President, Constituent Assembly of India, on that was placed by the Secretary before the Committee. The Committee discussed different suggestions and finally decided that keyboards of 44 and 45 keys as given in the charts be recommended.

KAKA KALELKAR,

Chairman.

M. SATYANARAYANA,

Member.

B. R. SAKSENA,

Member.

BALKRISHNA,

Secretary.