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FIRST CENSUS OF PAKISTAN, 1951

VOLUME 9

ADMINISTRATIVE REPORT

PART ONE—The Census Commissioner's Report.

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FIRST CENSUS OF PAKISTAN 1951

Administrative Report

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PREFACE

In offering this report on the administration and execution of the 1951 Census Operation to the Government of Pakistan, I do so with mixed feelings. It is with pride and gratitude that I record the devotion, loyalty, hard work and intelligent co-operation of the Census staffs, the enumeration organisation, and the public, which have in fact resulted in so much useful and fairly reliable information being made available. It is with feelings of regret and humility that I have to write so often that in future I recommend a different line of action, or the use of greater care, to avoid the pitfalls into which some of our most hopeful plans have fallen. Nevertheless, progress in any field depends on a determination to do better and actually it gives me some comfort to think that perhaps not the least valuable part of my three and a half years' work in Pakistan is the list of recommendations in this report.

The main Census Reports discuss the question of the accuracy of the Census. I should like to emphasize that as far as hard work and good planning by the Provincial Superintendents of Census Operations and their staffs, coupled with a very co-operative public response could make it, the Census is quantitatively a success. No Census is 100 per cent. right, but this 1951 Census of Pakistan covered the ground more completely and is less distorted by communal competition than past Censuses. It will probably show up in the years to come as looking very near the truth. In the qualitative assessment of the characteristics of the people, such as their ages and their economic activities, accuracy is less certain. Nevertheless, in these respects also much valuable information has been gathered, and of sufficient reliability to be of benefit. And the lessons of this Census should lead to still more useful results in 1961, or earlier if my recommendations for intercensal surveys bear fruit.

The Provincial chapters are worth special study. They will be useful to the next set of Provincial Census Officers and also they demonstrate that uniformity is difficult and complete centralization probably impossible.

In the Introduction to the main census report on Pakistan as a whole I have drawn attention to the good work of many members of the Census staff. I should not like the recommendations made in this administrative report to the effect that the Census organization should in future contain more men of professional competence in the field of statistics, to be taken as a slur on the administrative ability or devotion to duty of any of the men I have mentioned. The Governments of Pakistan and of the Provinces gave of

their best and supported me in every thing in their power. But I do most urgently recommend that some of the junior officers who have shown ability and energy in this Census, and who have gained much valuable experience, should be selected for further training in census technique and statistical practice, and earmarked for service in the census of 1961.

I say Good-bye to Pakistan with regret at parting from the many friends in and outside the Census organisation who have made my work most happy and interesting. I accepted the job as a challenge. I have enjoyed the fight. Here is the story of it and an idea of how I would conduct it had I to do it again.

Karachi
22nd November 1953.

E. H. SLADE,
Census Commissioner, Pakistan.

Part I

The
CENSUS COMMISSIONER'S REPORT

CHAPTER—I

INTRODUCTORY EXPLANATIONS

SECTION 1.0—PLAN OF THIS REPORT

1.00. Purpose and Classification: This Administrative Report explains the plan for the Census operation and recounts how it worked out in practice. The chief intention is to help and advise the officers who will be responsible for organising and directing the next Census of Pakistan. Since a great many of the comments, especially the recommendations of a financial and organizational nature, are in fact suggestions for consideration of Government, this volume is classified as "For Official Use Only".

1.01. Scope: It is not intended in this volume to discuss the statistics obtained by the Census; that is the intention of the Provincial Reports and the General Report for Pakistan. Nevertheless, this report indicates in many ways the accuracy and limtations of the statistics obtained and shows the reason for varying degrees of success in different parts of the work. It is therefore an important contribution to the statistical comments and it is hoped that it will be of help in interpreting and evaluating the results. Copies of this report should therefore be made available to Government Officers engaged in the study of the Census figures.

1.02. Arrangement: (*a*) This report is arranged in the two parts. The first 8 chapters contain the explanations of the overall plan and general notes on its execution. The chapters in this part deal generally with the various stages of the operation in the chronological order in which it was carried out. Chapter 8 is a brief summary of the whole of Part I and recapitulates the recommendations made in the previous chapters.

(*b*) Part II contains chapters written by each of the Provincial Superintendents of Census and gives in their own words the story of the work in their provinces. In these Provincial chapters there is naturally a certain amount of repetition of the explanations of the overall arrangements which are set out in Part I, but, as far as can be done without destroying the thread of the Provincial Superintendents' own reports mere recapitulations of the general plan have been deleted.

(*c*) Throughout Part I the plan is first explained; this is followed by notes on the execution of the work and finally the subject is summarized and concluded by a note of the lessons to be learnt. In drawing these deductions it has not always been possible to adhere strictly to the chronological order in which the parts of the operations were performed. But cross references have been given to assist the reader in linking the subjects together.

(*d*) Paragraph numbers have been assigned throughout the whole report for ease of reference. The paragraph numbers in Part I each consists of three digits; the first of which is the chapter number, the second is the section within the chapter and the third is the paragraph of the Section. In Part II, the paragraph number is preceded by the initial letter of the Province and the paragraphs are numbered consecutively throughout each chapter.

(*e*) A summary of cost of the Census is at Appendix 'A' and a schedule showing the staff employed is at Appendix 'B'. Notes regarding the size of the staff, and recommendations for guidance in organizing the offices which will be required for the 1961 Census, are given in Section 1.3.

SECTION 1.1—THE TIME ELEMENT.

1.10. The Hurry: The lack of time and necessity for speed has been the all-pervading atmosphere of the Census of 1951. To a great extent this was inevitable in the circumstances. The new State of Pakistan had not begun its separate existence until late in 1947. The governmental administrative service had to be created entirely anew and the staffs had to be found from the Muslim elements of the administrative services of the Provinces which formed Pakistan and from the devoted officers who "opted for Pakistan" from the central services of the Government of India. It is little short of a miracle that an efficient Governmental organization was operating so quickly. It was only natural that the Census of 1951 could not be given consideration until late in 1949 by which time of course the Census Commissioner should already have been appointed.

1.11. First rapid steps: The Census Act was placed before the Legislature late in December 1949, and received the assent of the Governor-General on the 13th January 1950. At the same time the search began for an officer to serve as Census Commissioner. No suitable candidate could, however, be found in Pakistan and eventually in January 1950 the post was advertised abroad through our High Commissioners. In the meantime, the services of Mr. Mizanur Rahman (a Joint Secretary in the Department of Refugee & Rehabilitation of the East Bengal Government) were secured to act as Officer on Special Duty in charge of the Census Section of the Ministry of the Interior. He took up his post on the 18th of February, 1950 and immediately organized his office and initiated three essential preliminary undertakings. First, negotiations were instituted with the Provincial Governments for the nomination of suitable officers as Provincial Superintendents of Census Operations (PSCs). Secondly, negotiations were started with all Central Ministries regarding the scope of the information to be obtained in the Census; and thirdly, the Census budget for the financial year 1950/51 was drawn up and accepted by the Ministry of Finance. Speed here was essential since these matters should have been settled long before.

1.12. Rushing out the Census Commissioner: Candidates for the post of Census Commissioner were interviewed in the office of the High Commissioner for Pakistan in London on the 3rd of April 1950 by a panel which included the Chief Census Officer of the Registrar-General for England and Wales. As a result of this interview I was offered the appointment as Census Commissioner for Pakistan early in May 1950. At that time I was serving in Germany as the British Co. Chairman of the US/UK/French Central Statistical Office of the Allied High Commission. The work of that office had nearly reached a point from which operations could proceed without difficulty. We managed to achieve agreement with the new German Federal Government during May 1950 and my resignation from the Control Commission was accepted. I left Bonn on the 28th of May and after a dash to London to settle my affairs, I arrived in Karachi on the 10th of June 1950.

1.13. Immediate action: From then onwards the pressure of time has been relentless. I had told the appointment panel in London that no Census could be organized in less than 9 months. Even this was a perilously short period. Had I not been involved in organizing the German Census of 1946 which was carried out in a similar rush, I would never have thought such a short time at all possible, especially in the light of the recommendations of the United Nations regarding the necessity for careful preparation. However, the Census in Germany has been successful and I believed, rightly as it turned out, that Pakistani enthusiasm and patriotism would balance the efficiency of German officials and the compelling power of Military Government. Nevertheless, there was not a moment to lose and I shall always be grateful for the preparatory work which had been done by Mr. Mizanur Rahman and his staff under Mr. N. Shamsi. I found that PSCs had all been selected and their appointments notified in the Gazette of 26th of May. The budget for 1950/51 had been accepted in principle at Rs. 7,17,-000 and a conference of the PSCs and the representatives of all Ministries affected had been called to meet in Karachi on the 19th of July to settle the scope and general method of Census opera-

tion. Papers were immediately prepared setting out the points to be considered and settled at the Conference. Briefs of conference papers and records of proceedings are found in file No. 2/11/50-Census. From the first it was realized that if the Census were to take place at the usual date in 1951, no serious changes could be made in the Census organization which had been used in the 1941 Census and that the main lines of the operation must be settled finally and immediately and be kept as simple as possible.

1.14. Census Data: The conference considered a suggestion that the Census date should be postponed in order to give proper time for planning and for participation by the newly formed Central Statistical Office of the Ministry of Economic Affairs. It was agreed, however, that it would be just possible to adhere to the regular date, despite the strain this would throw upon the Provincial Superintendents of Census and their staffs. It was felt that all difficulties must be over-borne by the urgent need of Pakistan for data and there were of course statistical advantages in adhering to the regular 10-year Census interval. I pointed out that in practice this would mean that a great deal of work that should be done in the preliminary stage would have to be tackled after the Enumeration. This would include decisions as to the method of abstracting and tabulating the data, the form of the tables and the general organization of the post-enumeration work. These things should properly be part of a complete plan of which enumeration formed one stage. The lack of time necessitated the Enumeration being carried out with only general ideas as to how the results would be finally assembled as statistical tables. Organization of later stages on a hand-to-mouth basis might lengthen the period between Enumeration and the availability of the data. This was accepted and the full conference settled the main outlines of the plan, the list of questions, and the Census date.

1.15. Full speed ahead: Having thus cleared general policy the PSCs and CC continued in conference and worked out a plan for the pre-enumeration work. Speed was its keynote. It was embodied in the Census Calendar issued as Appendix 'A' to Part I of the Code of Census Procedure. By dint of fearful efforts the main dates in this calendar were kept and it can be claimed that the plan worked out well. Nevertheless, time and again we were confronted with difficulties and problems which cried aloud for thought, consultation and re-consideration. But the inexorable pressure of the calendar prevented any serious change of direction, and ruthlessly cut out many ideas for major improvements. To give but two examples; by September 1950 it had become obvious that more detailed instructions were needed if the Cottage Industry Enquiry, which had been launched as part of the House-listing work, was to be really effective. But the instructional classes had been held and the men had dispersed to their work. Another case was the Economic Activity question, or rather set of questions: based on the test of the questionnaire and slip and the advice of the Central Statistical Office, changes were made to give increased precision to these questions. I would have liked to have tried them out again in districts and to have included a plan for using symbols to a greater extent in these questions, but the slips had to go to press immediately.

1.16. The future: Therefore our success in organising the enumeration, which as a record of the numbers of the people and their main characteristics is reasonably complete, should not lead to an idea that the period was sufficient. It must never be attempted again, please. A clear year and a half, or preferably two years, before enumeration is the minimum safe time for organization. This will enable the operation to be organized as a whole and the piece-meal post-enumeration planning to which we had to resort in 1951 and 1952 will be avoided. But I would emphasise that even two years is really a very short time in which to plan and organize the Census particularly as in future the territorial organization must be much more clearly defined and as far as possible, and certainly in towns, should be done on maps. However, the abolition of the "Phoenix System" will ensure that the preparatory work is begun in ample time. But it will be essential that the Census Commissioner-designate should be associated with this work at least on a consultative basis and that he should

take up his full-time appointment not later than the early part of 1959.

SECTION 1.2—THE PHOENIX SYSTEM.

1.20. *Links with the past:* Census Commissioners for several decades have reported strongly against what they have called the "Phoenix System" of organizing the Census in this country. They likened the Census Offices to that mythical bird—"the Phoenix"—which was supposed to have perished by burning its nest and to have risen again from the ashes. This is exactly what Census Commissioners were required to do under the Government of India. They were appointed into a vacuum in barely sufficient time (although none of them had such a short time as was allowed in this Census); they achieved Enumeration and tabulated the results; they issued their reports, and they disappeared. This system effectively ensured that the lessons of one Census were not passed on to the next. Each Census Commissioner faced with the organization of an enumeration to be carried out in less than 2 years time had little chance of improving upon the system used by his predecessors, as far as he could discover what that system was. The introduction of modern statistical techniques such as sampling had to be foregone, as there was no time to study and plan the basic frame-work. The designing of the Census Slips or Schedule so as to produce a properly pre-planned set of Census tables was most difficult because there was no time to plan the tables—enumeration itself filled the immediate programme and the question of sorting and tabulation had to be left until after the enumeration arrangements were complete.

1.21. Census Records: The Phoenix system has other disadvantages even more serious than those which affect the organization of the Census itself. One of my first tours was to the Punjab and the PSC showed me two godowns in the Secretariat compound in Lahore which had been locked up for 8 years and which contained the records of the 1941 Census of Punjab and Delhi provinces. There were huge wooden cases containing enumeration documents the retention of which had obviously served no purpose better than the nourishment of white ants. There were large collections of compilation documents, piled haphazard into cases. The only things of use were a damp and damaged but still complete set of Census Reports for 1931 for the Punjab. These have been very difficult to obtain since partition and this find was very welcome, but the rest of the treasure, some of which might have proved most valuable had it been arranged and exploited properly, had by the mere effluxion of time become perfectly useless. We retained a few samples and agreed that the rest might be destroyed.

1.22 Inter-Censal Activities: Had there been an inter-censal office in past decades charged with the care and custody of Census records and their maintenance in proper order, a great deal of subsidiary information could have been obtained from them. In addition, the next Census, at any rate as regards its geographical divisions, could have been organized well ahead; there would have been an officer charged with the constant duty of providing the estimates of the current population which are urgently wanted for numerous day-to-day administrative purposes; and there would have been an excellent chance of organising inexpensive but reliable sampling enquiries on the Census framework.

I will, however, not dwell further on this subject. Not only have previous Census Commissioners put the whole case most effectively in their reports, but there would appear to be every hope that the Government of Pakistan will not be so unenlightened as to abolish their Census Office completely.

SECTION 1.3—ORGANIZATION OF CENSUS OFFICES.

1.30 Central Office: The Central Office of the 1951 Census organization is known as the "Office of the Census Commissioner, Pakistan" and is a section of the Ministry of the Interior. As such it operates within the Secretariat and not as an Attached Office. This has been an advantageous arrangement eliminating a great deal of unnecessary paper work. It facilitates agreement on policy and simplifies the procedure for obtaining sanctions. The rapid manner in which the Central Office was organised has already been described,

The staff consisted of the following:—

(*a*) *Census Commissioner*: who was granted the status of a Joint Secretary but was not given an ex-officio rank as such. The Census Commissioner for 1941 in his Administrative Report pleased strongly for the grant of an ex-officio status for future Census Commissioners. He pointed out the delay which the absence of ex-officio Secretariat standing involved in the obtaining of sanctions and in giving executive orders in connection with establishment matters. Personally, I cannot say that the lack of an ex-officio status has been a hindrance to me. This is probably due to the fact that at all critical stages in the Census operations an officer of the Secretariat has formed part of my staff. He has managed the Budget, carried out all inter-departmental negotiations, obtaining my personal support where that was required, and has himself issued the necessary authorizations.

(*b*) *Census Commissioner's Deputy*: From the start of the Census Section Mr. Mizanur Rahman as Officer on Special Duty (Census) in the Ministry acted as full time Deputy to the Census Commissioner. He was appointed in February 1950 and carried the ex-officio rank of Deputy Secretary. When he was promoted to the regular rank of Deputy Secretary and left the Census Organization, he was after a short interval replaced by Mr. A. Rashid. Mr. A. Rashid had the rank of Under Secretary in the Ministry. Both these officer concentrated particularly on the financial and establishment side of the Census organization. But both of them also deputized for the Census Commissioner during his extended tours and took a great deal of the organizational work on their shoulders. Both of them hailed from East Bengal and were extremely helpful in their advice regarding the somewhat different conditions applicable to that province. Mr. Mizanur Rahman had had experience of 1931 Census when he worked in one of the Hand Sorting Centres in Bengal and his advice regarding the practicability of the questionnaire and the general organization of the sorting centres was invaluable. Mr. Rashid had attended a course of instruction organized under the point 4 programme by the Government of U. S. A. He had been attached to the Bureau of the Census, Washington and he made a great contribution to the tabulation scheme. During the short leave of the Census Commissioner in 1952, which would otherwise have been impossible, he managed the Census Office and kept the work going.

Both these officers fulfilled an essential function, but they were never really heavily engaged. Mr. Yeatts, the Census Commissioner for India in 1941 and for a while in 1951, gave it as his opinion that the Census Commissioner could not use, and did not need, a Deputy. I can see his point; the direction and control of the census work is a huge task, but it requires that every part of it shall be fully co-ordinated with the whole scheme, and at Commissioner's level the scheme exists, or is forming, almost entirely in his own mind. But Mr. Yeatts died at his post in 1950, and thus showed conclusively the wisdom of having a second officer of some seniority. In fact the initial rush could not have been made without the help of Mr. Rahman. Neither could I have carried on through another hot weather without the leave during which Mr. Rashid acted for me.

(*c*) *Statistical officer*: This Officer controlled and supervised the clerical staff engaged in:—

(*i*) Statistical research and analysis;
(*ii*) Preparation, production and distribution of the questionnaire, Enumeration slips, instructions, codes of procedure etc.;
(*iii*) Tabulation, compilation and printing of tables and reports;
(*iv*) Correspondence with Census staff in provinces regarding arithmetical queries and the general interpretation of instructions.

Theoretically he worked under the O. S. D. or Under Secretary, but in the nature of things most

of his activities were in practice controlled directly by the Census Commissioner.

Mr. N. Shamsi filled this vital post in the organisation. His previous experience had been obtained as a statistical research officer in the Revenue Division of the Ministry of Finance, and he had been specially prepared for work in the Census at a course of instruction held at New Delhi in 1949 under the auspices of the Population Commission of the United Nations.

Originally it had been intended to designate this post as Office Superintendent, but it was soon discovered that the executive statistical work, would be a complete full-time job for this officer. It was agreed that his designation should be Assistant Statistical Officer. I am doubtful whether the designation was a happy one. I chose it because Mr. Shamsi's work and experience seemed to fit the grade which goes by that name in the U. K. Civil Service, but it does not really fit here.

(*d*) *Assistant Incharge*: This post was introduced early in the organization as soon as it was discovered that the actual executive Census work would keep the Statistical Officer fully employed and he could not act as Office Superintendent. The A. I. C. dealt chiefly with matters connected with Finance and Establishment and was also responsible for general discipline and office routine. As long as large staffs existed in Provinces, this post was undoubtedly essential but there was a tendency to overlapping between the A. I. C. and the A. S. O. and towards the end of the Census operation the A. I. C's post was dropped.

(*e*) *The clerical staff*: At the outset there were three Assistants and 3 L. D. Cs. The Assistants dealt respectively with (*a*) establishment, forms and legislation (*b*) Co-ordination with Ministries regarding Census schedule and (*c*) enumeration planning. The Lower Division Clerks were a Diary Clerk, a Typist and a General Clerk, for records etc.

(*f*) *The Investigator*: Later in 1952 the Central office staff was augmented by the addition of an Investigator and a further Assistant. A "Statistical team" was then formed consisting of all the Assistants except the one dealing with finance and establishment. It worked under the investigator who was himself responsible to the Census Commissioner through the Statistical Officer. This team checked all draft tables submitted by Provincial Superintendents, compiled the All-Pakistan tables, carried out computation and research work and was responsible for proof-reading of all printed matter. The team worked in close conjunction with the compilation team and members of the latter were brought into the Central office to join the team and work under the Investigator as and when required.

(*g*) *Stenographer*: The above clerical staff was in addition to the Census Commissioner's stenographer who was in fact a personal secretary and, besides a continuous and voluminous correspondence, bore the brunt of the enormous amount of short-hand work required in the composition of the three Codes of Procedure with their three Annexures dealing respectively with classification codes, the Machine Sorting programme, and the Layout of the Tables. OSD/US also had a personal stenographer who was also kept very busy.

(*h*) *Class IV Staff*: Class IV staff consisted of two Daftaries, and seven Peons.

1.31. Provincial Offices: The Provincial Offices of the 1951 Census organization are attached to the Ministry of the Interior of the Central Government and are not part of the Governmental service of the province in which they operate. The personnel, however, have in every case been recruited by secondment from the provincial services or are temporary employees engaged from outside sources. The Provincial Governments nevertheless have made considerable contributions to Census work in their Capital Cities by the free provision of offices, loan of furniture, etc., all of which contributed towards the economical operation of the Census. The assistance given in these and in many other ways by Provincial Governments is gratefully acknowledged. The staff consisted of the Superin-

tendent of Census in each province and his Deputy together with Head Clerk, Stenographer and such other clerical and class IV staff as was necessary. The staff varied considerably in the different provinces. Details will be found in Appendix 'B' and in the chapters written by each Provincial Superintendent of Census.

1.32. Provincial Superintendents of Census: The Officers who served in that capacity in 1951 Census were chosen from among the senior civil servants in the Provincial Services. For the most part they were nearing the end of their active life and the same officers will not be available for the 1961 Census. None of them had any Census experience to speak of and none were trained in or had even read much about statistics. Their acquaintance with mathematics was for the most part a memory of their student days. Each of them was, however, an experienced administrator with a most intimate knowledge of his province, its people and its Governmental organization. They had many friends at all places and levels in the Provincial civil service and among the public. For the purpose of organizing the enumeration therefore they were excellent. They were a little less happy in sorting and tabulation, but they carried out these tasks with a very intelligent, and often usefully critical, regard for the detailed instructions. Their common sense analyses of the data on the basis of their knowledge of their country are most useful. I will in no way belittle their efforts, although I am recommending slightly different arrangements for the next Census.

Two serious incidents in connection with the Provincial Superintendents of Census are worth remembering. First almost immediately after the first Karachi conference the Provincial Superintendent for Baluchistan and States, who was a retired officer re-employed for the Census work, found that the pressure and complication of it would be too much for him and resigned his post. He was promptly and successfully replaced but this incident indicates clearly that it is easily possible for a Provincial Superintendent of Census to be too senior.

Secondly, the Provincial Superintendent of Census for N.-W. F. P. and Frontier Regions died suddenly in September 1950 and great difficulty was found in replacing him owing to the shortage of experienced officers in the province. His place was filled with success by an officer who did the Census work as a part time job coupled with the Secretaryship of a Provincial Department. However it is important to guard against the supposition that this arrangement, despite its economy, is desirable. It worked with this particular officer, due to his splendid energy and the work of his predecessor and of his deputy, but the post of a Provincial Superintendent of Census during the period of preparation and organization, undoubtedly calls normally for a full-time senior Officer.

1.33. Deputy Superintendents of Census: All the Provincial Superintendents of Census had been appointed in time for the initial conference in June 1950 and at that time were in the course of organizing their offices. In this matter all of them pressed for larger office and supervisory staffs than had been employed in 1941 and particularly for the provision of a junior gazetted officer as a deputy. It was decided that this would be essential in some of the Provinces.

In East Bengal, the mere size of the population made it quite impossible to contemplate the Provincial Superintendent being able to carry out the touring necessary to organize his province and instruct the staff in the districts unless he could leave his office in the charge of a capable deputy.

In Baluchistan the distances to be covered made it equally necessary to have a deputy there, whose chief function in the initial period was to share with the Provincial Superintendent of Census the work of personally instructing the enumeration staff.

This necessity for having more than one officer to carry out instruction below provincial level, and to inspect the whole Census organization on the ground, forced us eventually to appoint deputies in the N.-W.F.P. and Punjab. These joined during the last few weeks of the enumeration period and remained during the organization of the sorting centres.

The only province which therefore did not have a Deputy Superintendent of Census was Sind and

there is no doubt that the absence of such an officer was largely responsible for the nervous breakdown which took the Provincial Superintendent out of the Census organization immediately after the Enumeration.

1.34. *Census Staff of Provincial Headquarters.* The officer staff employed in the provincial headquarters was therefore as follows:—

a. East Bengal. The Provincial Superintendent of Census was Mr. H. H. Nomani, and his Deputy was Mr. A. K. Ahmad Khan. Both these officers are members of the East Pakistan Civil Service and served throughout the Census operation. In view of the size of the population, and thus of the compilation work, Mr. Badiul Alam was appointed in April 1951 as another Deputy Superintendent of Census to take special charge of this part of the operation.

b. Baluchistan. The Provincial Superintendent of Census was Agha Mir Yaqub Shah a member of the Provincial Civil Service. He took-over on the 15th of July 1950. His Deputy was Hakim Ghulam Husain. Both these officers served throughout the whole Census operation.

c. Karachi. The Federal Capital Area was treated as a separate Census Province and after some initial delay it was agreed that the Chief Census Officer of the Federal Area should be a full-time member of the Census Organization with the same responsibilities as the Provincial Superintendents of Census. Mr. Ali Mohammad Jafri, a retired officer of the Provincial Civil Service of the Central Provinces (India) who came to Karachi as a refugee, first held this appointment and organized the enumeration and started the abstraction work. In view of the complication of the Machine Sorting operation, however, he was succeeded early in 1952 by Mr. Akbar Kabir who had served as a District Census Officer and had controlled a Hand Sorting Centre in East Bengal.

d. N.W.F.P. The first Provincial Superintendent of Census was Khan Abdul Latif Khan (Provincial Civil Service) who conducted the initial arrangements but he died in September 1950. He was succeeded by Shaikh Abdul Hamid (also of the Provincial Civil Service) who took over in October 1950. In addition to his post as Provincial Superintendent of Census, Shaikh Abdul Hamid was Secretary to Government, North-West Frontier Province in the Food and Civil Supplies Department. During the pre-enumeration period and the early part of the sorting operation, Captain Ashraf Husain (Provincial Civil Service) acted as Deputy Superintendent of Census and was succeeded during the later part of the sorting and compilation work by Mr. Yusuf Ali.

Punjab. Mian Hassan Mahmood, B. A. (Oxon), Barrister-at-Law, served as Provincial Superintendent of Census for the Punjab and Bahawalpur State during the whole of the operation. He was originally an officer of the Provincial Civil Service but was appointed to the Civil Service of Pakistan in 1952. From July 1951 he held the post of the Provincial Superintendent of Census on a part time basis in addition to that of Deputy Secretary of the Punjab Government in the General Administration Department. During the pre-enumeration period he was assisted by Agha Ahmad Raza Khan who worked in the Census on a part time basis in addition to his duties as under Secretary in the Rehabilitation and Refugees Department. Shaikh Muhammad Sharif who had been incharge of the Lahore Hand Sorting Centre, became Deputy Superintendent of Census early in 1952 and conducted the compilation and tabulation work.

Sind. Mr. Mohammad Hashim Abbasi was Provincial Superintendent of Census from the inception of the Census work until after the enumeration when he proceeded on sick leave and was replaced by Mr. Gul Hasan M. I. Abbasi, who directed the sorting, compilation and analytical work. Mr. Mahboob Ali Mohammad Hashim Khoja was incharge of the Hand Sorting

Centre at Hyderabad until its disbandment and thereafter continued as Deputy Superintendent of Census. All these officers were members of the Provincial Civil Service for Sind.

N.B. The designation of Deputy Superintendent of Census was applied to officers-in-charge of Hand and Machine Sorting Centres as well as to the above officers

1.35. **Census staff below Provincial level.** The chief administrative officer (District Magistrate, Collector, Deputy Commissioner, etc.) in each district was made responsible for finding District Census Officers and Charge Superintendents from his regular staff. For the most part these posts were filled on a part-time basis, the official concerned combining the Census work with his normal duties, but the District Census Officers generally worked full-time on the Census for the last few months before enumeration. Most of the Supervisors and many of the Enumerators were also found in this way but a certain number of these two classes were recruited as volunteers from the Non-Official population. The Organization of the Census staff below provincial level is discussd in Chapter 3.

1.36. **Conditions and pay**: It is obvious from the experience we have had in 1951 Census that a more definite recruitment policy is required for the staff in the Central and Provincial Census offices. All ranks in the Census organization have undoubtedly felt that they were being asked to work considerably harder and quicker than in an ordinary Government office, but that there was little compensatory advantage. The high pressure of work was not continuous, but I feel it is safe to say that, while it never dropped below the normal standard of output expected in the Civil Service, the Census did often call for specially arduous efforts sustained for several months. This was certainly true in the pre-enumeration period and it occurred again after the sorting was completed and the tables had to be rapidly prepared. Finally, at the end the temporary nature of the work inevitably results in a rush to complete the report before the financial authority for the offices expires. In addition to these periods of intense activity in the Central and Provincial Offices, the sorting work, both Hand and Mechanized, was done under industrial factory rather than government office conditions, and the staff of the Sorting Centres regarded their hours of work and intensity of effort as definite hardships.

The Provincial Superintendents of Census and the Deputy Superintendents of Census, most of whom were gazetted officers, received special census pay in addition to the pay of their immediately preceding appointment. This was a fairly satisfactory arrangement although it led to certain anomalies due to the differences in the previous appointment of officers. Moreover, the Census pay was not issued in every case until after the abolition of the "30-per-cent rule."

Most of the officers did thus obtain some benefit for their extra work, but the Ministerial staff did not share in this advantage. The Provincial Superintendents in their reports have recommended that appointment to the Census organization should carry with it Special Pay of about 25 per cent of the basic pay and that this should be applicable to all ranks. That might well be a fair and reasonable solution but I am inclined to think that the Census job lasts too long to be dealt with on the basis of Special Pay which a man would lose when he returns to his parent office. There is also the feeling that Special Pay in this case is "Jam with the Pill"--sweetening a nasty job. That is not how the Census should be regarded. It is a valuable nation-building operation of intense interest, and should be done by enthusiasts with a sense of mission. Such men will be far more valuable after their Census experience. Promotion is for them a more fitting recompense and for the Government a better bargain.

1.37. **Staff and Recruitment**: As has been already shown for the 1951 Census the full-time staff for the Central and Provincial offices was created by transfers of Government servants from other Departments. The exception was the Census Commissioner who was specially recruited on contract, and a portion of the clerical and class IV staff who were engaged from outside the service as temporary employees.

The conditions and pay offered to Government servants on transfer to the Census organization

left something to be desired. As regards the clerical staff cases occurred where higher rates could be paid to the temporary clerical staff from outside the service than it was possible to issue to more responsible and more competent regular employees who were transferred to the Census staff. These anomalies should certainly be avoided and a clear policy on recruitment is obviously required.

The problem of augmenting the Census staff is rather like that of bringing a military unit from a peace to a war footing. The Central Census organization will, it is sincerely hoped, have been in existence as a nucleus throughout the inter-censul period. Key men will have been trained and the basic work of planning the next Census will have been carried forward to the point where the Central and Provincial directing staffs have to be built up by stages to their operational strength. For this purpose a series of establishment plans for the various stages should be prepared. Those for the latter portion of the work may be tentative, but there should be a long-term plan and within it a short-term plan for the first stage.

The plan of establishment should take into account lessons in this Census and the changed conditions which may be expected in 1961. In the following paragraph some suggestions are made regarding the establishment required. Once the plan of establishment is approved the appointments to it should be governed by a recruitment policy. The staff will include administrative officers, statistical officers, clerical and class IV staff. The officer grades will almost certainly have to be filled by transfers from other Government Departments and from Provincial services except for the few officers who will already be working in the Census Office. The clerical staff should also as far as possible be found from within the Government service. All the Provincial Superintendents of Census stressed this point very firmly. The Census establishment plan should lay down the scale of pay and Special pay applicable to each post. Where it is found necessary to resort to recruitment from outside the service the point in the scale at which the recruit's starting pay is fixed should have due regard to his training and experience but should not exceed that of a regular Government servant of the same ability.

As regards transfer from Government service into the Census organization there should be some incentive to attract the men selected. The Census Commissioner for 1941 lamented that the Census offered to its staff "two years overwork and then the sack" and went on to say that "the only class to whom Census employment can be said to have any real attraction is the unemployed or absolute beginners". "This is all wrong" he states, and he urges that "at the very least the administrative side of the Census should be manned by men who have a standing in a permanent department which is taken into account in all departmental schemes of promotion etc., and to whom the Census experience may be a definite source of opportunity".

1.38. Staff Organization: The following suggestions based on our experience in this Census are offered regarding the organization which would appear to be desirable next time. In brief my recommendations are that the officer who has been in charge of the continuing nucleus census office should develop into the Census Commissioner's deputy, and that each Provincial Census Superintendent should have an expert assistant, who would bear the brunt of the post enumeration work.

(*a*) *Census Commissioner's Office*: (*i*) The Census Commissioner with Personal Assistant (Stenographer) is certainly needed. I have already commented on his status and some notes on his qualifications are given below. All instructions on Census work should issue in his name: he must take personal responsibility for the whole operation.

(*ii*) He needs a full-time Deputy who should work throughout the whole period of the Census. If the Census Commissioner does not have secretariat status, the deputy requires to have it, and I suggest that, if he is not already in possession of it by virtue of his rank, he should if necessary be granted the ex-officio status of Under Secretary. The Census Commissioner must perforce be on tour a great deal and during his absence the work must go forward without a break. His deputy therefore must be an all-round man and the right

choice would be the officer who has been incharge of the inter-censal office. The designation should be Deputy Commissioner of Census (Central). In addition to being the general understudy of the Commissioner, this officer should coordinate the whole central office and also deal personally with all questions of establishment and finance. He might also keep in his own hands the organisation of Classification Codes, instructional classes and the layout of tables. All the work of the Deputy must be conducted in consultation with and on the authority of the Commissioner.

(*iii*) Below the Census Commissioner and his deputy, experience has shown that the work falls into three parts: Statistics, Punched-Card techniques and Administration.

A junior officer should take charge of the Statistical side of the work under the direction of the Census Commissioner and his Deputy. He will manage the executive work connected with the production of the enumeration slips, instructional leaflets, Codes of procedure etc. and should in due course direct compilation, analysis and presentation of the results in the All-Pakistan tables, Bulletins and Reports. After enumeration the staff under him would grow as the work progresses so as to deal with compilation, proof-checking, etc.

In this part of the work also falls the mapping and charting section. This section is likely to be quite busy during the early pre-enumeration stages, in fact, it should have been preparing maps delimiting the census areas in the inter-censal office. Later it will produce many of the lithographed sorting and tabulating forms and in the end the charts, maps and graphs which will accompany the analytical part of the report.

A punched-card machine expert must work as part of the Census Commissioner's office from the beginning of the planning stage to ensure that the information which is to be machine sorted, and the method of coding it, are arranged to fit into the punching and sorting plan. It must be remembered that the use of machine sorting may affect the form of the census questions and will certainly affect the design of the enumeration documents. It might be a wise plan for this officer to design both the hand and the machine sorting plan to ensure that they fit together.

During this Census, the Statistical Officer dealt with printing and despatch as well as with matters more directly associated with his field. This overloaded him seriously and moreover it is unlikely, that the normal statistical officer will be good at this work which is more of an administrative type. It is suggested that the Office Superintendent, who should deal with normal administrative matters and office routine, should also manage the despatch of Census documents and the whole of the printing operation except the design of layouts and illustrations.

(*b*) *Provincial Superintendents' Offices*: I feel that as much as possible, the Census work should be de-centralized to Provinces. This is an important question of principle, and there is a lot to be said on both sides. But on practical grounds there is in fact no possibility of the Census of Pakistan being taken or sorted on a centralized basis with only junior officers in provinces.

(*i*) Therefore the work of the Provincial Superintendent of Census must continue and the post must be held by a senior Administrative Officer. A note of the kind of qualifications he needs is given below. His designation should be changed; the present words have wrong associations as regards status. The

chief officer of the Census in a province should be known as the Deputy Commissioner of Census.

In view of my recommendation that a competent statistical officer should be provided to assist him, the Deputy Commissioner (Census) himself may if desired be allowed to complete the Census work on a part-time basis taking up a second appointment soon after he has published the provisional results. This second post must be one which does not, except possibly for occasional touring, remove him from the location in which his Census Office is working. He must remain in close touch with the sorting operation and be fully responsible for the successful conclusion of the Census operation in his province. Both his authority and knowledge are essential for the success of the census work in the final stages. If he has a good assistant however there will be an interim period between the enumeration and the report during which he may not personally be very busy on census work.

(*ii*) The Provincial Deputy Commissioner of Census should have an officer assistant who should be appointed at the same time as himself. I think the best designation is 'Census Officer' (Statistics). The qualifications desirable for him are noted below. He should share with his chief all the work of organising, instructing and inspecting the Enumeration staff. Later he would be personally responsible for the instruction of the sorting teams throughout the province and the management of such sorting as is done at the capital city. He should then act as compilation and tabulation officer and assist in the preparation of the analytical report.

(*iii*) If there is more than one hand sorting centre above district level each of them should work under a Superintendent who should be responsible to the Census Officer. The same arrangement should apply to any Machine Sorting Centre which may be set up at provincial headquarters.

(*iv*) The clerical and class IV staff in the Provincial Deputy Commissioners' office must suit the size and conditions of the province. The provincial office staffs of the 1951 Census appeared to be adequate. The strength of the compilation and sorting teams is discussed in the appropriate parts of this report.

(*c*) *Qualifications of officers*: The officers we had in 1951 Census were all experienced administrators and that is probably, for most of the posts, the primary consideration. The following notes based on current experience, however, may be some guide in chosing officers, or training them, so as to combine the essential administrative ability with the requisite practical technical knowledge and experience.

(*i*) Roughly two-thirds of the work of the Census Commissioner is in fact administrative. It concerns the organisation and maintenance of a large staff, the provision to them of adequate instructions, and the executive arrangements necessary to consolidate their work into a harmonious entity. The plan and the actual matter of his instructions, both verbal and written, require a working knowledge of census and statistical techniques including the use of punched card machines. But by far the most time-consuming element in his work is the physical effort of making the detailed plan and translating it into instructions, and enquiring that it is carried into action. The Census Commissioner therefore needs to have wide administrative experience plus a working knowledge of Census practice. He must be sufficiently senior to obtain the loyal and continued co-operation not only of his own staff but

of officials of other Ministries and of all Provincial Governments. It is also necessary to obtain the cooperation of the public and the Commissioner will have to do a certain amount of public speaking and general 'mixing'. Eventually, the results of his work must be printed and a knowledge of printing technique and methods of graphical presentation is an important asset. Above all he must be physically fit and capable of four years of sustained effort with much touring and little leave.

(*ii*) We cannot do better than to repeat the practice of appointing senior administrative officials from the Provincial Services as Provincial Deputy Commissioners. But I would suggest a few points to be borne in mind. First, the officers should be sufficiently young for Government to benefit for some years from the experience and information they will obtain by taking the Census of their province. This will also ensure that one of them would be available to become the Census Commissioner in the following Census if required. They must further have a liking for figure-work and an analytical, if not mathematical, mind. Moreover, they must be able to use language accurately and to put their thoughts briefly but lucidly on paper. Probably most important of all, they must be popular and influential enough to obtain the full cooperation of district officials and of the public throughout their province. In this last respect, the Provincial Superintendents for the 1951 census have been most successful, and we should certainly not lose sight of the value of influence. Lastly, and essentially, they must be physically fit and preferably should have recently had leave.

(*iii*) The next most important officer is the Deputy Commissioner of Census (Central). He needs to be fully conversant with the whole technical process of Census work. He should have studied statistical practice, and have acquired a good knowledge of the Census work and processes used in other countries, particularly those with conditions similar to Pakistan. He must also be a good practical Civil Service administrator, capable of carrying the ex-officio rank of his post. This officer should be well groomed for the job and I strongly recommend that he should have been the head of the continuing Census Office for a few years previous to the next Census. The only reason why I suggest that the officer who has headed that organisation should be the Deputy Commissioner and not the Commissioner is that I feel he is unlikely to be carrying sufficient rank. The Commissioner cannot do with a lower status than Joint Secretary.

(*iv*) I have suggested that each Provincial Superintendent of Census needs a statistical gazetted officer to assist him. Every effort should be made to provide officers who have theoretical training and practical experience in statistics, but as it may not be possible to get men who possess the qualifications which should go with the formal rank of Statistician, I suggest the designation of the post should be 'Census Officer (Statistics)'. The qualifications required are, first, a knowledge of technical statistical practice and Census procedure in this and other countries. They must be happy with figures and have keen analytical minds as they will not only have to prepare the analysis of the Provincial data as right-hand men of the Provincial Census chiefs, but will also have to detect any inconsistencies in the data presented by the sorting offices and direct investigations to locate, explain and if necessary rectify them. They must be capable of instructing the Census teams in the districts and of managing the sorting, compilation and

tabulation offices. They should start their duties by making a careful study of the previous Census reports of their areas and become completely familiar with the characteristics of the population of their province. The officers whom it is intended to nominate as Provincial Census Officers (Statistics) should attend a course of instruction and test organized by the continuing office, and be ruthlessly rejected if found unsuitable.

(v) The Junior officer dealing with the statistical side of the work in Census Commissioner's office should bear the same designation as the Provincial Census Officers (Statistics) but since he is working under the Deputy Commissioner, he may be younger than the men in the Provincial Offices.

1.39. Training: Several of the junior gazetted officers who worked in this Census have acquired much experience by practical work and have shown considerable ability in dealing with Census questions. It would be well to bear them in mind for appointments in the organization of the 1961 Census and with this end in view they should be given opportunities of acquiring theoretical training and if possible professional statistical knowledge in Census techniques. The following officers come to my mind in this connection, as being likely to benefit by adding training to their practical experience and as being young enough to be employed in the 1961 Census. Mr. N. Shamsi who has worked in my own office throughout this Census and probably knows more about it than anyone in Pakistan, is an obvious choice and is already nominated for a training course. Then there are Messrs. Bahauddin Ahmed and Akber Kabir, who have had experience of the punched-card machines, and Mr. Badiul Alam, compilation officer at Dacca—all three of whom belong to the East Bengal Provincial Civil Service. Mr. Mahboob Ali Khoja, of the Sind Provincial Civil Service, ran the sorting and compilation work at Hyderabad. Mr. M. Sharif of the Lahore Census Office and Mr. Ghulam Husain of the Quetta Office are older men but might well be borne in mind. If an opportunity occurs to send any of these men for specialist training it would be of great benefit to the next Census.

SECTION 1.4—FINANCE

1.40. The cost of the 1951 Census is summarized in Appendix A, which may be some help in estimating the funds required in each annual budget next time, but the lessons of this census point to a somewhat different allocation of the financial requirements. The individual slip system provided an immediately available hand sorting medium and, with careful planning, results in obtaining rapid results for such tables as can be produced with reasonable accuracy entirely by hand sorting and counting. This should be exploited as far as possible and suggestions are made to this end in Chapter V. This may save a certain amount which will go towards the inevitable increase in enumeration costs. Machine sorting, and possibly machine tabulation, is however certain to be used again and possible will be applied in a wider field. Nevertheless the card-punching operations consumes much time and money and unless labour costs change very greatly or there are simplification in punching techniques—such as the possibility of using mark-sensing punches—it will probably still be advisable, in this country, for reasons both of speed and economy, to make use of hand sorting to a large extent. Economy and speed go hand-in-hand as the chief expence is the pay of the staffs engaged in abstraction and compilation.

1.41. In the 1951 Census we have been only moderately successful in forecasting the amount of finance required in each of the annual budgets. The uncertainty has been due to the difficulty of estimating the time required for the various stages of the operation. We have had to extend the planned life of the Sorting Offices both hand and machine and of the offices of the Provincial Superintendents of Census and the Census Commissioner.

1.42. The Chief sources of this difficulty have been: First the slowness with which the hand-sorting staff settled down to their job coupled with constant desertions of temporary hands and the similar lethargic beginning of the machine punching and sorting operations. This problem will be discussed later in this report.

Secondly, the compilation of the tables was unexpectedly complicated by the fact that the results of machine sorting did not fit easily into the data obtained by Hand sorting. The tabulation was full of difficulties and the slow assembly of machine data held up the final stages considerably. This point will also be discussed in its proper place.

1.43. The lesson which these incidents point, however, is the fact that the temporary offices have to be allowed to work through to the accurate and full completion of the work. The threat of cutting off their finance does not really worry anyone below officer level and is therefore rather ineffective in achieving speedy work. I suggest that in budgetting for the next Census it would be realized that ample time must be allowed for the various offices. More time for planning will probably permit more time for testing the speed of work and for Central training of sorting and tabulating Staff which should all result in more accurate forecasting of the time requited as well as in a reduction of the period. I have mentioned, however, in paragraph 2.03 the possibility of financing Census work in provinces on a "Grant-in-Aid" basis, From the point of view of the Centre, this might be the best way of ensuring compliance with the time-table on which the financial plan depends, or at least of removing uncertainty from the central census budget.

1.44. While on the subject of finance, there are two points mentioned by most Provincial Superintendents of Census as having caused trouble, namely Travelling Allowances and the provision of vehicles. It is quite impossible to organise the Enumeration without considerable touring by all the officers including the District Census officers and even the Charge Superintendents. Normal civil service rates of travelling allowance should in theory be sufficient for the senior officers although there are differences between central and provincial entitlements which (when the latter were higher) led to hardship. But I have more serious complaints from junior officers that the travelling they had to do cost them far more than they could claim. This is a point which needs investigation in the light of the regulations, existing at the time of the next Census. The census officers must do so much travelling that speed and comfort are essential and possibly they should get higher rates than is usual for their rank. As regards vehicles, next time we should provide special census cars (preferably stations waggon type) to take the provincial training and inspecting staff right down to villages. But the railway should be used where it serves and it is absolutely necessary that local authorities place cars at the disposal of the Provincial Census staff when they are able to visit the districts by train. Orders to this effect should be given in all provinces. In East Bengal thought must also be given to the provision of water and air transport. In this the East Bengal Government itself was extremely helpful but at lower levels there was some difficulty (*vide* East Bengal chapter of this report).

1.45. As regards the total cost of the Census of 1951, despite all the difficulties, it will cost Rs. 29 lakhs which is 8 pies per head of population and probably the cheapest census in the world. This low cost is chiefly due to the system of finding the enumerators and supervisors on an honorary basis, and also to the practice of using civil servants, without any charge to the census budget, as District Census Officers and Charge Superintendents; which it is unlikely will be entirely possible in future censuses. These points are discussed in proper places in this report.

CHAPTER 2

GENERAL ARRANGEMENTS

SECTION 2.0—CENSUS ACT.

2.01. The Census of 1951 was conducted under the authority given by Act No. VII of 1950 (called the Census Act of 1949) which received the assent of the Governor-General on 13th January 1950. This piece of legislation was drawn up long before the actual form of the Census had been determined and was based no doubt on similar Acts passed for previous Censuses by the Government of India.

The co-operation given by the Governments of the Provinces and States, by officials of all kinds, and by the public, was in fact excellent, but many of their actions were not really authorized or made obligatory by the Act. I would strongly suggest that the legislative background of the Census should be reconsidered entirely well before the next Census is held. To enable this to be done effectively it is essential that the Act, or the orders made under it, should envisage the taking of a Census in the form in which it is really to be carried out. Therefore the general scheme of planning should precede the legislation. This is an overwhelming reason for the abolition of the "Phoenix system."

2.02. It would be advisable, however, to make the Census Act a piece of continuing legislation instead of a once-for-all law re-enacted before every Census. This is done in many countries. In UK the Census Act of 1920 makes provision for "taking a Census from time to time in Great Britain or any area therein and for otherwise obtaining statistical information." It is a perpetual Act and provides that, subject to its provisions, Censuses shall be taken as directed by Orders-in-Council. Such an arrangement obviates much of the rush and hurry involved in the preparation of a Special Act and also removes a good deal of detail from the field of politics. I would strongly recommend that such an Act should be submitted to the Legislature well before 1959.

2.03. The most important point to consider in drawing up the new Act is the definition of the respective financial liabilities of the Centre and the Provinces for the Census staff and operations. By then Pakistan will have, no doubt, adopted its proper constitution. Census is likely to be a Central subject and theoretically the whole cost of it should be borne by the Central budget.

In this census the Centre maintained the Census Commissioner and a Provincial senior officer in each province together with their staffs and offices but made no provisoin for District Census Officers and the rest of the organisation. Very little was paid for touring and incidental expenses, and nothing for clerical assistance below provincial headquarters. The provinces did in fact provide for the necessary work to be done by staff in their employment, but the extent of their effort and expenditure varied considerably. Sind is still maintaining that all touring done by the District Census Officers should be paid for by the Centre. In fact, (See Section 3.1) the District Census officers job is a full-time one for a period, he definitely needs full-time clerical assistance and must do a reasonable amount of special touring. Funds for this purpose should either be provided by the Centre or it should be agreed, and the Act should make it clear, that the cost is a provincial liability. The latter would put financial control where it can best be exercised and would probably be more economical. Possibly a "grant-in-aid" scheme is called for. The liabilities of the States should also be defined in this legislation if possible, or

should be settled by agreements negotiated well in advance.

2.04. The liability of municipalities for conducting the Census in their areas was not at all clear from Section 14. That sections requires a Municipality to cause a Census to be taken and overrides any other enactment regarding the method of conducting the Census, but it does not say who should pay. This caused considerable difficulty especially in Karachi. In addition to the present provisions in Clause 14, responsibility should be laid fairly and squarely on the shoulders of Corporations, Municipal authorities, Cantonment Boards, Notified Area Committees, Town Committees, etc. for providing, at their own expense, Census Officers to carry out the work in accordance with the directions of the Provincial Census Office, giving them office room and defraying their expenses including reasonable travelling.

2.05. A further point in respect of Municipalities which should be laid down in the Act is the responsibility for carrying out House Numbering. In rural areas house-numbering and house-listing can be done by the Enumerators, but in urban areas there should be a permanent system of numbering, preferably on the basis of street names and consecutive house-numbers in each street.

The Census Act should provide that by a date to be notified by the Provincial Census Officers Municipalities shall have brought their house-numbering system completely up-to-date with street names and house-numbers clearly marked on every thoroughfare and building. Quite apart from the Census, this would be of general administrative value, especially to the Postmaster Generals staff. It must cause endless confusion in a town to have places numbered for local rating and taxation, numbered again for postal purposes and numbered yet again for the Census. The postal numbers would be adequate for the Census and the correlation of postal addresses with plot ownership and rating records should be a simple matter in Municipal offices.

Enumeration in urban areas was found to be the weakest point in the whole operation and this one step would remove a great deal of the difficulty.

2.06. As regards the appointment of enumerators, there is the general power in Section 2 given to the Provincial Governments to appoint Census Officers, and a punitive clause 9a for lack of diligence. As regards imposing any obligation to serve as an enumerator, however, the Act provides only two methods: in the first place Section 4 makes the person in charge of every institution or communal dwelling place—Prisons, Hostels, Hotels, Industrial and Railway colonies, etc., —responsible for enumerating the occupants. In addition, Section 5 requires land-owners, members of local authorities, etc., with their agents officers and servants to assist in taking the Census if called upon to do so by the District Magistrate. In fact, the power to create Census blocks for institutions and estates was not utilized as much as it should have been. Both Sections are good and should be used more effectively, but Section 5 is very limited.

In practice we had to raise the corps of enumerators by detailing Government servants wholesale and by a combination of coaxing and threatening other suitable literate persons. Fortunately there was a general impression that service as an enumerator was a legal obligation. But the Act is rather silent about it except to the limited extent provided by Sections 4 and 5.

The question of recruiting enumerators is discussed in detail elsewhere in this report, but Section 5 of the Act might well be extended to enable the District Magistrate (or the District Census Officer on his behalf) to call upon School Teachers, non-gazetted Government officials, and all literate persons of good repute to act as enumerators or supervisors in the areas in which they reside or have their place of business. The obligation imposed by this section "to give such assistance as may be required" should be more precise and say clearly "to perform the duties of an enumerator or other Census Officer or to give such assistance etc."

Possibly, the rule-making power in Section 16 might have been used to authorize the appointment of Enumerators additional to those covered by Sections 4 and 5 but clause (*b*) (*i*) of Section 16 refers only to the "appointment" of Census Officers and it is perhaps doubtful whether the

acceptance of the appointment can be made obligatory by a rule. In fact this rule-making power was not used in the 1951 Census, chiefly on account of the pressure of time, but it may well be considered inadvisable to impose an onerous personal obligation of this kind on members of the public by means of rule. It is better if possible to make the power to require suitable persons to serve as unpaid enumerators depend directly upon the Act itself.

2.07. The Census Act provides for two alternative methods of enumeration. It is under Section 6 that the great bulk of the work was done on this occasion i.e., by an Enumerator asking questions and recording the answers himself. But under Section 8 authority is given for requiring householders, institutional managers, etc., to fill up a "schedule" on behalf of themselves, their families and the persons under their charge. These two alternatives should be left in the Act and more use should be made in future of the Self-Enumeration facilities which are given by Section 8.

2.08. The Provincial Governments are referred to in many places in the Act as the responsible authorities for issuing orders or taking actions. This wording should be carefully considered. In fact the Provincial Government issued no orders in connection with the 1951 Census except administrative orders to their own employees, and that they can do without the sanction of an Act. Statistical uniformity requires that there should be one Central ordering and rule-making authority and it is suggested that the reference to the Provincial Governments may well be anchronisms which should be deleted if the Census is to be, as it was in 1951, carried out under the direction and instructions of the Central Government.

SECTION 2.1—SCOPE OF THE CENSUS

2.11. There were several proposals to make the scope of the First Census of Pakistan much wider than had been usual in the Censuses taken by the Government of India in the past. Several of these ideas have been carried into action, notably the expanded scope of the language, literacy, education, fertility and land tenure portions of the Census and the introduction of the separate conceptions of industrial and occupational classification in lieu of the old "Means of Livlihood" question. The scope has also been improved in many ways by the adoption, as far as possible, of recommendations of various agencies of the United Nations particularly those of the Population Commission. Several ideas, however, had to be dropped either because they were unlikely to be carried out successfully or accurately as part of a full population census, or because there was insufficient time in which to organize the enquiries.

2.12. The various schemes and proposals were discussed at the inter-departmental conference held under the chairmanship of Khawaja Shahabuddin, Minister of the Interior, in June 1950. At this conference all Ministries of Central Government had an opportunity of being represented and all the Provincial Superintendents of Census were present. A note of the proceedings of the conference was circulated and formed the operative basic instructions regarding the scope of the Census. A copy of this note is in the Ministry of Interior File No. 2/11 (I) 50-Census.

2.13. It was regrettable that among the plans which had to be abandoned owing to lack of time in which to organize the necessary enquiries, was a tentative proposal to incorporate in the Population Census a survey of agricultural enterprises including a census of livestock. This is undoubtedly a most valuable and important enquiry, the results of which are urgently needed. To enable such an enquiry to succeed, however, most careful preparations are necessary. The questions have to be dove-tailed with great care into the Census questions on demographic, social and economic matters and especially into the data regarding family structure and the employment in agriculture of unpaid family help. Also the enumerators would need even more thorough training. More than a year's careful planning will be needed to expand the Population Census in this way. Moreover, the sorting and tabulating procedure will be far more complicated. A special sorting programme will have to be devised and a larger staff will be required as well as an augmented Machine Tabulating Centre if the results are to be presented in reasonable time. With great reluctance I advised that in this First Population Census of

Pakistan we should not try to combine with it an Agricultural Census. Nevertheless, I feel that the policy behind the proposal is absolutely correct and it is to be hoped that the Census of 1961 will include not only the normal enquiries regarding population but will deal at the same time with a complete survey of agricultural resources. In practice, it is doubtful whether the country will be able to wait as long as ten years for this information and probably an interim enquiry on a sampling basis will be needed to obtain essential agricultural data.

2.14. The question was discussed as to whether the population Census should continue the practice which had been followed until 1931 of enquiring into physical and mental handicaps such as lunacy, blindness, deafness and dumbness. The Population Division of the United Nations had discussed this point and reported that "It is far from certain that a population census can provide sufficiently exact information on physical and mental handicaps to repay the cost. The main difficulty is that the definitions of many common handicaps are highly elastic. Unless specific objective criteria for selecting the individuals to be considered as handicapped are devised and applied uniformly and conscientiously throughout the enumeration, the results will have little practical value. On the other hand, such methods of investigation are expensive; they interfere with other topics of enumeration; and under some census-taking conditions they appear entirely impracticable. Even the most careful methods that could be applied in a population census would not yield precise measure of the incidence of certain important handicaps, the presence or absence of which in many cases could be determined accurately only by a qualified physician....the Population Commission, at its fourth session, decided not to add the subject of topics recommended for inclusion in 1950 population censuses."

This question was therefore omitted from the 1951 list of Census enquiries. Here again a more expert inquiry using sampling technique will probably be necessary.

2.15. There was also a proposal to include in the Census questionnaire an inquiry as to Income. This would undoubtedly produce data of the greatest value if the question were suitably designed and properly answered. Several countries attempt to gather this type of information as part of the Population Census. There is, however, a very great danger of ruining the whole Census by the inclusion of questions of this type. In this country the census has to contend not only with a good deal of apathy, but in some places and among some classes of people, also with a certain amount of suspicion that Census information might be used to the disadvantage of the respondents. If there is a definite financial question, no amount of explanation would convince people that the Census was not directly connected with taxation. It was therefore decided that no Census question should require an answer in terms of specific sums of money and the income question was dropped.

2.16. An extension which was made in the scope of this Census was an inquiry into unemployment. This was arranged as a by-product of the question on occupation and was intended to show the number of persons who were seeking work in various occupations and for how long they had been unemployed. Most unfortunately this extension in the scope of the Census has not been a success on this occasion. The real reason for this is the indefinite conception which exists in the mind of the people as to what constitutes unemployment. This point is discussed in the Census Report Part I. The poor response is due largely to the vast majority of workers regarding themselves as employed in the agricultural business of their family until they manage to find work elsewhere, and partly also to the fact that a large proportion of the workers in Non-Agricultural occupations are independent workers. They may be "out of work" at a given time but they do not regard themselves as "unemployed". A valuable lesson has been gained and I think that careful definitions should enable useful figures to be obtained in the next Census, but it is clear that Western conceptions and definitions are not altogether applicable here and the matter requires far more study than could be given in the short period in which the 1951 Census had to be organized.

2.17. Another point which was examined in regard to the scope of the Census was the vexed question of "Dependency". Considerable thought

was given to the problem of classifying dependents according to the occupation of the head of the Household. The matter was fully discussed and it was decided that in practice it had always been impossible to get reliable information on this matter. In fact the proportions which the dependents bear to any section of the total population is probably fairly constant in any given urban or rural area. It was therefore decided not to make any attempt to classify dependents by occupations or industries.

SECTION 2.2—GENERAL SCHEME OF OPERATION

2.21. Immediately following the inter-departmental conference on the scope of the Census, the Provincial Superintendents of Census, under the chairmanship of the Census Commissioner, resolved themselves into a "Committee of Ways and Means". File No. 2/11/50-Census contains notes of the proceedings of this part of the conference, the chief work of which was the consideration of the various organizational and administrative stages of the pre-enumeration period. These included appointment of the District Census Officers; the division of the districts into Charges, Circles and Blocks and the appointment of Census Officers responsible for each; the design and test of the questionnaire and slip; the instruction of enumerators for House-listing and the completion of that operation together with the Cottage Industries return. Beyond that point the conference discussed tentative plans for instruction classes to train enumerators in the procedure to be followed in the main Census operation and also decided the general plan for the collection of the results and for the first steps in abstraction. The time permissible for each of the stages of the operation was discussed and the critical document known as the 'Census Calendar' was compiled.

2.22. Such a conference is absolutely essential but it should be held much earlier than was possible in 1950. It should take place at least a year before the Census date and should be attended not only by the officers designated as Deputy Commissioners of Census for the provinces but also by the officers who are to act as their Census Officers (Statistics). In the short time which was available between the arrival in Pakistan of the Census Commissioner and the holding of the conference, papers were produced regarding each of the points which had to be discussed. These helped the conference to take effective decisions in a short time. This essential preparation, however, is not a matter which should be compressed, as it was, into a week. The papers, which in effect are an outline of the Code of Census Procedure, should be prepared well in advance and circulated for study by the Deputy Commissioners and their staffs before the conference. In fact, it would be advisable to issue the papers in sufficient time to permit a certain amount of clarifying correspondence.

2.23. Considerable thought was given at this conference to the form and design of the Census slip which was discussed in detail. The slip used in 1941 Census of India contained no wording but only figures indicating the numbers of the question and spaces for the answers, which were for the most part to be recorded by the use of simple numerical codes. We had little information as to the success or otherwise of this scheme but it was the general opinion of the Provincial Supdts. that it would be advisable to indicate the questions by words rather than numbers and that wherever applicable words or indicative alphabetical symbols should be printed on the form so that answers could be rendered by putting a ring round the symbol. It was realized that the Census slip even in this form was not sufficient as a questionnaire. As in 1941, the actual words in which the questions were to be put by the enumerators to the public must be standardized and learnt by heart. For this purpose every enumerator would require an instructional leaflet. The preliminary forms of Census slips and instructional leaflets were agreed and it was arranged to test them by practical use on a small scale.

2.24. The plans made at this First Conference of Provincial Supdts. of Census were incorporated in Part I of the Code of Census Procedure (referred to briefly as "CCP/1") which was drafted for the most part at the conference itself. Immediately after the conference the drafts were finalized and stencilled. Stencilled copies were despatched to Provincial Supdts. on the 5th of July in sufficient numbers to permit a distribution to District Census

Officers. At the same time the Code was handed to the Press and on 27th July 1950 printed supplies had been despatched to all provinces. The Code of Census Procedure Part I (Pre-enumeration period) is Census 51 publication No. 3, ample supplies of which are being retained for reference. It is not therefore considered necessary to repeat the whole contents of the Code in detail in this report.

2.25. As the above story shows, Part I of the Code was produced at great speed. The instructions in it proved workable and the fact that book was distributed at the time it was wanted is undoubtedly one of the chief reasons why the Census took place at the right date. The Code Part I contained at Appendix. 'A' the Census Calendar and became the constant guide of every Census Officer who could read English. Nevertheless this pamphlet bears many indications of the hurried nature of its preparation particularly in Section 1 —'Definitions' which could with advantage have been more precise particularly regarding the definitions of a household, a normal resident and a Cottage Industry.

2.26. The Code of Census Procedure was supplemented by the issue of Census Commissioner's Circulars, the first of which was dated the 5th of July 1950. These circulars dealt with many subjects during the course of the Census operation, and complete files of them are being retained. There are three sets of these circulars; the first deals with Enumeration, and includes Nos. 1 to 72. The second series is the Post-Enumeration set which commenced early in 1951 and is numbered from circular No. 511 to No. 682. The third set is confined to matters affecting the Machine Sorting Operation and is numbered from 701 to 729. These circulars gave PSCs advance information regarding the instructions they might expect to receive in the Code of Census Procedure; they explained and amplified the instructions, and where necessary they also dealt with administrative questions.

2.27. C. C. Circular No. 12 initiated a special feature of the procedure used in controlling the 1951 Census operation, namely, the submission of progress reports at regular intervals. For the purpose of these reports the Census operation was broken up into a number of clear-cut stages and the special form of report required an assessment to be made as to the percentage of the work of each stage which had been completed at the time of the report.

The general scheme of reports had been discussed at the First Conference of the Provincial Superintendents of Census and is mentioned in Section 7 of CCP/1, but the detailed forms, on which Charge Supdts. reported to District Census Officers and those on which the District Census Officers and ultimately Provincial Supdts of Census reported upwards, were notified in C. C. Circular No. 12.

This system of reports was carried on in the same method throughout the whole duration of the Census operation. Suitable progress reports were designed for hand-sorting, machine sorting, compilation and tabulation phases of the work. The common feature of all of them was the estimation in percentages of the stage of completion of each individual task. This system of reports worked well and did much to discourage a natural tendency to procrastination. Provincial Supdts. of Census were able to take prompt action in cases where the percentage of progress reported did not correspond with the expired portion of the total time allowed for the work. There was however always a tendency to over-estimate progress in early stages with the result that the last 10 per cent often took a disproportionately long time. The files of progress reports, and the wall charts maintained from these in Census Commissioner's office have been retained for future references.

SECTION 2.3 CONFERENCES, VISITS AND TOURS.

2.31. Although a great mass of printed and written instruction was issued by the Census Commissioner and by the Provincial Supdts. the main method of explaining the Census scheme and verifying its progress was by personal contact.

It has already been shown that the intitial impetus to the work was given by an inter-departmental conference of Central Government officials in Karachi which was immediately followed by a

conference of Provincial Supdts. of Census. In that conference it was arranged that every Provincial Supdt. should immediately convene a conference of his District Census Officers where the whole scheme of the work agreed at the higher level conference would be verbally explained and all difficulties discussed. The stencilled copies of the Code of Census Procedure Part I reached all the Provincial Supdts. of Census in time for circulation either at or before this conference which was held in every province during July 1950. The Census Commissioner himself attended the conferences held by the Provincial Supdt. of Census, Sind and Khairpur State at Hyderabad and by the Provincial Supdt. of Census of Baluchistan and States Union at Quetta. These conferences not only made the plan clear and answered many questions but undoubtedly did a great deal to raise enthusiasm among the District Census Officers and inspired them with a sense of mutual competition. The fact that they realized from the first that all their colleagues were faced with similar problems gave them a sense of solidarity and confidence.

2.32. At these first Provincial conferences of District Census Officers arrangements were made for similar District conferences of Charge Supdts. and the importance of personal instruction by the latter of the Supervisors and Enumerators was particularly stressed. Conferences of Charge Supdts. were therefore held in every district early in August. By that time the printed copies of the Code of Census Procedure Part I had been distributed having been despatched from Karachi during the last week of July 1950. Copies of the Code for Sind districts were posted direct to District Census Officers and in the case of all other provinces they were distributed through the Provincial Superintendents of Census.

2.33. All the Provincial Supdts. proceeded on tour throughout their provinces during this time and themselves attended a great many of the district conferences of Charge Supdts. They also inspected many of the instructional classes held at lower levels. The District Census Officers also toured extensively in their districts and a great deal of the instruction was given by them personally.

This first series of instructional meetings of Census staff dealt exclusively with the arrangement for house-listing, house-numbering and, as a subsidiary operation, for the preparation of the Cottage Industries return. A special point in every conference was the clear de-limitation on maps and in the minds of the Charge Superintendents, Supervisors and Enumerators of the areas for which they were responsible.

2.34. The system of tours, instructional conferences and personal inspection was maintained throughout the Census operation. The Census Commissioner was rarely more than a month at a time at Headquarters and he in fact succeeded in visiting all Provincial Headquarters several times and also attended meetings in nearly every district. The Provincial Supdts. of Census were equally energetic in their touring. From what I have heard since, however, I am inclined to think that the amount of touring which was found possible by the District Census Officers was not really sufficient. This is probably due to the fact that not all of them were whole-time Census Officers. This is a point which requires special attention at the next Census.

2.35. During the Census Commissioner's final tour before enumeration considerable interest was evoked by the use of a series of lantern slides and phonograph records which had been lent to us by the American Embassy. These formed part of instructional aids used in the training of Enumerators for the United States Census of 1950. Although the explanations and illustrations were not entirely applicable to Pakistan, a great deal of the wording was in fact most apposite and the exhibition of the film accompanied by explanatory phonograph records proved a most useful addition to our scheme of instruction, but of course it reached only a very few places and could only be understood by persons who knew English. The most valuable part of the film was a clear explanation of the difference between Occupation and Industry. The equipment proved most simple to manage. The Census Commissioner's P. A. acted as projectionist after brief instruction by the American Embassy. This method of disseminating instruction to enumertors should be followed up more widely in the future. A series of

magic lantern slides to accompany a printed lecture written in the vernacular would not be expensive to produce and would be far more impressive and accurate than a bald and boring series of extempore instructions.

SECTION 2.4—PUBLICITY.

2.41. The arrangements to obtain the cooperation of the Census Officers and staffs by means of printed matter and personal contact would have failed in their purpose had we not also obtained the co-operation of the public. This is always a matter of considerable difficulty and especially among illiterate or widely scattered people. Nowhere does the public regard a Census operation with any natural enthusiasm and a strong appeal to their civic sense and patriotism is the only way in which this apathy can be penetrated. Even then it can only succeed if it is done on a big scale and in a colourful, interesting and enthusiastic manner.

The pride of the people in their new State of Pakistan was exploited to the full in eliciting their co-operation for the 1951 Census. This appeal met with widespread success and even produced a certain amount of popular welcome for the Census officers. It is doubtful however whether this particular plea will raise the same degree of response on future occasions when the novelty of nationhood has worn thinner and I would urge the most careful thought to be given to the means and methods of publicity.

2.42. On this occasion the Press co-operated very well and published in extenso many press releases explaining the Census and the ways in which it might benefit the people. Newspapers and journals, however, reach a very small proportion of the population. Press support is probably of more value by the discussion its readers inspire in their wider circles of personal contact. The Press, however, is also the basis of a great deal of radio publicity and therefore must receive careful attention and in fact some priority.

2.43. Radio is probably the most useful form of propaganda used in the 1951 Census. Receiving sets which are to all intents and purposes public, are found in the smallest towns and often in villages. They can be heard in tea shops, bazaars and other open-air places as well as in the houses of the better class of inhabitants. Thus a Radio broadcast, provided it is in the right language and is spoken by a capable announcer, reaches a very wide public in Pakistan. The Census Commissioner found that his broadcast, which although made in English had been repeated in Sindhi, Urdu, Punjabi and Bengali, and to an even larger extent the broadcasts made by the Provincial Superintendents were constantly referred to even in the most out of the way places, and had evidently served their purpose well.

2.44. A third method of publicity was the production, issue and exhibition of a large number of attractively printed Wall Posters. The first of these were put up just before house-listing and second and more detailed set was provided shortly before the enumeration time. Posters were prepared in Urdu, Sindhi and Bengali. They were distributed through the District Census Officers and Charge Superintendents and also through District Magistrates, Sub-Divisional Officers and Tehsildars, or their equivalents. The posters were exhibited in Post Offices, Railway and bus stations, mosques, tea shops and other public places. The posters were expensive but from the point of view of publicity they were most effective. They provided a more permanent reminder of the radio and press appeals and certainly did a great deal to make the population "Census conscious". Well printed Government official Posters have the advantage that the literate persons love to be asked to translate them and so they form the basis of public discussion and their effect is by no means limited to those who are able to read.

2.45. The most valuable form of publicity in this country, however, is undoubtedly the public meeting. Census Officers of all levels were urged to organize public meetings in the villages and towns throughout their areas. Wherever, this was done, the Census showed an improvement in the public response and in the intelligence of the answers.

The public meetings in advance of the house-listing were chiefly concerned in explaining the general necessity of the Census and the benefits it could bring to the people, and in disposing of any objections to the reporting of house-holds

and buildings. This first series of meetings were able to satisfy many people that the Census had nothing to do with the requisitioning of property, or with the displacement of Muhajir squatters, both of which points were tender subjects in many places and were naturals sources of suspicions regardnig the Census. Such personal doubts are far more likely to be expressed in a meeting and settled verbally than by written publicity Meetings share some of the advantages of the radio and give the Census the added glamour of a corporate activity. It is essential, however, that the "Question Master" and speakers should themselves be thoroughly instructed.

2.46. Immediately before enumeration a further series of public meetings were held in many towns and villages where the speakers explained the Census questions. Respondents were urged to be especially careful to report all their women and children; to calculate their ages in regard to well-known happenings, and to be ready to give particulars of their languages and education.

At meetings which I attended myself the people seemed to understand fairly easily the questions on occupation and industry. But in effect they proved to be matters on which both enumerators and respondents were poorly instructed and in future the speakers at both staff instructional and public explanatory meetings should concentrate a good deal more attention on these subjects.

2.47. A useful contribution to Census publicity was the issue of the explanatory brochure "Census of Pakistan 1951—How and Why" which was written by the Officer on Special Duty, Mr. Mizanur Rahman and was distributed widely. Copies were sent to the Press and publicity agencies as well as to all central and provincial government departments, municipalities, well-known personages and to Census Officers of all levels. This booklet was used as a basis for much press and radio propaganda and by the speakers at public meetings. I now think it might have been even more useful if some of the Sections especially those on "Industrial Occupations and "Unemployment" had been written in the vein of "What to tell the enumerator" with a list of "don'ts".

SECTION 2.5—PRINTING AND STATIONERY

2.51. The Census budget provided a certain amount of finance for the purchase of normal articles of stationery and office supplies by the Provincial Supdts. of Census, and also put at their disposal small funds for use for similar purposes at district levels. In addition to these normal supplies, however, the Census operation called for the production of a series of instructional booklets and special forms. The list of all the Census publications and stationery is given at Appendix C. Ali these productions were given identification numbers commencing with the title "Census 51".

2.52. The co-ordination of printing arrangements involved very careful planning both by the Census office and by the Controller of Printing and Stationery who helped us greatly by the special attention he gave to Census work. The wholehearted co-operation of his whole office and the presses under his control is gratefully acknowledged. The fact that the Census work was carried out in the short time available is largely due to their efforts. The printing work was not only done in time but reached a higher standard than is often found in similar publications in this country.

2.53. The whole printing operation was co-ordinated by the preparation early in July 1950 of a "printing plan" which set out all the Census requirements of forms and publications and showed their size, the number of copies the dates on which drafts were to be ready, and the date on which the finished printed copies were required. We had to make a certain number of additions and changes in the original plan as time went on but there were no major alterations and at all times the printers knew the full extent of their liabilities. One of the great advantages of this system was that paper could be reserved in ample time.

2.54. The largest requirement for printing was naturally the production of the final operative version of the Census Slip. The quantities actually issued were based on the number of normal inhabitants reported at the time of house listing. Before the house-listing was fully comple-

ted however, the work of printing slips had to start and a tentative quantity was arrived at by calculations based on the 1941 Census with overall allowances for natural increase, changes in distribution of the population and movements of population connected with partition. The size of these factors largely was unknown but in fact the tentative estimate of the number of slips required proved not to be seriously different from the requirements calculated from house-listing on which the Provincial Supdts. of Census finally based their final demands.

In view of the uncertainty of the above estimates and to allow for inevitable local variations as well as for mishaps in the distribution of slips reserve of slips were provided at various levels as shown in paragraphs 7.10 of Code of Census Procedure Part II. In all provinces these reserves had to be used to some extent.

2.55. Printing of the Census Enumeration slips was done from Blocks. It ensured complete standardization of size and matter in spite of the division of the work between many different presses. The paper chosen was carefully tested for durability in sorting. It was at first thought that very much thicker and stronger paper would have to be used but the sorting trial disclosed that the thin but tough paper chosen was likely to be of ample strength and durability and this was born out in practice. The Test Enumeration in the field showed the advantage of placing the binding staple which held the slips in pads of 100 on the top left-hand corner and not centrally. This enabled the full writing surface to be easily available on each slip up to the end of the pad.

2.56. A hole was ordered to be punched in the top right-hand corner of each slip. It was the intention that this corner should be cut away from all slips except those for Muhajirs so that needle sorting could be used to pull the Muhajirs' slips out of any batch. This would have simplified Hand Sorting and produced more data regarding Muhajirs. Unfortunately the hole was not accurately located in exactly the same place on all the slips and needle sorting was therefore impossible. The hole turned out to be very useful as a means of securing batches of slips with tags or strings but if it is intended in future Censuses to use the needle sorting idea for any purpose, special steps will be necessary to ensure that the punched hole is "registered" correctly by the printer and is also sufficiently large to overcome any slight irregularities in position.

2.57. The Census forms for some of the summaries, particularly the Location Code and the Charge Superintendent's Summary of provisional results, were not printed on sufficiently stiff paper with the result that they were hardly legible by the end of the sorting operation which called for considerable reference to them. In fact the Charge Superintendents' Summaries had in many cases to be re-written. These forms should be drawn up sufficiently early on subsequent occasions for them to be printed well ahead. Arrangements for the provision of suitable paper for these returns would not then present such difficulties to the Printing & Stationery organization.

2.58. The desptach, issue and receipt of all Census documents and stationery was notified on the special standard form which detailed the contents of the packet and particulars of the despatch. This despatch and Acknowledgement Form accompanied the rail receipt to the consignee who returned it having signed the suitable pre-printed endorsement regarding the safe (or otherwise) receipt of the parcel. These forms provided a very useful check on delays and damage, and were also the basis on which control was maintained over the supply of stationery. The standard Despatch and Acknowledgement forms were used in all Census Offices. This seems a very minor part of the Census procedure but in fact the timely distribution of documents is essential to the success of the operation.

SECTION 2.6—THE CENSUS COMMISSIONER'S STATISTICAL COMMITTEE.

2.61. Much of the work of organizing a Census has from its very nature to be done in consultation with government departments outside the Ministry in which the Census Office is located. Even when the main problem of the information to be gathered has been settled, definitions have to be agreed, the Census questions have to be framed, Codes of Classification have to be drawn up, and so forth.

It was quite impossible in the short time available to contemplate obtaining department agreement on these subjects by the normal method of circulating memoranda. From the very first therefore an inter-departmental committee was set up to consider Census problems and to arrive at co-ordinated advice to the Census Commissioner.

2.62. A Memorandum setting out the proposal to form a "Census Commissioner's Statistical Committee (CCSC) and outlining its scope was circulated on the 7th of July 1950 to all the Ministries of the Central Government which appeared to be concerned. It was pointed out that the Census Commissioner must control the Census and be responsible to his own Minister but that he wished to bring into association with his work the statistical and other appropriate experts in all Ministries interested in the census operation. The terms of reference were to discuss statistical subjects which affected the Census and to make recommendations to the Census Commissioner. Representatives of the newly-formed Central Statistical Office were to be members of the Committee and of all Sub-Committees to ensure general co-ordination.

2.63. This idea was generally welcomed by all Ministries. The first meeting of the CCSC was held on the 12th of August 1950 and in all eleven meetings were held. In connection with each meeting the Census Commissioner or a member of his staff issued a paper on each subject for discussion. This paper summarized the points at issue and made various recommendations for consideration of the Committee. Notes of the Proceedings were issued after each meeting. A complete list of the papers and proceedings is in file No. 16/1/50-Census. Meetings of the Statistical Committee examined the Census questionnaire and slip in considerable detail; discussed the wording of the Enumerator's leaflet; drew up the Codes of Classification, and agreed the List of Census Tables.

2.64. The Notes of Proceedings circulated after each meeting were treated by the Census Commissioner as operative agreements with all Ministries. For the most part Ministries concerned in the papers for discussions at each meeting were most responsive in sending capable representatives who could state their Ministry's opinion with authority. After each meeting the note of proceedings was prepared and circulated very quickly and in ample time for objections to be made before action was taken.

2.65. There is no doubt that the operation of this Committee enabled a fair amount of co-ordination to be achieved without any serious loss of time. It is strongly recommended that a similar system should be used in future censuses, but the series of meetings should start much earlier and more time should be allowed for consideration of papers and even for the unofficial discussion of drafts of the papers.

CHAPTER 3

ORGANIZATION

SECTION 3.0. DIVISION OF THE COUNTRY INTO CENSUS AREAS

3.01. The geographical organization of the Census was effected on the traditional lines. Each province was divided into Census districts corresponding generally with the administrative districts. The Census districts were themselves sub-divided into Charges, Circles and Blocks. The system, which is explained in Sections 1 and 2 of CCP. 1, proved thoroughly practical but is capable of improvement. Certain small changes were introduced in the 1951 Census and comments upon them are given in the following paragraph, together with suggestions for further improvements for consideration in the planning of the 1961 Census.

3.02. In the Districts of the Punjab, sub-divisions where they existed were made Census districts on this occasion and this arrangement was decidedly an improvement. A similar arrangement would have been an advantage in East Bengal. In fact it was to some extent carried out in practice, as many of the East Bengal districts are far too large and populous to be managed by one District Census Officer, and although the system of numbering and the title of District Census Officer (DCO) in East Bengal was based on the administrative district, in practice the S.D.Os death with much of the D.C.O.'s work in their sub-divisions. It is recommended that in 1961 the sub-division in East Bengal, and also in the Punjab where sub-divisions exist, should be treated as Census districts. This is merely recognizing the fact that in practice it is proving impossible to administer a Census in units of area as heavily populated and as large as some of the administrative districts now are.

3.03. One of the chief difficulties in organizing the Census in 1951 has been the problem of the organization of the enumeration in large cities and the recruitment and training of their enumeration staff. Special efforts are necessary to overcome the "urban apathy" which has been the subject of comment by the Census Commissioners for decades past. It is strongly recommended therefore that all cities and towns with a population of about one lakh or more should be treated as separate Census districts. The limits of these City Census Districts should not necessarily be those of the corporation, municipality, cantonment, etc., but should include all urban areas directly contiguous to the city and also any suburbs the inhabitants of which are chiefly concerned with the city's work and life. Where different Municipalities and Cantonments have in effect—although the fact may not perhaps have been legally recognised—amalgamated into one large "Con-urbation", the total urban area should become the responsibility of one City Census organization.

3.04. Smaller urban areas did not present such a problem but it is paritcularly important to keep the figures for them separate. In some places we were not sufficiently determined on this point in the 1951 Census and I feel there has been a tendency to treat as urban areas only those town which have been incorporated under Municipalities, Notified Area Committees, etc. Every tehsil, thana or equivalent area should have separate figures prepared by the Census for its urban and rural parts. The urban parts may be split up to show the individual figures for the various towns, although if they are below the 5,000 limit (or whatever figure is adopted in future

Censuses as the lower limit of population for a "town") they may be amalgamated together into one urban figure. But the truly urban areas should have separate figures from the rural parts of each tehsil, etc. For this purpose every urban area must be formed into a separate Charge, or Circle, if it is not sufficiently large to form a City Census District. In the 1951 Census we had some Circles which were partly urban and partly rural, and I do not believe we always succeeded in disentangling the two figures.

3.05. When the sorting stage was reached, we divided the whole of Pakistan into "Sorting Regions" for each of which separate figures were prepared. For the most part the Regions coincided with Charges or groups of Charges, but in certain places part of a Charge was in one region and part in another. In 1961, for which we have the background of the 1951 Census available for reference, it should be possible to simplify the organization. I would suggest that before the districts are divided into Charges, the list of Sorting Regions should be settled and used as a basis. The 1951 list of Regions is in Code Part III, Appendix I-D, but I think it can be improved upon.

3.06. If the above recommendations are carried out, it may well be possible to simplify the system of Location Code numbers. In the 1951 Census, the Location Code numbers were built up of the numbers of district, Charge, Circle and Block and since any of these might contain two digits, the resulting code numbers were often unwieldy. It may be possible to simplify the number by using the Region number instead of the district and charge number. When it comes to Machine Sorting of course it is only the region which needs to be punched on the card and even in hand-sorting the block number is only used once, and that is in the initial test to ensure that the slips of all the blocks have been included in the check figure in the Circle.

The Location Code is recorded in the first instance in the General Charge Registers. (CCP. 1, paragraph 24 and 25). These were useful working documents at district and charge level but it was the Charge Location Code Summary prepared on form Census 51, publication No. 17 which was the chief index to the whole system of geographical sub-division. This document was prepared just after the enumeration by copying out the Charge Registers. It is recommended that one form containing all the information given both on the Charge Location Code Summary and on the Charge Register should in future be provided to Charge Superintendent at the very beginning of the Census operation. It should be printed on good strong paper which should stand considerable use and should be finally bound up in district books and kept for permanent record.

The Charge Location Code Summary was initiated by Census Commissioner's Circular 60 dated 17th of February 1951, which explains the extent to which the Charge Locatien Code summary coordinates and summarises the other documents which show the geographcial organization of Charges.

3.07. In addition to the above registers and summaries, maps were prepared showing the boundaries of every Charge and Circle. The District Maps of Charges were generally on the scale of $\frac{1}{4}$" to a mile and the Charge Maps showing Circles were on the scale of 1" to a mile. Sketch maps were prepared for urban areas or where official maps issued by the Survey of Pakistan were not available.

It is recommended that the preparation of maps should be undertaken well-ahead in preparing for the next Census and the sub-division of the country into Charges, and possibly into Circles, should be settled on maps by the Deputy Commissioners of Census as one of their first tasks. In towns the actual delimitation of blocks would best be done by using large scale sketch maps and giving each enumerator a handy-size reproduction of the map of his own area. This involves considerable work which will probably have to be done in the Central Office, but it is normal procedure in most countries and is really the only effective way in which urban blocks can be laid down.

3.08. The Census Code Part I laid down as a general principle that 150 houses (house-holds) should normally form one block. This criterion had been handed down from previous Censuses but it was found to give a block population which

varied very considerably and was in many cases more than enumerator could be expected to manage. CCP. 2 therefore laid down that the ideal normal population of a block should be 300 persons and that the maximum should not exceed 500 persons. These sizes had in practice to be reconciled with the policy that a "village" in rural areas should consist of one or more complete blocks, but never part of a block, but this was achieved fairly successfully by sub-dividing unwieldy blocks and in some cases by appointing assistant enumerators. The village List which has now been published on the basis of the 1951 Census, will solve many problems in the de-limitation of the rural blocks in the 1961 Census. Every effort should be made to keep the blocks of uniform size especially if any sampling enquiry is envisaged to be carried out on a block basis.

3.09. The Census organization in the Karachi Federal Area presented special difficulties. The decision to treat the area as a separate census "province" with its own Chief Census Officer, was made after the other Provincial Superintendents of Census had already started work. There was at first some difficulty in obtaining the cooperation of the Municipality; when this was overcome, it was found almost impossible to raise a sufficient number of Charge Superintendents and when the Central Government had made a number of their own officers available for this duty, then the recruitment of supervisors and enumerators was found to be a very difficult task. The Census of Karachi was originally planned with the Wards of the city treated as Charges, but such an organization was soon seen to be impossible owing to the very great increase of population, and the city had eventually to be divided into no fewer than 44 Census Charges. A special time-table for the organization of the Karachi Census was drawn up and a series of meetings were held by the Municipal Commissioner and the Census Commissioner at which difficulties were overcome and the whole plan brought into action. A personal letter from the Census Commissioner to all Charge Superintendents in the Karachi Federal Area issued on the 19th December 1950 gave particulars of the special Census Calendar for Karachi and made arrangements for a Weekly Report. In the end the operation was carried through reasonably well but it is this experience in the Federal Capital which leads me to make strong recommendations for the establishment of each large city as a separate Census district.

SECTION 3.1—CENSUS OFFICERS

3.11. The Census Act gave the title of "Census Officer" to every person who was given power under the Act to demand answers to the Census questions. In fact these persons were the enumerators but a whole hierarchy of instructing, directing and controlling officials was also required and all of these men, except those employed in a purely clerical capacity, are included in the Census staff organization as illustrated in Chart No. 1. This shows that the channels of control from the Provincial Superintendents of Census ran down through District Census Officers to the Charge Superintendents and from them through Supervisors of Circles to the actual Enumerators.

3.12. The District Census Officer (DCO) was generally the District Magistrate/Collector of the district. In some cases however this job was entrusted by him to one of his gazetted officers. With a few exceptions, the District Census Officers were expected to work only part-time for the Census but in practice this proved more or less impossible. Actually for a month preceding the house-listing, and again for about two months before and a fortnight after the Enumeration period, the District Census Officers had little time for any other work. This point should be faced in future and the following suggestions are made:—

First, the District Magistrate/Collector (or similar other officer incharge of the district) should be made responsible for the effective discharge by the District Census Officers of his district of their Census duties and for all measures necessary to support these officers in their work and in their relations with the public regarding the Census.

Secondly, responsible officers of the staff of the District Magistrate/Collector, etc., well-acquainted with the locality, should be appointed to be District Census Officers and from the beginning of the instruction for house-listing until the completion of the district sorting should be relieved of

all other duties. They should be in direct touch with the Provincial Census Office but should be responsible for keeping the District Magistrate or Collector informed of their progress and difficulties. They should be given sufficient transportation facilities, or a definite conveyance allowance, to enable them to maintain frequent personal touch with the Charge Superintendents and to inspect the Census work in Circles and Blocks. The District Census Officer plays a vital part in the census and has a very heavy responsibility which he has generally to bear to a large extent as an addition to his normal duties. The Provincial Superintendents have commended that the post of D. C. O. should carry special pay. This will be even more necessary if, as is recommended, the hand-sorting, as far as it is retained, is to be done at District level. It is suggested that this special pay should take the forms of a lump sum honorarium paid on final and satisfactory completion of the work, and possibly at a rate proportional to the population of the Census district.

3.13. In every Census district the provision of office staff proved a serious difficulty. The necessary men were eventually detailed by the District Magistrates/Collectors, but there was considerable doubt as to the liability to find them. It should be made clear from the outset that office facilities and staff are to be provided by the District Magistrate for the District Census Officers and a clear decision given as to the financial cover, if any, that will be provided for this purpose from the Central Census budget. One senior and capable clerk from the District permanent staff is required for full-time Census work. He should attend a Provincial course of instruction early in the Census programme and should take up his duties on a full-time basis as soon as the work becomes heavy which will probably be well before the DCO himself needs to be relieved of other work. In the later stages of the instructional and sorting period, he will need assistance, the extent of which will depend on the size and population of the Census District.

3.14. The organization of the Census in large Cities involves a great deal more work than in the small towns or the rural areas. This has always been a weak point in the Census organization in this land and in 1951 the need for special census measures in the cities was particularly obvious. It has already been recommended that cities ought all to be separate Census Districts. The Chief Census Officers of the cities need to be appointed earlier than the other DCOs and they will each require not only one clerk but an adequate and complete independent office staff. In cities most of the enumerators and many of the Supervisors have to be found from non-official sources. The City Census Officer will have to recruit them, enthuse them and instruct them. It is necessary that he should have the complete confidence and cooperation of the Municipal and Cantonment authorities. It must be made clear, preferably in the Census Act, on whom the responsibility lies to provide and pay the City Census Officer and to find his staff and office accommodation. The division of a city into Charges, Circles and Blocks is a complicated matter and will mostly have to be done on maps. The office must therefore include a mapping section and arrangements for producing photographic reproductions of sketch maps, and for checking them on the ground.

3.15. To some extent the considerations which apply to the job of a City Census Officer are equally applicable to that of a Charge Superintendent or a Circle Supervisor who is entrusted with the organization of the enumeration in smaller towns. He should be chosen with a view to obtaining the cooperation of the Municipal authorities whose responsibility as regards Finance should be made clear. The work of a de-limiting blocks should be done by maps, and it is almost inevitable that a number of non-officials will have to be employed as Enumerators.

3.16. In the 1951 Census Charge Superintendents, other than those in Municipalities who were usually local government officials, were chiefly drawn from the ranks of the Revenue Staff. The officers chosen worked extremely well and I would urge the continuance of this practice. There is a lot of clerical work involved in the Census operation at Charge level, and every Charge Superintendent requires the services of a clerk. Where the Charge consists of a town between 25 and 100 thousand inhabitants or has an unusually large rural population, the Charge Superintendent's

clerk should be a full-time appointment and a decision must be made regarding responsibility for his pay.

In rural areas in West Pakistan the Patwaris formed the main staff of Enumerators and many of them not only enumerated a block but also acted as Supervisor for a Circle. In East Bengal, officials and members of Union Boards fulfilled a similar role. The corps of enumerators, however, cannot be entirely raised from these sources and it was necessary to include School teachers, Canal Patwaris, junior Government officials of all kinds and literate non-officials.

3.17. The recruitment of non-official literate persons as enumerators is a problem which needs special thought. In East Bengal a fair proportion of the enumerators were volunteer non-officials, and so were many in Karachi, and in other large towns. It was intended to use such persons very widely, but in fact it proved very difficult to obtain them on a voluntary basis. There was often a show of early enthusiasm after the first visit by a Provincial Superintendent or a District Census Officer, but when the amount of hard work was appreciated the volunteers often faded away. Nevertheless, it will be increasingly difficult to effect enumeration using only officials as Census takers. The power given in the Census Act to call upon certain classes of persons for obligatory service as Enumerators could be far more widely applied by the creation of special institutional" blocks, especially in urban circles, for hotels, clubs, tenement houses, blocks of flats, housing colonies, etc., where proprietors, managers or clerks can be required to serve as enumerators. There was a tendency to limit such procedure to jails, hospitals and other institutions under government control. In addition, leading residents of blocks should be either persuaded or compelled to serve as enumerators, or to employ suitable substitutes.

3.18. The question of remuneration of Census Officers is fraught with difficulty. In 1931 and again in 1941 Census Commissioners doubted whether the system of honorary work could be continued. There is no doubt that in 1951, many persons withdrew their offers of help when they found that no pay was issuable. And the multitude of government and municipal servants who did the Census work as an addition to their ordinary duties felt very strongly that extra pay should have been attached to appointments as Census Officers.

Nevertheless, two points effectively answer these pleas: first, even the smallest scale of remuneration would amount in total to a prohibitive sum. Rs. 10/- per enumerator, for instance, which would be regarded by the individual as an insultingly small amount, would in total call for some 12 lakhs rupees. Secondly, the kind of persons who makes the best enumerator, namely the educated leading citizen who is trusted and respected in local society would not be attracted by any small payment and would rather do the work, if he had to, for the honour and prestige it should carry.

was associated in 1946 and 1949 with the Census of Germany where the enumerator's task was required to be performed as a "Service of Honour" by nominees of the local Burgermeister. The appointment carried an official title for a year, and was accepted as a compliment by public-spirited persons of some local standing. I suggest that the only practical method of raising the Census corps of workers in Pakistan is to adopt a similar policy. On the one hand the duty should become a legal obligation once the notice of appointment has been issued. On the other hand care should be taken to ensure that admittance to the local team of census workers is evidence of a person's integrity and intelligence. A silver badge of office to be retained as a personal trophy of a public service might add to the enumerator's prestige. The issue of a ball-point fountain pen would be appropriate and result in a better record. Neither of these gifts would be expensive, certainly not in comparison with any scale of cash remuneration.

3.19. Every Census Officer was provided with a letter of appointment on the authorized form set out at Appx. 'B' of CCP 1, and signed by the District Census Officer. I am inclined to think that this form should be signed by the District Magistrate or Collector even in cases where he himself is not the D. C. O. The letters of appointment were generally made out, signed and

distributed at the instructional meetings. The forms were printed in Karachi and Dacca and were generally distributed under Census Commissioner's arrangements through the Provincial Superintendents of Census, but in some cases arrangements were made for the printers to despatch them direct to the District Census Officers.

SECTION 3.2—SPECIAL CENSUS AREAS

3.21. Under Section 4 of the Census Act certain specified institutions may be made into Census Areas, and the persons responsible for the normal administration of these institutions can be required to act as "Census Officers". This power was widely used for establishments belonging to the Defence Services and Railways, and for other institutions under the control of the Government. It should have been more extensively employed, but there was a tendency on the part of Charge Superintendents to overlook the possibility of creating such special blocks.

3.22. The arrangements for enumeration in areas under the control of the Defence Services were set out in principle under Section 6 of CCP. 1. These instructions were generally very sensibly and efficiently applied and for the most part enumeration in Cantonments was well done. District Census Officers, however, reported that, in the early stages of the organization of the census, Cantonment authorities did not realize that they were bound to carry out the Census arrangements as laid down in the Code. It was not until orders were received through the normal military, naval and Air Force channels that effective action was taken. It was also found that the arrangements for enumerating civilians in the Cantonment areas were often inadequate. This was particularly true in Karachi where the civilian population of the Cantonment areas is very large.

Care should be taken in future Censuses to ensure that Cantonment authorities receive their orders through their own channels at an early date. The large cantonments should be formed into separate Census districts. Instruction of enumerators, and particularly of those persons who are to enumerate the parts of the areas chiefly occupied by civilians, requires special attention in Cantonment areas.

3.23. The Census in Railway areas was organized in the normal manner and complete cooperation was ensured by the timely issue of general instructions from the Ministry of Communications. Railway station areas and colonies formed separate blocks or Circles, and in some cases separate Charges.

3.24. Hotels, Clubs and Lodging Houses were generally enumerated as part of the Blocks in which they were situated. This was an unfortunate policy since it did not make full use of the powers provided in the Census Act. All the institutions listed in paragraph 5.3 of CCP 2 should have been formed into separate blocks and enumerated under arrangements of the Proprietors, Managers, etc. Had this been done generally the work of the enumerators in the larger towns would have been considerably reduced and the enumeration in the institutions would have been more efficient. It is however particularly important to ensure that the enumerators of these institutions are properly instructed. A special instructional leaf-let might well be prepared for their use, and it may also be advisable to provide them with a schedule book for the enumeration of their residents and inmates from which the Circle Supervisors or the Charge Superintendents Clerk might make out the slips.

3.25. Business and industrial establishments were also enumerated as far as persons residing in them were concerned, as parts of the blocks in which they were situated. Section 4 (1) (f) of the Census Act permitted these premises to be treated as institutional blocks. This power should have been used wherever convenient and managers, proprietors or suitable occupants could have been required to act as the Enumerators. It might also be advisable to have a check made in large centres of employment as to the extent to which the employees have been enumerated at their residences.

SECTION 3.3 HOUSE LISTING

3.31. The House-listing operation is a necessary part of the Census. It is the check made by every enumerator of his whole area and the Household list should show every dwelling place.

An essential part of the operation is the check by the Supervisors, Charge Superintendents, etc., that no parts of the area have been left out and that the whole area allotted to each enumerator has been included in his House List. It is obvious that the effectiveness of the House-listing depends upon the instruction of the enumerator as to the limits of his area and his ability to recognize these limits on the ground. Maps are really the only satisfactory method of doing this but in the 1951 Census there was simply no time whatever to design the geographical organization of the Census by this means.

A second function of the House listing operation is to determine the approximate size of the population as a basis for the production and issue of slips, the reorganisation of necessary of the census areas, and the planning of the sorting operation. It was proposed also to use the household list summaries as a preliminary estimate of population for publication, but owing to the delay caused by the Punjab floods this proved impossible.

3.32. During House-listing an identification number is painted by the enumerator on every building thus forming a connection with the House-hold number in the House-hold list. This work was done very well throughout the country and is definitely essential in rural areas. In towns it was to be expected that permanent street—names and numbers would already be available. These were however generally absent or incomplete and Census House numbers had to be painted even in towns. This is a most difficult task for the town enumerators to perform thoroughly and is a contributory factor to the general weakness of the enumeration in towns. I strongly urge that as a preliminary to the next Census every Municipality should be required by law to complete its street-naming and house-numbering system and that DCO's and Charge Supdts. should make a survey and report on this point as soon as they are appointed.

3.33. The House-numbering was intended to start on the 15th of September 1950 and was to be completed by the 15th of September. This period had to be extended in the Punjab owing to the severe rains which washed away whole villages in some places. This experience indicates that in fact it would be dangerous to start the house-listing early and the period allowed in 1950 Census would appear to be most suitable. In urban areas the work of listing the houses can be started a little later provided the street naming and house numbering is adequate.

3.34. The paint required for house-numbering was provided from district or Municipal funds and nothing was charged to the Central Census budget. The material used was cheap local earth pigment and oil. The home-made paint produced from these proved to be quite sufficiently durable. There was a complaint from certain areas that the enumerators made the numbers of an unnecessarily large size. Actually figures about 3" high are sufficient. In some cases Charge and Circle numbers were painted as well as the block and house numbers. Provided the block numbers have been carefully allocated it should not be necessary to mark Charge or Circle numbers on buildings. No cases were reported of serious attempts to deface the census numbers from dwellings.

3.35. In the 1951 Census the vexed question of whether the house-list dealt with "households" or "houses" was more precisely defined than before, but there was still a certain amount of difficulty since numbers had to be given to buildings which were unoccupied at house-listing time but in which it was possible that residents might be found during the enumeration. It is suggested that in future any structures found unoccupied at house-listing time should be put in the list but should not be given numbers which should be reserved only for households. House-holds not numbered at house-listing time, but which are discovered during the enumeration, should be given numbers at the end of the list. The note made of the buildings however would ensure that every potential dwelling place is inspected.

3.36. The House-hold list used in 1951 is shown at Appendix 'C' of CCP 1. As long as the individual slip system is used the household list provides the only information on family structure and it may well be thought advisable to expand the household list schedule so as to provide better data on this subject. It would also be advisable to provide

a spare column on the house-list next to the column of Total inhabitants' in which, at the time of the enumeration, the number of slips made out for each household could be entered and thus compared with the number of inhabitants reported at the time of the household listing.

3.37. Owing to the shortage of time it was impossible to issue really full instructions in vernacular regarding the House-listing operations, and the instruction of enumerators for this important part of the work was chiefly done orally. The form was printed in vernacular however and gave a short note of exactly was had to be written on it. The note however did not mention the importance of ensuring that the list covered the area completely. In future it would be advisable to issue an enumerators leaflet for house listing operation. This however would be no substitute for oral classes of instruction with a practical demonstration of what to do and not do in filling up the list. As part of this personal instruction, the circle Supervisor should take the enumerators over the ground and explain exactly where their various boundaries are situated. Actually, this was done in the 1951 Census but the Code does not mention these arrangements in detail.

3.38. The opportunity was taken during the house-listing of 1951 Census to conduct two other enquiries, namely the Cottage Industries Survey and an enquiry, in selected sample blocks, regarding family members resident in India. Both these surveys met with a certain amount of success but had inevitable short comings due to the lack of time for organization and for proper instruction of enumerators. It was proved however that it is possible to use the house-listing visits to obtain subsidiary information if the scheme were drawn up well in advance and included in full in the written and oral plan of complete instruction of enumerators.

SECTION 3.4—COTTAGE INDUSTRIES ENQUIRY.

3.41. It was decided at the First Census Conference to combine an Inquiry into Cottage Industries with the House-listing operation. Brief instructions for this purpose were given in Section 4 of CCP 1. The House-listing operation undoubtedly provided an opportunity for an enquiry of this kind. But the general principle that instruction must be complete and thorough applies particularly to any such inquiry.

3.42. The "Cottage Industries" were described in this section as "home manufacture carried on by the household". It was considered by the Provincial Superintendents of Census that it was best to retain this simple definition. "Manufacture" obviously excluded repair and service trades and the adjective 'home' eliminated from the inquiry industries which were carried on in factory buildings or shops other than those attached to dwelling houses. In practice, however, it transpired that this restricted definition was not appreciated by the enumerators many of whom reported industries which were not in fact connected with manufacture. The definition of a Cottage Industry should be far more definite and should include an indication of the kinds of work which are, and those that are not, to be reported. If the connection of the industries with dwelling-places is not in future to be the criterion, a careful definition of a "cottage" industry, enterprise or establishment will be needed. Since the classification list of industries turned out in practice to be fairly short it might be possible to arrange for it to be printed in the Enumerators' Instructional leaflet or on the form of return and the code numbers might then be used in the report.

3.43. There was also a tendency in many localities for enumerators to scamp the cottage industry enquiry or to omit it altogether. To ensure completeness a definite reference to the cottage industries terms should be made in a column of the household list.

3.44. The Cottage Industries returns were coded at Provincial Headquarters, and transmitted to Dacca Machine Sorting Centre where the information was punched on cards and sorted. This machine tabulation proved fairly simple and rapid and if the inquiry is repeated, the tabulating scheme will need very little change.

3.45. The Census Tables on Cottage industries, in view of the doubts regarding the standard definition and the lack of complete coverage, cannot be regarded as a thorough survey. They do, however,

probably represent within their limitations a better conspectus of Cottage Industry activity than would otherwise had been possible. It is recommended that this enquiry should remain a permanent feature of the Census.

SECTION 3.5—SAMPLING INQUIRY REGARDING FAMILY MEMBERS IN INDIA.

3.51. An inquiry was made by the State Bank of Pakistan to the Census organization as to whether it would be possible to associate with the Census a survey, using sampling technique, with the object of discovering the probable extent of the financial commitments which might be involved in any plan for permitting remittances by residents in Pakistan to members of their families located in India. A plan for such an enquiry was discussed with the Central Statistical Office and the Director of Statistics of the State Bank and put before the Provincial Superintendents of Census at their Second Conference in September 1950. The conference was of the opinion that difficulties were involved in the scheme but that they were not insuperable.

3.52. A simple form of enquiry was therefore designed in which the following questions were asked:

(1) How many normal residents are there in this household?
(2) How many of them have First-of-kin living in India?
(3) If in future it becomes possible to do so, how many members at '2' intend to send money to First-of-kin living in India?

In the blocks selected for the sample the enumerators were instructed to complete the form in respect of every household.

3.53. The scheme is laid down in detail in Census Commissioner's Circulars No. 23, 23A and 23B. The number of blocks nominated for the sample was specified for certain selected towns where the actual blocks were to be chosen by drawing lots. In rural areas of East Bengal, Punjab and Sind, Block 3 in Circle 2 in every charge was the sample block.

The books of enquiry forms were all transmitted to the Census Commissioner who handed them over to the State Bank of Pakistan where they were processed by punched card machinery.

3.54. In practice the enquiry proved to be impossible in Karachi and very difficult in towns generally owing to delays in House numbering and in training enumerators. An overwhelming difficulty however was found in relating the sample to the total "population" as the system of blocks was under the control of DCO's and was often reorganised between the time of the enquiry and the time of enumeration. It was not therefore possible to assess the sampling error. Nevertheless, the State Bank of Pakistan found that the results were sufficient to show that the financial commitments involved in any relaxation of the control of remittances might well be enormous and this negative information justified the enquiry.

3.55. The lessons to be learnt from this effort are, first that once again everything connected with the Census must be planned well ahead and the instruction of enumerators must be extremely careful and precise. Secondly, any attempt to incorporate a sampling inquiry with the House-listing operation must require as a pre-requisite that the system of geographical delimitation is sufficiently complete and definite to form a firm framework from which the sample may be drawn.

SECTION 3.6—TEST OF ENUMERATION SLIP

3.61. Supplies of the First draft of the anumeration slips together with an outline pamphlet of the Census questionnaire were printed and provided to all District Census Officers during July 1950. Instructions were given that the practicability of these forms was to be tested by carrying out an unofficial enumeration in one rural and one urban locality near the district headquarters.

3.62. This test was carried out in every district and reports were made by District Census Officers to the Provincial Supts. of Census in time for the results to be discussed at the Second Conference of the Provincial Superintendents of Census held in Karachi in the later part of September 1950. Tests were also made by Provincial Supts. and the Census Commissioner attended the tests in Quetta City and in one or two villages on the Quetta-Ziarat Road.

3.63. As a result of the test and discussion, the idea of using numerical codes for recording answers to the Census questions on language, religion and education was dropped. Instead a tabular scheme was adopted for recording the answers to the language questions, namely No. 6, 7 and 8. For all other questions where numerical codes had been proposed a series of symbols were to be printed on the slips and the enumerator was to put a ring round the appropriate one of them. The numerical code scheme had been used in the Census of India 1941; there is no doubt that the symbol and ring system is much less liable to misunderstanding and error and it simplifies the work both of enumerators and sorters. It is recommended that it should be continued and if possible extended in future censuses.

3.64. Considerable discussion took place regarding the occupation and Industry questions and also regarding the record of Unemployment. The Central Statistical Office had urged a changeover from the "usual main occupation" question, which results in the calculation of the gainfully occupied population, to the Labour Force conception which requires that the occupation and the economic groups be related to a specified point in time. It was decided by the Conference that a question in the latter form would present difficulties regarding agriculturists and the usual occupation question was retained. However, it was agreed that the occupation and economic group in which respondents worked in January (the month preceding the Census) should also be asked and used for the tabulation of the non-agricultural workers. The conference felt that these questions, if properly taught during instructional classes should not have presented undue difficulties. In practice, however, this was one of the weak points.

3.65. The fertility question was also carefully discussed. It was felt that the questions regarding duration of marriage and the number of children presented little difficulty; the recording of the answers was simple, and the enquiry should be fairly successful. There was less confidence regarding the attempt to discover the number of children born during the last year and the number of them who were still living. However, in view of the notorious lack of adequate vital Statistics it was felt that an attempt should be made to obtain this information. In practice the endeavour to recall the happenings of an exact year was too much for respondents and the information obtained has proved to be inconsistent and of doubtful value.

3.66. The slip, as re-designed at the Second Conference, certainly worked extremely well in practice and is worthy of repetition. It needs improvements in certain respects particularly regarding occupation and employment and possibly the attempt to discover the birth-rate should be abandoned. The latter however is not really a Census matter and the occupation questions despite their novelty have shown that it is possible to obtain the desired information regarding the skilled workers.

SECTION 3.7—SECOND CONFERENCE OF PROVINCIAL SUPERINTENDENTS OF CENSUS.

3.71. As explained above, after the tests, of the enumeration slip, the Provincial Supts. of Census gathered for a second conference in Karachi which took place on the 18th, 19th and 20th September 1950. A note of the proceedings is given in PSCC/2 which was circulated on the 7th of October. A copy will be found in File No. 2/20/50-Census. The first two days of the conference were spent in detailed discussion of the enumeration slip and questionnaire and in drawing up the scheme for part II of the Code of Census Procedure.

3.72. I would strongly recommend that this second conference be repeated in future at about the same time i.e. as soon as the house-listing is well in hand.

The last day of the conference was spent in outlining the plans for sorting, compilation and tabulation. None of the Provincial Supts. of Census had any very clear idea of how long these operations would take. A rough time-table was agreed upon but in practice it was found quite impossible to adhere to it. On future occasions I would recommend that a third conference of PSCs be held after the sorting has been in hand for a little while. Difficulties could then be cleared and a more precise time-table laid down for the completion of the operation. A difficulty is that finance for the sorting and compilation period

has to be forecast in August and September of the year before enumeration in order to prepare the budget estimates and at that time both the size of the job and the ability of the staff are completely unknown factors.

3.73. A most valuable feature of the Second Conference was the arrangements for unofficial discussions between the individual PSCs and the Census Commissioner every afternoon and in the evenings. These helped greatly in bringing cohesion to the whole Census organisation in the statistical stage when uniformity is so essential and also resulted in rapid disposal of business during the official sessions.

3.74. A distressing feature of the Second Conference was the sudden death of Khan Sahib Abdul Latif Khan, the Provincial Superintendent of Census for North-West Frontier Province who had a fatal seizure in the evening of the second day of the Conference.

CHAPTER 4

ENUMERATION

SECTION 4.0—THE DATE AND METHOD.

4.01. The timing of the enumeration is a matter of great importance. It is necessary to avoid periods of the year when there are large movements of population and to choose a time when most people are at their normal residences. This had been considered carefully in connection with the past Censuses of India and was re-considered in its relation to Pakistan at the general Census Conference held in June 1950. It was decided that the traditional date in the latter part of February was undoubtedly the most suitable time and that there might be some disadvantage in changing the period since the data might perhaps not be quite comparable with the past Censuses in respect of certain areas Moreover, there was an advantage in using the same period as India. It must be remembered however that the choice of February for the enumeration period, advantageous as it is in general, results in the bulk of the Afghan Powindahs still being in Pakistan and in nomadic tribes from Baluchistan being found in Sind.

4.02. The choice of this time at the end of the winter also makes it necessary to arrange for special enumeration periods applicable to some of the mountain areas in the North, particularly Gilgit, the Kaghan Valley and other inaccessible parts of Hazara district, and Toba Achakatzai in Baluchistan. These areas are snowbound from December through to March and, with the exception of Gilgit, were enumerated in November 1950.

Gilgit and Baltistan were treated as part of Azad Kashmir and the results do not appear in the Report of the First Census of Pakistan, but actually an enumeration was organized under the control of the Provincial Superintendent of Census for N.W.F.P. Since the passes into Gilgit and Baltistan were already snowbound by the time the Azad Kashmir Government had decided to hold a Census, the enumeration of these two areas was held in June 1951, by which time it was possible for the Census organization to be created and brought into action. In these inaccessible areas, it is felt that the more fact of inaccessibility prevents any serious movements of population during the winter months and therefore very little difference is made in the figures by the difference in date.

4.03. The enumeration period was normally from dawn on the 9th of February to dawn on the 1st of March 1951 i.e. a period of 20 full days. This period enabled the Census to be conducted on the *de-jure* and not on the *de facto* principle i.e. persons were generally to be enumerated at their normal place of residence if they would be present there at any time during the enumeration period. Visitors to other places were left to be enumerated at their normal residence if they intended to return there during the enumeration period. Sections 5 and 6 of CCP. 2 explain the population to be enumerated and the time of enumeration.

4.04. The 20 days however was considered to be insufficient for enumerators to cover the large areas involved in many of the Blocks in Baluchistan and Sind. Permission was therefore given for enumeration to start in Makran, Lasbella, Kalat and Kharan States and in the rural areas of Districts of Baluchistan, on the 1st of January. This permission was also extended to the rural parts of Tharparkar district in Sind.

4.05. In the North West Frontier Province, enumeration on the standard Pakistan system was

limited as in previous Censuses, to the settled districts of the Province. In most parts of the Frontier Regions and Tribal Areas, it was not considered possible to do more than to make a careful estimate of the number of inhabitants by sex, the Political Agents being responsible for the preparation of the estimates. On this occasion, however, a special effort was made to organize the process of estimation on standard lines. The estimate was based as far as possible on careful local enquiries as to the number of inhabitants of each village and the total for the State or Agency was thus built up in detail from the bottom.

In 1941 however an innovation had been introduced in these Frontier Regions by which the people of the more accessible and less disturbed areas were enumerated on special simplified Tribal Slips under arrangements made by the Maliks of the Villages and the chiefs of the clans. In 1951 this system was extended to include Kalam and the area inhabited by Swathi tribes on the border of Hazara District. I discussed the further extension of this system with the Provincial Superintendent of Census and with his predecessor, the late Abdul Latif Khan, who was responsible for the preliminary arrangements in 1950. It would seem possible to make a very considerable expansion of the Tribal Slip system in 1961 provided the area is as quiet as it is now. This is a point which should receive very early attention and should be combined with plans to improve the method of estimation in the areas in which enumeration even on simplified lines is considered impossible. I would suggest that the Political Agents should draw up a Village List well before the Census and arrange for enumeration on Tribal Slips of all villages in which it is possible and for estimation to be applied only to the others. Where estimation has to be used, a standardized method should be followed by the Political Agents and the estimate should be in as much detail as possible since the breaking down of the figures is a great help in improving their accuracy. It might well be possible to obtain estimates of village totals by sex in three or four broad age-groups and to record the main tribal strengths, the number of children attending school, the number of literate persons and perhaps the numbers of workers in Agriculture, Manufacture and Service, together with a note of cottage industries.

4.06. The question of counting Afghan Powindahs was discussed in the first Census Conference and later in Quetta and Peshawar during the pre-enumeration period. In the 1941 Census particulars for the census were recorded at the special border crossing point posts set up for the control of Afghan Powindahs entering India. This policy was said to have led to some slight trouble in the past and it was felt there might well prove to be difficulty in its execution. Moreover, it does not really fit in with the Census which enumerates people where they are found regardless of the points at which they have entered the country. There is therefore some possibility in the old system of double counting and it was decided in the 1951 Census to make no special arrangements for Afghan Powindahs, except to ask Afghanis whether they were Powindahs and if so to record the fact on their slips along with all other details. In practice the Powindahs often refused to answer the full questionnaire, but particulars were gathered of the number of children (under 12 years), sex, tribe and occupation.

4.07. Other Non-Pakistanis were to be included in the usual enumeration in the normal manner. No special explanation was considered necessary except the note in CCP. 2 that citizens of foreign countries were among the population to be enumerated. There appear, however, to be some misunderstanding on this matter and I am by no means satisfied that a complete count was made of persons of Non-Pakistani nationality. The usual instructions were given that members of the Diplomatic Corps were not to be regarded as members of the population for Census purposes. This however should have been the only exception. In future the enumerators' instructions should make it quite clear that foreigners are not to be left out unless they are members of the extra-territorial staff of High Commissioners, Ambassadors, etc.

4.08. Since the Census was intended to be of a *de jure* nature and to count every person who was normally a resident of Pakistan, instructions were given that any members of a household who were absent out of Pakistan should be reported by the

head of their household and the normal Census slip be made out for them. A fair number of persons, especially in East Bengal, were reported in this way but of course the figures cannot be regarded as complete since Pakistanis abroad who had no household at home would be missed, and in any event the report depends upon whether the head of the household regards his absent family members as normal residents, and if so, remembers to report them. I doubt whether enumerators laid much stress upon this point.

To form a check on the reporting of Pakistanis abroad all Embassies and High Commissions of Pakistan were asked, through the Ministry of Foreign Affairs and Commonwealth Relations, to arrange for members of their staffs and other Pakistanis with whom they were in touch, to complete self-enumeration forms for themselves and their families. These forms were transmitted through the Ministry of F. A. & C. R. to the Census Office. In the sorting stage, arrangements were made to eliminate the duplications involved in this double system of reporting by Embassies and by households but in fact these were very few.

4.09. A disadvantage of the system of recording enumeration on individual slips is the loss of data on family structure. This was realised and discussed when planning enumeration and it was felt that the Household List was as much as could be done towards remedying this deficiency. In fact, however, the "household" as defined for Census purposes is not the same thing as the family from the demographic point of view, and it is very doubtful whether this could be remedied without introducing undue complications into the Household List. I would suggest, however, that consideration should be given in the 1961 Census to the idea of obtaining at the enumeration a "Family List" additional to the enumeration slip, showing the detailed composition of the families in each household and including the age of each member of the family. Ages in individual years would probably then be estimated with greater accuracy, since the list could be built up starting with the age of the youngest child. The head of the household would probably be able to give that figure correctly within a year or two; he would know the spacing of the rest of the family, and could form a fairly good estimate of the ages of the mother and himself at the time of the birth of the first child. Such returns might, therefore, produce much more reliable age statistics than we have been able to collect either in 1951 or in any previous Census. Such a return would be more valuable if it were completed everywhere but it might have to be confined to certain sample blocks. Where the head of the family is literate he could perhaps make out this list himself.

SECTION 4.1—INSTRUCTION OF ENUMERATORS.

4.11. The teaching of the enumerators how to do their final job is probably the most important part of the whole Census operation. We had very little time in 1950 and 1951 for this work but it was given priority over everything else and for the most part, considering the difficulties and the hurry, instruction was not at all badly done. In Karachi, Lahore, Rawalpindi and Dacca and some other cities, however, there was a last minute recruitment of enumerators and District Census Officers were unable to certify that every enumerator had attended a class of instruction. Nevertheless, even in the big towns of which I am doubtful, the great majority of enumerators were well instructed. But 100 per cent success is vital in this matter and nothing short of it is really acceptable.

4.12. This preparation for enumeration is the second series of instructional classes; the first was in preparation for the house-listing, and the plans for this second and vital series of classes should be explained to the men during the first series. The time of instruction is more or less fixed by the fact that it must be finished before enumeration and it cannot be done long before or the men will forget what they have learnt. To my mind the enumerator's instruction requires either a morning and an evening session, or sessions on two consecutive days. The first session is an explanation and demonstration of the whole job and the second is devoted to personal practice by the enumerators, the correction and discussion of their work, the answering of their questions and the testing of their knowledge. The Code laid down that the classes should be of at least 3 hours duration. From what I saw on my inspection tours I came to the conclusion that this is too little.

4.13. The instruction was carried out on the basis of the printed "Instructions for Enumerators" issued as Census 51, publication No. 9, the English version of which forms Appx. 'C' to CCP. 2. Every enumerator received a copy of this document. It was designed and to be carried in the pocket for reference during enumeration and was printed in Urdu, Bengali or Sindhi, with a few copies in English.

These leaflets proved to be very successful, but were better in form than in matter. They consisted of a single sheet folded into pages. The pages on the front of the sheet listed the questions in the exact words in which they should have been put to the respondents and against each question was stated how the answer was to be written on the slip. Most enumerators learnt this part of the leaflet by heart and during my visits I found that they all stood up very well to a *viva-voce* examination.

On the back of the sheet were printed a selection of explanatory notes. These are essential, but should be more precise and if possible more concise. My general impression is that more advice and explanation, rather than less, should have been given. I am inclined to think that the Enumerators' Leaflet should be extended into a small pocket book and might include the whole of the information given in Section 9 of CCP. 2. The language must be simple and the idea of providing every man with a vernacular copy must continue. In fact the suitability of the translations is a point of the utmost importance.

4.14. Part II of the Code of Census Procedure was used by the District Census Officers and Charge Superintendents as their own handbook from which the course of instruction was conducted. Copies were also made available to all supervisors who were able to read English. On the whole Code Part II filled its function successfully but it is not ideal. It had to be produced in far too great a hurry; copies were issued in cyclostyled form during November 1950 and printed copies were available everywhere a month later. The whole book was therefore composed and produced during a short period of 4 months in which the great mass of organizational work was also in hand. It is recommended that in future Censuses this Code should be split into three booklets; first the instructions required by District Census Officers, Charge Superintendents and Supervisors; secondly the fuller Enumerators' leaflet referred to above and thirdly a series of outlines for lectures to the enumerators' class. It might be an advantage to produce all these provincially but there must be an authoritative central edition.

4.15. In addition to the instructional leaflet and Part II of the Code, the instructional classes were provided with large Wall Diagrams giving a facsimile of the Census Slip in the vernacular. Also sheets printed on each side with 8 reproductions of the Census Slip were available for practice use during the classes of enumerators. These proved most successful and their provision should certainly be repeated.

4.16. If the District Census Officers can each be supplied with a set of lantern slides and a simple projector and can hold, in all the larger centres of their Districts, an illustrated lecture for enumerators the increase in efficiency and interest will be immensely well worth the trouble and cost. This was proved conclusively by my tour with the projector and gramophone which the Embassy of the U. S. A. lent to us. If this is done, there might well be an additional set of slides for use in meetings held for the purpose of explaining the Census to the public—the enumerators' set is unlikely to be suitable for that.

4.17. As regards the place at which the enumerators' instructional classes were to be held, the Code laid down that they should take place at Circle level although two or three Circles might be grouped for purposes of instruction. In practice the classes were generally held in the open air at the Headquarters of Halqas, Union Boards, etc., but in urban areas school rooms and even offices were used. As regards time of meeting I had expected the classes to be held during the evening hours so as not to interfere with the normal work of the enumerators. But in practice the convenience of the instructor was given priority and the classes were held in his working hours. This I fear is a danger.

Actually for the instructor these classes must be a full-time job for the whole of the month before enumeration and office hours must simply be ignored. The Charge Superintendent and his clerk should between them hold an enumerators' class in every Circle as well as special classes for supervisors. They can be assisted by the DCO's clerk and the DCO himself should inspect the work as much as he can.

The nucleus Census staff at provincial and Central levels should next time have held classes for DCOs and Charge Superintendents well before the time the latter have to organize their own instruction and a complete time-table of Charge and Circle classes should be drawn up for each District showing the date, hour and place of meetings and the arrangements for transportation accommodation and food.

4.18. One of the problems which arose during the instructional classes was the question of the amount of time required and the clash between the Census work and the Census Officer's normal duty. Most enumerators felt that towards the end of the period they would find that they could not complete the job as a part-time undertaking. There was a suggestion that the last day of the enumeration period should be declared a public holiday so as to permit enumerators to work freely, but it was felt that this would be dangerous as it would undoubtedly tempt people to be away from their homes and the idea was dropped. The majority of the enumerators were Government servants; for these an appeal was addressed, through the Provincial Superintendents of Census and District Census Officers, to the superiors under whom the Census staff was working, to give them permission to remain away from duty without loss of leave or salary for at least two days. This application was very generally successful. Census Commissioner's Circular No. 61 dealt with this subject but it is a matter which it would have been better to handle much earlier as an official request through Secretariat channels. A similar appeal to private employers regarding numbers of their staff who had offered to act as voluntary enumerators, was included in a Census Commissioner's broadcast and also met with a generally favourable response.

4.19. When the Standing Advisory Committee of Members of the Constituent Assembly examined the Census work in February 1953, the members took particular interest in the question of recruitment and training of enumerators and recorded their view that the instruction of the public and the enumeration staff should be planned well in advance of the next Census and that the assistance of Civil Defence and other official and non-official organizations should be sought. (File No. 31/4/52-Public—Ministry of Interior).

SECTION 4.2—THE WORK OF THE ENUMERATOR.

4.21. At or immediately after the classes of instruction every enumerator was issued with his supply of enumeration slips. The detailed arrangements for distribution are set out in CCP 2. The arrangement for supplying the main part of the slips in pads of 100 and completing the issue with small pads of 25 forms proved workable and economic.

In order to effect the distribution of these documents with sufficient rapidity, the Ministry of the Interior circulated the Cabinet decision that Census work was to be given "general priority during the months of January and February. This proved of the greatest value. The Railway administration and the P. & T. Department promulgated instructions to this effect throughout their systems. Special labels marked "Census Priority" were printed for attachment to all parcels containing Census materials. The arrangements for special Census postal and telegraph facilities were circulated in C. C. Circular No. 56. Arrangements were also made to give special attention within the census organisation supplementary demands from Districts and Charges for further supplies of pads. There might be a danger in fulfiling such demands without careful scrutiny since the existence of large supplies of spare slips might facilitate any attempt, such as had been made in 1941, to inflate the Census on political grounds. Instructions for dealing with promptly but carefully with supplementary demands were given in C. C. Circular 51. In practice these arrangements worked well. There were a number of requests for further supplies of slips but none of them involved large quantities.

4.22. For the most part slips were packed at the press at which they were printed and this work was included in the printers' contract. Generally consignments were addressed to Charge Superintendents, but in view of the difficult conditions in the Punjab due to the floods which had damaged railways and roads, special arrangements were made for delivery through the District Census Officers. These arrangements are outlined in C. C. Circular No. 44.

By the 4th of February all District Census Officers had reported receipt and distribution of adequate supplies of slips.

4.23. Instructions for the actual method of enumeration were laid down in considerable detail in CCP. 2 and the experience of operating them is related in the Provincial chapters of this report. On the whole the arrangements set out in the Code were carried out in the planned way and worked very smoothly.

4.24. A detail that is perhaps worth mentioning is the advice in the Code urging the enumerator to carry with him on his rounds the Household List of his blocks and to make sure that every Household and dwelling on the list was visited. Any buildings or structures which had not been inhabited at the time of House-listing were to be examined to ensure the enumeration of any occupants who had since arrived. I am not sure that this "list-in-hand" procedure was in fact carried out by many enumerators. They generally checked their household-list when they got back home, if at all. This occasionally led to households having to be revisited and there is of course a possibility of some inhabitants being omitted. I have already suggested that the household list should have a column in which the number of enumeration slips could be entered. The entries in that column might be one of the points inspected by supervisors during the course of enumeration.

4.25. The conduct of the enumeration was simpler and more thorough in rural areas than in the towns. In West Pakistan the revenue officials did the work with ease, they knew the ground and the people perfectly and the people knew them. Both the quality of the record and its completeness were noticeably good. In East Bengal the local Government organisation gave a similar advantage. The enumeration proved to be a different kind of job in the towns, and especially in the large cities. The people were more apathetic, the enumerator was very rarely known to them and it was much more difficult to find the head of the household and make sure that he accounted for every member of his family. The enumerator's work involved venturing into narrow alleys and up dark stair cases. It had to be done largely in the evenings when respondents could be expected to be home from their work. The Provincial Superintendents of Census have mentioned their local difficulties in their own chapters. The practical experience of enumeration leads to the conclusion that more time and more care is necessary to organise the Census work in towns. It may well be found essential to pay a stipend to urban enumerators in the future.

4.26. Although apathy has been mentioned, it is only fair to state that public cooperation was not entirely lacking. In the rural areas cooperation was more or less a matter of course; people there are in the habit of cooperating with the Revenue officials. In the towns, inspite of the natural apathy, the publicity campaign had succeeded in preparing the ground among more thoughtful and public-spirited people. In Karachi this was noticeable and many inhabitants got in touch with the Census authorities by letter or telephone to point out that they have not yet been visited by the enumerators, particularly in the Cantonment area where some student-enumerators dropped their task owing to approaching examinations, and last minute switches of Census personnel had to be made. These stop-gap arrangements were successful but the completion of the enumeration in that area was largely due to the determination of the population to get itself enumerated.

4.27. The idea of imposing a Curfew on Census Night was discussed in most of the larger urban areas. The usefulness of a Curfew to the Census lies chiefly in the greater ease with which the homeless population can be discovered and enumerated. In Karachi an appeal was made by the District Magistrate and by the press to all citizens to remain voluntarily in their homes on Census Night. This appeal met with a universal response and the

streets at mid-night were completely deserted, all places of amusement, restaurants, etc., having been closed by 11.30 P. M. This made it possible to pick up the wanderers and homeless, of whom a very large number were enumerated. Somewhat similar arrangements were made at some other large towns, generally by compulsory curfew although the voluntary nature of the Karachi Curfew was certainly an element in its success; the population appreciated the appeal made to their good sense and this undoubtedly helped to obtain general cooperation in the whole of the Census work.

4.28. During the enumeration period it was intended that the Supervisors should visit enumerators at frequent intervals. The Census Code laid stress on the administrative duties of the Supervisors, but it was chiefly in the training classes that Supervisors were instructed to inspect the enumerator's work during its progress, and there are signs that this was not done in some cases as thoroughly as it might have been. The duty of inspection the slips frequently during the enumeration period and particularly during the first day needs to be emphasised. Had this been done more thoroughly the defective recording of the answers to some of the questions mentioned in the next section would have been checked.

Very few instances came to light where the information given on the slip was obviously and deliberately false, although in one or two cases irresponsible enumerators had obviously indulged their sense of humour. C. C. Circular No. 67 called for reports of any cases where the sorting of the slips of any area indicated that concerted efforts had been made to falsify the results but no such cases came to light, nor were any reports received of deliberate infringement of the Census Act or refusal to answer the main Census questions.

4.29. The system of progress reports laid down in paragraphs 7.15 and 7.19 of CCP. 2 worked extremely well and ensured the successful start of the enumeration at the beginning of the period and its completion by the Census Night. Several District Census Officers have stated to me that but for the system of reports, many enumerators would have put off their work until the last minute and then failed to complete. One of the lessons of this Census has been the success of the principle of never giving an order without taking steps to see that it is promptly carried out.

SECTION 4.3—DIFFICULT QUESTIONS

4.31. The question which provided the greatest difficulty in analysing the Census results is undoubtedly that of Age, simple as it appears to be on the slip and questionnaire. The trouble is that that people do not know their ages and attempts by enumerators to make intelligent guesses result in distortions of the general pattern of the age structure.

Scheme for assisting the respondents' memories by an agreed list of dates of well-known local events were stated to have been put into operation everywhere, but in fact I found the enumerators had generally only a very sketchy list. It is obviously a difficult task to draw up a really satisfactory series. There cannot be a common list for a wide area and so it cannot be laid down by higher authority; lists drawn up above Charge level will probably be useless.

I am inclined to think that respondents would give better answers about their ages if they had notice of the question and could give it some thought. I therefore suggest that the Age question should have a very prominent place in the Census publicity plan.

A knowledge of the age-structure is of the greatest importance and value. On it depend many vital governmental and social policies. As a long term remedy for the general ignorance regarding age it is suggested that as part of the normal religious instruction of Muslim children they should be made to learn by heart the Hijri year in which they were born. If this information was thus linked with Islamic teaching and history, the date of birth would in time become part of the general knowledge of every person.

The inaccuracy of age statistics is not entirely due, however to the poorness of the answers given by the public. Part of the trouble can be traced to the difficulty of sorting and classifying the data. The enumerator was told in this census that, when a respondent did not know his or her age, it

should be estimated in single years up to 25 and to the "nearest" 5 years above that age. This naturally led to 'heaping' at numbers ending in 0 or 5, and the classification in the sorting stage into age-groups ending in 4 and 9, tended to increase the distortion. Moreover the figures written on the enumeration slips—sometimes in English numerals and sometimes in the vernacular —were often badly formed and easily misread by a hurried sorter or puncher. It is suggested that in future a set of age-groups be printed on the slip, so that a check-mark may be put against the right one, but there must also be a space in which the actual age in years can be written. This would lead both to more accurate enumeration and better classification.

4.32. Another question which presents difficulty despite its apparent simplicity is that of Sex. Statisticians and demographers find a high ratio of men to women a difficult matter to explain and are inclined to doubt the completeness of the enumeration of females. The Enumerator's Instructions contained a "slogan", inherited from past Censuses, that it was the duty of the enumerator to "catch every man". Actually the vernacular version said "every person" but it is perhaps more important to catch every *woman*. I am inclined to think that it would be as well if the Census Act made it a legal obligation of the Head of every Household to report to the enumerator every member of his family including women and children as well as men.

In the Census Commissioner's broadcasts the importance of enumerating women was stressed. It was pointed out that calculations regarding the future size of the population depended on the accuracy of the figures of potential mothers. It is generally considered by the Provincial Census authorities that the enumeration of females was fairly complete, but in view of the shortage of females disclosed by the sorting, it is urged that this point should receive special attention in the printed instructions to the enumerators for the next Census.

4.33. Some of the considerations applying to females in the above paragraph apply equally to children. The enumerator's instruction should stress that every living child must be reported and that girl children are as important as boys. It ought to be less difficult to report accurately the ages of children than of older people, but there seems to be a tendency to round them at age 5, which could possibly be eliminated with a little more care on the part of the enumerators.

4.34. The Questions which were popularly regarded as most difficult were those regarding occupation, industry, industrial status and unemployment. In fact, however, the sorting of the slips indicates that in the skilled occupations of the Non-Agricultural Labour Force, the slips were made out fairly well. The difficulties which arose were chiefly over the use of indefinite words such as 'Mulazemat' (service), 'Mazdoor' (Labour), and 'Naukari' (employment). These terms should be forbidden and any others like them. The suggested set of lantern slides and lectures might well give a large number of examples showing how specific cases should be entered on the slip, and illustrating the conception of Industry, Service or Business as the economic activity in which a person exercises his Occupation.

The conception of industrial status was fairly well understood but I would suggest that in future we should revise the categories. We might learn from America and include "Government Service" and "own account worker" as status classifications.

The idea of "unpaid family help", coupled as it was with that of partial self-support, presents difficulties. The eliminating question, on the subject of self-support, needs to be recast, probably on the lines of a simple set of alternative forms of activity one of which has to be ringed round.

The above revision would also help to clarify the conception of unemployment. Since such a large proportion of the population are independent workers, it is important to lay down a clear definition of exactly what it meant in the current social and economic circumstances by "unemployment". The definition should not be purely theoretical but should be designed to provide data for actions and services to control unemployment among different classes of persons. When this point and the definitions are made clear to the public, the response may be more reliable.

The whole series of occupational and industrial questions needs to be re-cast with great care and with particular attention to the words in which questions will be expressed in Bengali and Urdu. It is no use copying the questions used in the Censuses of advanced countries. Their conceptions are largely inapplicable and un-translatable.

4.35. The fertility questions met with a better response than was anticipated and the information regarding numbers of children and duration of marriage was carried through to complete tabulation. The questions on live births in the last year and on the survival of the infants so reported were, however, proved by tabulation to contain serious inconsistencies. The questions were obviously properly understood and there is no great difficulty in getting them answered in theory. But there are two practical difficulties; first, the respondents are not likely to remember the details at all unless they have warning of the question, and secondly, it is unlikely their reports will cover an exact period of 12 months. If the question is repeated on a subsequent occasion, special arrangements may have to be undertaken, to become effective a year before the Census, in order to mark the beginning of the period from which the count of births and infant deaths is to be made. In fact it might thus be linked with a drive for the registration of births and deaths generally.

4.36. A slight difficulty was found in the Education question. Oriental degrees such as Adib Alim, Munshi Fazil, Maulvi Fazil etc., had no place in the set of symbols Different provinces took different steps to include them, but for the most part they have been allotted one of the levels printed on the slip consistent with the number of years required to obtain the Oriental diploma. This point, however, may be considered in designing the questionnaire and slip in the future.

SECTION 4.4—COLLECTION OF RESULTS.

4.41. The Census Code of Procedure Pt. II section 10 laid down a complete scheme for collecting the documents recording the results of the Enumeration. The work falls naturally into two portions: first, the reporting of the provisional results; secondly, the collection of the enumeration slips and documents. The reporting of the provisional results was carried out very rapidly and in fact in advance of the time laid down in CCP 2.

The Census slips, with their summaries and abstracts, were passed upwards to Charge Superintendents, who reported in writing to the DCO the preliminary figures required. As soon as the DCO had received reports from all his Charge Superintendents he despatched a telegram of which a form was provided at Appx. 'J' of CCP 2. This form proved completely successful; the whole of the preliminary figures for Pakistan were received in the Census Commissioners office by the 16th of March. The Central and Provincial Governments were given prior notification of the figures and agreed to their prompt publication. The figures were released to the press throughout Pakistan on the 20th March and Census Bulletin No. 1 was in the printers' hands a day or two later. These arrangements for publication of the preliminary figures were set out in CC Circular 64.

4.42. The second stage of the collection of the results was the delivery of the Census slips and Enumeration reports to the Hand Sorting Centres. The Code of Census Procedure, Part II, sets out the arrangements for safeguarding the slips and ensuring their complete receipt. C. C. Circular No. 63 summarised all these arrangements in a final reminder to the D. C. Os.

The Transfer of Census records up to Charge Superintendents' level was well done, but above that level there was a certain amount of difficulty. There is a tendency for keenness to evaporate at district level immediately the preliminary figures have been reported. This resulted in a helter-skelter rush to get rid of the census records regardless of their accuracy and order.

It is suggested that in future Censuses, the District Census Officer himself should be responsible for obtaining the slips, organizing their safe custody, and carrying out the preliminary stages of the sorting. This would ensure continuance of interest and a sense of responsibility.

4.43. Transfer of slips to the sorting centres was, however, successfully carried out everywhere. There were delays, there were cases where a few

slips were damaged, but on the whole the Census was remarkably lucky. There were no losses of slips. A few were attacked by ants in one of the Punjab districts and a packet dropped in a river in East Bengal. The latter was recovered, the slips were found still to be legible and copies were made. The same was possible with nearly all the ant-eaten slips in the Punjab.

These incidents show, however, the danger which is present in this transportation stage, and consideration should be given to the question of providing official transport and using standardized protective packages such as thick cotton bags. If sorting is done at district level, however, the whole of this problem will become more manageable.

4.44. A weak point in the collection of Census results was the poor standard of accuracy and neatness in the preparation of the Charge Superintendent's Summaries. This becomes a key document in the sorting operation, and the division it gives into the urban and rural portions of the charge will I hope be of even greater use in future. The Summaries were made out in duplicate and one copy remained with the tehsildar. A third copy would have been of a great advantage as the copies used in the sorting centre often became illegible, and it would also be a good idea to have very wide spaces between the lines to give room for the amendments required when the slips are finally checked.

4.45. An unexpected difficulty occurred in the Punjab owing to elections having to be held almost immediately after the enumeration. Most of the revenue staff was wanted for election work, and these were the very same men who were responsible for the collection and transmission of the census results and records. An accelerated time-table was therefore agreed upon for use in the Punjab. Details are given in C. C. Circular No. 39. In practice with the help of these re-arrangements the election did not cause the trouble to the Census which had been feared. This question, however, is an example of the importance of keeping other major governmental operations clear of the Census period and a couple of weeks immediately before and afterwards.

SECTION 4.5—DISBANDMENT OF THE ENUMERATION STAFF.

4.51. The Organized census force of enumerators and controlling officers ceased its official connection with the Census as soon as the slips had passed out of their hands. The enumerator's task finished when he had submitted his report and obtained his supervisor's receipt for the slips, forms for both of which were printed in the Instructional leaflet. The report form was in fact a certificate that the enumerator had taken the Census in the whole of his block in accordance with the official instruction, and it also stated the number of slip-pads handed in and the number of persons enumerated on them. The figures in the enumerator's report form had to be checked by the Supervisor who then signed the receipt form which was in fact a discharge of the enumerator from his liabilities under the Census.

4.52. The responsibilities of Supervisors for closing their work satisfactorily were laid down in the Code of Census Procedure Pt. III paragraph 10.8 to 10.9. The Supervisor handed over an Abstract giving the total figures for his Circle. This abstract was arranged on similar lines to the Enumerator's Report and contained a certificate by the Supervisor to the effect that he had properly completed the job. Appendix to the Abstract was a form of receipt to be signed by the Charge Superintendent and retained by the Supervisor. As soon as he obtained this receipt the Supervisor was clear of his Census responsibilities.

4.53. The Charge Superintendent, who was almost invariably a regular permanent Government servant, had a rather more responsible final set of tasks to perform as laid down in CCP. 2, paragraphs 10.10 to 10.15. His clearance of the Census organisation was effective when he had received from the Tehsildars, or equivalent officials whose area covered his Charge, their receipt for the summaries which he was required to provide to them, and when he had also received an acknowledgement from the District Census Officer that the Census records of the Charge had been correctly handed over and any queries arising from them had been settled.

4.54. The District Census Officers were required to wind up their activities in accordance with the provisions in CCP. 2 for transmission of the slips and records and with the submission of a general report to the PSC. The report gave the names of persons recommended for the issue of certificates and letters of thanks for the services they had rendered to the country in connection with the Census.

4.55. Official *Sanads* (Certificates of honour) were issued to all Census officers from enumerators to Charge Superintendents. The Certificates were well printed, in English on one side and in the vernacular of the province on the other, and bore the facsimile signature of the Secretary of the Ministry of the Interior of the Central Government. The only written matter required on the Sanads was the name and address of the recipient. Arrangements for the issue of these Sanads at appropriate ceremonies were made in C. C. Circular 71.

A suitable statement for enclosure in the officials' service records was made in the case of District Census officers and all other permanent Government employees who were engaged on Census work.

4.56. In addition to the above *Sanads* conveying the thanks of the Government of Pakistan to persons who served as Census Officers, letters of thanks were sent to senior officers and non-officials whose efforts and influence assisted the Census work. Most of these letters were issued and signed by the PSC, but in a few cases the Census Commissioner at the request of the PSC gave his signature on behalf of the Central Government. Arrangements for these letters of appreciation are set out in C. C. Circular No. 72.

CHAPTER 5

ABSTRACTION

SECTION 5.0—GENERAL SORTING PROGRAMME.

5.01. The operation of building the data recorded on the individual enumeration slips into a complete set of Census tables involves three steps. The stages tend to merge into one another but in fact they form the distinct operations of abstraction, compilation and tabulation. The first of these consists of sorting the slips again and again for each individual characteristic shown upon them and on each occasion counting the number of persons possessing the variants which are to be tabulated for each characteristic. For this purpose the slips are sorted in batches the size of which depends upon the tabulation scheme modified by convenience of sorting. The compilation stage consists of the building up of the figures for these sorting batches into the totals required to be published in the tables. The final stage of tabulation consists of drafting the table itself from the compilation records.

5.02. This post-enumeration work thus needs a different type of organization from that which had conducted the enumeration. Now a large full-time staff is required operating to some extent on lines more like an industrial enterprise than a Government Office. This staff must perforce be recruited generally on a temporary basis. Nevertheless, each set of figures must be followed through from the sorting stage to its final incorporation in the statistical tables. The inclusion of sufficient permanent officials to ensure the maintenance of continuity and control is vital.

In the post-enumeration stage the Census work continued to be done under the direction of the Provincial Superintendents of Census, but each Sorting Centre had a gazetted officer to take charge of it. These officers were known as Deputy Superintendents of Census (DSC) and most of them continued their association with the Census work upto the final production of the tables. Figure 3 shows diagrammatically the outlines of the organization which was set up and the flow of the data through the various offices.

5.03. The sorting operation was organized in three main stages each divided into phases and workings. The first step was the scrutiny and check of the slips and their preparation for the main business of sorting. At this stage the number of slips was definitely agreed and formed a check figure to which all subsequent work had to conform. Further, in this stage some of the data was examined by the compilers and given code numbers for more accurate sorting. The second step was the sorting by traditional hand methods of the greater part of the characteristics listed on the slip. At the end of this stage the slips of the Non-Agricultural Labour Force and of certain cities were segregated and passed out to the next stage, for more detailed sorting by machine. The third stage, the machine sorting operation, was used to classify the Non-Agricultural Labour Force according to its occupations and Economic activities and to effect cross tabulations within and between these categories. Since it was felt that the Non-Agricultural Labour Force in the larger cities would represent a large proportion of their total population it was planned to transfer the later portions of the Hand Sorting operation for the whole population of large cities to the machines. This scheme however proved difficult in practice and was only partially carried out.

5.04. The detailed plan for the whole of the Abstraction Operation is given in Part III of the Code of Census Procedure which has, in Chapter I, a general explanation of the scheme. Chapters 3 and 5 describe the hand-sorting arrangements and Chapter 4 deals with the work in the Machine Centres. Since the details of the operation are fully explained in Part III of the Code, it is not intended to recapitulate them in this report.

Part III of the Code was issued in loose-leaf form during the course of the work. This arrangement was unavoidable since there was no time in the pre-enumeration period to plan the work and formulate the detailed instructions required. In any event, however, loose-leaf form is probably the best method in which to issue these instructions: it enables the operative staff to have in handy and completely uptodate form, the guidance to which they need to make day-to-day reference. If the book had been issued as a finished and bound volume there would in practice have been a constant stream of amendment. The amendments to a loose-leaf book were fairly easily made on a standard system which when the amendments were extensive included the issue of replacement pages. This avoided reference to correspondence files; the whole instructions were in the Code, and though there were many queries most of them were settled by drawing attention to a paragraph of the Code or, where necessary, by amending or expanding it.

5.03. The Abstraction work, as it was performed in practice, is discussed in the Provincial Chapters of this report to which reference should be made. The following sections of this chapters are intended merely to summarize the outstanding points and, above all, to suggest possibilities of improvement.

5.04. The scheme of organisation for the Census offices in the post-enumeration period is shown diagramatically in Figure 2. In this chart the various offices and sorting centres are indicated together with the channels through which they were given direction and their work was controlled. This chart also shows the various routes by which the documents containing the results of abstraction, compilation and tabulation were passed upwards to the publication stage.

SECTION 5.1—HAND SORTING CENTRES.

5.11. The securing of premises for Hand Sorting Centres raised numerous difficulties. Accommodation was, and still is, one of the great shortages of Pakistan. In Karachi space for a Hand Sorting Centre was an obvious impossibility and as soon as it was agreed by the Ministry of Finance that arrangements might be made for a certain amount of Machine Sorting, the first decision was that the whole of the abstraction work for the Federal Capital Area would be done by punched-card machines. We organized the Karachi Machine Centre in one barrack hut of the Ack Ack School. It was far too small but a Hand Centre would have taken at least five times the space.

5.12. From the point of view of control, training and organization, as well as that of accommodation, there is a maximum size for a Hand Sorting Centre which careful calculations indicated was in the neighbourhood of 8 million population. This is one of the decisions in which we were certainly right and I would recommend that these figures be borne in mind in future. The bigger centres than this all had difficulties. A decision which turned out to have been a mistake was the arrangement by which Rawalpindi Hand Sorting Centre dealt not only with the slips of North Punjab but also with those of the settled districts of the N.-W.F.P. In the planning stage this arrangement had every appearance of economic. In practice the numerous queries and investigations that were necessary caused considerably more work and expense than would have been needed had Peshawar sorted all the slips for the N.-W. F. P. In future each province should be entirely self-contained in the matter of its sorting.

The above considerations indicated the need for four sorting centres in the East Bengal, two (and if possible 3) in the Punjab and one each in the other provinces. Accommodation was eventually found for all these except that we had to be content with two centres in the Punjab. It proved impossible to obtain accommodation for a sorting centre for the South Punjab districts either in Multan or Bahawalpur and the slips for

these districts had to be sent to Lahore. This made the Lahore Centre rather unwieldy.

5.13. The duties of the staff in the Hand Sorting Centres and their special administrative arrangements are set out in Chapter 5 of CCP 3. The size of the staff had been discussed at the second conference of PSCs and the outline scheme is laid down in CC Circular No. 25. That circular however was issued before the final decision was taken to install Machine Sorting arrangements to deal with the more intricate portion of the sorting work. When this decision was made the Hand Sorting plan was reduced and the number of sorters was cut down to approximately one sorter per lakh of population. With sorting staff on that basis the Hand Sorting programme was actually carried out in about 8 months i.e. about 180 working days. The original calculations were based on a speed of 60 slips a minute, plus allowance for time in counting, checking and recording the results. In practice only a very few of the sorters succeeded in approaching this speed.

5.14. The hand sorters' work was directed and controlled by a heirarchy of officials, as set out in C. C. Circular No. 25, and consisting of:

(*a*) The Deputy Superintendent of Census in charge of the Centre, who was usually a gazetted officer.

(*b*) An Office staff to deal with the administration and the maintenance of the records.

(*c*) A Chief Inspector.

(*d*) Inspectors depending on the size of the Centre upto a maximum of four.

(*e*) Checker-Supervisors at the rate of one per 20 sorters.

The scale of the checker-supervisors was found in practice to be inadequate. Inspectors and even compilers had to spend a good deal of time in checking sorters' work and even then the checking of classifications (as distinct from counting) was, to my mind, insufficient. I am recommending that Hand-Sorting in future should be done in smaller centres at district level. This may enable the supervisory staff to be sufficiently numerous to make a more thorough check.

5.15. All Hand Centres found that the office Record-Keeper could not deal with the office papers and also keep track of the movements of the slips within the Centre. That work is of course of the utmost importance and compilers or supervisors had to be diverted to it. The establishment of the sorting centres definitely needs to include a capable senior clerk to act as record-keeper for the slips, sorters tickets, charge summaries, compilation sheets, etc. Another shortage in the authorized staff was the scale of peons, sweepers and chowkidars. These were very sparingly provided but it became obvious that they are essential, and that the last named should if possible be permanent employees of government. There is no saving in cutting down below the usual level in the scale of peons, they can be of great help in handling the mass of paper and in saving the time of the sorting and checking staff.

5.16. The equipment required for the Sorting Centres was extemporized locally and proved to be adequate. C. C. Circular No. 59 made certain suggestions which were carried out in various ways in different Centres. The cheif requirements were racks and pigeon-holes. Bamboo racks proved to be the cheapest and most serviceable. They were constructed quite inexpensively in Rawalpindi and Karachi. Most of the East Bengal Centres managed to borrow file racks from permanent offices. Comilla Sorting Centres used an Official Record Room plentifully fitted with racks. (This was excellent for storage but the space available for sorting was very restricted.) In Lahore the ballot boxes used by the Election Commissioner were borrowed and proved to be excellent for storing slips in their 'batches'.

Sets of pigeon-holes were made very inexpensively in most centres in East Bengal and proved satisfactory. The container idea suggested in C. C. Circular 50 was generally used elsewhere. A few of the pigeon-holes used in previous Censuses were discovered in some provinces and put to good use. In Hyderabad good containers were made without great expense from sheets metal. In Rawalpindi the sorting centre had a very small number of pigeon holes and many of the Workings were handled by sorting the slips into piles on

the floor. I did not like this, but it appeared to work. This method, however, required a complete absence of ventilation in the Sorting Centre and I do not recommend it. A most difficult point regarding equipment was the provision of tables and chairs for sorters. Many men took it as a matter of prestige that they should be given a chair. Nothing had been allowed in the budget for such furniture and in most of the Centres the sorters had to do their work squatting on the floor. It was in Bengal that this was considered particularly unsatsifactory and many sorters preferred to bring their own chairs.

My suggestion for carrying out hand-sorting at district level will get over much of the trouble regarding equipment as the Centres will be much smaller and their requirements will probably be within the resources of the local permanent offices.

SECTION 5.2—THE HAND SORTING OPERATION.

5.21. The detailed plan of the Hand Sorting operation is given in chapter 3 of CCP. 3. The work was broken up into 5 phases: the original plan contained a sixth phase but it was taken over by Machine Sorting. Variations of the plan were made for Baluchistan so as to include classification by tribes, and an entirely different plan was used for the special tribal slips of the Frontier regions of the N.-W. F. P.

(*a*) The first phase of the Hand Sorting programme was the most difficult one and took nearly half the time allotted to the whole operation. It included three parts:

(*a*) The Block sort
(*b*) The Circle Sort and
(*c*) The Children sort.

As a preliminary to the block sort the slips had to be carefully scrutinized and obvious mistakes corrected. This was to be done by the controlling and compiling staff of the Centre but in fact it proved too big a job for them and a good deal of the work in many Centres was done by the more intelligent sorters. This is one of the reasons why it would be better for sorting to be done at lower levels where the sorting team can be of a higher general quality and more in touch with the enumerators and the actual conditions of the districts.

(b) The Block-sort itself consisted of the classification of slips by sex and the segregation of Muhajirs. This set up the batches necessary for the Circle sort and checked the total number of slips with the Charge Superintendent's Summary.

(c) The circle sort classified and counted the slips according to religion, birthplace, nationality, mother-tongues, and literacy. These figures were obtained for each sex and separately for Muhajirs. The first working divided the slips of persons not "In the Mode" from "Others". Persons "In the Mode" were those who claimed Pakistani nationality, whose Birthplace was in the district of enumeration, whose religion was Islam, and whose mother-tongue was that prevailing in the district. The persons so classified always represented the majority of the slips in the batch and this preliminary classification cut down the size of all the subsequent workings in the circle sort.

(d) The third part of Phase I—the Children's Sort—completed the analysis of slips of all persons under 12 years of age for the few other classifications which applied to them, and thereby eliminated this large class from all subsequent phases.

(e) The general plan of Phase I of the sorting was successful and its general principles should be continued, as long as hand-sorting methods are used. The following suggestions are made, however, for general improvement:—

(*i*) More time must be allowed for the scrutiny stage.

(*ii*) If data regarding the strength of communities is still the basis of parliamentary representation the religious division should be a part of the block-sort and thereafter maintained throughout all sorts; and communities which have separate electoral representation should be kept apart and not amalgamated into "Other Religions". This religious breakdown, however, was found to be of very small value in the NWFP, most of the Punjab and Baluchis-

tan and one of the first decisions to be made is the extent to which sorting is required to be done on a religious basis.

(*iii*) Statistical analysis of Census results, and particularly the assessment of the rate of increase of the population requires that the Age Structure should be known. The Census office received many applications for this information long before we had abstracted the data. Moreover, the analysis of the Age Structure brings to light mistakes and inconsistencies of all kinds in the enumeration and sorting. It was originally planned for the Age analysis to be part of Phase I. But it was changed over to Phase 4 because calculation showed that larger batches could thereby be maintained throughout the whole sorting operation and the time and cost much reduced. In practice, however, this resulted in the Age data, which is perhaps the most important feature of the Census, being rushed through in the last expiring days of the sorting centres. The standard of work may perhaps have sufferred from this and it proved impossible in practice to investigate inconsistencies since the staff who had handled the documents had ceased to exist. It was probably not an economy to delay the age sorting and it would be best put into Phase I.

(*f*) Phase II was very simple and sorted only the slips of literate persons counting them according to educational level and the languages they were able to read or write.

(*g*) Phase 3—Economic Activities—dealt with slips of self supporting persons (i. e. all except Dependents), and was in three parts:

(*a*) Non-cultivators

(*b*) Cultivators
and

(*c*) Self supporting persons not in the Labour Force.

The slips were made up in regional batches from the results of the Circle. Sort Phase 3 A—Non-Cultivators—divided off the slips which had to be sent to Machine Centres and those which continued in the Hand Sorting. In so far as the latter represented Non-Cultivators in the Agricultural Labour Force, they were sorted for occupations, industrial status and duration of unemployment. The cultivators were sorted in Phase 3B for land tenure, subsidiary occupations and duration of unemployment. The persons not in the civilian Labour Force had been segregated in Phase 3A and were divided in Phase 3C into various categories.

(*h*) Phase 4 was the age sorting which was cross-tabulated for years at school and for marital status. This phase also included the sort for multi-lingualism which might with advantage have been transferred to Phase I since it is closely associated with mother-tongue.

(*i*) Phase 5 was the Fertility sort and was confined to women who were or have been married.

(*j*) The whole system of hand sorting was illustrated by a rather light-hearted pictorial diagram copies of which were supplied to all sorting centres and census offices. This graphical summary proved most useful. A reproduction of it is at Figure 3.

5.22. For each phase or part of a phase, special sorters' tickets were designed of which adequate supplies are available for future reference. (File No. 4/30/51—Census). A feature of the sorters' tickets was the arrangement of check figures which proved the total accuracy of counting. This check, however, cannot prove the accuracy of classification and it is important to realise that the value of Hand Sorting is entirely dependent upon the amount of visual checking which is carried out to prove the accuracy of the classification.

5.23. After the Circle Sort the "sorting region" became the geographical area on which sorting batches were based. This continued throughout the whole Hand Sorting operation until Phases 4 and 5 were reached, but these were sorted on a district basis. This had the unfortunate result of denying us the urban and rural analysis of the age structure we originally planned. It has already been recommended that the scheme of sorting regions should be carefully reviewed for the next Census. Each sorting region should be either

rural or urban—never partly both—and the urban/rural split should be maintained to the end even if regions are amalgamated in other respects for the final workings.

5.24. The original plan for sorting arranged that slips of the NALF should be copied out when they had been segregated in Phase 3. It was intended that the copies should be sent to the Machine Centre for analysis regarding Economic characteristics and that the original slips should continue in the hand sorting through the rest of Phase 3 and Phases 4 and 5. Calculations, however, established that copying the slips would involve an inconveniently large amount of work, and it was also anticipated that once the data on the slips had been punched on cards for machine sorting, the figures required to complete the Tables, in respect of the characteristics for which the rest of the slips were still to be hand-sorted, could be more easily obtained by machine. We were right in stopping the copying of slips but were wrong in thinking that tables could be easily made up by mixtures of hand and machine sorters' tickets. The delay in obtaining figures from the machine centres proved a major difficulty in completing the tabulation scheme. It is recommended that in future, if hand sorting still continues at all, every table should be built up either completely from hand sorting or completely from machine sorting, and careful consideration should be given to the method of transferring data from Hand Centres to Machine Sorting Centres. The coded schedule which was used to transfer the cottage industries reports to Dacca Machine Centre was found to work well. A development of this may be the best method of coding and passing data to Machine centres in the future.

5.25. Permission was given in CCP. 3 para 3504 for the Age, Marital Status and Fertility characteristics to be analysed, where the batches were very large, by sorting a large random sample which was never less than 40,000 slips or less than 20% of the total batch. This arrangement was used very rarely and did not apply to children, ages over 54, or to Cities. I made verbal enquiries in every province regarding this procedure and was told that it worked easily but was really no saving in time and was only used for the largest districts.

5.26. The only virtues of Hand Sorting are its speed and cheapness. Its cheapness may prove illusive if rates of pay of clerical staff rise in the next decade as they have done in the last. The speed of hand sorting arises from the method used in this Census (based on ideas proposed in 1941) of so designing the original enumerator's records that they could serve as sorting media without having to be copied. Compared with Machine Sorting this saves the whole time taken by punching and offsets the great speed of the sorting machines. The slips proved in practice to be easily sortable and quite sufficiently durable despite the handling they received in the Sorting Centres. It would seem, therefore, that unless there are great advances in the mechanization of punching, or big changes in the pay required by sorting staff, Hand Sorting may probably still be, in this country, the least expensive method of abstraction. It must always be remembered, however, that the standard of accuracy in Hand Sorting cannot be high and depends chiefly upon the honesty, energy and thoroughness of the staff, and especially on the provision of a large number of checkers with a high degree of integrity and industry and a blood-hound's 'nose' for nonsense.

SECTION 5.3—THE ORGANISATION OF THE MACHINE OPERATION.

5.31. There is no doubt of the great advantages to be gained by the use of modern punched-card machinery for the sorting and tabulation of Census data. The accuracy of Machine tabulation far exceeds the possibilities of Hand sorting and in fact is in general only limited by the human element involved in coding, punching and handling the cards. Speed is the second great advantage of machines. Powers-Samas and Hollerith sorting machines are both designed to sort cards into 12 categories at the rate of 400 cards per minute. That is 10 times as fast as hand sorters can be expected to work.

To these advantages is added the great gift of flexibility which is of enormous importance when it is desired to obtain detailed cross-tabulations. Machines make no bother about dividing the cards into batches according to the variants of one characteristic and then dividing each batch into variants of another. They will classify, for

instance, occupations by age, or mother-tongues by birthplace. In hand-sorting such cross tabulations, if not altogether impossible, can in practice be very few since once divisions and sub-divisions have been created, they complicate all subsequent workings. By machine such classifications can be made and used and the cards can then be re-sorted on a different basis.

5.32. In his Census report for 1941, the Census Commissioner for India advocated investigation of the possibilities of using machine sorting in future Censuses. He described an experiment carried out in Delhi where an existing punched-card machine installation was used out of normal office hours to tabulate the local census data. This experiment showed many useful lessons and the advice of the 1941 Census Commissioner proved most valuable.

As a result, early in the planning of the sorting programme, enquiries and calculations were made regarding the possibility of transferring part of the sorting and tabulating work to machines. The high speed at which the sorting machines worked indicated that the financial provision required for the Hand Sorting of occupations and even the most simple cross-tabulations of them with industries, age and education, would be practically equal to the cost of doing the same work more thoroughly by punched-card machines. A scheme was therefore put before the Ministry of Finance who were extremely helpful and agreed that the Census Commissioner should make enquiries from the Punched-Card machine companies and produce a definite plan. It was very heartening to realize that the officials of the Ministry of Finance, who had of course theoretical knowledge of the punched card accountancy, were themselves eager to see the introduction of the modern method into Pakistan. They had no doubt that a change-over from hand methods for the more complicated portions of the Census abstraction plan would eventually become inevitable as a consequence of the progress of the World, and that the possibility of introducing the use of up-to-date machinery in the 1951 Census should be carefully examined.

5.33. The 1941 Census Commissioner for India with his experience of hand-sorting methods in 1931 and with the knowledge he had since gained in Washington and Ottawa realized that "to handle the All-India Census throughout on machines would mean either spreading out the work over several years or hiring such batteries of equipment as would be difficult to accommodate and would prove extremely costly if indeed machines in such quantities at census time would be obtained at all".

I had had considerable experience of punched-card machinery, but the descriptions of hand-sorting in the 1931 and 1941 Indian Census Reports were my first acquaintance with this method which had become traditional in this land. Needless to say I was appalled at the possibility of inaccuracy, the lack of flexibility and the huge staffs required for hand-sorting. But I was equally taken aback by the apparent success of the operation, as demonstrated by the previous census Tables, and by the speed with which they had been compiled. The speed moreover was expected to be improved upon by the introduction of the individual slip to be used both as an enumeration document and as the sorting media. I came to the conclusion that to keep within financial bounds and to produce rapid results it was advisable to continue the use of hand sorting for the simple parts of the sorting operation while introducing machine sorting for the most complicated stage which would therefore have to be also the last stage.

5.34. The doubts of the Census Commissioner for 1941 regarding the possibility of obtaining punched-card machinery in sufficient quantity proved, however, to be well based, especially as the proposal, like the whole Census organization, had been initiated dangerously late. There was certainly no time for the manufacture of machines and it was obvious that the Census of Pakistan, if it obtained machines at all, could have to be content with what could be spared by the makers from their stocks. It must be remembered that nearly every country in the World tries to take its Census around the turn of the decade. The United Nations had made a big drive to achieve a world-wide Census in the years 1950 and 1951. Most countries had made their plans well ahead of these dates and the manufacturers had earmarked very nearly every piece of punched-card equipment they could produce.

It was important, when introducing machine methods into the Census of Pakistan for the first time, that the operation should be planned on the simplest possible lines. The most complicated part of machine tabulation is undoubtedly the use of the tabulating machine itself. Punching is simple once past the preliminary and training stage. It is the sorting which is the crux of the machine process; after the cards have been through the sorting machines they can either be tabulated by normal "book keeping" methods—with clerks entering the data on compilation sheets and totalling them with the help of adding machines—or the sorted cards can be put through a tabulating machine which performs the compilation automatically with of course for greater speed and accuracy. The tabulating machine, however, is a most sensitive instrument, with something of the temperament of a "prima donna", and requiring special adjustments (or special fitments, depending on the type of machine) for each individual tabulation.

5.35. An outline scheme for abstraction and tabulation of the whole data for the Federal Capital and of part of the data elsewhere was prepared and submitted to the British Tabulating Machine Co. (Hollerith) and the Powers-Samas Accounting Machines (Sales) Ltd., both of U. K. and to the International Business Machines Company (Hollerith) of America. It was explained that the plan of working must be simple and that schemes for eliminating tabulators by using counting sorters would be acceptable. The American Company asked to be excused as their maintenance organisation was not yet ready in Pakistan. Both the other companies examined and discussed the plan with great care and put in detailed tenders for the provision of machines on hire, their maintenance and the instruction of operators.

The B. T. M. Co. could not provide Hollerith counting sorters in time and included tabulating machines in their plan. The Powers-Samas Company undertook to provide counting sorters promtly and therefore did not propose to use tabulators. The price quoted by the B. T. M. Company was a little less than that quoted by their competitors but they had assumed that the work could be done by a much smaller battery of equipment and it was very doubtful whether the number of punchers and sorting machines would be adequate.

It was decided, purely on grounds of simplicity of operation, to use the Powers-Samas Company's plan and the counting sorters which they alone could provide at such a short notice. The contract with the Powers-Samas Company is in file No. 3/22/51-Census and the papers regarding shipment and installation are in file No. 3/8 (III)/50-Census.

5.36. The scheme for the machine operation is explained in general outline in Section 3 of Chapter 1 of CCP. 3. The machine sorting operation fell naturally into two parts; first punching data on the special cards and secondly classifying the data by sorting the cards on the sorting machines. The detailed procedure for punching and sorting is given in Chapter 4 of CCP. 3.

Two machine sorting centres were set up. One in Karachi to deal with the whole sorting operation for the Federal Capital Area and with the special Economic Classifications of the NALF of West Pakistan. The other machine sorting centre was in Dacca and was slightly smaller in size. It dealt with the Economic Classifications for the NALF of East Bengal and also with the Age and Fertility sorting—phases 4 and 5 of the Hand Sorting operation—of the 4 large urban areas of Dacca, Chittagong, Barisal and Comilla. It was originally intended to carry out the sorting of Age and Fertility data for the larger cities of West Pakistan also by machinery but the unexpectedly large size of the Non-Agricultural Labour Force (NALF) in West Pakistan and the slowness of punching precluded this except for Karachi and Hyderabad cities.

In addition to these two main operations on the slips of cities and of the NALF, the machine sorting centres dealt with several smaller sorting jobs; the Dacca Centre punched and machine sorted the data obtained by the Cottage Industries Enquiry and in the Karachi centre the machines were used to classify data for Foreign Nationals and Pakistani citizens abroad.

5.37. Powers-Samas company felt that they would be able, if the order were placed promptly, to give delivery of the punching machines, and sufficient cards to begin the work, in July 1951. It was not expected that the Hand Sorting would by then have segregated the slips of the Non-Agricultural Labour Force (NALF) the analysis of which was to be the chief work of the Machine Sorting Centre. But time would be required for training operators and both centres would have a good deal of work ready for the men as soon as they had been trained. In Karachi the punching of the slips for the Federal Capital Area could be proceeded with immediately and in Dacca it was planned in a similar way to punch the cards for the Cottage Industry Enquiry as the first job.

There was considerable delay in obtaining the machines and in receiving the supplies of cards. Shipping space from England was reported not to be available at the time the machines were ready. But thanks to the good offices of the Pakistan High Commissioner in U. K. the punching machines were all shipped in July. Chittagong consignment, however, met with considerable delays in discharge and transportation to Dacca. There was an unfortunate mistake which resulted in the supply of cards for Dacca being shipped to Karachi from whence it was necessary to re-ship them to Dacca.

The Karachi Machine Centre began training in August 1951 and commenced the punching of operational cards in December 1951. In Dacca training began in October 1951 and operational punching began in November 1951.

5.38. Negotiations for the acquisition of the premises had been initiated well ahead. The East Bengal Government were particularly cooperative in making a large shed available in the Secretariat Compound at Ramna. In Karachi nothing better could be found than a barrack hut at the Ack Ack School, Clifton. This was not really large enough and had two great disadvantages. First was its inaccessibility—which caused constant trouble for the staff—and secondly it was very much exposed to high winds and drifting sand—which were equally inconvenient for the machines. It speaks much for the robust construction and general service-ability of the Power-Samas machines that they managed to continue in fairly regular operation despite the sandy conditions in which they operated.

Special electric installations were provided by the Public Works Department and were in serviceable order by the time the machines actually arrived. Both in Karachi and Dacca, but specially at the latter centre, we had constant difficulty with the electric supply. Machines had frequently to stand idle for want of power and in Dacca there was much difficulty with the sorting machine due to fluctuating voltage which led to their running either too fast or too slow both of which caused frequent wrecking of cards.

5.39. The Powers-Samas representative advised us that it would be easier for the operators if specially printed cards were provided, the extra cost of which is negligible but in fact they proved a nuisance. We had three types of specially printed cards suitable for one, two or three persons on a card. The slow and long communications with England resulted in frequent shortages of one type of card or the other, and this, especially in Dacca, was considered to be sufficient excuse for changes in the programme which upset the rythm of work.

In fact once a puncher has got used to his job he rarely looks at the printing on the card and in future I recommend that plain cards only should be used.

SECTION 5.4—CODING.

5.41. An essential preliminary for machine sorting is the translation of the data into numerical codes. The original slips from which the cards had to be punched were ordered to be sent in from districts with code numbers already written against all the census questions with the exceptions of certain specified replies which were sufficiently simple and standardized to permit punch operators to code the answers mentally by inspection of the

slips. No difficulty was experienced in this matter in practice.

5.42 The coding done in the West Pakistan Provincial centres, however, proved to be of very poor quality in most cases and the work had to be systematically checked and corrected by the compiling staff of the Karachi Centre. In Dacca it was claimed that this difficulty was not so serious. My feeling is that the work of coding did not receive the careful attention which had been demanded by the instructions. It is obvious that the machines cannot sort accurately if the data is incorrectly coded.

5.43. Coding is a difficult and laborious job. Full and careful instructions were given in chapter 8 of CCP. 3 and the DSCs in charge of Hand Sorting Centres in West Pakistan together with their Chief Compilers were all brought to Karachi and given a week's intensive training and practice in coding work. A similar instructional conference was held for the senior staff of the East Bengal Sorting Centres.

5.44. Provincial Superintendents of Census complained that coding was a very tiresome task and in fact some of them go as far as to think it causes so much trouble that it outweighs the advantages of machine sorting. This is of course a complete fallacy since if coding for machine sorting is so wearisome and exacting as to be badly scamped, it can be safely assumed that hand sorting without coding will even be more badly done. In fact the work done in the provincial Sorting Centres, plus the checking at the Machine Centres which included the querying by punchers of any doubtful or unusual coding, resulted in a fair standard of accuracy. The time taken, however, in the coding operation was far more than had been allowed for in the planning of the timetable and is one of the reasons for the supplementary estimates that were required.

5.45. If machines are to be used at all, coding is essential and ample time and staff must be allowed for it. Even for hand sorting it is most advisable to code any complicated classification. It is recommended therefore that in future much more emphasis should be put on the coding work and more thorough instruction should be provided for coding staff. The instruction must be centralized to ensure uniformity and some expense in travelling and Detention Allowance (D. A.) is unavoidable. A training course should be conducted by the Central Census personnel for as many as possible of the people who are to be entrusted with the coding work. This central course should not be limited to leaders but should bring as many of the workers as possible into first hand contact with the central authorities and the orthodox methods. In addition the Central and Provincial Census staff should hold provincial and district courses and tests and follow them up by constant inspections during the coding period. If sorting and coding is done, as is recommended, at district level, this inspection of coding must be done in every district. But at whatever level coding is done, inspection of coding work is essential. It is a waste of money to carry out sorting either by hand or by machines unless coding is first done and steps taken to ensure that it is as accurate as possible.

5.46. In coding the slips, the coding clerks have to make good use of their judgement and imagination, as well as of their knowledge of their fellow countrymen, in interpreting the enumerators' records into the terms of the standardized codes. The further away from the enumerators' level this work is done the less chance there is of it being done wisely and intelligently. This is a further reason for the recommendation that the sorting and the coding work should be done largely at district level by men who had a close understanding of local conditions and who were themselves part of the enumeration staff.

5.47. The codes used in this census had to be hurriedly extemporized. They were disseminated as Appendices and Annexures to the Codes of Census Procedure as follows:—

(*a*) Place Code, used for Nationality, Birthplace and Muhajir's Origins,—CCP. 3 Appx. VIII-A.

(*b*) Language Code, for Mother Tongues, Other languages spoken, and languages of literacy. CCP. 3, Appx. VIII-B.

(*c*) Standard Industrial Classification (Slightly amended by CCP. 3—Appx. VIII-E). CCP. 2 Appx. F.

(*d*) Cottage Industry Products Code CCP. 3, Appx. VIII-H.

(*e*) Non-Pakistanis & Pakistanis Abroad CCP. 3, Appx. VIII-J.

(*f*) Occupational Code (Printed as Census 51-Publication No.11-A).—Annexure to CCP. 2

5.48. On the whole the codes proved quite successful and easy to use, but they need careful revision before the next Census. Apart from general improvement in coverage, two recommendations are made; first, the numerical organization of the codes should be integrated with the machine sorting plan, so that every digit gives a meaningful sort and the number of runs is thus kept to the minimum. Secondly, the occupational code should be expanded so as to provide separate classes for workers in different industries in cases where the occupation is more or less identified with the industry, for instance weaving occupations may have separate classes for workers in silk, wool, jute, cotton, etc. This would give valuable data should it be found, as it was this time, that complete cross tabulation of industries and occupations is too big a job.

SECTION 5.5—CARD PUNCHING

5.51. The card punching scheme is described in Section 2 of chapter 4 of CCP. 3, which should be read in conjunction with the definitions given in Section 6 of Chapter 2 as some of the definitions of punching operations are tantamount to operational instructions. Punching instructions in the Code gave full particulars of the exact action to be taken by a puncher detailing the data to be punched in each column of the card, and saying how it is to be done. The instructions in the code proved adequate and were easily understood and operated. They formed the basis of the series of instructional classes conducted in the Machine Centres. Summarized extracts from them were written on large black-boards which could be read by the punchers from their seats.

5.52. Three types of cards were used. Card 'A' was punched with the data of two persons and was used for all-Non-dependents, Columns being provided for economic characteristics. Card 'B' contained the data of four persons and was used for children and male dependents. Card 'C' contained data for three persons and was used for female dependents columns being provided for the fertility data. Card 'B' was only required in Karachi Machine Centre, the children's slips having been eliminated everywhere else by Hand sorting. In Dacca, Card 'B' was used therefore only for male dependents.

This idea of having more than one person on a card had been tried out in Delhi in 1941 and was thought quite practical by both the machine-making companies. However, I have great doubts as to whether the economy in cards was not outweighed by the complications caused in the sorting work. The manufacturers make punched-card machines which are capable of handling cards smaller than the standard size and it may be advisable to consider in the next Census whether to take advantage of this and to have only one person on a card.

It has already been mentioned that these three types of cards were specially printed. To my mind this is quite unnecessary and merely complicates the supply of the cards. Punchers very quickly learn what the columns represent and there is really no need for special printing.

5.53. During the first half of the punching operation, 100 per cent of the cards were check-punched and verified. This rather more than doubles the amount of work required but is essential until the punchers achieve a fair standard of accuracy.

When a card is found on verification to be incorrect if becomes necessary to re-punch it from the original slip. In order to locate that slip, it is necessary for slips to be numbered and for the numbers to be marked on the cards. Originally this numbering was done by the punchers in pencil. This cut down the punching speed very considerably and we soon introduced, at the suggestion of the Dacca Machine Centre, a scheme for using an Automatic Numbering Machine. With this machine a daftri or a peon stamped a running number on each slip which number was punched on the corresponding card.

5.54. On the advice of the Powers-Samas expert, the first calculations of punching speed were based on 9,000 key-depressions per hour, which gave an individual target output per puncher of about 140

card per hour and an output for the Centre of about 60 verified cards per puncher-hour. The punchers were paid a basic wage plus a bonus for the proportion of this target which they achieved. The operators found these targets, however, almost impossible to obtain and all efforts in the early days to achieve them resulted in serious loss of accuracy. The trouble proved to be almost entirely psychological. Man simply could not believe that the planned output was within the bounds of possibility, although the basic target of 9,000 key-depressions was much less than is generally obtained in Europe by girls who are no more expert to start with than our Pakistani operators were. There was this great inertia which seemed to prevent us getting much above 40 finished and verified cards per puncher-hour. Dacca Centre was a little worse than Karachi and was running about 34. Suddenly one or two punchers began to do better and earned a little of their bonus. The slowness of operation was then finally cured by changing the bonus scheme and the work finished with Karachi producing well over a 100 cards per puncher-hour and fewer than one per cent of cards had to be rejected for inaccuracy. Dacca did not do quite so well as this but the difference was largely due to failures of electric current which stopped their work from time to time.

5.55. The first step in re-organizing the bonus scheme was to reduce the quota of punched-cards which the operator had to produce for his basic pay before he could draw any bonus at all. At the same time the rate of bonus was slightly reduced so as to keep within the authorized expenditure. The result of this change was to enable most of the operators to draw a small bonus. The "carrot was held a little closer to the dondey's nose"; once he had had a bite he was anxious to keep on. Speeds increased immediately and it was quite obvious that the previous slowness had been purely due to lack of effort.

5.56. Careful check was kept on speed and on wastage, i.e., cards spoilt by inaccuracy, and it was noticeable that as the speed increased the wastage dropped almost to nil. As soon as the men began to work swiftly and automatically they worked accurately. While they were alternately looking at the keys on the punching machines and turning away to look at the slip, their speed was not only slow but mistakes were frequent. The next step, therefore, resulting from the increase in accuracy was to reduce the amount of time spent in check-punching and in verification. Operators were classed as "two-star", "one-star" or "un-starred" punchers according to their weekly average error. A two-star man, was one with errors in two percent or less of his cards and only 10 percent of his output was check-punched and verified. One star operators were those with less than 5 percent errors and 50 percent of their cards were checked. The others were unstarred and their work was checked 100 percent. The rate of bonus varied for each category of operator depending on their "stars" which were allotted or withdrawn weekly on the basis of the previous week's record of verification. Arrangements for this scheme are given in Section 5 of Chapter 9 of CCP. 3 and in C. C. Circular 708. I would strongly urge that some such arrangement should be started in future from the very beginning of the operation of punching work, although it will not be of much effect until a fair proficiency is attained.

5.57. The rate of pay sanctioned for punchers was fixed at a total of Rs. 120/- including bonus. Originally this was to be made up of Rs. 70/- pay and Rs. 50/- bonus. But it proved so difficult to get men to join on these terms or stay at work before any of them were earning a bonus, that the terms were amended to Rs. 90/- basic pay and Rs. 30/- maximum bonus.

The figure of Rs. 120/- was based on rates paid by other users of punched-card machinery most of whom, however, employed Anglo-Indian girls at even higher rates. This policy was advocated but it was realized that it would lead to serious difficulties and expense, and that in Pakistan at present the job would have to be done by men.

The rate was intended to attract persons of some education, and the Officers in charge of the Cehtres tended to require that candidates should be matriculates. In the long run, however, we found some of the best punchers were men who had little more than primary education. I think effi-

ciency and interest in the job would be much greater if the normal punching operator was recruited from the Daftary/Peon class and in that case it might be possible for some of them to be permanent civil servants. We employed one of our office Daftaries as a puncher and he proved to be one of the best. The punching sections of the machine Centres were operated on a double shift system, which kept the machines in action 12 hours daily except on Fridays and Sundays. The shifts of operators worked 6 hours each, and changed about midday. This system worked well and is an economy. It was found that operators preferred to continue permanently in the morning or the afternoon shifts and not to alternate, as was originally arranged. The Friday shift was worked by the early shift one week and by the late one the next. No work was done on Sundays except repairs and maintenance. Towards the end of the operation men, especially "two star" punchers worked extra time on Fridays and at night to help in completing the work.

5.58. A system of weekly progress reports enabled close control to be kept on the punching work. These reports will be found in files Nos. 18/25/51—Census and 18/32/51 for Karachi and Dacca Centres, respectively.

The work was originally planned to take six months but in fact it took about nine, due partly to the slow speeds in the first three months, before the introduction of the revised bonus and star-scheme, partly to the unexpected by large number of cards required for the Punjab, and partly to failures of electric current and shortages of cards. The latter two causes chiefly operated in Dacca Sorting-Centre.

5.59. A description of the machine operation is given in Chapter 9 by Mr. Akber Kabir who was in charge of Karachi Centre and by Mr. Bahauddin Ahmed incharge of the Dacca Centre, in Appx. 'A' to Chapter 10.

It is only fair to record that both these young officers acquired very rapidly an excellent knowledge of the work required. They trained and inspired teams of raw punchers and succeeded in carrying out with considerable success this operation which was entirely new to them. The work of the machine punching section has shown conclusively that it is possible for Pakistani operators to achieve very fair speeds and a high degree of accuracy once their initial distrust of the work has been overcome. It will be a great help in any future punching machine work if one or two of the punch operators in each centre were trained up to expert level well before the Centres start. New men will then realise from the start that the speeds are possible.

It is also only fair to record that the Powers-Samas punch proved its complete efficiency and ability to stand the stress of inexpert operation. It is of great simplicity from the point of view of the operator, and complete mastery of it can be obtained quite quickly by determined men.

SECTION 5.6—MACHINE SORTING.

5.61. The sorting process is the most intricate part of the machine operation. It is not the actual working of the machines that is so complicated, however, but the design of the programme. Punched-card machines are often referred to in the popular press as "Mechanical (or electrical) brains" but in fact like other machines the brains are put in by human agency and in the case of the punched card system by no means the smallest part of this human contribution is the designing of the sorting procedure.

The sequence of workings, and of the runs which make up each working, together with the arrangements for mechanical checking of the completeness of the work, are set out in Annexure 2 of the Code of Census Procedure Part 3 (CCP. 3) This annexure consists of a detailed manual which gives for each working of the machine sorting operation, three sets of papers: First, the schedule of runs and the general instructions for the working; secondly, a diagram summarizing the whole working in pictorial form, and thirdly a set of the machine sorters tickets on which the results of each run are recorded. The preparation of this programme was an immense labour which I had perforce to perform myself, but I was most ably assisted by Mr. S. J. Rawlings of the Powers-Samas Company. It has already been recom-

mended that this work, and in fact the whole scheme for punching, sorting and tabulating, should in future be the responsibility of a separate officer, working under and in close consultation with the Census Commissioner.

Owing to the short time allowed for preparation this sorting programme was produced while the Census organization was engaged in the later stages of the Hand sorting operation and in the punching of cards. Time left us no alternative to this sequence of planning but in fact it is quite wrong. The programme should be planned, at least in general outline, before the cards are designed or the punching instructions are written, and the latter should be in firm form before the Enumeration Slip is settled. A summarized description of the sorting programme with instructions regarding the use of the detailed schedules and diagrams is given in Section 3 of Chapter 4, CCP. 3. The scheme provided for three phases of work.

Phase 'A' applied to the Federal Capital Area and to Hyderabad city. These two areas were sorted in full by machinery and the function of this phase was therefore to deal with operations which for the rest of Pakistan were carried out in the Hand Sorting Centres. The workings of this phase dealt with Muhajirs, Literacy, Birthplace, Mother-tongues. This phase also dealt with the Ages, Marital Status and Schooling of Children, whose cards were thus completely sorted and eliminated from the rest of the operations.

Phase 'B' dealt with Speech additional to Mother-tongue, Age, Marital Status, Fertility and Schooling of persons over 12 years of Age. This phase therefore completed the sorting operation for that part of the population which had been eliminated from the later stages of Hand sorting.

Phase 'C' dealt with the cards of self-supporting persons and sorted them according to economic characteristics not handled in the Hand sorting operation i.e. Occupations by Education, Age, Economic groups (i.e. Industries) and Industrial status. This phase was designed also to obtain particulars on Unemployment but in fact the reports on the slips were so inadequate that the sorting operation, although for the most part carried out, did not yield useful results.

A special phase applicable only to East Bengal dealt with the analysis of Cottage Industries cards in two workings. An extra phase in Karachi Centre, dealt with the cards of Non-Pakistanis and Pakistanis Abroad.

5.62. The results of sorting appear in the form of figures in the "counters" of the sorting machines. The machines classify the cards by distributing them mechanically into 12 boxes in accordance with the position of the punch holes in the column on which sorting is taking place. As each card drops into its box, it is recorded on the appropriate counter. The figures on the counters were transcribed on to the Machine Sorters Tickets, which were specially designed forms all of which are being retained for reference. The entries made by the sorters on these tickets were in every case checked by a second person.

The sorters tickets were originally intended to be written in ink, but the mimeographed forms were produced on absorbent paper. Writing on them in ordinary ink was inclined to blur, and we had to content ourselves with entries in pencil. It is suggested that if the same system is used again, ball pointed fountain-pens (using solid non-blurring ink) should be issued to all sorters. It is hoped, however, that if the future plans include counting sorters, in lieu of tabulators, the orders for machines will be placed far enough ahead to enable the sorting machines to be fitted with printing counters which make an automatic record of the numerical results of sorting. Such machines are generally used for Census operations in the U. K. and other countries where tabulators are not used.

5.63. As in the Hand sorting, the machine sorting operation has to deal with the cards in batches. To some extent these batches were preselected by Hand-sorting the slips before punching, and by the use of different kinds of cards. But beyond these main divisions, cards had to be fed through machines in batches corresponding to geographical areas for which separate figures were

required. In some cases also the batches were subdivided according to religious groups. A complication at this stage was the arrangement by which 2, 3 or 4 persons were punched on a card. Obviously, the cards had to be run through the machines again and again for each personal section and in most cases the whole working had to be completed for the first person and then repeated in full for the other personal sections of the cards in the batch. This called for specially designed sorters' tickets and great care in running and it also made the instructions in the programme look perhaps rather more complicated than they actually were. In practice, however, it was rarely found that the geographical, religious and 'personal' sub-divisions were in fact the limiting factors on the size of the batches. In many cases the maximum size of the batch was dictated by the maximum number which could be recorded by the counters. The fact that there were more than one person on the card therefore did not lengthen the sorting operation as much as had been feared. However, it is strongly suggested that this point be considered carefully in future Censuses. My predilection is certainly in favour of having one person per card.

5.64. Since we were not using tabulating machines, whenever it was necessary to carry out cross-tabulation operations—and it was mainly for this purpose that the operation that we included machines in the Census operations—the batches had to be broken up into stacks for the main characteristics and each stack then had to be run through a series of runs for the second characteristic in the cross-tabulation.

This stacking called for a high degree of care and discipline among the sorting operators. The non-disturbance of the sorted cards pending their further sorting was of the greatest importance. Instructions were given that special attention should be given to this matter and in fact it was very well done. Cards were kept in carefully labelled divisions and there was no instance of their organization being lost. This was largely due to the provision of adequate table space along-side the sorting machines and of a good supply of spare trays in which slips could be stacked.

5.65. The Powers-Samas machines despite our inexperience and the difficult conditions of operation, due to fluctuating current at Dacca, and to sand in Karachi, gave remarkably little trouble. In the early stages of course there were the usual "teething" difficulties. The machines we received quite new and had to be run in and adjusted, and the operators were also quite new and occasionally did the wrong thing. Powers-Samas Company, however, maintained a mechanic in constant attendance until these troubles were over and the maintenance provision included an adequate supply of spare parts. Later on the Company did not feel it necessary to maintain a mechanic permanently in the Karachi Centre, but they rarely failed to send a mechanic quickly in the event of trouble.

An important point in the avoidance of idle machine-time due to mechanical breakdown is the provision of a telephone in each Machine Sorting Centre. These were provided on this occasion and must be regarded as indispensible. We also took steps to give priority to the installation of a telephone in the office of the Powers-Samas Company in Karachi.

The most frequent source of stoppage of machines, however, is the wrecking of cards. Any card that becomes bent, swollen, damp, or otherwise distorted in its shape, or of which the edges have been damaged, fails to pass the classifying mechanism in the machine and has to be dragged out, generally in small pieces, with a special tool. Wrecking was extremely frequent in the early stages but became less as the operators acquired proficiency in handling the cards and detecting faulty ones, and also in avoiding any treatment of the cards which might damage their edges. The climate, however, especially in Dacca, and fluctuations in the electric supply made it impossible to avoid this trouble altogether. A puncher and punching machine is therefore required to be on duty throughout the whole sorting operation for replacing damaged cards.

5.66. An unfortunate result of the slow initial progress of the punching operation was that we had to drop the idea of sorting by machinery the

slips of all persons over 12 in certain of the larger cities of Western Pakistan. The "machine cities" were to have been a definite part of the machine operation and Phase 'B' of the sorting procedure was specially designed to deal with them. It was found, however, that it would mean keeping the punching section in existence for an extra period of some 4/5 months. For financial reasons, therefore, and also with a view to speeding up the final preparation of tables, the slips of the "machine cities" in the Punjab were completed by Hand Sorting except for the NALF element. For the "machine cities" of East Bengal the original plan was carried out, but the only West Pakistan city, apart from Karachi, to have its adult population data from Machine Sorting Programme was Hyderabad Sind.

The original plan also included arrangements to punch cards in Karachi for the Non-Pakistani nationals and for Pakistanis abroad. This scheme would likewise have been too large a punching operation had it been carried out in full. Cards were punched for all the other classes but the slips of Indian visitors to East Bengal and of East Bengali visitors to India as well as those of mariners afloat, were dealt with by Hand sorting methods in the Karachi machine centre. The compilers and one or two of the more intelligent punchers were diverted to this work and the handsorting was finished and checked in less than a fortnight whereas card punching would have taken about 6 times as long. The comparison however begs the question of accuracy (there can be no real verification of hand sorting) and moreover such a large saving in time could only be made where the sorting operation is of the most simple nature.

5.67. Recruitment of sorting machine operators was based on much the same system as that used for the punchers but a higher standard of education was expected and very few of the sorters had lower qualifications than matriculation. Their pay was based on the same rates as that of the punchers i.e. Rs. 90/- plus Rs. 30/- maximum bonus making a total of Rs. 120/-, but the bonus scheme for the sorters was entirely different from that of the punchers. All the sorting machine operators were treated as a team and each was paid an equal amount of bonus dependent on the proportion of the planned output obtained by the centre as a whole each month. Particulars of the bonus scheme are given in C. C. Circular No. 714.

It was originally planned to run the sorting machines in double shifts with similar arrangements to those made for punching, but at first the handover between shifts was found to present difficulties and it also proved to be advisable in many workings for the operators to have an assistant to handle the cards and keep them in their stacks. The team of sorting machine operators therefore worked most of the time on a single shift of 8 hours a day and for the most part two operators attended each Machine. The last few workings, however, when the men had become expert, were run in double shifts to catch up with the programme.

5.68. Careful reports were made in accordance with C. C. Circular No. 714 each week showing the amount of work done and the proportion which this bore to the planned output. These reports formed the basis on which bonus was paid. As in the punching operation, it was found that at the beginning work was very slow and there was a general opinion that the planned output per machine-day was quite unobtainable. After a few weeks, however, the operators began to approach the figures in the plan and in the end the sorting operation did not greatly exceed the 9 months for which the machines were hired. The basic calculations for the time-table of the machine sorting operation are given in C. C. Circular No. 714 but as explained above we had to reduce the scope to get as much as possible done within the budget. As a guide for future operations our experience indicates that the target output per machine day should be reduced by about 20 percent and the allowances for linked runs and stacked runs should be doubled.

An independent series of reports on idle machine time were required by C. C. Circular No. 720. These proved to be most useful; the maintenance of the necessary records for preparing these returns enabled the officers in charge of machine

centres to take immediate actions to minimize stoppages.

5.69. On the whole the machine sorting operation went through very smoothly and the planned procedure proved practical. In the end the men found little difficulty in operating the sorting machine and even the complicated stacking arrangements proved to be well within the capacity of the ordinary sorter. Training of the men was done by the Officers in charge at the machine centres, assisted by the Powers-Samas staff before the work started and the company's representatives, by constant visits to the Centres, were able to ensure that a good standard of machine operation was kept up. Much stress had been laid in the instructions on the importance of orderly management and proper protection of the cards. The Supervisors in charge of the sorting centres paid particulars attention to this point and maintained a high standard. The two officers in charge of sorting centres acquired a complete mastery of the complicated sorting programme and were, in fact, able to suggest several ways in which speed and accuracy could be improved. Their descriptions of the work are given in the appropriate provincial chapters of this report.

SECTION 5.7—SPECIAL PROBLEMS IN SORTING CENTRE.

5.71. All Provincial Superintendents of Census have remarked on the difficulty of recruiting suitable staff for the sorting centres and have urged that at least the inspecting staff and as many as possible of the supervisors should be permanent employees of Government. It is realized that this is not an easy policy to carry out, but for all abstraction work, and especially if hand-sorting is used, the accuracy of the results depends upon the supervision. We cannot expect a high sense of responsibility from temporary hands. They may take pains to ensure that their immediate duties are discharged in such a way as to cause them no immediate trouble, but that is not sufficient. Slipshod work in Hand Sorting does not necessarily come to notice immediately and responsibility for checking should be placed on the shoulders of men who have to think of their future and who will be careful to see that their work will stand long-term investigation.

5.72. The recruitment of suitable hand-sorters presents great difficulty. The work is arduous, not easy to learn, and is carried out under strict inspection and control. Temporary hands come into the Centres expecting normal office conditions and to draw the advertized maximum remuneration. When they find that to earn the full amount of bonus requires skill and constant industry; that there is no time for rest and chat, and that hours of work are longer than is usual in Government offices, they rapidly lose heart. It is obvious that most hand-sorters regarded their job as a stop-gap; when they found something better they deserted immediately and all the time and effort spent in training them was wasted. We tried to cure this attitude by withholding a fortnight's pay which was forfeited by any man who left without notice. The Bonus was naturally paid sometime in arrears, and was subject to the same conditions regarding forefeiture for desertion. But this was very little deterrent until the scheme was adopted of calculating the bonus weekly and letting every man know how much stood to his credit and was liable to forefeiture for absence.

In the NWFP a number of sorters were Patwaris who attended the Centre on deputation and were given Special Pay. It is doubtful whether this system could be extended but it was undoubtedly most successful. It is believed, however, that if the hand-sorting system is continued—a great many of these staff difficulties would be avoided by organizing smaller hand-sorting centres at district level.

5.73. The machine centres suffered to some extent from the same staff troubles but their men had more to lose and were less prone to desert without proper notice. Even if the prescribed notice of resignation is given, however, changes of machine operators involve the loss of considerable time and money spent in their training. In regard to Punchers, both Centres found it possible once they had started operation to have one or two unpaid "cadets" under instruction waiting to fill casual vacancies. It may be possible to extend

this idea and to make it a practice that training is not paid for.

5.74. The real cure for staff troubles in Machine Centres was found in the revised bonus scheme which brought a man into the bonus-earning field as soon as he was reasonably well trained and gave him opportunities to increase his bonus on an out-put—cum-efficiency basis. In all Centres, both Hand and Machine, the bonus scheme was undoubtedly a trouble to administer, but it also undoubtedly achieved its object of spurring the men to attain the planned output. Neither the hand or machine operators would have been finished as soon as they were, had we not had these schemes. It is suggested, however, that the basic pay should be fixed at a normal living wage and the bonus should be an additional amount, calculated and notified weekly or monthly but only payable to those men who are actually serving when their section of the Centre is closed.

In addition, it is important that before the general recruitment takes place a few "pilot" hands should be trained upto bonus-earning level so that from the start it will be realized that the target is capable of achievement.

5.75. The most vital matter, in all work connected with sorting, is the physical checking of accuracy. This was specially important with a bonus scheme in operation. A vigorous and standardized system of checking was prescribed, but it was difficult to strike the correct balance between the necessity for checking and the demand for speed. Speed even in Hand-sorting, provided the work is done honestly, is conducive to accuracy. A point which must be guarded against more thoroughly in future, however, is a tendency to take unauthorized short-cuts, or to manipulate sorting to minimize effort at the expense of accuracy. For instance, there are some indications that, in some Hand-sorting Centres at the time of the circle sort, slips of older persons were improperly placed in the children's category. Sorters may have realized that a great deal of subsequent work might thus be saved. This is nothing more than a suspicion, but it would account perhaps for the unrealistic size of some of the children's crude age groups, and is the kind of thing for which the controlling staff must watch. Similar vigilance is just as necessary in Machine Sorting. Sorters tickets are official records of importance and the originals, neatly prepared and signed by sorters and checkers, were ordered to be filed in permanent form. This procedure was for the most part properly carried out. The tickets from Karachi Machine Centre in respect of some of the final sorts are, however, untidy and in few cases I suspect scamped work.

5.76. Hand sorters and machine punchers need not necessarily be Matriculates. They require energy, dexterity, a sharp eye, ability to read vernacular, and above all honesty. The kind of man required is the type normally recruited as a Daftry or Peon. Sorting Machine operators and all compilers should have the qualifications generally required of Upper Divisions Clerks and as far as possible the compilers should be permanent employees of Government, so as to be available later to investigate any faults that may be disclosed by analysis of the data on which they have worked.

5.77. A point which seriously affects both accuracy and speed of sorting in Hand Centres is the extent to which slips have either been precoded by the provision of printed symbols or are subsequently coded numerically before sorting. It is suggested that the scrutiny stage of any future hand-sorting should be given much more time and should include the regular numerical coding for card-punching. The type of men suggested for hand-sorting or machine puncher would generally be unsuitable for coding work and it will be necessary for it to be done by the Inspectors, Supervisors and Compilers or by special coders, all of whom should preferably be permanent civil servants drawn from among those who have served in the enumeration staff.

5.78. The arrangement by which sorting by age was split up into three parts, i.e. picking out the children's slips in the Circle sort, classifying them by age in the Children's sort and sorting the rest of the population by age in Phase 4, saved a great deal of time but it is not recommended as a procedure to be repeated. The classification by

age is one of the most important fruits of the Census, many authorities are interested in having the data quickly, and on the whole it should be done at an early stage. Probably the best place for it is immediately after the sort for sex and religion. It may be advisable to arrange the sorting of age-groups in such a way as to facilitate the calculations for any subsequent smoothing that may be planned to overcome the heaping which is bound to occur at round numbers and at certain ages. But the whole question of the sorting for age and the checking of its results, including arrangements for investigations into inconsistencies, should receive expert consideration in the pre-enumeration stage and be most carefully planned. An early and complete check on the accuracy of the age sorting is specially advisable. By putting the sort early in the programme, and by arranging for early compilation it will be made possible for any questionable results to be fully investigated before the sorting centres close down.

SECTION 5.8—ONE PERCENT SAMPLE

5.81. I could not find that any arrangements had been made in previous Censuses for the retention of the enumeration documents. As has been previously mentioned, a selection of the slips in 1941 Census was found in a garage in the Secretariat of the Punjab in Lahore, but very few of them were in legible condition. It was therefore agreed at the First Conference that once sorting has been done the original enumeration slips should be destroyed, in accordance with the guarantee of secrecy given in the Census Act. I thought, however, that this is not really a desirable policy, although if all the slips were retained it would be impossible to find the slip of any individual unless elaborate arrangements for filing were made, and to obtain any more statistical data from the slips would involve the re-creation of a full sorting organization. It was therefore decided that the best middle course was to retain one percent of the slips as a permanent sample.

5.82. It was intended to transpose all the data on these sample slips on to punched cards so that they might be sorted subsequently in any required manner to obtain data for estimates regarding Census information additional to that shown in the official tables and especially to permit more detailed cross-tabulations to be made on a sampling basis. The punching operation, however, proved to be so lengthy and difficult that this scheme had to be stopped. Cards from a certain number of sample slips were punched in Dacca Centre but none were punched in Karachi. The sample slips have however been retained, as well as all punched-cards, and if it is necessary to do so the original plan can be carried out. Papers regarding this subject are in file No. 17/52-Census.

5.83. The sample, however, is not considered to be satistically satisfactory having been drawn after the hand-sorting work was done. It would be better in future if the sample were drawn on a proper random basis before the sorting began. Possibly the punching of the sample cards should be the first operation of Machine Centres and certain tables might be prepared by the use of the sample only, thus cutting down the extent to which the whole quantity of slips has to be fully sorted. Such a scheme however would have to be planned and executed with great care which was quite impossible in the scanty time available previous to the start of sorting on this occasion.

5.84. The use of the sample slips in the above manner will provide a check on the general accuracy of hand sorting, but it cannot, if the sample is drawn from the mass of slips produced by the general enumeration, form any check on the accuracy and completeness of the enumeration itself. Consideration should therefore also be given to the possibility of combining the sampling scheme with a repetition of the enumeration in selected blocks by a team of highly trained special enumerators. The selection of the blocks for this purpose must be made scientifically to give a reliable randum sample of which the size and standard sampling error could be calculated. The full-time census clerks of Charge Superintendents and other responsible men who had been given the enumeration sorting and coding training might be used as enumerators. The results of their work could provide not only an immediate check of the accuracy of enumeration in the particular blocks and generally, but might be designed so as to enable the sample

cards to be punched without disturbing the slips of the main enumeration.

5.85. As regards the sample retained from the 1951 enumeration documents, it is stored partly in Karachi in the custody of the Census Branch of the Ministry of the Interior, and partly in Dacca in charge of the Provincial Governments' Statistical Office. Each of these collections include the stocks of punched cards used in the machine sorting operations, which have been retained in full and also the 1% sample of the enumeration slips. The punched cards can in theory be resorted as may be required in the Powers-Samas sorting machines, of which one has been retained by the Census Branch of the Ministry of the Interior in Karachi. The Statistical Office of the East Bengal Government has similar machines. From the experience we had of the effect of climate on the cards, however, they are unlikely to remain in a useable condition for long damp, warmth, dust and insects will cause them to curl and swell and will damage the edges. Moreover, in the unsuitable and crowded conditions in which the Karachi Centre operated and its final rush of work, I should be surprised (despite my orders) if the collection of sorted punched-cards was kept properly organized, or handed over to the Census Branch fully complete.

5.86. The compilation working sheets give data in greater detail than the census tables show, but if it is desired further to amplify or verify the 1951 Census data it would probably be best done by means of new field surveys on a sampling basis, for which the Census data, especially the village lists, give useful fundamental information. Such enquiries would be likely to be more profitable than further processing of the original 1951 Census records or the punched cards, since they would be presumably conducted by investigators who had been specially trained and might be expected to get nearer the basic truth than the census enumerators could, and the results would also be more up-to-date.

SECTION 5.9—SORTING AT DISTRICT LEVEL.

5.91. In this Census the hand-sorting operation was done by an organization more or less similar to that which had been used in previous Censuses. Sorting centres were set up to deal with Provinces, divisions or groups of districts and the centres were made as large as possible subject to the ability of one officer to control each centre. This was thought to be the most economical and efficient plan.

The difficulties of finding accommodation, obtaining, furniture, recruiting staff and providing adequate inspectors, checkers and coders of a reliable type, lead to the conclusion, however, that in most Provinces hand-sorting and coding would be better done at district level. I doubt if this idea could be applied in NWFP or in Baluchistan. The Federal Capital Area was on this occasion separately sorted by machinery and no doubt that system will continue. But in East Bengal, the Punjab and Sind, Provincial Superintendents of Census unite in recommending that in future Censuses hand-sorting should be done at district headquarters.

5.92. This will simplify the arrangements for the collection of the slips and permit a quicker start to be made on the work of scrutinizing and coding them. Very possibly the Charge Superintendents' clerks should all be brought in to join in this work together with the staff of the District Census Officer, and if necessary other reliable men, preferably permanent Government employees who have been associated with the work of enumeration and who therefore thoroughly understand what has been done.

5.93. Subsequently members of this team should act as Supervisors and Inspectors of the District Hand-sorting Centre and as compilers for the District Tables. The hand-sorting work should not begin until a large proportion, if not all of the slips had been checked and coded. Compilation could proceed as each working was sorted. By dealing with each of the Census Districts separately, and all of them simultaneously in this way, it probable that time will be saved in the long run as well as trouble.

At a district headquarters it might well be possible to arrange for many of the sorters to be permanent Government employees as was done in Peshawar Sorting Centre on this occasion for the

handling of the tribal slips.

5.94. Any such scheme for decentralization of sorting, however, will be most dangerous unless it is combined with instruction at provincial level to ensure uniformity of action. Well before the Census—there will be no time for this to be done afterwards—the senior members of the supervisory and inspecting staff of the district sorting centre must be brought into Provincial Headquarters and be thoroughly "drilled" in the whole sorting scheme and in the preparation of Sorters' Tickets and compilation working-sheets. This instruction should also thoroughly cover the whole system of the numerical coding. Then similar instructional courses will be necessary in every district to pass on the training to all members of the district coding and sorting teams.

5.95. These classes will need a comprehensive text-book which will in effect consist of what were in this Census the sorting, compiling and coding chapters of CCP. 3. This Hand-book must be produced in good time, and this in turn involves that the sorting and tabulating scheme should be finalized well ahead.

5.96. During the course of the work in the District Centres the Provincial Deputy Commissioner, his statistical officer and senior compiler should visit and inspect the centres continually and ensure that the work is being done strictly in accordance with the plan, that proper checks for accuracy are being made (they should make some themselves,) and that the records are being collected and filed in a standarized and efficient manner and are properly protected.

5.97. I can imagine that each District Census Centre will go on to produce its own Village List and a set of district tables possibly written in the first place on pre-printed forms standardized for all districts of Pakistan. The Provincial Deputy Commissioner of Census would receive these tables in draft form as the work proceeded so that his statistical officer could scrutinize and analyse them at once and detect any serious anomalies which called for investigation. It would thus become possible, in serious cases, for a complete check of any part of the sorting to be ordered before a district centre was closed, but without incurring the expense that such an order would involve in a large sorting centre.

5.98. The above suggestions do not imply that hand-sorting should be preferred to Machine Sorting. The latter has great advantages and it is envisaged that next time there will be a Machine Centre in each of the larger Provinces to process data for the more complicated tables and possibly to deal with the sampling enquiries. But expense, the difficulty of obtaining sufficient machines at the right time, and the delay involved in punching the cards, are likely to make it necessary to continue to do much of the sorting work by hand methods. In that case the sequence of operations and the arrangements for "keying" the hand-sorting and the machine sorting together, and agreeing the totals arrived at by the two methods, need careful planning well in advance. It is already recommended that the two systems should be kept separate and data for one provincial table should come from one or the other sorting system but not from both. This will, however, not make it any less necessary to ensure that the two systems agree with each other in all totals common to both. If the hand-sorting is done at district level, then this reconciliation must be made between district totals.

CHAPTER 6

COMPILATION AND TABULATION

SECTION 6.0—GENERAL METHOD OF PRODUCTION OF TABLES

6.01. The data obtained by the sorting process was recorded on documents known as Sorters' Tickets. The Hand Sorters' Tickets were printed on heavy paper to withstand considerable handling and to remain as permanent records. A suitable form of ticket with a separate schedule for each working presented the data resulting from each phase, or part of a phase, of the sorting operation. There were separate sets of Hand Sorters' Tickets for the various geographical areas, i.e., for each "Circle" in Phase 1-A and for each "Region" in all the other phases except phases 4 and 5 for which the tickets showed the figures for districts. For each of these geographical areas separate sorters' tickets were to be made out for each "batch" of slips i.e. for males and females of Muhajirs, other Muslims, Caste Hindus, Scheduled Castes and Other Religions.

The Machine Sorters' Tickets were mimeographed papers specially designed to record run-by-run the readings on the counters of the sorting Machines. There was a sorters' ticket form for each working of the machine operation and a separate form was made out for each geographical area and each sex and religious batch.

6.02. The first step in the preparation of the tables was the assembly of the data from the sorters' tickets into totals for each of the geographical areas for which separate figures were to be given in the Census Tables concerned. This process was called "compilation" and was carried out by posting the figures on the sorters' tickets on to large "compilation working sheets" specially ruled for each table. After this process of compilation came the tabulation process in which the totals on the compilation, sheets were entered into a draft of the table. This was a relatively simple business.

In compilation and tabulation every posting and every addition had to be checked and signed by a second compiler who certified that he had verified every figure. All the additions, as had also been done for the additions on the sorters' tickets, were verified by the use of the Adding Machine.

Instructions were given that the compilation working sheets were to be regarded as valuable permanent governmental records. They were to be neatly compiled and filed and indexed with care. For the most part this work was done thoroughly, but a few of the compilation sheets are missing or incomplete. This particularly applies to the last workings in Karachi Machine Centre. Any slackness in preparing or retaining compilation documents may lose much of the value of all the previous work and I recommend an even greater formality should be introduced into this stage of the working in future. It might be an advantage to provide large and well-bound books, containing blank columnar analysis forms on good paper, for the use of compilers. These books would then form the permanent record. Their very size and permanent appearance would impress the workers with the importance of their task.

6.03. The original plan intended that the bulk of the compilation should be done in the Hand-Sorting Centres. In practice, however, much of it had to be left until after these Centres were closed, since compilers were kept too busy scrutinizing and coding slips, preparing the Village List, training sorters, and assisting in checking

the sorting work. It is a great pity that the original plan had to be abandoned, as it was intended to ensure that unusual figures would be queried and checked on the spot. My recommendation that Hand-Sorting and the compilation of district tables should be done at district level in future should prevent this loss of what I had regarded as an important safeguard on accuracy.

6.04. The Village List was scheduled to be compiled by the office staff but in fact the normal routine business of the office was as much as they could manage and the drafting and checking of the village list had, in most provinces, to be done by men detailed from the team of compilers.

The Village List is to a large extent an innovation introduced into the Census to make available for administrative use the detailed information accumulated during enumeration regarding the villages, Dehs, Thapas, Union Board Areas, etc., which form the lower echelons of the governmental organization of the country. With very few exceptions the Census arrangements for enumeration were based on these areas and the Charge Superintendents' summaries of provisional results after they were corrected by the careful check made of the slips in the Sorting Centre, provided the necessary information for the Village List.

The Village list was sent in draft form to the District Magistrate, who in turn circulated it in his area for correction of names and locations of the villages and the insertion of the local details. The drafting of the list and its subsequent revision and preparation for printing was a huge task and which largely fell on the compilers. The work is, however, well worthwhile and the Village Lists should be extremely useful not only for day-to-day administrative purposes, but also for organizing statistical enquiries of all kinds and especially in preparing for the next Census.

6.05. In a somewhat similar manner the data regarding the housing of the population which was obtained in the course of house-listing has been summarized into subsidiary Census tables. The first step in this summarization was the preparation of the Housing Analysis (Appx. 'G', CCP. 2) by Circle Supervisors. These summaries were collected and amalgamated in the Provincial Superintendents' Offices and this work also fell to the lot of the compiling organization.

6.06. Tables 1 and 1-A (Population, Area and Density) and Table 2 (Variations during the last 5 Decades), were also built up from the Charge Superintendents' Summaries after they had been corrected by the initial re-counting of the slips. These were all known as "extracted" or "ancillary" Tables. They did not require data from the main Hand and Machine sorting operation and could be compiled before the sorting tickets were available. It thus will be seen that the Village List, the Housing Tables and the main Population Tables form a special set of tasks. They were intended to be done independently by ordinary clerks without interfering with the main timetable for coding sorting and compilation. In practice, however, the compiling team had to do the work.

6.07. The first results of the Census to be published after the issue of Census Bulletin No. 1, which gave the provisional figures of the first preliminary count, was the analysis of the population according to religious groups. This information is urgently required for political and representational purposes and in order to publish it quickly in Census Bulletin No. 2, it was found necessary to re-arrange the order of work in Phase I of the sorting programme. All provinces had compiled their final figures on this subject by September 1951 and Census Bulletin No. 2 giving Table 6 (Religion) was sent to press in October 1951. It had been decided that this Religious Table need not be analysed by sex, but in future I would suggest that, as there is no difficulty in compiling the data, an analysis by sex should be included in the Religion table and appear in the Bulletin. I would also suggest that in future the next step after sorting by sex and religion should be sorting by Age and Marital Status, and this data should be compiled, analysed and compared with past censuses and other areas at the earliest possible moment, so as to detect any serious inaccuracies.

6.08. The next step in compilation was the preparation of an analysis of the whole population by main economic categories i.e. children, other

Dependents, Cultivators and other self-supporting persons. This data became available from the last working of the Circle Sort in Phase I of the sorting programme and was compiled into special interim tables circulated in December 1951 for governmental use. (Papers are in File No. 14/10/51 -Census).

As soon as this table was compiled, coding of all slips in the "other self-supporting persons" category for occupations and economic characteristics was taken up.

This was done before proceeding to the compilation of the rest of the regular series of tables. The idea of putting this coding work at this point in the sorting programme undoubtedly saved the handling by the coders of a large number of slips, but I am inclined to think that it would have been better if all the slips have been fully coded in the scrutiny stage. The subsequent sorting would then have been much more accurate although some of the interim results might not have been available quite so early.

6.09. Completion of the compilation work for the rest of the tables was carried out in a planned sequence and controlled by a system of progress reports described in C. C. Circular No. 606. The planned time-table went badly adrift owing not only to the many calls on the small compilation teams but also to the longtime taken in completing the Machine punching and sorting work. In order to avoid the long delay which might have occurred between the completion of compilation based on Hand sorting and the receipt of data from the Machine Centres, the provincial compilation staff were reduced in strength towards the end. The compilers in provinces had all the tables ready to fill in the Machine results as soon as they arrived. But this caused a great spate of finished tables coming before the PSC just at the end of the "life" of his post and office. There was little time to analyse and consider the data and hunt for inconsistencies. It is strongly recommended that in future if there is a combination of Hand Machine sorting, we should arrange for a certain set of tables to be prepared entirely from Hand Sorting, possible compiled largely in districts, and that all the rest should be based entirely on provincial sorting, wherever possible by machine methods, and compiled separately.

SECTION 6.1—COMPILATION ORGANIZATION

6.10. It is not easy to calculate the optimum size of the compiling staff; while there is a limit to the number of men who can be employed on compilation work, since only one man can deal with one set of sorters tickets and work on one compilation working-sheet at a time, there is also a limit to the time to be spent on the work. Based on these limitations we arrived at the conclusion that the maximum number of compilers was two per district but that there is nevertheless a minimum and this was fixed at 5 men. In Punjab and East Bengal a Senior Compiler was allowed in addition.

The size of the compilation teams, however, turned out to be somewhat inadequate even for the compilation itself, and in future not only should the number of men be increased but it should be recognized clearly that compilation cannot start until coding is finished. Compilers can act as coders and afterwards as compilers but the two jobs cannot go on concurrently. However, if sorting starts when coding is nearly finished most of the compilation could probably be done practically simultaneously with the sorting.

It is also recommended that the supervisory staff of the compilation teams should be stronger. A Chief Compiler is required to supervise and control every team of compilers and in the larger offices there should be Senior Compilers at the rate of one per 6 Compilers. In Bengal, when the whole team had been concentrated at Dacca, it was found necessary to have a gazetted officer in control of the complete compilation work. This officer was in addition to the Deputy Superintendent of Census and to the Officer incharge of the Machine Centre and he proved absolutely necessary.

6.11. As already explained, in East Bengal and the Punjab compilers were first attached to the Hand Sorting offices. This produced the very difficult problem of obtaining men who were willing to work for some months in the towns at which the Sorting Centres were located and then to be transferred to the Capital city of their province. We could not offer any allowances for the cost of transporting them and their families, and the period of duty at each station was too long to be covered by Daily Allowance. This limited the

choice of men and also led to difficulties caused by resignations.

It can be expected, however, that if we adopt a scheme for compilation of district tables in the district sorting offices and only have their tabulation into provincial tables done at the Provincial Offices, there will be no need for such wholesale transfers in future.

It is recommended, however, to ensure continuity during the tabulating and investigating stage, that the senior compiler of each District office should be kept on when his office closes and should be transferred to the compiling staff at Provincial Headquarters. He will know what was done in the district office and understand the compilation working-sheets and thus can greatly assist in reference and investigation. I suggest he should not be released until it is quite certain that all the tables of his district have been fully analyzed and accepted.

6.12. The pay allowed for compilers was Rs. 120/- consolidated, but the Chief Compiler was appointed at Rs. 160/-, plus the usual allowances, in the hope that it would be possible to obtain a permanent employee of Government. These rates of pay attracted the right type of men but it was very difficult to obtain permanent employees for the Chief Compiler's post, due to the reluctance of other offices to part with men with the requisite qualifications.

On the whole we succeeded in recruiting matriculates for the post of compilers and in fact many of them were men who were studying for University degrees in the evening. Such men were the right type for coding and compilation work and should be encouraged to take it up seeing that in practice it is always likely to be impossible to recruit many of the ordinary compilers by obtaining men on loan from other Government departments. It is however strongly recommended that a special effort be made well ahead of enumeration to secure Government employees as Chief and Senior Compilers. An offer of special pay as an addition to their current basic pay will be necessary.

6.13. A small point which caused some difficulty in organising compilation work is the amount of space required to do the work in a manner likely to lead to accuracy. Every compiler needs a really big working table on which he can spread out the sheet on to which he is posting and also have beside it the tickets from which he is posting. There must also be working tables for the Adding Machine operators and space for the Checkers and Chief and Senior Compilers to move about and sit beside the men whose work they are examining. The men cannot be crowded together. There must also be space in which to stack the documents in current use and presses in which tickets and compilation sheets can be filed in meticulous order when done with. The difficulties caused by small rooms and small tables were overcome in the end in Lahore and Dacca but a great deal of work was carried on under conditions of considerable difficulty.

6.14. The size of the staff was roughly decided by the number of districts since this dictated the number of compilation sheets, and the general plan was for the whole-team to work on one census table at a time, different men dealing with different districts. But cases often occurred where it was easier for men who had mastered a particular table to compile it for all districts. This situation would not arise in the same way if district tables were compiled in District Offices.

6.15. The preparation by the coders of the Village List data, Population Tables and Housing Analysis seriously upset the time-table for compilation. The amount of work involved proved to be far greater than was expected, and we found there was no alternative but to use compilers for the preparation of these documents. The work on these particular Tables, however, does not really need to be done by persons who have been trained in the enumeration, coding and sorting procedure. Possibly it could best be done by about two men in each district office who should be detailed from the District Magistrate's staff to work under the Chief Compiler.

6.16. All the coding work was planned to be done by the compilers but it is a colossal job and it was realized from the start that office staff and sorting centre supervisory staff would probably have to join in the work. (See para 8.107, CCP 3.)

Coding should be done before sorting starts and it requires special training. It naturally follows therefore, that it must be undertaken immediately after the enumeration and the training must be given as part of the pre-enumberation instructional programme. This will probably mean that the coder compilers in District Census Offices will be some of the same men as were employed by the District Census Officers and Charge Superintendents as full time Census workers in the pre-enumeration period.

6.17. In Machine Sorting Centres men were detailed from the local team of compilers to act as checkers and to take charge of the finished MSTs which they would in due course require for their compilation work. Liaison between the Machine Sorting Centre and the compilation team is essential and every compiler who is using Machine data in his compilation work should be made thoroughly familiar with the Machine sorting operation. This is best ensured by allotting some definite function in the Machine Centre to men attached from the team of compilers and changing these men round frequently. We adopted this scheme both in Dacca and Karachi and undoubtedly it did a great deal to prevent mistakes and misunderstandings.

Compilation from the Machine sorting tickets was carried out on the same system as compilation from Hand Sorting Tickets, figures being posted from the MSTs to compilation working-sheets the totals of which were transferred to the draft tables.

In West Pakistan, however, the PSCs required the results of Phase 'B' of the Machine Sorting Programme for insertion into the compilation working-sheets of certain tables which they had posted from Hand Sorting tickets. For this purpose the Machine Sorting Centre entered the totals from the Machine Sorters Tickets on Sorters Tickets in the same form as had been used for Hand Sorting. Thus the Provincial compilers did not have to learn to read data in the special form in which it appeared on MSTs. This scheme worked out well but involved the Karachi compilers in a great deal of work. It would be obviated in future if all tables are derived either 100% from Hand sorting or 100% from Machine sorting.

SECTION 6.2—COMPILATION AND TABULATION PROCEDURE.

6.21. The procedure to be followed in compilation and tabulation work, and the general duties of compilers were set out in Chapter 6 of CCP. 3. Section 1 of that chapter explained the functions of compilers generally, and detailed their duties in the initial stages of the sorting work including scrutiny and coding of slips and the production of the check figures by which the numerical accuracy of sorting was controlled. Section 2 explained the compilers' work in the correction of Charge Superintendents' Summaries. Section 3 gave detailed instructions for the compilation work on the Tables derived from Phase I of the Hand Sorting Operation. Appendices illustrated the rulings required for the compilation working-sheets.

Chapter 6 of CCP. 3 was originally intended to contain other sections dealing with the remaining Phases of the sorting work and giving similar instructions for all the Tables. It was found in practice, however, that this would in fact be an unnecessary elaboration. The compilation offices were all visited during the later half of 1951 and it was found that the Deputy Superintendents of Census and the Chief Compilers had in fact worked out for themselves simple and adequate compilation working-sheets. At the Lahore Conference attended by all the Census Officers in January 1952 it was agreed that there was no need to complete Chapter 6 of CCP. 3 as the portion already written combined with the Master lay-out sheets ensured uniformity and gave sufficiently clear general indication of the forms and methods which were required.

6.22. The essential uniformity in this stage of the Census work was maintained by the issue of a series of full size *pro formae* tables known as "Master Layouts" contained in Annexure 1 to CCP 3. It had been agreed at an early stage that the Census reports would be printed in books measuring about 9 3/7" x 7 1/2"—a convenient size for reference and the largest size which would

go comfortably in shelves and book cases normally provided in the Government offices.

The Master Layout sheets were of double foolscap size and so arranged that when set up in either 6 or 8 point printer's type, they would occupy no more space than would be available on pages of the Census volumes. The proformae indicated exactly how the draft tables should be laid out on double foolscap sheets using the ordinary Government typewriter. Tracings of the Master Layouts were prepared in the C. C's office. Blueprints were made from them and every PSC's office and compilation work room received a complete set. Special port-folios were issued to keep the sheets in proper order and good condition.

6.23. With the Master Layouts therefore as a basic indication of the data required, compilation working-sheets were drawn up in each office and completely posted from the sorters tickets. They,have all been retained as permanent Census documents along with Tickets from which they were posted. These working documents should be carefully filed and retained during the inter-Censal period, and in fact for as long as possible, as they provide information by means of which the Census data can, if necessary, be analysed in greater detail than is shown in the published tables.

6.24. An important point in the compilation procedure was the careful reconciliation of the results of Hand sorting with the data received from Machine sorting. The slips sent from Hand Centres to Machine Centres for further processing were systematically bundled in batches according to the last Hand-sorting working to which they had been subject. The lables on each packet indicated the number of slips it contained and this number was carefully checked both by despatching and receiving offices. Nevertheless, many discrepancies were alleged and correspondence was required to achieve agreement. Moreover, despite this initial check, there were inevitable further disagreements, generally of a minor nature, in the totals eventually obtained when the slips had all been punched on cards and the cards went through the sorting machines. These discrepancies not only concerned the total number of persons involved but also the numbers in various classifications. The differences were rarely serious but they involved a lot of work and in some cases visits had to be made to effect a reconciliation. This is a point which it is recommended should receive consideration in future, as the same kind of difficulties may arise if slips emanating from sorting at district level are required to receive further processing either by Hand or Machine at provincial or central level. There is of course a great deal to be said for the complete centralization of the whole sorting programme and if this were possible the question of reconciliation would only arise between sections of the Central office where they can be much more easily managed. I may say, however that in countries where the Census data is entirely processed by punched-card machinery, punching is often de-centralized and in some cases part of the sorting. The problem of re-conciliation is in all such cases a matter of importance.

6.25. Chapter 10 of CCP. 3 consists of a series of notes and explanations of the Master Layout sheets and contains tabulation instructions regarding every table. These notes were in constant use in all the compilation offices and proved to be an essential aid to statistical uniformity. The preparation of the Master Layout-sheets and these accompanying instructions involved a great deal of work in CC's office throughout the whole of 1952. Had it been possible this work would have been done at least in outline as part of the pre-enumeration planning. In fact in the course of planning the layout-sheets in this way many points were brought to light that would have merited considerations when designing the questionnaire and slip and when working out the punching and sorting procedure. This work should therefore if possible be brought to a fair degree of finality very early in the pre-enumeration planning stage.

6.26. An important paragraph in Chapter 10 of CCP. 3 is para. No. 10.08 which emphasises the importance of initiating research into all figures which show unexpected relations towards

other figures in the Census or unusual variations from past Census. The PSCs made the best efforts they could in the time at their disposal to carry out such research, but in fact it needs statistical training and it is one of the chief reasons for my strong recommendation that each Provincial Superintendent needs a properly trained Statistical Officer to assist him. This research work cannot safely be left to be done entirely in the Census Commissioner's office after the receipt of the draft Tables. It may be of considerable difficulty at that time to ensure proper investigation into anomalies as the compiling staff, who know all the intricacies of the work, will then be approaching disbandment, and reference by the central office to the Sorters' Tickets and Compilation Working-sheets may be difficult. These documents will be in the course of transmission and investigation will be impossible until they have been received in the central office and organized into permanent files. Even then it will be sometime before the central staff are completely familiar with the records.

This question of investigation and research is, therefore, of paramount importance and no table should receive the PSC's signature until he has been able to explain satisfactorily all questionable figures and is sure that none of the doubtful points in the data are in fact due to mistakes of sorting, compilation or tabulation.

In this Census examination and analysis work was only done effectively, in many cases, after the receipt of the draft tables in Karachi. This central scrutiny is of course vital. It is extremely difficult to forecast how much work it will entail and one of our mistakes was to allow far too little time and staff for it in our budget plan. I would suggest that Statistical Officers in provinces and their Chief Compilers should all be brought into the Centre to take part in the final stage of this work.

6.27. When the draft tables received from Provinces had been scrutinized, and as an aid to their further analysis, cyclostyled copies were produced in the form of 'Advance Edition' sheets. These stencilled copies were prepared in the C.C's office in the exact form in which they would be set up in type by the printer. For this purpose a special typewriter was acquired which was provided with letters of "micro-type" size.

These AE sheets have proved extremely useful. The scheme for their issue is detailed in CC. Circular No. 652. Apart from providing a great simplification as far as the printing press was concerned, they made it possible to provide Census information at an early date to Government departments, and they were used widely for the purpose of analysis and research. Have we not had a plentiful supply of the copies of the draft tables, the co-operation of the statistical experts in research work would have been most difficult. Moreover when the actual figures were available from the PSC's drafts it was found that the layout of the tables could in many cases be simplified and the production of AE sheets made this a fairly simple process.

The use of a micro-type machine was justified and I would suggest that the Census Office should be provided with such machines from the start.

The system of producing drafts in stencilled form not only had the advantage of providing an adequate number of copies of Tables but also ensured that all alterations and corrections made in the original typing were repeated accurately and clearly on all copies. On stencils this can be done easily by the use of "Correction Fluid" ; on carbon copies the human element comes in and there is no guarantee that all of them will be properly corrected or that corrections will always be legible.

6.28. PSC's offices had been provided with simple adding Machines for the use in checking additions during the sorting process, and these machines were of great use in the compilation work. The larger offices and the Central Office, however, were also provided with electrical Adding, subtracting, multiplying and dividing machines and also with electrical Adding machines which provided an automatic printed record. These machines proved to be of the greatest value and are essentially for compilation and tabulation work.

The machines used in the Census have been retained for Government use but when the time comes for the next Census they would no doubt have become indispensable to their current users and in drawing up the Census budget the necessity for this kind of equipment in each census office is an important point for consideration. These machines are mostly used for compilation and research work and even if, as is to be expected, much wider use is made in future Censuses of punched card sorting, and possibly tabulating, methods the provision of Adding and Calculating machines will still be essential.

CHAPTER 7

ANALYSIS, PUBLICATION AND COMPLETION

SECTION 7.0.—PREPARATION OF THE REPORT.

7.01. As in the past, the Census Reports were planned to be issued as a series of volumes for the Provinces with a summary volume for the country as a whole. Each Provincial Superintendent of Census was required to write an explanatory and statistical review of the results of the Census in his Province. This narrative portion of the Report became Part I in each volume while Part II contained the tables. There is a Part III in the N. W. F. P. and Pakistan Reports, containing the Tables of the Frontier Regions and Karachi respectively.

It was at first thought that each of the parts would require a separate volume, but when the work had been planned in detail it was found that for each Province they could all be published in the same binding. This is a great advantage as readers are less tempted to use figures from the tables without consulting the explanations, which are often important if one is to appreciate the true meaning of the data.

7.02. In January 1952 all Provincial Superintendents and many of their Deputies met in Conference with the Census Commissioner and his staff at Lahore and thoroughly discussed the plans for producing the Reports and the policy to be followed in composing the matter. This Conference considered a series of papers written by the Census Commissioner's Office, several of them being the work of Mr. Abdur Rashid who had just returned from a study of Census work under the auspices of the Census Bureau of the United States of America.

The Conference examined the problems involved in presenting and reviewing the data, comparing them with past Censuses analysing the apparent changes, preparing maps, charts and statements to show the salient facts, and ineffective publication. An outline plan for the contents of each Chapter was drawn up. The papers of the Conference are preserved in file No. 15/2/51-Census and consist of a series of documents numbered "Provincial Superintendents of Census Conference No. 3 (PSCC/3) Nos. 1 to 8", the last being a summary of the proceedings and the appendix to it being the outline of contents.

7.03. As this was the first census of Pakistan it was thought advisable to include descriptive notes of the geographical and historical back ground of the country and people. Information of this kind had been included in many places in previous Census Reports, but for this Census it was thought advisable to write special Chapters. I doubt whether it will be necessary to repeat this feature in the future.

7.04. At this Conference, in order to ensure a coordinated scheme of maps and charts, the Census Commissioner undertook to issue special circulars giving his suggestions for these illustrations. The scheme took the form of a set of 'prototype" maps of each Province. Copies of these were sent to each Provincial Census Superintendent for use as working sheets for the preparation of distribution maps to illustrate his Chapters. Similarly the Census Commissioner's Office issued a set of sketches giving typical designs for charts and statistical diagrams.

7.05. Production of these illustrations in

each Province would have required the recruitment and equipment of at least one draftsman in each provincial office. It was decided that as far as possible this work should be centralised in a small drawing office in Karachi which should work under the direct supervision of the Census Commissioner and maintain a certain amount of uniformity in the production of illustrations. This scheme certainly proved an economy and on the whole has worked quite well.

7.06. The Lahore Conference worked out a tentative time-table for the completion of the tabulation and the writing of the Census Reports. The dates proved quite impossible in practice owing to the length of time taken by the machine operation. This led to the necessity for supplementary budget grants. It is being recommended elsewhere that the whole abstraction and tabulation work for each province should in future be under the control of the Provincial Census Offices. This should tend to avoid such unforeseen delays, but quite apart from the question of delay in tabulation it has been obvious in the latter stages of writing that the research required to produce the report may bring to light facts which necessitate revision of the tabulation. It is, therefore, almost impossible to guarantee a firm data for the conclusion of the tabulation and report writing stage of the Census, and I would strongly recommend that budgetary provision should be made for a fairly lengthy period in future so that neither the Census Commissioner nor any Provincial Superintendent should feel that he has to hurry this scientific and critical work through by a definite and early date. Doubtless they, however, will be thinking of their careers and next posts and will in fact be anxious to finish the Census work as quickly as possible, especially if, as I have recommended, the Provincial Census Chiefs are officers who have a good deal of their careers before them and are being groomed for higher things. There is, therefore, more danger in fact of the work being hurried than of research and authorship being dragged out, but there should not be, as there was this time, a definite "guillotine" closure.

SECTION 7.1—RESEARCH, AUTHORSHIP AND EDITORIAL WORK.

7.11. A great deal of research was necessary to prepare the matter which is discussed in the Census Reports. The figures shown in the published tables had to be compared with similar data from past Censuses and in some cases with comparable figures for other countries. Comparison with the past involved lengthy calculations in the case of East Bengal and the Punjab in order to make adjustments in respect of the new areas resulting from partition. A similar problem arose in Sind, since the last figures published in almost all cases were those for 1931 when Sind was a part of Bombay Presidency, and even when 1941 figures were available they had to be adjusted in respect of the division of the old Karachi district between Sind and the Federal Capital Area.

A great deal of more had to be done in the way of such research than is actually mentioned in the published reports. Until calculations have been made comparisons are impossible, but the results do not necessarily prove of sufficient interest to warrant publication. Nevertheless, statistics is largely a science of comparison and this work is of great importance and value. Apart from such comparisons investigation was required into the figures of the 1951 Census itself, for purposes of evaluation and to locate and appreciate the causes and trends of local and communal differences, avoiding the natural tendency for the reports merely to list the differences and draw attention to the high and low figures.

7.12. The special circumstances of each province and the differences between the different parts required, in many cases, the preparation of supplementary tables in Part II or subsidiary tables in Part I giving information on subjects which are not separately analyzed in the official set of tables, or for which greater detail is advisable. In this Census such supplementary tables have been prepared by Baluchistan and the N.-W. F. P. in respect of tribes. East Bengal has produced subsidiary tables showing the statistics of Thanas, certain particulars regarding the

Tea Garden population and an analysis of the tribal peoples of Chittagong Hill Tracts. In most provincial reports the results of the Cottage Industry Enquiry are shown in Supplementary Tables and there are subsidiary Tables on many subjects including Housing.

7.13. The authorship of the reports involved the Provincial Superintendents of Census in work which for many of them was entirely a new departure quite outside anything which had arisen in their normal official experience. They rose very well to the occasion but there was a tendency in some cases to leave important analytical and critical work to their deputies.

These officers were intended to assist in investigation and research work but were not really intended to take the actual work of authorship off the shoulders of the Provincial Superintendents.

7.14. To supplement the Census data, and to relate the information regarding the population to its background it was necessary to obtain data from other government departments. The relationships between the rural population and the utilization of the soil, and between the industrial workers and the location and development of factories and other establishments, are instances of this kind. So is the information on the area of districts, tehsils and municipalities, which is needed for the tables on density of population. This data had to be gathered from the Survey of Pakistan as regards the larger areas and from the local authorities for the smaller places. Much information was also needed from the Education authorities. All these departments were co-operative but the gathering and analysis of the information required much work and time.

7.15. The Provincial Superintendents forwarded the drafts of each chapter to the Census Commissioner's Office as soon as it was finished and I did my best to provide friendly criticism and editorial assistance. Most of my suggestions and amendments were readily accepted by the Provincial Superintendents. A series of "Query Sheets" was exchanged between the P. S. Cs. and myself which reduced to a simple system the correspondence concerned with ensuring that the conclusions were properly supported by statistics and that the paragraphs were framed and expressed in a manner suitable for official publication under Government auspices. This editorial work in practice involved a great deal of time, thought and re-writing. Much of it had to be hurried in order to adhere to the sanctioned dates for the closure of the Provincial Offices. I am grateful for the extra lee-way given to this work by several of the Provincial Superintendents who continued to answer my queries long after they had ceased to be a part of the Census organization.

7.16. As regards demographic analysis, it had been suggested that the United Nations Technical Assistance scheme might be called upon to assist the Census work by the loan of an expert in this field. As a result Mr. Douglas L. Ralston came to Pakistan in May 1953 and made exhaustive researches into the Age data, the sex-ratio and the basic information related to the rate of growth of the population. It is regretted that he was unable for reasons of health to bring his work to any definite conclusion. He came up against the obstacle, however, which has always restricted scientific investigation of population growth in this land, namely the inadequacy of vital statistics such as the records of births and deaths, and the unreliability of the Census data on ages. I suggest that for the next Census the planning work, both for the enumeration and for the abstraction procedure, should be done in collaboration with an expert in this field who, to be of any real help, must work with the Census Commissioner for two or three short periods, the first of which should be at least 12 months before the enumeration, when the scope of the questions is being decided. A second period of collaboration during the planning of the abstraction and tabulating work would be advisable, and finally when the data has been produced, the demographer should devote himself for some months to the preparation of a study for incorporation in the Census expert. By that time it may well be that the Government of Pakistan may have appointed a Government Actuary or other suitable permanent official who can do this important work, but it is not within the power of one man to administer and control the Census as Census Commissioner and also to devote himself to

intensive scientific study of the results.

7.17. Mr. Ralston's researches resulted in a recommendation that the Age tables should be published in broad age-groups only. This was a departure from previous practice in which small age groups have been included in the Census tables although the reports discussed their inaccuracy and advised against conclusions being drawn from them except on the basis of broad groupings. There is a great deal to be said for both points of view, and we have probably chosen the right course by including only the broad-groups in the tables in the main Census report, but having the full details printed for use by experts. This decision, however, necessitated a re-compilation of many of the tables in the last three months before publication and the re-writing of a good deal of the Provincial Reports while the All-Pakistan report has had to be prepared in great haste. The recommendation made elsewhere for improvement of the age data and for it to be sorted, tabulated and analyzed as quickly as possible will I hope prevent this kind of thing in future.

SECTION 7.2—PRINTING & PUBLICATION

7.21. It was originally intended that each Provincial Census Report should be printed under the supervision of the Provincial Census Superintendent concerned who would have been responsible for correcting proofs and for the general accuracy and layout. It was found at the Lahore Conference, however, that printing facilities in some Provincial Capitals were somewhat restricted. The presses in Peshawar were already over-full with Government work; it was doubtful whether Quetta printers could cope with the tables, and printing in Sind was already chiefly done in Karachi. It was tentatively decided therefore to print in Karachi, Dacca and Lahore only and for the Census Commissioner's Office to be responsible for all printing work in Karachi. In practice this arrangement had to be extended to the Punjab report also as to print it in Lahore would have involved keeping the Punjab Census office open for many months with no function other than printing. East Bengal has therefore been the only Province to deal with the printing of its own volumes and for the whole of West Pakistan the work has been done in Karachi.

7.22. The formal of the Census volumes was agreed in 1951 with due regard to the size of an ordinary book-shelf, the foolscap volumes of 1931 and previous having obviously suffered by being too tall for careful storage, and the 1941 volumes being still more awkward. The smaller book, will, it is hoped, prove more convenient and last longer in readable condition. It has involved considerable ingenuity in planning the tables, but its size and arrangement follow the modern fashion of many statistical publications, including several of those issued by the Government of U. S. A.

7.23. The Controller of Printing & Stationery has been particularly helpful throughout the whole Census operation. Mention has already been made of his great efforts in the production of enumeration documents and he was equally helpful in the final production of the volumes of the report. The Deputy Controller of Printing & Stationery in Dacca also gave most valuable assistance in the preparation of East Bengal volumes. In both Dacca and Karachi the Government printing works were fully engaged with other work and most of the printing has had to be done by private Presses whose willingness and cooperation is much appreciated, and especially their patience over the unavoidable delay in clearing proofs and the large amount of re-composition caused by the decision to broaden the age-groups.

7.24. The Census Commissioner's Office was therefore faced with the enormous job of designing the layout and dealing with the proofs not only of the Pakistan volumes but also those of all the Provincial volumes of West Pakistan. Every man on the staff has joined in a great effort to ensure the accuracy of the composition of the tables and to eliminate errors from the proofs of the narrative chapters of the report. The numerous statistical statements, charts and maps have caused Mr. Shamsi and the Printers much worry and careful work. But the full responsibility for accurate composition lies with the printers. I shall not be able to see much of their final work before I leave Pakistan but I have every hope that despite their

working in English, which is not their Mother-tongue, they will be able to produce books which are a credit to their establishments.

In this connection I must express my sincere admiration for the efforts made by Mr. N. Shamsi and the other civil servants in my office to understand the special problems of the printers, and to rise with success to the unusual call made upon them to turn themselves into a busy publishing house. Mr. A. K. Ahmed Khan in Dacca found himself faced with the same kind of printing and publishing problem and was not as easily able to obtain my own advice. I feel he deserves special praise in this respect and I have every hope that by his efforts and the support of Mr. Qassim Ali, the Deputy Controlling of Printing in Dacca, the East Bengal Census volumes will be a credit to his Province.

SECTION 7.3—COST AND STAFF

7.31. Appendix 'A' summarizes the cost of the Census work in each financial year during which it has been in progress. Appendix 'B' shows the chief features of the staff organization with the grades and pay related to the posts. The total cost of the Census is about Rs. 29 lakhs which figure covers the estimated expenditure till the 28th February 1954. This works out at pies 7.33 per head of the population, a figure which makes the Census of Pakistan, perhaps the cheapest and certainly one of the least expensive Censuses in the world.

7.32. As regards the future, it is quite certain that the cost of the next Census of Pakistan will exceed the above figures for the 1951 Census. If enumerators are paid there will be an enormous increase in expenditure, but I feel that this is neither practical nor likely to lead better results than the present system of using civil servants wherever possible and augmenting them by volunteer private citizens. Quite apart from this question, however, it will be necessary to expand the officer establishment to allow for a proper sub-division of functions at the centre and to provide statistical officers in the Provinces. It will also be necessary to provide funds for full-time District Census Officers and their staffs including a number of full-time workers at Charge level. Moreover it is probable that Machine Sorting methods will be used more extensively; they are not likely to be any less costly than Hand-sorting or to get the work done any quicker, but their superior accuracy and flexibility will make them essential. The financial authorities therefore should require a completely revised and detailed estimate for the 1961 Census and it will not be possible for the cost of the 1951 Census to be taken as the yard-stick.

PART II

THE REPORTS OF
THE PROVINCIAL SUPERINTENDENTS OF CENSUS
OPERATIONS

CHAPTER 8

SUMMARY OF RECOMMENDATIONS.

8.01. To facilitate references, and to prevent any chances of their being overlooked through being included in the narrative paragraphs on the subjects to which they relate, the more important recommendations are listed below. These should be read in conjunction with the Code of Census Procedure, Parts I, II and III for the 1951 Census and with the Annexures thereto.

8.02. Planning and organisation. Ample time must be allowed (1.16)—the "Phoenix system" should be dropped and staff provided for inter-censal continuity and activities (1.22)—Census Act needs revision (2.01)—Conferences of Provincial Supdts. of Census (3.7)—Recruitment of staff (1.37)—Desirable organisation of Central and Provincial Census Offices (1.38)—Training (1.39).

8.03. Finance. Provision must allow ample time for checking accuracy (1.43)—Transportation arrangements and Travelling allowances (1.44)—Liabilities of Provinces (2.03) and Municipalities (2.04) to be defined.

8.04. Enumeration arrangements. House-numbering in towns (2.05)—Liability of citizens to serve as Census Officers (2.06)—Use of strong paper for Census documents (2.57)—Sub-Divisions (3.02) and Cities (3.03) should form census districts —Urban areas to be separately enumerated (3.04) and sorted (3.05)—Maps (3.07)—Cantonments (3.22)—Family list (4.09)—Manual of Procedure (4.14)—Difficult questions; Age (4.31), Sex (4.32), economic characteristics (4.34), Births (4.35).

8.05. Scope of Census. Agricultural Survey (2.13)—Unemployment requires study (2.16)—Cottage Industries (3.45).

8.06. Instruction of Census staff. Magic lanterns (2.35)—For House listing (3.37)—More time needed (4.18) and planned time-table (4.17).

8.07. Census Officers. District Census Officers to get special pay (3.12) and staff (3.13) especially in Cities (3.14)—Charge Superintendents may need staff in larger charges (3.16)—Institutional enumerators (3.17) and (3.24)—Prestige of enumerators (3.18).

8.08. Abstraction. Provinces to do all own work (5.12)—Improvements in procedure (5.21) (e) and (5.78)—Sorting areas to be urban or rural not both (5.23)—Training in Coding (5.45)—Codes to be revised (5.48)—Punch cards one per person (5.52) and not specially printed (5.39)—Printing sorting machines (5.62)—Non-blurring ink (5.62) —Checking staff to be permanent employees (5.71)—Operators, recruitment (5.76)—Training (5.74)—Sorting at District level (5.9)—Compilation books (6.02)—Early compilation of age table (6.07)—Each table from one source, either hand or machine sorting, not both (6.09)—Compilation staff (6.10)—Continuity of Senior Compilers' responsibility (6.11)—They should be permanent employees (6.12)—Reconciliation of totals (6.24) —Tables to be designed early (6.25)—Research and evaluation is a provincial responsibility but needs central check (6.26) and ample time (7.06)—Collaboration of demographic expert in planning and report writing (7.16).

8.09. Sampling. Sorting by sampling methods (5.83)—Sample enumeration (5.84)—Inter-censal field surveys (5.86).

CHAPTER 9

BALUCHISTAN

SECTION 1.—ENUMERATION

B. 1. Creation of the Provincial Census Office. The Provincial offices for the 1931 and 1941 census had been opened in March 1930 and February 1940 respectively but it was found that this was at least 3 months late in the season, and according to recommendations on record the 1951 census office should have been opened about early January 1950. Circumstances however prevented the opening of the Baluchistan office for the 1951 census before the 1st June 1950. On that date K. B. Malik Bashir Ahmed (who had retired from service two years earlier and had been recalled for the census) assumed charge as P. S. C. and set up an office in one of the huts in the Civil Supplies Directorate at Quetta with a small staff (2 clerks and 2 peons) and some furniture borrowed from the supplies office. Arrangements for the—clearance, white washing etc. of the hut and provision of the office equipment were made during the next few days until the D. S. C. Mr. Ghulam Hussain joined his appointment on the 10th June 1950. On the same date K. B. Malik Bashir Ahmed put in his resignation on grounds of ill health but continued to do the preliminary organizational work, until 16th July 1950 when he was relieved by K. S. Agha Mir Yakub Shah. K. B. Malik Bashir Ahmed attended the first conference of P. S. C.'s which was held at Karachi in the 3rd week of June, 1950, and in the light of decisions arrived at at that conference, and of the C. C's instructions, and after consulting the Local Administration, he issued his first census circular in early July to all district officers, informing them of the general outlines of the census programme, asking for the preparation of the village and house lists and town registers, and inviting them to a census conference of district officers which was to be held at Quetta on 20th July and presided over by the Census Commissioner Pakistan. This conference was attended by the Revenue Commissioner and all Political Agents or their Assistants and representatives from States, and proved most useful. The minutes of the conference have been placed on record.

B. 2. Shortage of time for Preparation for Enumeration. Preparations were then started in right earnest, for the enumeration, which was fixed for February 1951. A period of only 6 or 7 months was available to cover a long programme spread over several stages of work, appointment and training of census staff in all parts—including some very far flung areas of the Province, and—finalization and checking up of every detail before the enumeration period began. With a huge joint and incessant exertion on the part of all concerned, it became possible to bring the operations to a successful end—there was nowhere a breakdown or failure of the organization and no serious hitches, and the "Provisional" population totals were telegraphed to the Census Commissioner and confirmed by telephone and by post on due dates. But difficulties were—experienced and problems did arise at each stage. The operations had been (quoting the Census Commissioner himself) "compressed into a dangerously short period"—and the shortage of time was much felt in this Province with its remote areas and limited means of communications. It is strongly recommended for the next census that—benefit be taken of the experience of 1931, 1941 and 1951 and a clear year of 14 months should be allowed for organization and preparations for the enumeration, so that if the enumeration is scheduled for March 1961; the

Provincial Superintendent of Census should open his office and start work not later than January 1960.

B. 3. Census Areas and Census Officers. After the Provincial Census Conference, the Province was divided into Census districts (conforming to administrative districts) and appointment of District Census Officers. These were as under:—

Census District.	Designation of the officer entrusted with duties of D. C. O.
Chagai.	E. A. C. Nushki.
Loralai.	Political Agent, Loralai.
Quetta-Pishin.	Assistant Political Agent, Quetta-Pishin.
Sibi.	Political Agent, Sibi.
Zhob.	Assistant Political Agent, Zhob.
Kalat State.	Revenue Secretary, Kalat.
Kharan State.	Naib Wazir, Kharan.
Lasbela State.	Tahsildar, Lasbela.
Mekran.	Naib Wazir, Mekran.

B. 4. General Village Registers and Town Registers and Maps. District Census Officers were then asked to proceed with the further division of their districts into census charges, circles and blocks etc., to ensure delimitations of boundaries between each census unit, and to expedite the preparation of the General Village or Town Registers and maps of Census Charges and circles properly marking the boundaries of each unit. Copies of these forms will be found on the collections of instructions which have been left on record.

The progress of work on preparation of these documents was inspected during the preliminary training tours of the Provincial Superintendent of Census and the Deputy Superintendent of Census, and the record was completed under their personal instructions and brought to Quetta.

B. 5. Code of Census Procedure Part I. Meanwhile the Code of Census Procedure Part I dealing with the pre-enumeration procedure had been issued by the Census Commissioner, and copies thereof were distributed to the district officers Preliminary training tours by the Provincial Superintendent of Census and the Deputy Superintendent had begun in August 1950 and the instructions laid down in the Census Code were discussed with and explained to the District Census Officers and their staff during these tours. The Code which was meant for all-Pakistan, was simple, clear and self-contained. Only a few circulars in Urdu were issued from the Provincial Superintendents office during the enumeration stage, on points requiring special clarification or on questions arising in connection with the peculiar conditions prevalent in this province.

B. 6. Recruitment of Enumeration Staff. Charges Superintendents, Circle Supervisors and Enumerators were appointed almost entirely from the existing officials namely Tahsil staff, Patwaris, a few village school-teachers, and occasionally tribal headmen and their relatives. Owing to the lack of sufficiently well educated persons in the rural areas, no volunteers from members of the public were available. In the Quetta City, the Executive Officer of the Municipality secured the services of officials by applying to the different heads of offices and departments located in Quetta, and organized his enumeration very well. A number of volunteers were produced by the Muslim League and their services were gratefully accepted and utilized by the Charge Superintendent.

Letters of Appointment required under the Census Act for the Charge Superintendents and their subordinate census staff were sent to each District Census Officer who entered the names and issued them to each individual.

B. 7. Special Enumeration Staff. In the following areas where there was no official agency to cope with the work on enumeration, establishment paid for from the census budget was sanctioned:—

Kharan.
Marri Bugti.
Toba Achakzai Circle of Chaman Tehsil.
Sambaza Circle of Fort Sandeman Tehsil.

Details are contained in a special file on the subject which has been left on record.

B. .8 The Census Date. The census was *de jure* (the old "defacto" system involving a one night convulsion having been dropped in 1941) and was carried out on a "normal residence" basis, spread over a specified enumeration period viz, 9th to 28th February 1951. This period was strictly applied in Urban Area, but in the rural areas of districts and in the States, the enumeration commenced on 1st January, to allow of the longer time necessarily required owing to difficulties of transport, and in view of the distances which had to be covered by enumerators in order to "catch" the scattered rural and nomadic population. The date of completion of the enumeration was in all cases 28th February.

Past censuses have always been held in March or February. In Baluchistan, however, these months are not suitable for the following reasons:—

(1) This Province gets most of its rainfall and snowfall during January and February. Some parts (e.g. Ziarat) are usually snowbound during these months, and fair-weather roads may be washed away during these months. This and severe winter conditions make the work of the numeration staff more difficult in the districts of Quetta-Pishin, Loralai and Zhob, and the northern half of Kalat State.

(2) As a result of the southward move of the population during the cold weather a considerable part of the normal population of Quetta is absent; similarly large numbers of tribesmen from the districts as well as from the Sarawan (Kalat) sojourn in the plains of Kachhi and Sibi. Some are counted in Sind. All this had a disturbing effect on the "normal residence" aspect of the population which we aim at recording.

(3) During these months owing to the approach of the end of the financial year the revenue staff on whom the burden of the enumeration of 90% of the population falls, are very much occupied with the work of collection of revenue dues. They find it most difficult to combine their own duties with the census and to carry out both, satisfactorily.

(4) Summer months have climatic disadvantages in the lowlands, and the most suitable months for a census of Baluchistan are apparently the months of April and May. Some arrangement would be necessary to avoid double counting of nomadic tribes who may have been enumerated in Sind, if the census there were taken at the normal (February) time.

B. 9. House Listing and House Numbering. Houselisting was one of the first items of preliminary work asked for in the provincial circular of July 1950. Later, on receipt of instructions and Household Lists forms from the Census Commissioner these were sent out to Districts and lists were prepared. In these forms a "household" was defined as "a collection of persons living and eating in one mess with their resident dependent relatives, servants and lodgers who normally reside together".

Instructions on the preparation of Household lists were given during training tours, and a certain amount of publicity work was also done by means of wall posters etc. received from the Census Commissioner inviting the public to assist in the proper and accurate completion of this first stage of the census work. In the Quetta city the loudspeaker van was also used.

It was decided that House numbering need not be done in the rural areas, where household lists were prepared without observing this preliminary. No inefficiency was experienced. In towns of course the numbering of houses was done, prior to the compilation of H. H. Lists, and all charges (i.e. cost of paint etc.) in connection with the affixation of numbers were borne by the Municipal or other Local funds.

On the whole and with very few exceptions the work on the preparation of house-hold Lists was punctually and satisfactorily completed. There was some delay in the Quetta City but the lists were finally ready before the enumeration period began. In the Marri and Bugti tribal areas, there was no staff to prepare the house-hold lists in advance according to the normal programme, and therefore the special enumerators sanctioned for

these areas who commenced work in January 1951 did house-hold listing and enumeration simultaneously and side by side. This arrangement worked well, and was acceptable in the special circumstances of the Marri and Bugti country. The extension of this arrangement to other areas would not, however, be desirable, as it is essential to have the household lists etc. prepared previous to actual enumeration so as to furnish a preliminary estimate.

B. 10. Cottage Industries. An enquiry relating to Cottage Industries was conducted at the time of preparation of Census House Lists. According to the instructions to Census Enumerators a "Cottage Industry" covered home manufacture by the household, and large scale enterprises i.e. employing 20 people (10 where power driven machinery was used) or more were excluded.

As there are only a limited number of Cottage Industries in Baluchistan, most of the tehsils rendered nil reports. The figures collected, therefore, represented only the following parts of the province:—

District or State	Parts represented.
Chagai District.	Nil
Loralai District.	Nil
Quetta-Pishin District.	Quetta town only.
Sibi District.	Whole District except Tehsils of Bolan and Kohlu.
Zhob District	Hindubagh tehsils only
Kalat State	Whole State.
Kharan State	Nil
Lasbela State	Bela town and Niabats of Velpat, Liari and Kanrach.
Makran State	Tahsils of Panjgur, Turbat, Mand, Dasht and Jiwani.

According to the Census Commissioner's instructions a series of tables which were not included in the volume of Census Tables were prepared out of the material available and distributed. But the study was not quite complete, and on the next occasion the district staff will have to be asked to take the enquiry more seriously and to ensure a more thorough coverage.

B. 11. Code of Census Procedure Part II. This Code which covered the procedure of enumeration itself and instructions to enumerators as well as explanation of the Census questions was received well in time and enabled the issue of circulars from the Provincial Superintendent of Census's office to be reduced to the minimum. Sufficient copies of the Code were received from Karachi, and were distributed down to charge level.

B. 12. Instruction of Census Staff. The enumerators' leaflet in urdu and the diagrams representing a very large size reproduction of the census slip, ample supplies of which were received were distributed to all concerned in time for preparation and practice. Much importance was attached to personal instruction of the census staff. The Provincial Superintendent Census or the Deputy Superintendent visited nearly each district and State headquarters once before the Enumeration, for personal training and demonstration and to answer the questions of the census staff. Emphasis was laid on the attendance by as many persons as could be arranged at the training classes. Census workers who received training at these classes in turn held similar training classes at tehsil headquarters and rural centres, to train the enumerators. As far as possible another visit was paid to each district and State headquarters etc. to check the progress and accuracy of the work during the enumeration period. In Quetta City and Cantonment several training lectures were given by the Provincial Superintendent of Census and the Deputy Superintendent at the meetings organized by the different charge Superintendents in the Town Hall, the Cantonment Board office and in the Railway Divisional office.

B. 13. Distribution of Slips and Forms. Local printing was limited to the very minimum as most of the forms were supplied by the centre. Full details are on record in the file on the printing plan and distribution of forms. The indent for enumeration slips based on the estimates of 1941 was submitted early in July 1950. As soon as household lists were received, revision of estimates became necessary and supplementary supplies were found to be required by all districts. Eleventh hour demands for supply of slips were received from the

Chagai District and the Kalat State as a result of the return of large number of nomadic tribesmen to their home districts. Telegraphic indents were placed on the Census Commissioner who arranged quick and prompt supply and no break-down occurred any where.

B. 14. Collection of Provisional Totals and Completed Census Records. The reports of provisional totals and the completed census record from districts were received in accordance with the procedure laid down in the census code and on the dates prescribed. The District and State Census Officers sent their records by special messengers which ensured the safe delivery and systematic handling over of the record at the Census (Census) Office. Difficulty was experienced only in the case of the Quetta-Pishin District (excluding Quetta City and Cantonment) of which the record arrived late and that for the Chaman Sub-division was sent in a mixed up condition and had to be rearranged by the Census Office prior to being taken over for sorting.

B. 15. Comments on Organization. The organization of the 1951 Enumeration was on the whole satisfactory and better than that at previous censuses is as much as it ensured a much better coverage of area, and received much better publicity and whole-hearted co-operation from the public. Except for the few cases where paid Enumerators had to be engaged, in special circumstances, the enumeration work was everywhere done on an honorary basis mostly by officials in addition to their duties and was well done. The same arrangements as were made in 1951 as regards appointment of District Census Officers, Charge Superintendents, Circle Supervisors and Enumerators are recommended for the next census. One difficulty, however, which made itself felt in 1951 in the case of the Quetta Pishin District especially was the absence of a whole time clerk in the District Census Officer's office to attend to census work. Keeping in view the experience of the past censuses, it is recommended for the next census that one clerk of the upper grade paid from the census department should be appointed in each district in the District Census Officers office to handle the large amount of correspondence, circulars, slips and forms and to see to the final collection of census record and its despatch to the Provincial Superintendent's office. These appointments should be for 6 months ending a month after the completion of enumeration.

Cost of Enumeration. The total cost of enumeration i.e. expenditure incurred during the first year of the census amounted to Rs. 43,186/- which included Rs. 13,330/- on account of cost of the Enumeration Staff engaged in special areas. Details are shown in Appendix 'A' and 'B'.

B. 16. Recommendations for the Future. The following recommendations are placed on record:—

(*a*) The Census Officers and Office staff should be drawn from amongst the provincial cadre as before and allowed special census pay at the same rates as in 1951. The Provincial Superintendent's Office should preferably have four clerks in all (against 3 of 1951) including the stenographer to Provincial Superintendent of Census. Special care should be exercised in selecting the staff and as far as possible persons with census experience be selected, and warned that no leave would be granted to any member of the staff in the course of the operations.

(*b*) Arrangement for District and Municipal census offices should be the same as in 1951, with the exception that a census clerk should be provided by the Census Department to each District Census Officer.

(*c*) Efforts should be made to obtain the services of volunteers from amongst the public to work as census Supervisors and Enumerators etc. With the further spread of education, such volunteers should be forthcoming in 1961 in urban areas, and to a small extent even in rural areas through the assistance of tribal headmen.

(*d*) Several improvements in the wording of the census Act proved to be necessary. These were discussed from time to time between the Census Commissioner and the Provincial Superintendents of Census and recommendations on this point appear in the all-Pakistan administrative report. One important change suggested is that in the name of the appointment of the Provincial Super-

intendent, most of the Provincial Superintendents found that "Director of Census" would be a more suitable style. The change was not given effect to in 1951 only because it was too late to alter the wording which had already been used in the Census Act.

(*e*) The enumeration should, if possible, be fixed for May or June 1961, and the provincial census office opened by 1-3-1960. If the enumeration is fixed for February or March as at previous occasions, then the census office should be opened not later than the 1st January 1960.

(*f*) Demarcation of census areas, use of the location code, house-listing and house numbering etc. should be on the same lines as followed in 1951. No house-numbering is necessary or of any use in the rural areas, and was not done in 1951 or at previous censuses.

(*g*) The "Slip" system by means of which a separate slip is filled up for each individual, worked well in 1941 and 1951 and may be continued. This system has helped to eliminate the whole slip-copying stage which used to take about 3 months at previous censuses. Its only disadvantage is that it does not clearly show the "family detail" which would be readily available from a *schedule* recording details for all persons in a family on one sheet.

(*h*) Self enumeration forms might also be tried at the next Census as an experimental measure in the Quetta City and Cantonment, a number of forms being issued to each household and collected on completion, by the Enumerator responsible for the block. But even in Quetta it would not be feasible to introduce this method throughout the city or the Cantonment.

SECTION II—SORTING

B. 17. Organization of Sorting Centre. The sorting centre at Quetta was opened on the 1st April, 1951. This was under the charge of the Deputy Superintendent Census and consisted of 1 Inspector and 6 sorters to begin with. The staff was gradually increased and as the establishment grew, supervisors selected from amongst the sorters were placed in charge of sections for supervision and check of the work. The sorting was in full swing by June 1951 with a staff consisting of 1 Inspector, 2 Supervisors, and 20 sorters. Sorting work was completed on the 30th November, 1951 according to the Time Table prescribed by the Census Commissioner and the sorting Centre was closed on that date.

B. 18. Location. The Centre was located in 2 huts adjacent to the hut occupied by the Provincial Superintendent Census's Office in the Civil Supplies Directorate Compound. Correspondence for the allotment of these huts had been started in November 1950, with the Baluchistan Secretariat, and possession was taken and the huts were prepared for use before 1st April, 1951.

B. 19. Recruitment of Staff. No difficulty was experienced in the recruitment of sorting staff which was selected from amongst local candidates after a common sense test and interview, but as the pay was only Rs. 60/- p.m. men with suitable educational qualifications or experience were not attracted. Only a few of the sorters were matriculates and the appointments being purely temporary, many left without notice as soon as they got better jobs elsewhere. This difficulty has existed at all previous censuses and resulted in a certain amount of inaccuaracy and dislocation of work. The only remedy lies in more favourable terms of service for the sorting staff.

B. 20. Equipment. Most of the furniture required for the sorting office was borrowed out of the unserviceable surplus stock of the Food Supplies Directorate and repairs to make it temporarily fit for use were carried out at the expense of the census funds. This arrangement worked well and resulted in considerable saving in expenditure. Sorting baskets etc. were locally purchased.

B. 21. Commencement of Sorting Work. The sorters were employed for the first 6 days on experimental work and the sorting was commenced with the "Tribal Block Sort". The enumeration pads for each Block were broken up and sorted by sex, Muhajir/Non-Muhajir and by Tribes, the last named following a printed Tribal Index a copy of which was furnished to each sorter. The results of the sorting were entered on a Tribal Block Sorter's ticket, which was used only in Baluchistan. At the same time the standard B. S. T. (prescribed

for all-Pakistan) was prepared. This showed the numbers of Males/Females and Muhajir/Non-Muhajir separately. With the results of this preliminary sorting, check and correction was also carried out, of the Circle abstracts and charge summaries etc., received from the District enumeration staff with the enumeration slips.

Prior to being broken up, enumeration pads were subjected to a cursory check for omissions, inconsistencies or apparent inaccuracies in the entries on the slips and corrections were made as far as possible.

B. 22. Sorting Operations in Action. After the Block Sort, the Circle sort in which the unit for sorting was the Circle was undertaken. In this and in all subsequent stages of sorting, the work went on smoothly and mechanically in accordance with the Census-Commissioner's instructions which took the form of chapters of the Census Code, Part III, and were received by instalments, each instalment arriving prior to the due date of commencement of each sorting Phase.

B. 23. Coding. Special marking or "Coding" of slips for certain varieties, prior to sorting was introduced at this Census. This system, details of which are contained in the Census Code Part III, very much facilitated sorting during the Circle sort, and subsequent stages. The coding for "Occupation and "Economic group" was intricate and Coders (Compilers of the pay grade 120/-) were given special training and practice before this part of coding was begun.

B. 24. Machine Sorting. Slips for the Non-Agricultural Labour Force which had been segregated during Phase 3 of sorting were retained separately and were, after full coding, sent to the Machine Sorting Centre at Karachi where further sorting was done for Age, Marital Status, Education, Subsidiary language and Economic characteristics and also for fertility and infant mortality in the case of married women. This partial sorting by machine, which was an experiment, was on the whole a success, although some delay occurred in receipt of Machine sorting tickets for the different Tables, and difficulty was experienced in reconsiliation of figures. But this difficulty was the result of the fact that the Machine sorting centre was not located at the same station as the provincial compilation office and personal contact was not possible.

It is recommended for the future that, as at previous Censuses Census Slips for the whole Province be collected at Quetta with all possible speed, after completion of enumeration. In view of the small numbers of slips and difficulty of organization it would not be useful or worthwhile to attempt any sorting at district level. Hand sorting is already an "old-fashioned method" and it is most desirable that the scope of machine sorting be widened at the next census. It would be best if Baluchistan could have its own machine-sorting centre, but the small population would not justify the expenses on a separate outfit at Quetta. To continue the sorting work for Baluchistan with that of another Province would be dangerous because of the chances of unchecked confusion.

B. 25. Compilation. Compilers were recruited as far as possible, by selection of suitable hands out of the sorting staff, as the sorting work progressed. They were, to start with, employed on checking and correction of palpable mistakes in enumeration slips, before each bundle was handed out for sorting. Next, they did the coding work for the Circle Sort, and for the other phases of sorting, and as soon as the complete circle folders were available, the compilation of Table 6 Religion was taken in hand. After the completion of this Table (which was the first to be prepared and which reached the Census Commissioner in the end of August 1951) work in the compilation Branch continued simultaneously on the following items:—

(1) Coding for occupation etc.

(2) Compilation of other tables dependent on hand-sorting results e.g. mother tongue, Birthplace, literacy, etc.

(3) Village list completed from corrected charge summaries.

(4) Housing Tables extracted from the Household lists.

(5) Compilation of Cottage Industry Tables from the C. I. Schedules.

These Tables were Cyclostyled and distributed by the Census Office.

(6) Compilation of Statistical Analysis of Baluchistan Tribes. This was an amplification of Table 20 appearing in part 2 of the Provincial Census Report. It was done by a special establishment paid for by the Local Administration but who worked under the honorary supervision of the Deputy Superintendent Census. The finalized work consisted of 50 pages of tabular matter printed and distributed at the cost of the Local Administration.

(7) In August, 1952 Machine Sort tickets started coming from the Machine Centre at Karachi, and based on these, information was incorporated in the relevant working sheets and tables on Age and Marital Status, Education, Economic characteristics, Fertility etc. were prepared. The last machine sorters tickets were received finally corrected in February, 1953 and Tabulation was completed in March, 1953 when the compilation staff had, after gradual reduction come down to one compiler.

A time table of work and standard layout of all tables were received from the Census Commissioner, to whom weekly progress reports were submitted.

B. 26. Printing Arrangements. The village lists and the Tribal Analysis were printed locally. It was originally decided by the Census Commissioner that the Census Report and Tables should also be printed locally, in order to reduce pressure of work on the Government Press at Karachi, but it was found that printing work of the required standard could not be produced at Quetta. Arrangements were therefore made at Karachi and the Census Commissioner's office took upon itself the work of checking of proofs etc. which was all done after the close of the Census Office at Quetta, on 26-3-1953.

B. 27. Completion of the Report etc. The draft of the report was still incomplete when the Provincial Superintendent Census's appointment terminated on 31st January 1953 on which date he proceeded on leave preparatory to retirement, and thereafter remained associated with the work for some months. Subsequently the Deputy Superintendent Census remained in charge with a skeleton office up to 26th March 1953. Beyond this date extension as impossible on account of Government's orders for strict economy. The Deputy Superintendent Census therefore obtained 2 months leave during which period work was continued on clearance of references etc. on draft Tables, winding up of office and drafting of the report. The last named item of work had to be continued for about 4 months after the Deputy Superintendent Census, had been posted to another appointment at the end of his leave.

Considerable difficulty was experienced during the six months that work continued after the close of the office. It is recommended for the next census that the office should not be closed until the work has been finally completed, the report should preferably be printed locally and a small staff should remain in existence during the concluding few months for checking of proofs etc. and distribution of the printed volumes.

B. 28. General Administrative Questions. As far as the opening and running of the office was concerned, no difficulty worth the name was experienced. Stationery etc. requirements were provided out of the census budget which was as usual passed and allotted by the Census Commissioner. A reasonable saving was made on cost of furniture. As almost all over requirements were obtained on loan only repairs and certain small purchases were made at the cost of the Census funds.

There was only one difficulty or handicap. We started late and we finished late. It was decided by the Government of Pakistan only in November, 1949 to hold a census in February 1951 and the Census office at Quetta was set up in June (instead of January) 1950. Methods of work were very much improved and modernized and the results produced will show that we were at this first Census of Pakistan able to present a more detailed statistical analysis of the population especially as regards economic characteristics. For the census of 1961 it is recommended that the Provincial Super-

intendent Census should start with a small office not later than 1st January 1960. The office should be fully set up and established by 1st March 1961 and the date for distribution of the complete census report should be 30th June 1963.

B. 29. Disposal of Census Record. The records have been disposed of as under:—

(1) The files of correspondence, instructions, accounts, sorters tickets, circle folders, compilation sheets, and drafts of tables etc. packed in marked boxes have been placed in the Baluchistan Secretariat.

(2) The Census maps of each district and the charge location code (showing details of the territorial units of census enumeration) have been sent to the office of the Census Commissioner Pakistan, Karachi for record.

B. 30. Acknowledgements. In conclusion, grateful appreciation is placed on record of the valuable work of those who contributed towards making this census a success. These are:—

Firstly, the public of Baluchistan who whether in cities or in remote tribal areas, whole heartedly cooperated with the Census staff and patiently answered their questions.

Secondly, the District Census Officers and the Enumeration staff who worked hard with one joint aim i.e. the timely and successful completion of the enumeration, and

Lastly, the Deputy Superintendent of Census Mr. Ghulam Hussain without whose efficiency and energy it would have been impossible to ensure the results achieved. He maintained a high standard of work during the different phases of the Census, right from the planning stage to the completion of the Report. Even after the close of the provincial office he continued hard work to the assistance of the Census Supdt. first for 2 months while on leave, and later for 4 months in addition to other duties in a very busy post.

CHAPTER 10

EAST BENGAL

SECTION I—ENUMERATION.

E. 1. Creation of the Provincial Census Office, Preliminary difficulties, and the tyranny of Census work : The Provincial Census Office of East Bengal was started in May, 1950. I was then working as the Deputy Commissioner of Sylhet on the Assam-East Pakistan border after having worked as the District Magistrate of Jessore on West Bengal border for 2 strenuous years. Inspite of personal difficulties hurried down to Dacca from Sylhet and took over immediately the duties of Provincial Census Superintendent, East Bengal. I was in indifferent health at that time and had no leave for sometime. Authorities controlling the future censuses may consider the appointment of the Provincial Census Superintendent well ahead and select a suitable officer who has recently enjoyed leave so that he may give his best to the Census Operation which will take all his time without break for at least 3 years. The Pakistan Census of 1951 has been cruel to some of the Provincial Superintendents and other Census Officers. The Provincial Superintendent of Census of one Province died in harness under its pressure. The P. S. C. of another province found the pressure too heavy for him and resigned his post to save himself from a complete breakdown; and the tyranny of census organisation brought mental troubles to a third Provincial Superintendent. I with high blood pressure and indifferent health remained in it to the end with the hope of fighting the census tyranny effectively and of recouping my broken and shattered health subsequently if possible.

E. 2. Accommodation and Furniture : When I joined my duties there was no accommodation available at Dacca either for the office or residence. None of the three methods of begging, borrowing and stealing proved effective for a few days. However, I continued submitting my needs officially to the authorities concerned and luckily was soon successful. Courtesy, politeness and firmness remained my guides throughout the census operation and they brought me success everywhere.

There was really a very serious dearth of accommodation at Dacca, the newly established capital of East Pakistan. But on my request the Chief Secretary to the Government of East Bengal (Chairman, Accommodation Board) very kindly favoured me with a suitable residential accommodation within a few days of my arrival and I gratefully acknowledge this favour. But no accommodation for the Provincial Census Office could be made available for some days. As both the Central and the Provincial Governments had given top priority to Census, the Chief Secretary and the Home Secretary (who supervised the Provincial Census Work) and the Secretary of the Buildings Department, East Bengal, very kindly gave priority and I am thankful to them. Accommodious shed inside the Eden Buildings (Secretariat) compound was allotted for the Provincial Census Office and an airy and well lighted room in the main Secretariat Building, near the Census Shed, was also given to the Census Superintendent. To enable us to do the census work at top speed and to give us facility to contact different Central and Provincial Offices and the Officers of various districts, the Deputy Secretary, Home (Common Services) Department, Government of East Bengal,

agreed to allow telephone installations at my residence, in my office room, and in the Census Shed where the Provincial Census Office was accommodated. In this matter the Deputy Secretary very kindly gave top priority to our needs.

In the beginning there was no furniture and no stationery of our own to serve our offices. Here again we were helped by departments of the Provincial Government and all essential things were lent to us. In June 1950, our Provincial Office, was thus enabled to start its work without any serious difficulty. The services of an experienced Head Assistant (Moulvi Abdul Majid) of the Home Department were placed with us. He got his grade pay and a special pay of Rs. 50/- p.m. with other permissible allowances from us during his deputation. After his appointment other necessary staff also were temporarily and gradually appointed by us.

E. 3. Shortages of time for preparation of enumeration: Appointment of an officer to assist: There was no time to lose after the Provincial Office was established. Preparation for enumeration had to be taken in hand at once. Extensive touring was required immediately to make people census minded, to organise census divisions, and to enlist and recruit census workers. When I was away, important work in the office often suffered. I could not for some time be given any officer as my personal Assistant. This handicap continued for months. After great efforts an experienced Deputy Collector (Mr. A. K. Ahmad Khan) was given to me in November, 1950 and when he took charge of the office, preparation for enumeration in districts and all preliminary census organisations could proved with speed and redoubled energy and I became more free to do field work. I may suggest here that in future censuses the Head Quarter Dy. Superintendent of Census (*i.e.* P.A.) should be appointed simultaneously with the appointment of the Provincial Census Director (Census Superintendent). The work of this first census of Pakistan, as stated above, started late. We had to fight against time. In such circumstances it was most unfortunate to find that the appointment of the P. A. was also much delayed. The success of a census depends to a very large extent on the amount of touring which the census Superintendent does during the organisation and enumeration periods. If success is to be achieved the Superintendent must be continuously on tour for several months before the census is actually taken. It is essential that his P. A. should be in his office to take the responsibility of making, and taking action on, such immediate decisions as are necessary during his absence. A personal assistant should always be a Gazetted Officer and must be a man of experience energy, commonsense and character with capacity to control a huge fluctuating staff. He must have some mathematical and statistical knowledge as well as a gift for detail and accuracy. His entertainment almost as soon as the Census Superintendent is appointed would in the long run lead to economy since he could at a very much earlier stage undertake the additional enquiries necessary for the report. He could for instance prepare matter for comparison with vital statistics, a note on the economic conditions during the decade and particulars of the condition in each police station area and census town which might throw light on changes of population as well as details of the changes in the estimated areas. His work during compilation and tabulation would also be made very much easier by his having had contact with the whole process of census from the beginning.

E. 4. Necessity of personal visits creation of District Organisation. Due to shortage of time for preparation for enumeration I had to make whirl-wind tours to prepare ground for a successful enumeration, to enlist the sympathy of local officials and non-officials and to help our men in the recruitment of good census workers. I visited every district, subdivision and important place and held mass meetings to make the people census conscious and to explain to them the necessity, utility and importance of this first census of our newly created state of Pakistan. I received help and co-operation everywhere. Only a few districts failed to appreciate the importance of the census and showed indifference to its work and organisation. Some of them however cared little for my requests and to bring home to them the importance of this top-

priority work the Chief Secretary, Government of East Bengal, and the Home Secretary very kindly issued D. O. letters and urgent orders to all District Magistrates (Copies printed at the end) asking them to give top priority to the Census work, to consider the orders of the P. S. C. as orders of the Government and to render all possible assistance to him and to the census organisation. The District Magistrates were told that they would be mainly responsible for the success of the census operation. Copies of these letters and orders were sent to the heads of all Departments, to all Sub-Divisional Officers and to other concerned, requesting them also to give top priority to census work and to render all possible assistance to the census Organisation. This worked miracle. After issue of these letters no slackness or indifference was seen anywhere and a very generous and full co-operation was available from almost all quarters.

E. 5. Transport. In the beginning transport facilities in some of the districts were not readily available. This difficulty vanished after the issue of the Chief Secretary's orders and all possible transport facilities were made available to the Provincial Superintendent of Census and other Census officers every where. I must note here my deep sense of gratitude to the Home Transport Department of the Government of East Bengal and all District Magistrates, to the Railways, and to the Steamer Companies for their help and co-operation. They gave us top priority in the use of their transport whenever needed. In the areas where there were motorable roads we were given cars or jeeps, and in the areas where road facilities were not available we were favoured with the use of steam or motor launches and when necessary were allowed the use of the Government aircraft which could land either on air-fields or rivers. This speedy air transport was extremely helpful and saved many break downs in the many riverain areas of East Pakistan. When very urgent census papers could not be delivered in time to certain areas, even through special messengers it was these aero-planes which came to our rescue. They were always made available in our emergencies on requisition. The European and Pakistani pilots, who helped us in such urgent air trips, were most courteous and obliging. In East Bengal, which so much interseeled by rivers and where road, train and steamer facilities are so limited, the use of such planes in census work which has to go like a clock, is vitally necessary. Moreover, during census operations the district and the subdivisional census officers in riverain areas should have permission (and be given preference) to use the Government steam and motor launches so as to complete the census programme of their area in scheduled time. Otherwise the remoter parts of their charges tend to be neglected. Some District Census Officers were not allowed the use of launches although there was no shortage of fuel and they were lying idle. Slow country boats are useless for long river journeys on census work.

E. 6. District Census Officers. As soon as it was decided to take a census in usual course in 1951 the Provincial Government asked the District Magistrates to suggest suitable and energetic Deputy Collectors for employment as District Census Officers. As census was considered a thankless task in which officers, inspite of a very hard duty, did not get any special pay or consideration, but on the other hand always faced financial difficulties, many officers avoided or tried to avoid census work. The result was that in some districts unsuitable officers were appointed as District Census Officers and had to be replaced later on. It cannot be denied that the duty of a District Census Officer (D. C. O.) in East Bengal is very hard and strenuous. They have to perform very important and responsible work. Only sincere and devoted officers with a keen sense of responsibility, who are not afraid of hard work and extensive touring, should be appointed to work as D. C. O's and these posts must be made attractive by attaching special pay, and special T. A. rules to them. The D. C. O's have to tour actively in their districts, which are mostly difficult for travelling purposes, and in the absence of special allowances they incur financial loss and hardship. D. C. O's have represented that they should be given a special pay of Rs. 100/- and be allowed first class travelling allowances, or at least the special pay and extra 50% T. A. given to Assistant Settlement Officers who have much smaller areas (one or two thanas) to manage and whose staff is smaller and not untrained. The selected D. C. O's who

are later on appointed as D. S. C's for more responsible works of sorting centres should get Rs. 150/- p.m. as special pay.

D. C. O's according to the present practice are paid by the Provincial Government. They start their census work as an addition to their normal duties, and it is only towards the middle or end of the work that they are allowed to give their full time and attention to the census. This arrangement proved un-satisfactory. D. C. O's should be released entirely for census work as soon as they are appointed. Possibly the Central Government should take over these officers from the beginning for exclusive employment in census work. In the resent census some D. C. O's made the excuse that they did not have enough time from their other duties to do important census work.

The census operation of the Chittagong Hill Tracts was previously managed by the Deputy Commissioner himself. The serving Deputy Commissioner, who came to Pakistan by option but who later on left Pakistan suddenly, was appointed as D. C. O., but he managed to get out of it and arranged the appointment of a subordinate officer of lower rank in his place. Consequent result was not at all happy. Chittagong Hill Tracts is a difficult district and its census should be managed by a senior officer such as Deputy Commissioner himself who commands respect and is above all influences and bias.

E. 7. **Conference of District Census Officers.** However, the delimitation of the different census areas was taken up as soon as the District Census Officers were appointed. The Provincial Superintendent of Census, after attending the Central Census Conference at Karachi in June 1950 called a conference of all the D. C. O's at Dacca. This was opened by the Chief Secretary and presided over by the Home Secretary. In this conference methods and procedures of the present census were explained and discussed. D. C. O's were given clearly to understand that census duties were to be completed strictly according to the Census Calendar (Annexure A of Code Part I) and the provisions of Code of Census Procedure Part I.

Advance copies of Census Procedure Code Part I giving the plan for the pre-enumeration period were hurriedly prepared at Karachi and reached us just in time for discussion in our Provincial conference. Its provisions were fully explained to all concerned and the D. C. O s were requested to go ahead at top speed with the formation of census divisions, the preparation of census registers and maps, and the recruitment of census staff. The provisions of this code and of the Census Act were widely published by census of mass public meetings, newspapers, Radio Pakistan and leaflets throughout the province. Training classes, with charts and diagrams, were held to prepare the census workers of all grades.

E. 8. **Census Divisions.** (*a*) *Districts.* The census districts generally coincided with the 17 administrative districts and a D.C.O. was appointed in each district to be in charge of the census operations. It will perhaps be not out of place to note here the huge size of districts in East Bengal. Mymensingh district alone has a greater population (58 lakhs) than the Provinces of Baluchistan (6 lakhs) and Sind (46 lakhs) taken together (excluding States). Some of the Sub-divisions of East Pakistan districts are much bigger census jobs than districts often are in West Pakistan. In future censuses East Bengal Sub-divisions should be made census districts to be managed by separate census officers under the supervision of the district Magistrates and the Provincial Superintendent of Census.

(*b*) *Charges.* Each census district was divided into several census charges. In rural areas Police Stations (thanas) formed charges. Each Municipality was constituted a separate charge without exception. Similarly many towns which were not municipalities were also made into charges. The Charge Superintendents were selected and appointed by the D. C. O's. In rural charges they were generally premanent Government officials whose normal duties gave them thana-wise jurisdiction and who were of sufficient seniority, influence and personality. They again in their turn selected suitable local men as supervisors for each census circle. In Chittagong Hill Tracts, in the absence of other suitable men likely to run the census successfully in the hilly areas, the Thana Officers were appointed as Charge Superintendents. But in all other districts they were the Sub-Registrars,

Co-operative Inspectors, Thana Agricultural Officers, Sub-Inspectors of Schools, Inspectors of Civil Supplies Department, Adjutants of the Ansar Organization, Revenue Officers, or similar officials. In big charges, where it was difficult for one officer to cope with the work, assistant charge superintendents were also appointed. In municipalities, the chairmen were appointed as the charge superintendents except where they were un-suitable for census work when responsible Government officers or influential and respectable non-officials of good standing and qualifications were chosen instead. In the municipalities superseded by Government their Executive Officers were appointed as Charge Superintendent unless unable to cope with the work when some other officer of the rank of a Dy. Collector or Sub-Dy. Collector was deputed for the purpose.

No particular Sub-Divisional Census Officer was appointed but the S. D. Os were asked to look after the census operation as part of their normal duty. As they were always heavily burdened it was not possible for many of them to give much attention to census work and they generally deputed another gazetted officer for the purpose. The Circle Officers in most districts were appointed as Assistant Census Officers for their respective circles, and the work done by them was most commendable.

(*c*) *Circles and Blocks.* After the formation of charges, their organization into circles and blocks was undertaken. Each village, however small, was a separate block. In sparely populated tracts there were not enough men for all the blocks formed under this rule. In such cases two or more blocks were allotted to the same enumerator, but he was asked to use separate papers for each and not to mix up figures of one village with the other.

Simultaneously with the formation of the circles and blocks, supervisors and enumerators were selected. In rural areas normally the union boards were the units adopted as circles and the most obvious choice for the supervisor was the president. Where the union board area was too big it was divided into two or more circles. Where no efficient or dependable local persons from the union board could found, primary licensing assistants, school teachers and similar gentlemen were appointed as supervisors. In the districts of Sylhet and Chittagong Hill Tracts no union board system has been introduced as yet. The chowkidari circles in Sylhet and mouzas in Chittagong Hill Tracts were therefore formed into census circles with their respective sarpanch or headmen as circle supervisors. In municipalities supervisors were generally drawn from the municipal commissioners, but the choice was not restricted to them. Other active and influential gentlemen commanding local respect and confidence were often also appointed. Assistant Supervisors were appointed where supervisors were found unable to manage the work unaided.

(*d*) *Special Census Divisions.* Important Railway Stations and the larger railway colonies were made into special charges and the smaller ones into separate circles and blocks according to size. Charge Superintendents, supervisors and enumerators were normally selected from among the railway staff.

The organization of steamer stations in river districts into census divisions followed, mutatis and mutandis, the same procedure as railway premises.

Cantonments were kept completely distinct from all adjacent areas. According to instructions large cantonments were constituted separate census charges.

At this census there was only one major port in East Bengal namely Chittagong. It was constituted a separate census charge and special rules were applied to the census of this port. The new Chalna port in Khulna was in making then and did not create any problem for us this time. Initially the D. C. O. Chittagong faced a lot of trouble in the selection of a Charge Superintendent for the port area. Officials of the port administration were reluctant to take up the job. Ultimately the matter was brought to the notice of the Ministry of Communications through the Census Commissioner, and the port Director was persuaded to nominate a Jetty Superintendent.

Jails, hospitals, lunatic asylums, boarding houses, police line and barracks were also made separate Census units. The officers-in-charge of such units or their nominees were normally appointed charge superintendents, supervisors or enumerators according to the size of their units.

(*e*) *Number of Census Divisions.* The schedule below shows the number of census officers of different categories employed in the province of East Bengal for 1951 census.

Designation	Number	Jurisdiction.
P. S. C.	1	The province.
D. C. Os	17	Districts.
Charge Supdts.	550	Census charges.
Circle Supervisors	6887	,, circles.
Enumerators and Addl. Enumerators	1,07,196	.. ,, blocks.

Reserve enumerators were also recruited and trained for use in emergencies.

EB. 9. (*e*) The following chart shows the census divisions by districts with the name and age of the District Census Officers in East Pakistan in 1951 Census:—

Name of the Districts.	Name of D.C.O's with their age.	Charges	Circles	Blocks.
1. Dinajpur	Mr. Monawar Hossain Choudhury, Dy. Magte. (50)	30	354	3,882
2. Rangpur	Mr. Fazlul Azim, M. A., Dy. Magte. (58)	43	550	6,720
3. Bogra	Mr. K. M. Hossain, B. A., Dy. Magistrate (56)	19	148	3,149
4. Rajshahi	Mr. A. K. Choudhury, M. A. Dy. Magistrate (40)	35	352	6,600
5. Pabna	Mr. Nasiruddin Ahmad, Dy. Magistrate (48)	25	357	3,794
6. Kushtia	Mr. Md. Taher B. A., Dy. Magistrate (55)	24	238	2,030
7. Jessore	Mr. Md. Badiul Alam, M. A., Dy. Magte. (31)	25	393	4,424
8. Khulna (including Sundarban)	Mr. A. Z. Khan, Dy. Magte. (53)	29	304	3,953
9. Bakarganj	Mr. A. S. M. Fazlur Rahman, B. L. Dy. Magte. (41)	40	338	7,332
10. Faridpur	Mr. S. A. Salam, B. A., Dy. Magte. (38)	26	262	5,756
11. Dacca	Mr. Mafizur Rehman, M. A., Sub-Dy. Magte. (40)	43	395	8,937
12. Mymensingh	Mr. A. Basit B. A., Dy. Magte. (47)	64	642	12,786
13. Sylhet	Mr. Azizus Samad, B. A., Dy. Magte. (44)	57	1,180	10,176
14. Tippera	Mr. Akbar Kabir, M. A., Dy. Magte. (38)	32	403	8,674
15. Noakhali	Mr. A. Aziz, M. A. Dy. Magistrate (48)	18	154	4,904
16. Chittagong	Mr. Bahauddin Ahmad, M. A., Dy. Magte. (31)	28	238	4,148
17. Chittagong Hill Tracts	Mr. Balabhadra Talukder, Sub-Dy. Magte. (51)	12	384	535
		550	6,887	97,800

E. 9. Voluntary Census Workers: I am pleased to note here that except in Chittagong Hill Tracts and in a few other backward areas there was no dearth of suitable, educated voluntary supervisors and enumerators who were recruited from all communities. Once the men were selected, trained and appointed they worked enthusiastically and justified their selection. Greatest credit and praise go to them as they worked selflessly and voluntarily. A very large number of them were men of good families, high social status and education. Hired men, whose total cost would have been huge, could never have produced such a satisfactory work. Their contribution to the completion of census on a voluntary basis was great and all thanks are due to them.

E. 10. Maps and records of census organisation : General Village or Town Registers, maps, Charge Registers, Household Lists, Cottage Industries Lists and other records of the Census Organisation of the East Bengal Province were properly prepared. In the past such records, after the census offices were closed were kept with the Director of Land Records, Bengal. Census records of 1951 census will also remain in his safe custody so long a permanent Census Department is not created.

E. 11. Census Date : For over half a century the census has been taken in the month of February which has actually been found to be the most convenient and suitable time. There are no rains, storms, not scorching heat during this time in East Bengal. This month presents all necessary facilities for road and river traffic. Weather and climate generally remain pleasant, and convenient for outdoor work. Whatever may be the case in other parts of Pakistan regarding outdoor census work in February, in East Bengal this is the only suitable time for it.

E. 12. House Listing arrangements : For the Houses Numbering, House Listing, etc. advance estimates of the total quantity of census forms required by East Bengal had been made and indents on the office of the Census Commissioner of Pakistan submitted. After House Listing detailed indents were submitted showing the exact address and quantity required for each consignment. Separate indents were used for each form as detailed under para 71 Code Part I. Some of them came direct from the C. C's Office from Karachi but it was found that this caused delay and proved to be expensive. It was therefore decided that all forms, slip-pads, instructions to enumerators etc. for East Bengal should so far practicable be printed and supplied by the Deputy Controller of Printing and Stationery, Dacca under advice of the Controller of Printing and Stationery, Pakistan, Karachi. This decision proved very helpful and saved a heavy expenditure and risk of break down.

E. 13. Instructions and Publicity. We followed the congested census programme very well with everything ready at our hand. Test slip pads and Questionnaires in English came from Karachi and gazetted officers made a test everywhere and submitted their reports about their suitability. The pros and cons of the test slips were reported to C. C. after which the final form of enumeration slip and questionnaire were settled and training of Census Officers started.

The D. C. Os held conferences with their Charge Superintendents and they in turn collected their supervisors in different meetings and in central training classes. They held training classes of enumerators and gave them intensive and conscientious training, using the large wall diagrams and practice slips etc. according to Census Code Part II.

Each Census Officer held propaganda meetings in his areas in co-operation with local officers and leading people and gave wide publicity to the coming census operations. These meetings brought home to the people clearly the importance, necessity and utility of the census and made them ready to co-operate with the census workers. These public meetings, addressed both by officials and local leading non-officials, were most effective in making the people census conscious and preparing the ground for enumeration. They were cent per cent successful at places where District Magistrates and Sub-Divisional Officer's co-operation was available. Circle Officers in their circles did a lot of useful census propaganda.

Census posters and leaflets printed centrally, provincially or locally were widely distributed and

exhibited. A census wall calendar was printed with important information in its margins. This became very popular and was most effective. All newspapers co-operated freely and gave full publicity to census matters. This made at least the educated persons fully conscious of the coming census operation. The Radio Pakistan was another useful and effective means through which census was popularised. Appealing features and talks on census were broadcast. The importance and utility of each question to be asked during the censes were fully explained and objections and criticisms raised against them were fully met to the satisfaction of the public.

E. 14. **House Numbering.** There was some protest made by the house-owners during the house numbering in some areas on the ground that it spoiled the appearance of the house. Fortunately such protests were confined only to few areas and even there did not last long. The enumerators were advised not to use unnecessarily big and ugly figures although the identifying numbers had to be bold enough not to escape notice during enumeration.

Coaltar and other paints used for numbering the houses were obtained locally by almost all the enumerators and supervisors. In rural areas the union boards mostly supplied them and in municipal areas the municipality concerned made arrangements. A good number of enumerators themselves procured the necessary paints with the help of leading local persons. Census Department was seldom required to spend any money for these supplies.

Excepting census forms, slips, etc. other materials and stationery were arranged by the enumerators and supervisors locally. They did it most willingly; there was a really national spirit and great enthusiasm was displayed in the performance of this duty.

E. 15. **Printing and Distribution of Slips etc.** Excepting English and Urdu versions of census slips, all slips Enumerator's Instructions, circulars etc. and most of the other census matter was printed at Dacca and distributed by the Deputy Controller of Printing to our census officers in each district packed according to the chart of distribution supplied to him by us. Census slips were mostly bound in pads of one hundred slips, but a large number of pads of 25 slips each were also prepared. This facilitated the distribution and avoided wastage. The system of distribution worked very well. Only in very few cases were the railway wagons containing census material delayed or misdirected. Even in these few cases timely action by all concerned saved the situation and none was too late. The railway or steamer receipts for the parcels of forms sent to different districts and charges were handed over to us by the Deputy Controller. We maintained a register of despatches and forwarded to the consignees "despatch and acknowledgement" forms. The consignees on receiving the railway or steamer receipts contacted the Station Masters and they checked every consignment before taking delivery. Any shortage or damage was noted on the railway receipts before the delivery was taken and on checking the details, the Census Despatch and Acknowledgement receipts were returned to P. S. Cs office with necessary entries. All shortages, spoilage, wastage and deficiencies were reported to the sender and to the Charge Superintendents, D. C. Os and P. S. Cs and prompt action was taken to replace them. Reserve stocks of census slips pads were kept with the Charge Superintendents, D. C. Os and P. S. Cs to meet emergencies. Fortunately there were very few cases of shortage, loss, or damage requiring the use of reserve stocks.

E. 16. Enumeration in action. In a census operation the enumerator is the crucial man and the actual taker of the census. Other census officer are simply their instructors, supervisors, and controllers. Accuracy mainly depends on the honesty of the work done by the enumerators and on their keenness and enthusiasm. Where these men really took care to receive their training fully, read the Enumerators Instruction Leaflet carefully and repeatedly, and understand the questions and their real implication and meaning clearly, and also to follow the census instructions properly, the result was simply splendid.

The maximum population of an enumerator's

block was 500 persons. The enumerator had to fill up one census slip for each member of this population and complete the enumeration of the whole block within the prescribed period. The best time for the enumerators visits both in rural and urban areas was in the morning and in the evening when the people were generally at home. In case of pardanashin women, people away, and absent members of the household, enumeration was made on information given by the head of the household or any other responsible representative.

In case of illness of working enumerators trained enumerators from the area reserves took their places and completed the work. The public, especially in rural areas gave the fullest co-operation. Urban people tended to indifference and callousness in the beginning but by personal contact and influence of Census and District authorities they were persuaded to co-operate.

The worst place Dacca, where there was a complete lack of interest and enthusiasm and where even the quota of enumerators was not fully available. Unfortunately this absence of interest was marked not only among the public but also in officials. When all efforts to get sufficient voluntary enumerators from the public failed, at the request of the Provincial Superintendent of Census, Government servants were commandeered from different government offices and hurriedly trained. They rose to the occasion and saved a very serious situation. The census in Dacca City would have failed without their timely assistance.

Dacca gave trouble from the very beginning. The Executive Officer of the superseded Dacca Municipality was unable to serve as its Charge Superintendent, the two Sadar S. D. Os failed to take much interest in Census work and the first D. C. O. of Dacca had to be removed for slackness. It is essential in future censuses to appoint right from the start a Senior Deputy Collector having a real sense of duty and responsibility as the D. C. O. of Dacca district and also a younger officer of the same type as a Special Census Officer for Dacca city—the capital of the province.

For the enumeration of the floating population of Dacca and other places and the port areas, the method adopted was the synchronous method of enumeration. The enumerators were specially trained to handle the enumeration of these people within one night. In port areas the masters of the vessels were served with timely notice by the nautical surveyor and they co-operated splendidly. Launches and Sampans were engaged for the movement of the enumerators during the night.

The system of Interim Reports, ordered in para. 7.15 of Census Code Part II from Enumerators upwards through the Census channels of control to the P. S. C. eventually to the C. C. provided complete information and full control over the work during the enumeration period. This system created alertness, healthy rivalry, and great enthusiasm amongst the enumerators and others concerned. The work of enumeration went like a clock and was completed successfully without any breakdown or serious mishap. There was seldom any complaint of false statement or suppression of correct informations from any area except in the case of languages.

E. 17. Supervision during enumeration : Although very extensive touring was done by me in the province during the preparation and pre-enumeration periods I personally toured many different areas again during the enumeration period. Each District Census Officer was also constantly on the move during this period and personally inspected the work of as many enumerators as he possible could. The Charge Superintendents and the Supervisors were actually on the spot constantly in their areas and inspected and supervised the enumeration. They had to solve all difficulties on the spot and remove obstacles if any from the way of peaceful and smooth enumeration. Besides these officers there were influential and respectable local leaders whose honorary services were obtained to help the enumerators and not only to influence the local people to answer honestly and give correct information but also to see that the enumeration went peacefully and smoothly without interference by any one. The local personages took pride in this

honorary work and did it gladly. They proved very helpful indeed.

Every enumerator kept a record during the enumeration period of the number of male and female persons he had enumerated daily and compared the figures with the household list to make sure that differences, if any, were reasonably explained. He questioned the households where figures seemed unlikely or any other anomally was suspected. These things were checked by the inspecting officers also to ensure accuracy. After the census night (between 28th February and 1st of March) he took a last look over his slips and the totals in his report and where necessary made fresh checks.

E. 18. *Collection of the results.* In the Enumerator's Instructions leaflet a form was given for submission of a report by the enumerators to their supervisors at once after the enumeration period was over and not later than the 3rd of March, 1951.

The Enumerator gave the household list and all the slip pads to the Supervisor with his report. This report was a certificate in which the enumerator stated categorically that he had taken the census completely in his block in accordance with the instructions. It also stated what papers were handed over by him to his supervisor. The supervisor in his turn checked the papers and granted a receipt to the enumerator in the prescribed form. After receiving his enumerator's reports each supervisor made out his abstract in Form H of the Census Code Part II and made it over personally to his Charge Superintendent along with the pads of slips etc. before the 6th of March, 1951. The papers and figures of the abstract and enumerator's report were again checked at the charge superintendent's office. The latter prepared the Provincial summary of census results (Appendix I of Census Code Part II) and forwarded it to their S. D. O's who had to add the figures for Area. As in East Bengal areas are generally expressed in acres and not in square miles the S. D. O's completed Column C in the charge summary forms in acres and subsequently the areas were converted into square miles in the P. S. C's office. I am sorry to say, however, that this column was left unfilled by many S. D. Os and area not supplied had to be collected later at considerable trouble.

The Charge Superintendents reported to their D. C. Os. direct in writing that they had sent their summaries to the S. D. Os delivered to their respective D. C. Os all the slip pads and records of their charges.

E. 19. Publication of Preliminary Results. All D. C. Os had collected the results and papers from their Charge Superintendents. By the 12th of March, 1951, and by the 15th of March they had all telegraphed the provisional results of the census of their districts to the P. S. C., and to the Census Commissioner in the prescribed form at Appendix J of Code Part II. The P. S. C. also telegraphed the total provisional results of East Bengal to the Census Commissioner on 15th March 1951 and, under instruction, published them in a Press Note in all the local papers on 17th April 1951. These provisional figures were subsequently printed and published in a bulletin form (Census Bulletin No. I) on 30th April 1951. There was great demand for provisional figures of different communities, but as there was no column for the same in the summaries these figures were not available for publication in Census Bulletin No. 1 or in the official Press Note.

E. 20. Transportation of slips to Sorting Centre. With the termination of enumeration four zonal Hand Sorting Centres were started at Dacca, Comilla, Barisal and Rajshahi. The Dacca centre dealt with the slips of Dacca and Mymensingh districts, numbering 98,87,047 ; Comilla centre dealt with the slips of Comilla Sylhet, Noakhali, Chittagong and Chittagong Hill Tracts districts numbering 1,17,45,629 ; Barisal centre and Barisal, Faridpur, Khulna and Jessore under it with 1,01,53,203 slips ; and Rajshahi was given Rajshahi, Bogra, Pabna, Kushtia, Rangpur and Dinajpur Districts and had to sort 1,02,76,732 slips. Subsequently a Machine Sorting Centre was also started at Dacca to sort certain important data which could not be done by Hand Sorting.

When the Provisional results were despatched and after each D. C. O. has dealt with his own work on the pads and documents in respect of each charge, he made over these census materials charge by charge to the Superintendent of the zonal Sorting Centre appointed to handle his district. These were despatched under special arrangement and with the greatest possible care.

The D. C. Os sent detailed lists in duplicate with all deliveries of documents and census materials to the Sorting Centre. One copy of the lists was signed by the Superintendent of Sorting Centre concerned and returned as an acknowledgement. Each Superintendent was provided with suitable and safe accommodation for his sorting centre which was fully equipped with the necessary furniture to keep the census slips and other documents safely. In Dacca the Provincial Government very kindly spared the whole of shed No. 16 and part of Shed No. 15 within the Secretariat compound. In Comilla the District Magistrate was pleased to allot one entire wing in the pucca buildings of the collectorate. The Rajshahi District Magistrate made available spacious semi-pucca accommodation attached to the Collectorate. Only Barisal Centre was unfortunate. It had to make two changes before suitable accommodation, after much negotiations could be had at the Town Hall. However, when the sorting work started in full swing all centres went very well. What furniture etc. could not be borrowed from local Government offices had to be purchased. Special sorting containers, pigeon-holes, trays etc. had in any case to be purchased at all the centres.

E. 21. P. S. Cs own office in the organization and control of enumeration : I have already explained how the Provincial Office was organised and established. An experienced Upper Division Assistant was lent by the Home (Common Services) Department of the Provincial Government to work as the Head Assistant. Obtaining a good stenographer was difficult and the first two persons deserted. At last a good young man, obtained from another Government department, remained with me and proved really helpful. The P. S. C's office, being a temporary establishment attracted no experienced men and we had to recruit raw hands, possessing the requisite educational qualification, and train them. Some of these, when trained, also immediately got permanent or more lucrative jobs elsewhere. However, no work connected with the supply of census slips and other materials to the districts and charges, was allowed to suffer. Where necessary our own men escorted slip pads etc. to their destinations.

Due to this constant change of personal and the pressure of work the correspondence section of the P. S. C's office got into arrears, but, thanks to the strictness and hard work of of my Personal Assistant, Mr. A. K. Ahmed Khan (the Deputy Superintendent of Census, H. Q.) this was not allowed to continue long. I received immense help from him and I am most grateful to him for his full co-operation and valuable assistance. His experience in statistical work solved many of our intricate problems. The forward Diary system was insisted upon and all concerned were kept a chart of their duties. This system kept every one alert.

Leave of any nature that could be avoided was discouraged. There was no breathing time for anyone during the pre-enumeration period. P. S. C's office worked till late hours every day and officers remained on duty daily from early morning till late at night to meet all emergencies. The Telephones of the P. S. C. and of his P. A. served an essential need and were always busy with urgent calls.

A list of officers and staff attached to the P. S. C's office at different stages with details of pay etc. will be found appended at the end of this report.

I may note here that it was extremely difficult for us, in the beginning of census organization this time to get hold of the Reports, Hand books, etc. connected with previous censuses. This was due to (1) partition and (2) absence of a permanent census office. I understand the latter had caused similar troubles in previous censuses. Copies of some reports etc. could only be obtained after much difficulty while many necessary papers

could not be had at all. I would suggest that there should be either a separate and permanent census office with its head office at the Centre and branch offices at the Provincial Head Quarters or the census organisation should be incorporated into some continuing office of the central and provincial governments or a special census office dealing with all census including the Agricultural census, production census, etc. might be created.

In order to start the Provincial office properly and keep it free from the trouble of desertion I strongly recommend that in future censuses :—

(*i*) Special pay should be given not only to gazetted officers but to all full time census staff. In the case of ministerial staff 25% of the basic pay would be a reasonable level for special pay. This would go a great way to avoid difficulties which have been met with in obtaining or retaining suitable staff in temporary census offices.

(*ii*) Census Office staff should be supplied as for as possible from the permanent Government offices.

(*iii*) In case suitable and experienced hands cannot be spared by any government office, good and dependable persons recruited from outside should be given a duty allowance equal to 25% of their grade pay. This also will remove the difficulties discussed above and will attract really good outside people who will not easily be persuaded to leave our office for jobs elsewhere.

E. 22. The work of census organisation at District Level: It was a difficult job to organise the District Census offices during this operation. Finding the work hard and meticulous and carrying no extra pay some of the D. C. Os failed to pull their weight in the beginning. I have already mentioned that they grumbled at the stringent T. A. Rules by which they suffered financial loss.

Another reason for dissatisfaction was that the D. C. Os had no clerk of their own. They depended on the mercy of the District Magistrate and his Office Superintendent and the latter was not always sympathetic. Some of them did not appreciate the importance of the work and kept the District Census Officers without suitable accommodation or clerical assistance. When personal requests were made by the P. S. C. to District Magistrate some part-time clerks were made available to D. C. O., but their important typing work often did not receive the essential priority. This difficulty continued at many places for a long time and it was only towards the end that, after repeated requests, every D. C. O. had the services of full time clerks and could get his reports etc. typed. I strongly recommend that in future censuses every D. C. O. should be provided with a full time typist-clerk from the very beginning on the same terms and conditions as recommended above. Later on the District Magistrate, as usual, should be requested to depute the necessary staff from his office to the D. C. O. to help in the completion of the census work of his district.

In many districts the D. C. O. were not provided with suitable rooms for themselves or for their offices. There was no difficulty where the District Magistrate himself took a keen interest in the census work of his district and considered it his duty to guide and help his D. C. O. in running the census operation properly. But in certain places these difficulties continued until the District Magistrate received the Chief Secretary's order that they were mainly responsible for the success of the census and that top priority should be given to it. In future censuses in the very beginning an order should be passed by the Provincial Government to all District Magistrates requiring them to give suitable office accommodation to the District Census office and to accord the full facility and assistance to the D. C. O's work.

E. 23. The work of Charge Superintendents, Circle Supervisors and Enumerators: The Circle Supervisors and Enumerators discharged their duties creditably almost everywhere. There was

hardly any trouble about them anywhere except in Dacca City. But the Charge Superintendents became a problem. This time each thana (and not each union as before) was a charge and instead of non-official charge superintendents it was made a rule that touring government servants having jurisdiction over the thana concerned should be appointed as Charge Superintendents. It was very difficult to find a suitable and influential government servants of this type in every charge (thana). Charge Superintendents had to be selected from the Sub-Registrars, School Inspectors, Co-operative Inspectors, Inspectors and Assistant Inspectors of Agriculture, etc. Some of them did not usually toured while others had very small funds allotted by their departments for their travelling allowance. The Census Department had not made any provision to pay their T. A. bills. This anomalous position created great agitation and to some extent was the cause of a certain amount of unsatisfactory supervision of the census organisation and enumeration by the Charge Superintendents in certain areas. There were not sufficient Circle Officers (Sub-Deputy Collectors) to do this work and the District Magistrate also had no extra officers to depute to the Charges to work as Charge Superintendents. In future censuses if the same policy of appointing Government officers as Charge Superintendents is adopted sufficient funds to meet the T. A. of the Charge Superintendents should be provided by the centre or the provincial Government should allow their Education, Registration, Agriculture and other departments concerned to pass reasonable claims for T. A. for their officers for census duties.

E. 24. **Comparison of the organisation in this census with that of past censuses:** As a matter of fact this census followed 1941 census organisation to a large extent, except that instead of unions, thanas formed charges this time. In Chittagong Hill Tracts thanas formed charges in 1941 also and O/Cs of thanas were Charge Superintendents in both the censuses. This district is backward and hilly. No other suitable men to work as charge Superintendents were available there. The Headmen of the villages acted as supervisors. With the partition Sylhet, a district of Assam, came to East Bengal. In this district the Union Board system has not yet been introduced. There are small circles (much smaller than unions) each under a sarpanch. To keep uniformity with the rest of East Bengal, as well as to have the guidance and supervision of responsible government officers, thanas were made the charges in Sylhet district also. The P. U. Bs., Sarpanches, and Headmen were, however, not left out of the picture, They and other responsible and influential local non-officials were appointed as supervisors. The number of blocks in a census circle was also reduced in this census to obtain a more careful and closer supervision. This necessitated the appointment of independent or additional supervisors. Similarly the size of the block was also reduced this time necessitating the appointment of extra enumerators for the same compact area. But it is certain that the result achieved by such changes is more accurate and more satisfactory. There is another reason also for better work and greater accuracy this time. The census workers, especially the enumerators who were the backbone of the census operation, showed this time greater enthusiasm and zeal; they considered the work as a National Duty and they performed their duties as selfless national volunteers working for the interest of their own Nation and Independent State.

E. 25. Summary of Recommendations for future guidance.

A.—**Officers and staff.**

(1) The Provincial Census Officer and his P. A. (D. S. C., H. Q.) should be appointed at least 18 months before the time of actual enumeration and the Provincial Census Office should start working simultaneously with his appointment (Ref. para 1.5).

(2) (*a*) The census work should be given top priority and the orders of the Provincial Superintendent of Census should be treated as Government's order (Ref. 1.6a).

(*b*) Priority also should be given to the need of accommodation and transport for Provincial, Zonal and District Census Offices, including residential quarters.

(*c*) A. D. O. letter from the Chief Secretary and a circular order from the Provincial Government to all District Officers regarding the above in the very beginning will be very helpful. [Ref. 1.6(*a*) (*b*)].

(3) The Provincial Superintendent of Census should have the position of a Head of the Department. This will facilitate and expedite office and other organisations and avoid delays caused in obtaining sanction or approval about details of expenditure from the centre. After provisions in Census Budgets under different heads are made the P.S.Cs should be left to be responsible for the details and to keep expenditure within the provision. Of course for an extra or supplementary grant, if and when necessary, he must approach the Census Commissioner.

(4) The designation of Provincial Superintendent of Census is unsuitable. It should be changed to some other designation which would indicate the true status of the officer. It may be Director of Census Operation or Deputy Census Commissioner.

(5) The Provincial Superintendent of Census, as in the past, should be given a car allowance to manage his work satisfactorily and energetically. Failing that one Government car or jeep should be exclusively placed under the disposal of the P. S. C. Without such facility it is almost impossible to manage the work.

(6) A special pay of Rs. 100/- p.m. should be given to all District Census Officers and a special pay of Rs. 150/- p.m. to all Deputy Superintendents of Census in-charge of sorting centres, compilation and tabulation. They should get first class touring facilities or at least the special rates allowed to the Assistant Settlement officers (Ref. 1.7).

(7) The designation of the Deputy Collector working as Personal Assistant to the Census Superintendent is disliked by some people. He is always a Deputy Collector and a gazetted officer. In the Centre the P. As. of superior officers are generally their stenographers. On certain occasions confusion and misunderstanding was created by this designation I suggest that he may be called the Deputy Superintendent of Census, Head-Quarter and he should be granted the special pay of Rs. 150/- p.m. and other permissible allowances to make the post attractive otherwise it becomes a problem to get a willing officer to work in this post demanding a very hard and strenuous duty continuously for more than 3 years. (Ref. 1.5).

(8) Special pay should be given to non-gazetted officers also. 25% of the basic pay would be a reasonable level (Ref. 1.47).

(9) Census office staff should be obtained as far as possible on deputation from other civil establishments with special pay as stated above (Ref. 1.47).

In case all our ministerial posts fail to be filled up by suitable and experienced hands obtained from local government offices good and dependable persons should be recruited from outside and they also should be given a duty allowance equal to 25% of their grade pay to attract and retain really good outsiders. (Ref. 1.47).

B.—Methods of working

(1) The duty of de-limiting enumeration blocks should be the responsibility of the District Census Officers.

(2) Blocks should be as uniform as possible in population. Bigger villages should be split up in more than one blocks—total figures for the complete village to be collected together later on (Ref. 1.11).

(3) House-listing and house-numbering are essential for an accurate census (Ref. 1.28).

(4) (*a*) The individual slip system operated successfully, and unless conditions or requirements have changed greatly, it should be continued.

(*b*) The occupation questions were not always understood. They must be simplified.

(*c*) Individual slips cannot provide data on family structure—the Household list might be so designed as to remedy this.

(5) If it can be so organised as to avoid serious difficulty during organisation and enumeration and in the collection of results, and if no increase of work be created during sorting, self-enumeration household schedules forms could be tried in the next census for use by reliable and responsible literate persons. But my own conviction is that it would be risky. The country is not yet sufficiently ripe for this great responsibility.

(6) Hand sorting may be organised on a district basis upto the level to which it was carried in the present census in the "circle sort". This method perhaps will be more useful and helpful and it may do away with the necessity of Zonal Hand Sorting Centres. It is expected to ensure greater accuracy and will, in any case, facilitate correction of bad enumeration slips. (Ref. 1.21).

After district sorting the slips should go into Provincial Sorting Centres, which may expedite the work by using punched-card machine methods. But arrangement for good punching and sorting machines must be made complete before the work in the hand sorting centres are finished. (Ref. 1.22).

(7) The Preliminary Report should be designed to give information regarding the strength of communities if possible. (Reference 1.38).

(8) In future censuses the previous practice of appointing the Deputy Commissioner of Chittagong Hill Tracts himself as District Census Officer of that district should continue. A careful watch on the census operation of this border hilly district will also be necessary.

An active, tactful and experienced officer must be appointed as Special Census Officer for the City of Dacca from the very beginning (Ref. 1.31).

(9) Adequate transport facilities for the P. S. C., D. S. Cs. and all D. C. Os, in their respective areas should be provided. not only Government jeeps and cars but Government steam or motor launches, and occasionally Government planes should be allotted as and when required, Government may ask all District Magistrates and Departmental heads to allow the use of their means of transport for census work. [Ref. 1.6(b)].

(10) Census slips must be printed and bound in pads of 25 to 100 according to necessity by the beginning of November, 1960 at least. Their distribution in East Pakistan is difficult and many obstacles have to be crossed before the slip pads reach different districts, thanas (charges) and other units. The distribution should be complete by 31-12-60.

To meet emergencies, reserves of census slips should be with different census officers by 31-12-1960, according to the ratio laid down in para 7-10 of Census Code Part II.

(11) In future censuses in East Bengal each Sub-Division should be a Census District.

(12) Lists of good workers of all ranks temporarily appointed in the Census Department should be sent in proper time to all Government Offices with a request to absorb them in suitable posts. This will help the P. S. C. and other Census Officers in recruiting man in future censuses as well. Such steps were very successful this time.

(13) The District Census Officers should be given the services of a full time clerk from the very beginning (Ref. 1.49).

(14) If non-touring Government officers, or non-officials, are appointed to work as Charge Superintendents, funds should be provided either provincially or centrally for their T. A.

SECTION II—SORTING.

E. 26. Hand Sorting Centres: Organisation, size and location: The sorting operation in East Bengal was done in four hand sorting centres and one machine centre. Each of the hand sorting centres dealt with the slips for specific geographical areas known as its "zone". They were located at Dacca, Barisal, Comilla and Rajshahi. North-Eastern parts

of East Bengal comprising the districts of Dacca and Mymensingh was Zone No. 1 and its slips were sorted at the Dacca centre; South-Western parts of East Bengal comprising the districts of Faridpur, Barisal, Khulna and Jessore was Zone No. 2 and its slips were sorted at the Barisal Centre; South-Eastern parts of East Bengal comprising the districts of Tippera, Noakhali, Sylhet, Chittagong and Chittagong Hill Tracts was Zone No. 3 and its slips were sorted at the Comilla Centre; the North-Western parts of East Bengal comprising the districts of Rajshahi, Dinajpur, Rangpur, Pabna, Kushtia and Bogra was Zone No. 4 and its slips were sorted at the Rajshahi Centre. The Rajshahi Zone was slightly larger than the others. Each zone was divided into series of tabulating "regions" and sorting was generally done regionwise.

The Machine Centre was located at Dacca and took over the slips of the Non-Agricultural Labour Force (NALF) as soon as they had been segregated in the hand sorting centres for preparation of the occupational and economic tables in respect of this portion of the population. The machine centre moreover, dealt with all slips for Dacca, Narayanganj, Chittagong and Barisal Municipalities.

Dacca machine centre had also to punch and sort the Cottage Industries data for both East and West Pakistan (excepting Baluchistan and N.W.F.P.) from coded schedules sent by the P.S. Cs. concerned.

E. 27. **Recruitment of staff:** Each hand sorting centre was provided with necessary office staff, Chief Inspector, Inspectors, Supervisors and Sorters as sanctioned by the Census Commissioner according to the volume of work. The staff worked under the direct control of a Deputy Superintendent of Census who was a Deputy Collector, chosen from those who had acted as D. C. Os. The size of the staff was determined on certain assumptions regarding the speed of work. An overall calculation fixed the number of sorters required at about 10 per million population. Supervising, inspecting and compiling staff was estimated proportionately for each sorting centre. With the progress of work some adjustments were made in the size of the staff. During the operation some Compilers (about 10) were deputed to each centre by the Provincial Office to help the staff.

The staff were appointed on a temporary basis for specified periods. They were not all appointed at one time but by batches as the work progressed. The appointments were made liable to termination without notice for unsatisfactory work or as the work was completed. They were recruited from amongst experienced hands of other offices or outsiders, preference being given to those who had worked in the present or past census operations. In addition to the sanctioned monthly pay, the sorting staff were allowed a bonus pro-rata to their out put of satisfactory work.

E. 28. **Equipment:** A small financial allotment was made to the P. S. C. for the provision of essential furniture and equipment for hand sorting centres. As the centres were to be in operation for a few months only, out-right purchases of the articles required were avoided as far as possible. Normal articles of furniture such as desks, tables, chairs were, wherever possible, borrowed from Government offices. Where it was not possible to borrow, hiring from dealers and private owners was attempted but with little success. Equipment and furniture, when specially made, was constructed as simply as possible of local materials and with a view to easy sale when they were not required.

D. S. C's office staff, Inspectors and Compilers were provided with chairs and tables. At Comilla centre benches could be obtained for the sorters but at other centres they were made to sit on the floor on mats, but it was with great difficulty that they could be persuaded to do so. Some sorters left the job out of resentment.

In each centre arrangements for racks, pigeonholes and containers for slips had to be made. In some centres racks could be borrowed but in others they were very successfully constructed of bamboo frame-work. Pigeon-holes (divided boxes) for sorting purpose, and containers for keeping the sorted slips, were made locally.

E. 29. **Instruction of staff:** The sorting work could not be started simultaneously with the rceruitment of the staff in the sorting centres. Before taking up the work they required to be carefully trained in their duties. Each member of the office staff, every inspector and every compiler was given a copy of the chapters of

Code of Census Procedure Part III (CCP3) which related to his work. Classes of instruction were organised in the centre; the work was explained and practised and fully discussed. Compilers and Inspectors were instructed by the D. S. Cs, Sorters and Supervisors were gradually introduced to each stage of their work by personal instructions from inspectors and compilers. Inspectors watched them at work and compilers worked alongside them until they were sufficiently competent to be left alone.

E. 30. Code Part III: Sorters' Tickets : The instructions in CCP. 3 were sufficiently clear in detail to require no comment and such difficulties as were experienced in following them were due mostly to misunderstandings which need not have arisen.

The Sorters' tickets were specially ruled forms on which the sorter recorded the results of sorting and counting operations. Forms were provided for each sort and detailed instructions as to how they should be filled up were incorporated in the CCP. 3. The forms were suitable and no major difficulty was felt.

The hand sorting procedure was split up into different phases. Block sort was part A of phase one. An examination of slips took place before the staple was removed from the pads. After the slips were scrutinized they were passed to the sorters for the block sort.

All the phases were smoothly done in different centres according to the instructions in CCP. 3. Whenever any difficulty was faced, the same was clarified by further reference to C. C. The work involved in phase I was the heaviest and was the most important part of the operation. This phase was made more complicated by the fact that the religious tables (Table 6) were wanted urgently and had to be prepared before the Circle Sort (part B of phase I) could be completed as planned. The workings dealing with communities had therefore to be done first leaving aside the remaining workings to be dealt with after the religious breakdown was over. This involved serious dislocation in the proper arrangement and storage of the slips by different categories. As the slips of the same circles were required to be handled twice, once, for religious break-down and again for completing the circle sort, the time taken for this sort was much more than what was anticipated. The next big task was phase IV. The adoption of the sampling technique was a relieving feature in this phase but, as in the case of circle sort, an additional difficulty had to be faced here. For delimitation of the constituencies for the ensuing election the Home (C & E) Department had to be supplied with age-grouping figures region-wise. It was, therefore, necessary to sort the slips region-wise instead of doing so district-wise up to working team of the phase without using the sampling technique, with the result that the operation could not be finished in scheduled time.

E. 31. Discipline, control, and supervision in sorting centres; staff difficulties.

All the staff was under the direct control and supervision of the D. S. C. in-charge of the centre, and was required to maintain complete discipline. Each worker was made responsible for the safety and maintenance in perfect order, of the slips and other paraphernalia of work. Carelessness in this respect was penalised with loss of pay or fines. Indiscipline entailed summary dismissal also.

Frequent desertions often without any notice, seriously affected the output of the sorting centres. It always took time for a new recruit to pick up his work and attain the necessary efficiency and speed. As all the workers were appointed temporarily they were constantly on the look out for better and permanent appointments. Forfeiture of pay and bonus for desertion had little effect on this tendency. Their conditions of service, also contributed to the tendency to desert as they were different from the conditions prevailing in Government offices, *i.e.* a forty-four hour week, practically no holidays, often work on Sundays and extra hours on week days, and restricted leave.

E. 32. Accuracy of sorting and counting: Arrangement made for checking and testing the work left little room for inaccuracy. Supervisors circulated continually amongst their team of sorters and checked the classification and counting of workings here and there constantly. Similarly the inspectors carried on a continuous running check of all classifi-

cation, counting and addition work. Every sorter's ticket required to be signed and dated by a supervisor as a certificate that he had checked its accuracy and by an inspector as a certificate that he had made sufficient tests and was satisfied with the result. None-the-less some cases of negligence and carelessness were found on the part of the supervising and sorting staff, but on the whole the result has been satisfactory and sorting and counting has been fairly accurate.

E. 33. Termination of the Hand Sorting Operation: The term of the Hand Sorting Centres was originally from March to 30th September, 1951 for the sorting staff and for the D. S. C. and office staff upto 15th December, 1951. Later on C. C. directed that all data from the sorters' tickets were to be transferred to working sheets and for this purpose the services of the D. S. Cs, a few sorters, supervisors and inspectors were extended upto 31st December, 1951.

The sorting staff were given written notice of the data of their disbandment. At the time of disbandment they were given a discharge certificate signed by the D. S. C. with appropriate remarks about their character and quality of work. Inefficient compilers had been weeded out when detected and this opportunity was taken to fill their posts with the ablest men amongst the sorters and supervisors. Heads of Government departments and District Magistrates were successfully requested to employ the disbanded census staff in the vacancies of their offices. Before final closure all departmentally purchased articles of furniture, equipment, etc. not required for further use were sold by public auction and those which had been borrowed were returned with thanks. All compilers, along with the sorter's tickets, working sheets and other documents, were transferred to the Provincial Office at Dacca for report to D. S. C. (Compilation). The winding up of the hand sorting centres was neat and methodical.

I must express here my deep gratitude to Mr. Bahauddin Ahmed, D. S. C. of the Machine Sorting Centre and the four D. S. Cs (Messrs A. S. M. Fazlur Rahman, Md. Badiul Alam, Akber Kabir, and A. Karim Choudhury all of whom were young and energetic Deputy Collectors) of the zonal Hand Sorting Centres, for the great assistance given to me by them in completing this hard and difficult work smoothly and most satisfactorily.

E. 34. Plan for diverting city slips to Machine Centre. All slips of Dacca Chittagong and Barisal cities were transferred to Machine Centre after phase 3 of the hand sorting operation for phases 4 and 5 to be done at the Machine Centre. The original plan was that copies of the slips should be kept before transfer to Machine Centre and phase 4 should be hand sorted by those copies. The dropping of the original plan which required copies to be kept in the hand sorting centre for use in phase 4 was very economic in the sense that much time and labour that would have required for copying the slips had been saved. Moreover, machine sorting for phases 4 and 5 was more speedy and perhaps more accurate.

E. 35. Use of original slips as the sorting media. In this census a slip was used for every individual at the time of enumeration and the same slip was used in sorting operation. There was therefore, no necessity of slip-copying. The advantage of the use of original slips as the sorting media is manifold. It saves much time, labour and expense and the dangers of inaccuracy inherent in copying. The slips stood up very well under the wear and tear of sorting.

E. 36. Recommendations regarding sorting: (a) Possibility of carrying out part of the sorting work on a District basis: The Block sort and circle sort can with better advantage be done in the district by the D. C. O. with the help of a staff recruited from among the best enumerators and supervisors of the district. At this district level figures for permanent administrative units such as union and village should be brought out. It has been found at the time of preparing the village lists and the union tables that in many cases the instructions in the census code were not properly followed in delimiting different census units. During sorting it was detected that circles comprised parts of different unions, and blocks parts of different mouzas. Areas and boundaries of unions and villages in such cases had, therefore, to be settled by reference to local authorities and J. L. lists. These difficulties could

be easily solved, with more satisfactory results if sorting upto union—level were done at district level.

(b) Wider use of machine sorting: This first Census of Pakistan witnessed the introduction of machine sorting. In the earlier censuses of pre-partitioned India cent per cent of the sorting job used to be done by hand. But in this census more than 6 per cent of the total enumeration slips of East Bengal were dealt with in the machine sorting centre installed at Dacca.

Machine sorting is advantageous mainly for three reasons, namely (a) speed, (b) accuracy and (c) cross tabulation on a wide scale.

Slips of the entire non-agricultural labour force, and of the selected cities and also the cottage industry enquiry returns were sorted in the machine centre by Powers Samas Machines. In Dacca centre we had 19 punches, one autoverifier and seven sorting machines. The Punching machines record the codified data on special cards. The Autoverifier detects cards with punching in wrong positions and the Sorting machine sorts and counts the punched cards in twelve categories at the rate of about 400 cards per minute. A hand sorter, at his best, could sort only 40 slips per minute. Moreover, except in case of mechanical defects, the machine rarely commits a mistake. But the higher speed and greater accuracy of the machine cannot receive un-qualified praise because of several limiting factors. The machines, tackle figure work most efficiently. But most of the census data are recorded on enumeration slips not in figures but in words and symbols. So, for the purpose of machine sorting there is the huge preliminary spade work of numerical codification. The success of coding depends on the intelligence and efficiency of the coders. Unfortunately the occupational data were in some cases inadequately recorded by enumerators. Coders also commit mistakes in giving proper code numbers. It would have been better for the purpose of machine sorting if the enumerators could to some extent use a code or symbol for the occupational data. If machine sorting is used on wider scale in the future censuses of Pakistan some such method may perhaps be worked out. The other essential preliminary to machine sorting is punching, which also takes considerable amount of time. In East Bengal an average punch operator could not punch more than 100 cards in an hour. If, coding can be simplified. I think, machine sorting should be adopted on a much wider scale to ensure accuracy. The other two limiting factors in the machine operation will I hope in future be eliminated. One is the uncertainty of electricity supply which was a highly dislocating factor and caused a huge loss in time. The other is the troubles caused by the machines themselves. That the sorting machines did not behave properly at first was said to be due to "teething troubles". This may be correct as we found the machines settling down in course of time and doing the job quite well. Further mechanical improvements in machines may be expected in another ten years. (A detailed report on the organisation and working of the machine sorting centre is appended).

SECTION III—COMPILATION AND TABULATION.

E. 37. Organisation of the Compiling Staff; recruitment: In all 40 compilers and one chief compiler were sanctioned for East Bengal. The compiling staff was a part of the P. S. C's office but was shown under the head of the machine centre in the financial provision for census work. They were all appointed purely on a temporary basis and liable to termination without notice for unsatisfactory work. They were recruited from amongst experienced hands of other offices or outsiders, preference being given to those who might have worked in the present or past Census operations.

The whole team of 40 compilers and the chief compiler was intended for deployment at the discretion of the P. S. C. throughout the whole of East Bengal in the early stages of the operation. P. S. C. deployed 10 of them to the Dacca Hand-Sorting Centre, 9 to Barisal to Comilla and another 10 to Rajshahi Centre. The chief compiler always remained in the P. S. C's office. The compiling staff was gradually centralized at Dacca transfers

from the other centres as the results of compilation in the sorting centres became ready for tabulation on a Provincial basis. Some of the compilers also worked in the Dacca machine centre.

E. 38. Compiling instructions in Code Part III: The instructions for compilation were contained in Chapter 6 of the Census Code Part III (CCP. 3). The provisions in the code for compilation were sufficiently clear in detail and gave rise to no comment or cirticism in any essential respect. Tabulation instructions were, also, issued by Census Commissioner in chapter 10 of the Code whenever it was considered necessary. The master layouts themselves were clearly understandable and if any difficulty was felt in preparing the tables from the layouts issued by Census Commissioner the same was referred to him (Census Commissioner) and prompt clarifications were obtained. Census Commissioner circulars were also issued now and then clarifying anticipated points of doubts or difficulties. The procedure adopted for preparation of the tables was entirely satisfactory.

E. 39. Compiler's work in the sorting centre: In the early stages of the plan compilers were employed chiefly in instructing each intake of sorters until the latter became able to work independently. Compilers were brought back to sorting work at the beginning of each phase to ensure that each new sorting process worked in practice by capable men. Difficulties could thus be discovered and overcome before the sorters took up the work under bonus conditions.

In addition to this instructional work the compilers were employed during the early stages of the sorting operations to carry out the scrutiny and correction of slips and coding for the modal sort. As a preliminary to block sort a compiler or any other reliable worker would examine the slips of each block to make sure that the slips were sortable. He was particularly on the look out for any persistent error which might have been due to misunderstanding or carelessness by the enumerator. For this purpose examination took place before the steple was removed from the pads.

E. 40. Coding: Before transferring the slips to machine centre they had to be coded by the compiling staff of the hand-sorting centre. This was a huge task for the small number of compilers in each centre to cope with in course of such a short period of time. In times of pressure the office staff, the inspectors and even the sorting staff had therefore to be engaged on this work. The coding work had to be done quickly by organising coding sections. A team of five or six men sat round a table and all worked together on the slips of one packers at a time, so as to preserve the sorted order.

Coding became a very difficult task in view of the fact that many answers were recorded vaguely or most inadequately. The coder had to consider what the respondent really meant by his answer and had to make a skilful and intelligent assessment of the right code number to use. It was really difficult to check the tendency towards inaccurate or inadequate coding.

For sorting by machine it was not necessary to write the numerical code by hand in every column of every slip. In many cases the coding was so simple that the punchers could punch direct from the slip. That was not, however, possible for occupations, Economic groups and places of birth and origin all of which had to be coded numerically.

E. 41. Table 6—Religions: This was the first tables to be completed. The data for this table was obtained from the circle folder and the compilation proceeded along with the circle sort. In the hand sorting centres the compilers did only the compilation work and the actual tabulation was done at Dacca in the P. S. C's office.

The instructions for compilation of this table laid down in CCP 3 were exhaustive and there was no scope left for misunderstanding. There was, therefore, no difficulty felt in the compilation of this table except that the whole thing had to be done within a very short period by a small number of compilers in each hand sorting centre.

E. 42. Schedule of Economic Divisions: A summary of total population by main economic divisions had to be prepared by the compiling staff at the time of sorting operations. The figures of

the population analysed according to main economic divisions were obtained by the end of the circle sort but were to be compiled and tabulated long after in detailed tables. The Labour Ministries, however, were in urgent need of the information. Moreover, it was necessary for estimating the size of the various sorting operations and of the machine jobs and the measurement of progress of work. Each sorting centre, therefore prepared a schedule and sent copies to P. S. C., who in turn sent the same to the Labour Department of the Provincial Government and to the Census Commissioner's office.

The figures for the schedule were extracted by use of the adding machine without the preparation of working sheets and were expressed to the nearest thousand. Each Sub-Division was treated as a locality in East Bengal and the figures for each locality included muhajirs and all religions in one set of totals, each locality taking one line on the form.

E. 43. Other work carried out by compilers in the Sorting Centre: The team of compilers was a general utility body of clerical assistants at the disposal of the D. S. C., for all purposes. They posted the sorter's tickets on the working sheets, and draft tables and assisted the sorting and supervision staff. They added the final figures of the circle sort to give the check figures for use in subsequent sorts. The Correction of the Supervisors abstract and Charge Superintendent's summary in respect of the discrepancies discovered by the initial Block sort was another important work done by the compiling staff.

E. 44. Classification Codes: (a) the Place Code: The place code provided in one series of code numbers, figures denoting the provinces of Pakistan and of India, the districts of Pakistan, the Tehsils of Kashmir and Jammu and the countries of the world. These code figures were used for birth place, nationality and Muhajirs origin and were utilized in Hand as well as in Machine Sorting. In many cases the respondent stated the name of the district instead of the province as his birth place. In some cases names of towns or even villages were given. Coding presented special difficulty in the proper classification of such information. In each centre a coder was specially assigned to study this part of the place code and was provided with available maps and books of reference.

(b) **The Language Code:** Nine main languages used in Pakistan were printed on the enumeration slip. They were given the first nine numbers in the code for use by the sorters and coders in the order in which they appeared on the slip. These nine languages were coded by eye by the punch-operators. Zero (0) was used to indicate ability to read the Holy Quran but no other Arabic. The nine languages printed on the census slip were the only languages tabulated for literacy and bilingualism. In respect of mother tongue, however, all the various mother tongues reported by significant number of people had to be tabulated. It was, therefore necessary to write a code figure on the slips of all persons who, by using the tenth (blank) column on the slip, indicated a mother tongue which was not one of those printed on the census slip. The language code was used for this purpose in both hand and machine sorting.

(c) **Economic Group Code:** Economic group coding was a simpler process than occupation coding. If the economic group of a person was selected earlier, it was easier for the occupation coders to give a correct code number for his occupation.

The system actually followed was that two or three men of the coding team were engaged on the economic group coding. They would code the economic groups and pass the slips to the occupationals coders. In many cases it was not difficult for the economic group coder to select the correct occupation code. Under such circumstances the economic group coder used to code the slips for occupations also. This system was found convenient and, in fact it saved much time and effort.

(d) **Occupation Code:** The classification code of occupations was published as an annexure to CCP. 2. All slips classified as "other occupations" in the hand-sorting (i.e. all self-supporting persons other than cultivators) had to be coded for occupation. The coders used to work in teams particularly for this part of coding operation. Each member of the team made himself expert in one particular subject because it was impracticable for any one of them to know the whole code so thoroughly as to allot the correct occupation code number without delay. As main group 7 was most difficult and lengthy this single group was divided up between 3 to 4 coders each one of whom had studied his particular section of it. Under this system quite a high speed could be reached in coding. Although most slips were not difficult for coding, nearly 10 % of them required some thought and discussion round the table. However, the team method ensured that when a particular question was once settled in discussion it could be quickly dealt with thereafter. In team-working there was a risk of loosing the sorted order of the slips if the team worked on more than a packet of slips at a time. To avoid that danger it was necessary to see that one packet of slips was completely coded before placing another packet on the coding table.

(e) **Cottage Industries Code:** Cottage Industry enquiry was carried out at the time of House Listing. The sorting and counting of this information was considered to be done easier by using the Powers Samas machines. For this purpose the type of enterprise was coded using a numerical classification list settled by the Census Commissioner. In order to minimise the work of training the operators and to distribute punching and sorting in proportion to staff and equipment, the machine work on these tables both for East Pakistan and West Pakistan were all done in Dacca. The punching was done from coded schedules prepared under arrangement made by each Provincial Superintendent of Census. In East Bengal the coding of the schedules was done by the compilers.

In some places enterprises not falling within the definition of a Cottage Industry such as repairing and service enterprises and those carried on in factories and not in "homes" were included in the returns by the enumerators but these enterprises were not included in the coded schedules.

E. 45. Concentration of the compilation teams at Provincial Head Quarters: At the end of December 1951 when the Zonal Hand-Sorting centres were closed, the compilation teams were transferred to the staff of the Deputy Superintendent (Compilation) in the Provincial office together with Sorters' tickets, compilation working sheets, records of check figures, house-hold lists, Charge Supdt's summaries and all other documents required for compilation and tabulation. The Chief Inspectors were also attached to the compilation office to ensure continuity and to deal with queries arising out of sorting. As office accommodation the compilation staff took over the space used by the Dacca hand-sorting centre in the Secretariat compound (Eden Buildings). Most of the furniture and equipment for compilers were also found from the Dacca hand-sorting centre and further requirements were locally purchased. As the Dy. Supdt. in-charge of Dacca hand-sorting centre was appointed the D. S. C. in-charge of the compilation section the whole thing was smoothly arranged.

E. 46. Compilation arrangements: The Census Commissioner gave a list of all the tables arranged in the approximate order in which they were to be completed. In practice, however, the compilers tackled many of them concurrently for facility of work and speed.

The tables prepared in this first census of Pakistan have links with the past population statistics of undivided India but are more far-reaching and exhaustive in certain respects. Detailed instructions were laid down in the code as to the form, content and layout of the different tables. If details of every check for internal consistency or agreement with other tables had been given in the

code it would have been helpful.

E. 47. Compilation of ancillary tables: Parallel with the early stages of the general compilation those special jobs were undertaken, viz., the cottage industry returns the village lists, and the housing tables ;

(a) The Cottage Industry Tables : The Cottage Industry tables were prepared on a Provincial basis on stencilled sheets and distributed to interested departments of the Provincial and Central Governments.

(b) The Village List: In this census village lists for this province have been produced for the first time, giving the population, houses, areas and local details for each village. The 60,000 villages in East Bengal have been arranged union wise thana by thana, with a sub-divisional abstract for each district, in the 17 district volumes of the village lists. These village census figures have been of great administrative value in many fields. The main source of information for this list was the Charge Superintendent's summary which gave the list of villages arranged in the manner in which the Census was organised. In many cases, however, this did not agree with the general administrative organisation and the order of the villages had to be carefully checked by reference to S. D. O's. The figures for area of villages and thanas were adopted from the jurisdiction lists as verified from the office of the Director of Land Records and Surveys, East Bengal. The local details in respect of villages were ascertained from the S. D. O's. On account of the limited space separate figures for males and females were not given.

(c) The Housing tables: These tables were produced in the office of the D. S. C., from the housing Analysis forms prepared by the circle supervisors and collected through the D. C. O's. In the P. S. C.'s office these documents were assembled into folders for each municipality and for the rural portion of each district. Working sheets for the tables were prepared from the analysis sheets. The preparation of this table would have been easy if all the analysis forms have been received. For many circles and charges, however, they had to be prepared in P. S. C.'s office from the household lists, which was a most laborious task. Moreover, in many cases the analysis was carelessly prepared, and needed rectification with reference to the household lists.

E. 48. General compilation work: extraction of totals into draft tables: Typing: The original intention was that the tables derived from the hand-sorting operation would be compiled in the hand-sorting centres. A team of compilers were attached to each centre mainly for the purpose. No substantial progress, however, could be made in that direction. Moreover, it was found after examination of sorter's tickets and working sheets in the compilation section of the P. S. C.'s office that work reported complete had been done carelessly and required thorough checking. There was, however, no difficulty in the preparation of the draft tables after the compilation works had been done. A standard layout for each table was issued by the Census Commissioner and in circulars and correspondence clear instructions were given for extraction of totals from compilation working sheets into draft tables. The type-script of the draft tables was prepared on paper of double foolscap size ruled to agree with the standard rulings. The outside dimensions of the typed drafts and column widths were, however varied to allow for the size of the letters of the type writer actually used. Six copies were made of the tables and in each case two of them were sent to the Census Commissioner. The type-writing of tables was an enormous and laborious work. It was necessary to check the type written copy carefully with the manuscript copy.

E. 49. Compilation from Machine Sorting: Machines were used for sorting all the slips (except those of children) of selected cities and all the NALF slips. The results were recorded on machine sorters tickets (MSTS). The tables which could be prepared exclusively from the hand-sorters tickets were completed first and tables for

which figures were to be included from the machine sort were taken up afterwards. To avoid delay compilation sheets for different tables were made ready complete with all data from the hand sorting and as soon as the MSTS were received their data were entered in the spaces left for them. The compilers worked in the machine centre in rotation in order that they could all understand the MSTS. Discrepancies were, however, frequently detected in MSTS at the time of compilation and the MSTS had to be rechecked. There was, however, generally no difficulty in compiling and tabulating the machine data.

E. 50. Mechanical Aids. For compilation and tabulation work the following machines were supplied to the P. S. C.:—

1. One merchant Automatic Calculator.
2. One listing Adding machine (Roneo).
3. Five "Plus" desk adding machines.
4. One hand numbering machine.

The desk adding machines were received in May 1951 and four of them were used in the four zonal hand-sorting centres and afterwards in the Provincial compilation section. The fifth machine was used in the machine centre. The hand-numbering machine was in the machine centre.

The small desk Machines were inadequate for the main compilation and tabulation work and for investigation and record work. The Automatic calculator and the listing machine permitted easier and quicker calculations including multiplication and division and avoided the coping out of every figures. Work was greatly simplified by the use of these machines and it is to be lamented, that the automatic calculator and the Listing Machine were not received until more than 50 per cent of the work was already done.

MACHINE SORTING AT DACCA

1. Selection of the Dy. Superintendent of Machine Sorting Centre: The introduction of machines for the sorting of Census data in this First Census of Pakistan may be regarded as a very bold venture on the part of such a young and under-developed state. Never before, had machine methods been applied on a large scale in processing census data in this sub-continent.

The machines were intended to obtain a detailed cross-tabulation of Census data in a comparatively shorter time. The Occupations and the Economic Groups of the non-agricultural Labour force were to be analysed in greater detail than could be made by hand methods. Moreover, machine sorting could be regarded as more accurate and reliable than hand sorting.

The machines used in our Census were supplied on hire by Messrs. Powers Samas Accounting Machines (Sales) Ltd. of England. In a conference held on the 5th of April, 1951 between the Census Authorities (Census Commissioner, Provincial Supdt. of Census and Deputy Supdt, of Census) and the representatives of M/s Powers Samas at Dacca, the detailed programme regarding the installation of machines at Dacca was drawn up. The authorised staff included a Deputy Supdt. of Census to take charge of the machines work and it was decided to appoint a District Census Officer in this capacity to ensure continuing with the enumeration work. For this post I was selected and notified of my appointment in the last week of April, 1951. I made over charge of my duties at Chittagong and joined as Deputy Superintendent of Census incharge of Dacca Machine Centre on the 2nd May, 1951.

2. Training of Supervisors and Dy. Superintendent in Calcutta: Soon after I joined, the two supervisors were appointed who joined their duties in the 2nd week of May. On the 13th of May myself and the Supervisor's proceeded to Calcutta for a fortnight's training with M/s Powers Samas Accounting Machines. We found that the operation of the machines was quite simple and we were able to learn the methods of operation within the first few days. The rest of the period was utilised in practising the operator's job thoroughly. As part of our training we were taken to the installation of similar machines at the work-shop of M/s. Andrew Yule and Co. and the Statistical section of the All-India Institute of Hygiene. In the former place these machines were being utilised for cost-accountancy and in the latter place for health statistics. Powers Samas representatives in Calcutta took a keen interest in our training and were, as they have always been, very helpful.

The Deputy High Commissioner of Pakistan in Calcutta, whom I saw immediately after my arrival, was kind enough to provide accommodation for our supervisors. After completion of training we came back to Dacca by the end of May.

3. Consignment of Machines from England: The punching machines which, according to schedule, were to have reached Dacca in June, actually came as late as the middle of October due to difficulty in obtaining shipping space and to delays in berthing and discharging at Chittagong.

Meanwhile the electrical installation in the shed where the machines were to be installed, was completed.

4. **Recruitment:** The first idea about the type of men most suitable for operating the punching machines was given to me by the District Manager of M/s. Powers Samas, Calcutta. The operation of the machine was similar in some respects to the operation of a typewriter. A trained typist would be able to learn the operation of a punching machine quicker than others. The posts were advertised at a consolidated pay of an operator was announced as Rs. 120/- per month but an order was received from the Census Commissioner that the basic pay of an operator would be Rs. 70/- only and the remaining Rs. 50/- would be paid as bonus according to output. This was mentioned in the interview letters to candidates and of 150 applicants only 73 appeared for interview. I have reason to believe that many did not turn up in view of the reduction of the basic pay. From among the candidates interviewed 34 were selected for appointment; 25 joined on 4-10-51, another 8 joined by 22-10-51, one did not join. Of these 33, five were discharged during training and three deserted. In subsequent recruitments we adopted the principle of giving training for a week or two before appointment. No remuneration was given during the period of training. Appointments were given only when candidates were found suitable after training.

Nine operators were recruited from among the discharged personnel of the different hand sorting centres. A larger number of such discharged hands were not available since the D. S. C's were unable to release more sorters before the Hand Sorting Centres were finally closed.

At the initial stages there was frequent desertions. To prevent desertions better terms of service had to be offered, and the Census Commissioner eventually approved an increase in the basic pay from Rs. 70/- to Rs. 90/-.

Recruitment of sorters was done in May, 1952. Sorters need to be of quicker understanding than punchers. Punchers work more or less mechanically, but sorters had to understand the complicated sorting programmes and to be very much on the alert when operating the machines. In recruiting the sorters, therefore, an intelligence test was held. The D. S. C's of the hand centres were requested to forward names of intelligent and energetic sorters and supervisors. Out of the 14 sorters recruited eight were deputed from the different Hand Sorting Centres. All the sorters were found to be men of good intelligence and after a few days training they mastered the details of machine sorting.

5. **Training:** The first batch of punch operators joined a few days before the installation of the punching machines. During the first week of October, 1951 they received theoretical training, viz., the study of the enumeration slip, methods of detecting mistakes in slips, coding and the study of the relevant portions of C. C. P. 3. The practical training on punching method began on 10-10-51 by which date 12 punching machines were installed. The first few days on the machines were utilised in training to punch the standard lessons of Powers Samas training book, after which the trainees practised punching from copies of slips. During training periodical tests were held to check the standard of speed and accuracy. The Powers Samas Technicians and our supervisors taught the operators all the techniques of machine operation. Instruction classes were conducted by me personally. The training period of the first batch of operators went on until the arrival of supplies of cards and they remained under training for more than a month. For later recruits the period of training extended from 10 to 20 days according to the standard of efficiency shown.

6. **Consignment of cards:** The machines came much earlier than the cards. Though most of the machines were installed by 10th of October, 1951, the first consignment of plain cards was received on 9th November, 1951 having been consigned to Karachi through an error in London. A small

quota of cards was brought by the Calcutta representative of Powers Samas but these were, sufficient only for a few days practice, and the Powers Samas technicians advised us to continue the training of operators on the machines without the use of cards. This was done but is unsatisfactory as it is not possible to check either speed or accuracy.

The first consignment of 1,00,000 cards were all plain unprinted cards, which were really meant for training and for cottage industry data. Coded cottage industry schedules were not available when operators completed training and the only slips ready for punching work city slips for which printed cards were intended and such cards ought to have been sent earlier. By the time 60,000 printed 'A' cards were received, about 70,000 plain cards had punched and work had to be suspended for a few days till the 3rd consignment of 180 thousand cards reached us on 15-1-52. On three occasions I went to Chittagong to arrange early clearing and forwarding of cards from Chittagong to Dacca and on two occasions I brought some cards with me as personal luggage. Yet the amount of time lost due to the delay in receiving cards was considerable. There was the additional disadvantage of frequent change over from one type of job to another which could not be avoided because of the irregular supply of the different types of cards. If these unfavourable circumstances had not interrupted, the punching job might have been completed by the middle of July 1952.

7. **Punching.** Standard sixty five column cards were used. Census data were represented on the cards by means of punching holes in different columns on the basis of a predetermined layout. For the purpose of this punching all data recorded on Census slips had to be coded in terms of figures. An elaborate coding system was devised for the occupational data, the cross classification of which was the main job of the machine sorting. Other data were mostly "eye coded" i.e. no code figures were actually recorded on the slips but punchers could easily punch the particular code figure as the code figures did not extend beyond 9 in most cases. The cards once punched had to be "check-punched" by a second operator from the same original slips to ensure reasonable accuracy. Check punching was done on the same type of machine by means of a simple turn of a knob which caused the original round punched holes to become "ovalised". If all the round holes were ovalised it indicated that the punching of both the operators agreed. A machine known as the Autoverifier was sorted out incorrect cards from batches of punched cards at the rate of 200 cards per minute. After sorting out the wrong cards, the original slips corresponding to the wrong cards were referred to and new cards were punched embodying the correct information. When a card contained only a very few mistakes it was taken to a special punching machine with a reproducting feature. The wrongly punched card was fitted at the top of the machine and a special key depressed to reproduce all the correct data of the original card on a new card. In cases of columns with wrong punching the special key is not used. Instead, the normal keys of the punching machine are used to punch the correct information.

All cards had to be numbered corresponding with a number on the slip in order to make it possible to find the relevant slip in case of a wrongly punched card or a wrecked or spoilt and worn out card for reference. This numbering of slips and cards was done initially by the punchers themselves and took a good deal of time. An automatic numbering machine operated by two additional daftries economised time and increased the output of punched cards.

Punching in cards started by the middle of November, 1951. The operators who attained a speed of 6500 key depressions per hour during training could barely reach 2000 to 2500 key depressions per hour in the actual. However, as time went on most of the operators increased their speed and accuracy. But even after a month's practice, the speed attained by the operators was

much below the standard determined by Census Commissioner. According to that standard an operator had to punch 105 cards per hour to earn the minimum pay and 140 cards per hour to earn the full bonus. This was a bit too high for the average punch operator in Dacca though it represented only two-thirds of the speed attained in Europe. The operators were further handicapped by bad legibility and palpable mistakes on enumeration slips. Wrong and inadequate coding in some cases further slowed down progress. Some additional compilers had to be deputed to check these mistakes in the slips.

The irregular supply of electric current and frequent total stoppages of supply to the machines caused very serious dislocation on many occasions. On all occasions all possible steps were taken to restore the connection as early as possible but still much valuable time was lost.

After working for 3 months we found overselves much behind the schedule. The total punching job was to have taken 9 months according to the programme. During the first three months we had done only a very small fraction of the total job.

The percentage of mistakes committed by operators during the initial stages was very high. In trying to increase their speed they committed more mistakes and thus wasted time and cards.

The Powers Samas technician told me in Calcutta that a good operator could achieve a normal speed of about 8500 key depressions per hour. Census Commissioner's calculation was perhaps based on similar estimates. For each card approximately 60 key depressions were necessary. Hence, to punch 140 cards per hour about 8500 K. D. are necessary. In other words it meant 5 key depressions every two seconds. Such speed could not be attained by most of the operators.

In order to encourage the operators the Census Commissioner made a considerable reduction in the target from 625 to 400 cards per day thus bringing the minimum bonus within easy reach and also laid down rules for cutting down verification. Punchers were classified weekly according to the standard of accuracy achieved by each in the previous week. Only a percentage of the cards of good punch operators was "check punched". The above two methods helped a great deal in keeping very near the time table laid down. It was noticeable that accuracy improved as speed increased once the operators had overcome their initial fear of rapid work.

8. Sorting: The first sorting job was the tabulation of cottage industry. Sorting of cottage industry cards was comparatively easy and there was little difficulty in doing it. Cards for each district were sorted according to the group of product and the actual enterprise. Again each enterprise was sorted for the number of male, female and child workers and also the number of looms in case of weaving industry.

The next job was the sorting of population cards. It was divided into two parts—phase B and phase C for East Bengal. Phase A applied to the Karachi centre only. Sorting phase B was done for NALF and cities in respect of those characteristics which for other slips were extracted by the later workings of the hand sorting operation. Thus the machine sorting figures were added to hand sorting figures to give the total of each group of persons of each geographical area. The data obtained by machine sorting phase B were: Age, marital status, speech, years of education, duration of marriage, fertility, births and infant mortality. The sorting phase in respect of marital status, fertility, birth and infant moratality was a bit complicated and for these working a specially trained batch of operators were selected.

It was originally planned to proceed with the sorting work "vertically". In other words each sorting district was to be sorted for all workings of both the phases A and B before another district was taken up. This method was followed for sometime but was ultimately found to be disadvantageous. Besides, this method would have made it impossible for the compilation section to finish

any one of the tables which was connected with the machine sorting figures before machine sorting itself was complete. Therefore, we decided to complete all the workings of phase B before taking up any of the workings of phase C. We completed sorting phase B for all the districts by the 3rd week of August 52—much before the deadline which was 30th September 1952. Thus the compilation section was provided with all the machine Sorter's Ticket to complete tables 7A, 4, 4B, 9, 9A, 16, 17, and 18.

During sorting phase B, the rate of progress (i.e. the output of work) was very near the estimate made by the Census Commissioner in his circular No. 714 dated 7-5-52. But as soon as phase 'C' was taken up, the output of work decreased by more than 30 per cent. This was due to the need for completing the sorting separately for each 'person' on the card and re-establishing the required batches before taking up the next 'persons'.

Working 15 of phase C proved, easier than any other working. It was done for the province as a whole and, therefore, consisted of long straightforward runs. In fact during most of the weeks when working 15 was in hand the actual time taken in sorting was less than the schedule time allowed. We completed this working, the last working for the Dacca Centre, by the 23rd of December, 1952. The dead line for the completion of machine sorting job in East Bengal, was 31st December.

9. **The machines—Their utility:** The main purpose for which machines were introduced in the sorting of date of the first Census of Pakistan, was that it was impossible by any other method to get data on the labour force on so comprehensive a scale as was obtained during this Census. The labour force was classified by individual occupation, sex, religion, locality (upto sub-division in some cases) and industrial status. Certain selected occupations and main groups of occupations were classified by age group and educational level attained. Unemployment in different occupations was analysed by months unemployed. The different economic groups were classified by main religions and sex for each district. In the last working, namely working 15 individual occupations (upto the 4th digit) were classified by sex. Cross classification on such a big scale was possible only by machines. Thus the expenses incurred by government for machines hire was well rewarded.

CHAPTER 11

KARACHI

SECTION I--ENUMERATION.

K. 1. The creation of Pakistan raised Karachi which had been the Capital of the Province of Sind, to the status of the National Capital of the new State. The Karachi Municipal Area with the Civil Cantonment, other neighbouring cantonments and 44 surrounding villages which had previously formed part of Karachi District were amalgamated to form the new centrally administrated Federal Capital Area. The rest of Karachi District remained in the Province of Sind and became Thatta District.

K. 2. To conduct the Census Operation in the Federal Capital Area, the office of the Chief Census Officer, Karachi was created, Mr. A. M. Jafri was appointed to this post and he took over his duties on the 29th August 1950. He was given an office staff of one Head Clerk, one Upper Division Clerk, one Lower Division Clerk, one Typist and two peons. The office was originally located in the Karachi Municipal Corporation Building and was shifted to Block No. 72, Ack Ack School, Clifton, a couple of months after completion of enumeration.

K. 3. The Census work therefore started very late in Karachi and Mr. Jafri had to make intense efforts to overtake the lost time and set up the census organisation. He was, however, confronted with formidable difficulties. The Municipal Corporation, on the analogy of the share borne by Government as a special case in 1941, expected to meet only 50% of the expenses but the Census Act, 1950 made it incumbent on Municipal Corporations to take up Census work within their administrative areas. The Chief Census Officer managed to grapple with this contentious question, and eventually on the arrival of Mr. R. A. F. Howroyd as Municipal Commissioner, obtained the necessary cooperation and help from the employees of the Corporation. The selection of Mr. Sharif, Assistant Engineer who was thoroughly acquainted with the City, to deal with the Census work for the Municipality was very helpful.

K. 4. The Federal Capital Area was organised in two Census District, District No. 1 with the Collector of Karachi as District Census Officer, consisted of the Cantonments and villages; District No. 2 was the Corporation area with the Chief Officer of the Corporation as District Census Officer.

K. 5. In District, No. 1, 17 Charges were made, but there should have been more. The Civil Cantonment, with an area of about 4 square miles and a population of over 1 lakh, was a single charge. Mr. Jafri endeavoured to split this up but it was allowed to remain and ultimately this charge was the cause of great anxieties. District No. 2 was split into 44 charges including the Port Trust, Railway, and Customs areas and the Mauripur Salt Area as separate charges.

The Charges were not uniform in size. The main reasons for disparity were the lack of uniformity in the size of Municipal Wards or divisions (the Census delimitation was, in fact, done on

rough estimates of population but the figures available were very doubtful) and the movement of population due to the influx of Muhajirs and their frequent changes of residences, together with the lack of any record regarding the numerous new houses which were springing up in all quarters.

It is interesting to note that doubt existed about the exact boundaries between the Municipal Corporation, the Port Trust and the Civil Cantonment Areas. These were, however, satisfactorily settled although it may be mentioned that about 11 circles of the Civil Cantonment area, with a population of nearly 72,000 persons were found on delimitation of new ward boundaries, to belong to the Corporation area. The new wards, delimited, vide Gazette of Pakistan, Extraordinary, dated the 4th June 1952 (Registered No. 5.1033) have generally been based on the population figures supplied by Census and have, also taken into account the basis of divisions on which census enumeration was conducted. It has, therefore, been possible for us to publish a special Table, showing population by sex religion and Muhajirs based on new ward boundaries, though these were non-existant in 1951.

K. 6. No difficulty was encountered in getting suitable charge Superintendents so far as District No. 1 was concerned. The Mukhtiarkar of Karachi worked as the Charge Superintendent for Charge No. 1 of District 1, which comprised the villages falling under Federal Capital Area. The other Charge Superintendents of this District were suitable military or civil officials appointed under the Collector's arrangements. They were briefed in the provisions of Part I of the Code of Census Procedure at a meeting held by the Collector in July 1950.

In District No. 2 however, it turned out to be a hard task to secure the large number of Charge Superintendents required for the Municipal Area. Neither public men nor officials were willing to devote part of their time to this national work. Out of 44 Charge Superintendents in this District, only 3 were non-officials, a sad commentary on our public leaders. The Central Government and the Government of Sind nominated certain officers for this honorary work, but many of these managed to avoid it on one plea or another with the result that the Charge Superintendents were not fully appointed until late in January, 1951 with enumeration due to start in less than a month.

K. 7. The 61 Census charges of the Federal Capital Area were divided into 324 Circles and 2,202 Blocks. In accordance with instructions of the Census Commissioner, the usual census localities registers were opened and the Charge Location Summary is more or less complete for District No. 2. In the strenuous efforts to create the Census Organisation, however, some of the important tasks, which, in fact would have helped greatly in efficiency and order could not be finished and, despite the provision to every Charge Superintendent of a map of his area, full details of the delimitation of circles and blocks were never reported.

K. 8. The difficulties encountered by Mr. Jafri in getting Charge Superintendents were a fraction of the troubles he and his Charge Superintendents had to recruit the requisite number of Enumerators and Supervisors. The response for voluntary service as enumerators was very poor, inspite of appeals to heads of Government Departments etc. Originally, about 3,000 enumerators were collected but most of them left the work when they found that it was honorary and that the most they would get out of it was the refund of out-of-pocket expenses and a "Sanad". In a letter dated 29th January, 1951 to the Census Commissioner, Mr. Jafri reported that out of 44 Charge Superintendents in District 2, only 30 had procured their full quota of Supervisors and Enumerators. There were two Charge Superintendents who did not have even one Supervisor or Enumerator—and only 10 days were left for the beginning of Enumeration. The Collector of Customs, the Chairman of the Port Trust, the Naval authorities, and the Muslim League National Guards came to the rescue, however, and deserve special thanks for the considerable number of Enumerators they produced at the eleventh hour. Even then, there was a shortage

and towards the end of the enumeration period some workers had to be transferred from their own charges to help finish the work in other. However, at least 2,900 persons were ultimately appointed as Enumerators and Assistant Enumerators. Appointment letters were issued to all of them on the prescribed form and signed by the District Census Officers.

Acknowledgement must be made, of the help given at this stage by a few devoted officials and non-officials among whom were an enthusiatic group of ladies who, though not themselves holders of any Census office, rendered great help to the organisation. But mention should be made particularly of Mr. M. Sharif, Assistant Engineer (Roads) of the Municipal Corporation, who contributed greatly to the creation of the census operation. A very helpful gesture was the tea party given by Mr. E. Maneckji Hirjina at which the Administrator of Karachi addressed all the Charge Superintendents and a noticeable increase in enthusiasm was aroused.

K. 9. While houselisting and numbering work proceeded more or less satisfactorily in the Cantonments and Taluka area, the progress of work in the Municipal area was most disheartening. It should have begun in September but in December, when but a few days were left for completion of the work, it had not been taken up in some parts of the city. In view of the special circumstances and the inadequate number of Census Officials, the Corporation authorities had undertaken the work of house numbering. The temporary erections of gunny cloth, lattas, blankets, etc. in which about 2 lakhs of refugees were living in Karachi, were not allotted numbers, but to exclude any possibility of missing them in the enumeration full descriptions of every such household, were to be given in the household list. In order to complete the job in time, the Corporation authorities took upon themselves the task of getting the houselisting done as well as the renumbering, but the work was done so hurriedly that it was difficult to accept it as complete.

Since both house numbering and listing were done by the Corporation staff, there was a danger of the Enumerators remaining uncertain of the extent of their blocks. The Corporation authorities therefore agreed to type out block-wise extracts from the household list to be handed over to the Enumerators, but with the hurried work, the constant influx of refugees and the population movement within the city, it was rare that an enumerator had a satisfactory household list.

K. 10. Though it was originally planned to hold the cottage Industry Enquiry along with the House Listing, this scheme had to be given up in the Federal Capital Area. It is to be regretted that this useful enquiry had to be dropped, but it was felt that in the difficult circumstances in which census work was being conducted in Karachi, it would be a grave risk to the entire operation, if any extra load was imposed upon the struggling census staff.

K. 11. Code of Census Procedure Part II—the basic explanation of the plan for Enumeration —was first issued in cyclostyled copies to District Census Officers. Later each Charge Superintendent and Supervisor in the Federal Capital Area was supplied with printed copies of the Code, as well as Enumerators leaflets and other papers. The distribution was completed by the middle of December, 1950.

Indents for enumeration slips and forms were made out on the basis of a rough estimate of 17 lakhs population. Slips were asked for in 3 languages, Sindhi, English and Urdu. These were sent by the Census Commissioner's office direct to D. C. O's for distribution to Enumerators.

Self-Enumeration forms were also issued in the Federal Capital Area and proved of great value. These forms were very popular and saved the enumerator's time, enabling many to be released for work in short-handed places.

Analysis of Housing Forms were issued to Charge Superintendents, but were filled in very perfunctorily owing to the inadequacy of the house-

hold list, with the result that no useful housing statistics could be compiled for the Federal Capital. Useful housing statistics could be compiled for the Federal Capital.

K. 12. The tremendous difficulties encountered in recruiting Enumerators made it necessary to make strenuous efforts upto the very last moment to train them for their Census duties. Several training classes for Charge Superintendents and selected Supervisors were held at which the enumeration procedure and questionnaire were explained and answers written on black boards. The instructional leaflets were issued to all Enumerators at Training classes frequently held in different areas and they were all made to understand how to ask the questions and how to note the answers on the slip. Wall diagrams showing the Enumeration slip were used in these classes. The questions on economic characteristics were in particular discussed and explained with reference to specific illustrations. It is of course doubtful if those enumerators who joined at the later stages were instructed equally satisfactorily but classes were continued right into the enumeration period. The questions, except those on Economic Characteristics and for married women (Question 16) were found to be quite simple and inspections during enumeration and checks at the Charge offices immediately afterwards showed most of the slips were properly filled in.

K. 13. A great deal of publicity work was done in the Federal Capital Area in connection with the first Census of Pakistan. Whatever difficulties one had to get voluntary workers, no one could say that the ideas and requirements of the Census had not penetrated to every corner of the Capital. The publicity campaign was conducted through Radio Pakistan, the vernacular and English Press, Meetings and loud-speaker vans. Continuously over a month the publicity broadcasting van made its rounds throughout the length and breadth of the city. This work was mainly done by a group of ladies, who sacrificed their time and comfort for this national cause. The press, too, rendered most valuable help. All the local newspapers gave prominance to the necessary official announcements and also wrote leading articles and no newspaper published any unhelpful criticism. Public meetings were held, some of which were addressed by the Administrator of Karachi and by the Census Commissioner. The results of these publicity compaigns were excellent. The public became conscious of the Census and began to realise the importance of the operation; their minds were disabused of many false notions crediting the Government with ulterior motives, and the enumerators were treated politely by the public. Many persons, as a result of the wide publicity, came forward for enumeration, impatient of the delay of the Census-taker in going to their residences. The publicity had its effect also on the Census officials who were inspired to take a more enthusiastic interest in their work.

K. 14. The Charge Superintendents in charge of rural areas– the Taluks of 44 villages lying within the Capital area—had no special difficulty in completing enumeration in the allotted time. In the smaller Cantonments, too, the work proceeded smoothly. The dangerous areas were the Municipality and the Civil Cantonment.

The work was not unduly heavy, each enumerator having to record between 250 and 500 persons and the time allowed was ample. All that was required was the will to work. Special efforts were made to create interest, infuse enthusiasm and to kindle a firm will to complete the allotted task. It must be admitted that at the last moment, "demonstrative inactivity was turned into realistic action". One example will suffice. At 2-30 A. M. on the Census Night, 18 enumerators who had done their job in the Corporation area volunteered to help complete the enumeration in the Civil Cantonment area where the work was still unfinished. Enumeration passed off quietly and despite earlier misgivings it was reasonably complete and successful.

During the whole period of preparation and enumeration the Office staff of the Chief Census Officer had cheerfully borne a very heavy burden

of work. During the last few days of the enumeration period they not only performed their own office work with zeal, but smilingly undertook many outdoor enumeration duties to make the Census a success. They enumerated thousands of households themselves and dealt with a vast number of self-enumeration forms.

The credit for successful completion goes largely to the final wave of popular enthusiasm; this inspired not only the Census officers but also the general public, who rendered cheerful cooperation. People who could not be contacted in their huts or houses came forward in large numbers to the local census offices to get themselves enumerated. The rush for enumeration at the Municipal Office was unexpected, and individuals continued to come for enumeration till the dawn of the 1st March.

K. 15. The night between the 28th February and the 1st March 1951 was the Census night, which was intended principally for the enumeration of the floating population and those who might have escaped enumeration previously. In order to perform this task efficiently, it was decided to have a voluntary curfew. The Census Commissioner had a firm belief in the good sense of the people. He appealed to the public through the press, Radio and loud-speakers vans to stay in doors, so that a complete record of all vagrants, homeless and the new arrivals could be made. The people of Karachi responded wonderfully to the simple appeal of the Census Commissioner. By 10 P. M., the streets of Karachi were empty although very few special police arrangements had been made. The enthusiasm of the Census officials during that night was most remarkable. Till the early hours of the morning, the whole census organisation remained on duty. Not only did they complete checking the enumeration of their area by finding out new births and arrivals or recent deaths, they also completed the enumeration of vagrants and homeless or passengers from abroad. Even the Chief Census Officer was halted constantly during his inspection tour that night and asked if he had been enumerated. The Census Commissioner and the Municipal Commissioner toured through the City till early morning. An extract from the leading local English daily "Dawn" of the 2nd March, 1951 may be quoted: "—A 196 miles tour of Karachi on the Census night, omitting hardly a street, was re-assuring—. On Wednesday night volunteers in Karachi gave ample proof of their earnestness and worked indefatigably the whole night".

K. 16. Supervision during enumeration was satisfactory. Mr. Sharif and the Chief Census Officer was everywhere in evidence. The Census Commissioner himself visited a Charge Superintendent who was causing some anxiety and explained to him the danger of allowing his men to lag behind. In all circles in the City the Supervisors inspected slips and accompanied the enumerator in their interviews throughout the evenings of the enumeration period. In the Cantonment area similar supervision was maintained in many charges.

All Charge Superintendents had opened local offices in schools and other suitable public buildings and had been supplied with bold name-boards, which were fixed on their office doors. The charge Superintendent, or in his absence one of the Supervisors remained in the office to deal with queries by enumerators and the public. Boy scouts were posted at each office to work as messengers. Some of the Charge Offices resembled military operation rooms with maps and chart. The Lawerence Quarters Charge Office, managed by National Guards, was one of the best organised.

K. 17. The collection of results, gave considerable trouble. After receipt of provisional preliminary results, there were last-minute corrections and the provisional totals for the Federal Capital Area could not be sent to the Census Commissioner until 19th March, 1951.

Even after the preliminary results were available, the Chief Census Officer found it most difficult to recover the records and slips from the Census officials. However, the completed slips, which

were checked at the offices of the D. C. O's were all eventually passed to the Machine Sorting Centre at Clifton, where all the information on the slips was to be punched on cards and sorted mechanically.

K. 18. This was the first Census in which Karachi was treated as a separate unit. The system of having two District Census Officers, as in 1941, was continued in this Census, under the Chief Census Officer, but whereas in the past the Municipal Corporation authorities, guided and goaded by the Provincial Superintendent, organised the whole census up to and including enumeration, with the appointment of a Chief Census Officer an attempt was made to shift all the responsibility on to his shoulders. The District Census Officers eventually shared whole-heartedly in the work, but inevitably, the Chief Census Officer had to take a more direct and detailed share in its direction and control especially with regard to the City Area. To obtain greater efficiency and co-operation it is recommended that the senior men in the staff of the City District Census Offices should in future be selected mostly from the permanent staff of the Karachi administration, and special pay of 25% of the basic pay should be given to them. The initial organisational work and the directional details cannot be done well with the help of a purely temporary staff, recruited ad hoc. The Chief Census Officer himself and his staff should be permanent Government servants.

The Federal Capital Area of Karachi will always be mainly urban in character but the system of having at least two Districts under separate District Census Officers will no doubt be continued. For the rural Taluka and the outlying Cantonment Areas, the procedure followed in this Census should prove adequate. Better arrangements will have to be made however for the Municipal Area. Officers of the Municipality of sufficient status and seniority, should be appointed whole time from a few months before the Census. Like the District Census Officers in East Bengal, they should be responsible both to the Chief Officer, who must be made ultimately responsible for success of Census Operation in the Municipal Area, and to the Federal Area Census Chief.

K. 19. The experience of this 1951 Census in the Federal Area in the matter of Enumerators has been most discouraging. In Mr. Jafri's opinion, it will be impossible in future to recruit unpaid volunteer workers in Karachi in large numbers; he writes, "Government, therefore must come to a definite decision and either pay the enumerators or conscript them". In this Census out-of-pocket expenses upto a reasonable amount have been paid. But this did not, in fact, result in any lessening of the worries and enxieties of recruitment.

On the other hand, while no doubt, it would be easier to get Enumerators if payment is made, it should also be borne in mind that if paid Enumerators are appointed for the Karachi Area, other Urban, and possibly rural, areas in Pakistan will find that they have no alternative but to pay their Enumerators. The cost will be huge.

The Census of Karachi was undertaken in an area where the new and increasing population had not settled down. The city was in the midst of a large scale population movement: People did not know each other, and there were few men with enough influence to secure volunteer enumerators in their localities. In the course of next few years things may be expected to become more settled, and local leaders will emerge. Non-official agencies are being organised, local youth organisations, cultural and recreational clubs and societies are springing up. More schools and Colleges are being opened. By the time of the next Census, it can be expected that the City will have a body of energetic and patriotic citizens, with established leaders, who may be persuaded to devote a reasonable period of their leisure to this national cause.

K. 20. The Census Organisation was set up very late in Karachi. In the next census the city is still likely to be growing and the delimitation of blocks, whether by house numbering and listing or by better method such as maps, will again pre-

sent considerable difficulty. Adequate time for preparation and setting up of the organisation should be given. The Federal Capital does not cover a wide area, and as long a period may not be required as in the cases of larger provinces, but about one year's time should be given before enumeration, so that Charges and Circles may be formed well in advance and proper maps made for each. All disputes of boundaries and jurisdictions as far as the census is concerned must be clarified before-hand.

There is no doubt that house numbering is of great help to the Enumerators. In the city and in areas, where permanent house numbering may be in existence, separate census numbering may not be required but complete numbering of some sort should form the basis of the enumerator's record to ensure that no place is left out. The Household list is essential, and is a most useful document. It is indeed the preliminary count of the total population and serves as a check to the final count.

K. 21. The individual slip system proved a great success, but the Economic questions and the questions for married women on duration of marriage etc., should be simplified. Self enumeration forms proved popular and useful. In the next Census, these may be printed in greater number and distributed among educated persons. Full instructions for completion should be printed on each form.

K. 22. It is difficult to compute the actual expenditure incurred on Enumeration. The Corporation and local bodies had to spend considerably from their own funds. The Census Officers, being honorary workers, received only a small amount on account of out-of-pocket expenses. The expense incurred by the Central Government on account of Enumeration in the Federal Capital has been given in the appendix A. Since the same office continued as the Sorting and Compilation Centre, it is necessary to explain the figures given in the appendix. The total expenditure, for Enumeration, can be put at Rs. 21,386/5/- only. The expenses in 1950-51 were entirely on account of Enumeration, but were debited against Major Head "Superintendence" except for the month of March, 1951 when it is shown against Major Head, "Enumeration". In 1951-52, the pay and allowances of officers were debited throughout against Major Head "Superintendence" but the expenditure, on account of staff was debited partly on "Enumeration" and partly to "Sorting and Compilation". Therefore, expenses for Enumeration has been worked out on the basis of the entire expenditure on 1950-51, plus expenditure under "Superintendence" for the period up to the beginning of the Machine Sorting Centre, and plus expenditure under "Enumeration" for the year 1951-52. In 1952-53, only Rs. 87/- were debited to Enumeration. Rs. 142/11/-, were refunded to Treasury on account of an undisbursed amount of out of pocket expenses. Of this total expenditure on Enumeration, after allowing for reductions by short-drawals and refunds Rs. 8,608 were spent for out-of-pocket expenses of Census Workers.

SECTION II—MACHINE CENTRE

K. 23. It had been decided that all the data on the slips of the Federal Capital Area, Karachi should be sorted by punched-card equipment in a Machine centre in Karachi. This centre would also act as the Punched-card processing depot for the whole of West Pakistan.

Mr. Jafri, who had served as Chief Census Officer, for the Federal Capital Area continued in charge of this Centre until 31st December 1951 and supervised the collection, checking and coding of the slips for the Capital Area and the beginning of the card punching work. I took over charge on 9th Janaury 1952 on transfer from East Bengal where I had been the Deputy Provincial Superintendent of Census in Charge of Hand Sorting Centre at Comilla.

K. 24. The Census Office of the Federal Area had been merged with the Machine Centre and shift-

ed to hut No. 72, Ack Ack School, Clifton on the 1st May, 1951. This place was a few miles away from the City in a collection of deserted army huts on a sandy desert. It is always windy, being in the closest proximity to the sea, and it is most difficult to keep the place free from dust and white ants, the greatest scourge to records. The hut had no compound and was too small. The Karachi Administration did not agree to provide a police guard without payment—unlike the practice in East Bengal, where the Census Centre was guarded by armed police. Electric supply was liable to frequent disturbances and we lost considerable working time due to stoppage of current. Transport to the area was always unsatisfactory, and until middle of 1952 was chaotic. We had, in short, to work under very adverse conditions and in fact the place did not satisfy any of the conditions considered necessary for a Machine Centre. However, the shortage of accommodation in Karachi was acute and the place had been accepted because it was the only alternative to waiting for one to be built. Still, it should be noted that the poor accommodation, and its dreary and inaccessable situation had a great effect on efficiency.

K. 25. This Centre, besides, office staff had three other categories of employees.

(*a*) The first batch to be recruited were the senior compiler and 10 compilers, who joined on 7-5-51. Their first work was the preliminary sorting, known as the Special Block Sort for Machine Cities which had to be done by hand to put the slips in batches for punching. Their next job—and a most important one—was the coding of all the data on the slips except the items which were so simple that the Punch-Operator could work direct from uncoded answers. Their pay was fixed at the consolidated rate of Rs. 120/- per mensum. The senior compiler was paid on a scale commencing at Rs. 160/- and drew normal allowances. The compilers were intended to have good educational qualifications, but there was great difficulty in getting good enough men on a temporary basis.

(*b*) The second category of staff were the Punch Operators who were recruited next in batches. The first batch of 10 started on 10-7-51. The pay for Machine Operators was originally fixed at Rs. 70/- plus a maximum of Rs. 50/- Bonus on output. The scale was shortly revised to Rs. 90/- plus Rs. 30/- maximum Bonus.

The word "Bonus" reveals a mentality among the Machine Operators, which needs comment. The idea that pay would be computed from a quota of work and would vary, according to results was foreign to them. Towards the close of the punching work, when all the punchers were fairly expert and there was variety of different kinds of punching work to clear up it was declared that the operators would be paid the full Rs. 120/- but would have to complete specified items of work. This worked well and the tasks were all completed in due course. The word 'Bonus' was dropped but the underlying principle of payment by results was adhered to and everyone was happy and worked hard.

The punching Operators worked in two shifts, each under a Supervisor, who was paid in the same scale as the Senior Compiler. These operators were recruited in batches and were also, discharged in the same manner, as the programme of work began to finish. Out of these Operators 3 were promoted as Compilers. The more intelligent and industrious Punching Operators were retained for the Sorting Operation.

(*c*) The third category consisted of the Sorting Machine Operators, and was not needed until the Punching was well advanced. All the sorting Machine Operators were sought to be recruited through the Employment Exchange, but the candidates willing to work in the conditions at Clifton and on a temporary basis were not very satisfactory. Most of the staff were not even Matriculates. As far as possible good punchers were transferred to the sorting work on the completion of punching and in later appointments and the filling of vacancies, we tried to obtain men of better education. But with experience and uninterrupted goading, even the non-matriculates attained quite good standards in spite of educational drawba cks.

was noticeable that education and intelligence do not necessarily go hand-in-hand.

K. 26. The slips of the Federal Capital Area were received in the centre between 2-5-51 and 12-6-51, in batches for each Charge and accompanied by the necessary Census summaries and other documents.

Next to arrive were the slips of Sind Province. These came all together on 11-10-51 in the custody of the Chief Compiler. Hyderabad City slips had come on completion of the Special machine Block and Circle Sorts, ready to be coded punched on cards and sorted by machine to the same extent as Karachi slips.

Slips from the rest of Sind came on completion of Hand Sorting phase No. 2, that is before they had been broken up into the different categories of the Labour Force. At this Centre compilers and some of the Machine operators had therefore to be put on the job of extracting NALF slips, which alone, would be dealt with here. The balance were sent back to Hyderabad Hand Sorting Centre. Transference of slips of all adult persons to this Centre and taking back again slips of "Dependent" persons, those in the Agricultural Labour Force and 'Inactives' resulted in some confusion and only after long correspondence and numerous visits of Sind Census Officers could these anomalies be reconciled.

The slips from Sind intended for Machine Sorting had also to be coded here and as most of the slips were in Sindhi, a language not understood by any of the Karachi staff, two Compilers from Hyderabad were deputed to help in coding. No difficulty was found in coding except for the "Economic" questions.

The slips from Rawalpindi Hand Sorting Centre came in early February of 1952. These slips were of NALF persons of N.-W. F. P. and Rawalpindi Division of Punjab and of all persons, excepting Children of Rawalpindi City and Cantonment. Then came from Quetta Hand Sorting Centre, the slips of NALF persons of Baluchistan. Last to arrive were the very large number of slips of NALF of Lahore and Multan Divisions of Punjab. It was due to the unexpectedly large size of the NALF in the West Pakistan, that the plan for Machine Sorting all slips of certain Cities had to be abandoned.

K. 27. The Code of Census Procedure Part III, dealing with post-enumeration work, was issued in loose leaf forms. It was built up by continuous issue of sheets the first batch of which was issued on the 10th March 1951 and thereafter began a flow of new pages, amendments and replacements as the work progressed. Besides, the Code, Circulars were issued from time to time containing instructions.

Instruction regarding the Block Sort was given to the Compilers. There was nothing complicated in it. Nor was there any difficulty in the Circle Sort. The punchers were also given instructions in the schemes of coding which were given in the annexures and appendices to the C. C. P. 2 and 3 and for certain data which did not need to be coded the Punchers were instructed in "eye-coding". CCP 3 gave full instructions as to the columns of the punching Cards would be punched for each set of data. Compilers and Machine Operators were given copies of relevant sheets of CCP 3 and also, verbal instructions with demonstrations. All this work was novel to the staff and much trouble was taken in the instructional classes, which were held frequently throughout the work, and I should say that on the whole the instruction achieved its object.

K. 28. The slips of the Federal Capital Area were taken up first and hand sorted, blockwise and sexwise according to the types of cards on which they were to be punched. Prior to the sort, slips were scrutinized to detect obvious errors and omissions.

The next step was to hand-sort the slips of each circle to give the religious breakdown. This was required for Table 6, which had to be published quickly. It was impossible to wait for the cards to be punched for this data to be sorted mechanically. The result was communicated to the Census

Commissioner in September 1951.

K. 29. On the completion of this religious hand sort, the Centre took up the important task of Coding. Punching of datas on machine—Cards could only be done on basis of coding. A conference on Coding was held in Karachi where tests and practices were carried out. Instructions on Coding included the place code, language code, code for Educational level and years of studentship, and codes for Occupations and Economic Groups. Coding for places called for consolidated knowledge of geography, as one had to give the code number of the Province, while only the name of the District was generally mentioned on the slip. No great difficulty was encountered in coding the common types of occupations in accordance with the classification code of occupations for the Civilian Labour Force. Ignorance of technical nomenclature of certain types of industrial persuits created some difficulties but were easily surmounted. Constant watch had to be kept lest the coders solved difficulties by recourse to favourite omnibus categories.

The slips from Sind came uncoded and I have already mentioned that 2 compilers were sent from Hyderabad to help the coders in Karachi. The compilers in Karachi made a running check of coding of all slips which came from the Hand-sorting Centres. Slight errors were frequent, but a considerable number of errors were detected in slips which came from Rawalpindi Hand Sorting Centre. These slips had to be examined one hundred per cent and recoded wherever necessary, which greatly retarded our programme of work. Machine Sorting is a waste of time and money if the Coders do not perform their task carefully or honestly. Training in coding and close supervision of coders was, therefore, required to be intensive.

From my experience at the Hand Sorting Centre in East Bengal and at this centre, I may state that a training class for those selected for coding should be held for about a fortnight and then, a test should be taken. No one who has not passed the test should be allowed to code. Apart from this periodic tests should be held to test the memory and tendencies of the coders. Such initial and periodic tests were found to be of great value in this centre, where the compilers became quite proficient in coding work.

K. 30. According to programme, after coding, cards should have been punched for all slips in this centre. But, as has already been mentioned, all adult slips of Rawalpindi City and Cantonment excluding cultivators were sent to this centre and came at such a time that it was impossible to undertake the job of punching them all. Hence, the slips were first hand sorted (as should have been done in phase 3 of the Hand Sorting programme) into the different groups of Labour Force: Dependents ALF, NALF and inactives. The slips of dependents, ALF and inactives were hand sorted for phases 3, 4 and 5 and Hand Sorting Tickets were sent back to the Provincial Superintendent of Punjab. The slips of NALF were punched for sorting on Machines. In the Census Code, it had been stated that all slips of the Defence Personnel as well as of Non-Pakistanis would be sent to Karachi for sorting. The slips of the Civilian employees of the Defence Service Personnel were sorted separately as it had been decided that service personnel would not be analysed for occupations. Therefore, these slips were, also, put to Hand Sorting.

Similarly, it had been settled that the slips of Indians in East Bengal would be sorted by hand. It was also decided that slips of Pakistanis abroad enumerated in East Bengal would be hand sorted into: seafaring folk afloat, persons in India, and those in other parts of the world.

It would appear from the above that the Machine Sorting Centre undertook considerable hand sorting operations, but actually, these tasks formed a negligible proportion of the work of the Centre. In these Hand Sorting Operations we utilized the Compilers and Sorters who did the hand sorting work while the Punchers worked simultaneously on the card-punching Machines. Thus the sorters

were kept busy until cards were ready for their machines and considerable time, which would otherwise have been required for Punching and Sorting on Machines was saved.

K. 31. The Machines chosen for use in this Census were manufactured in the United Kingdom by Powers-Samas Company. In Karachi, we used 20 Universal Automatic Key Punchers, one Reproducing Puncher, one Automatic verifier and 8 full counting Sorters with trolleys. We used the Powers-Samas Standard 65 column cards. These were of 4 types—'A' cards for Non-Agricultural Labour Force, two male persons or one female being recorded on one card. These cards were, also, used for other male non-dependents of Karachi and Hyderabad City. 'B' cards were used for children and male dependents, 4 persons being recorded on one card. 'C' cards were for Female dependents, 3 of whom could be recorded on one card; and lastly, 'D' cards, which were plain standard cards, to be used in emergencies to replace any of the other 3 types of cards. All the 3 types of cards—A, B & C had appropriate headings and punching could be faster. The use of 65 column cards was, also, economical. But I feel that it would have been much more convenient and ultimately, economical if a smaller card was used and one person per card had been recorded. Considerable difficulties had to be encountered in sorting, because of having more than one person per card.

The Punching Machines began to be installed in September and were ready in November, 1951. As each machine was installed, Punching Operators began to be trained in batches. The Punching Machines were all placed in one room, three in a line. Before the installation, special wiring plug points and meter were provided by the P.W.D. One reproducing machine and one auto-verifying machine were also installed in the room. Powers-Samas Company provided two Engineers, who not only looked after the machines and undertook immediate repairs, but also, trained the operators in using the machines.

The training consisted of two parts (i) learning how to handle the machine; and (ii) how and what to punch. The machines were not difficult to manipulate and within a short time, the Operators learnt how to run them. These machines were very advantageous in that pressing the keys only "set up" the data; Punching of the card was done electrically and the physical strain was not severe. Errors, if seen when set up, could be rectified before punching thus avoiding wastage of cards. The Punching Operators started training on practice exercises and when they had learnt the machine they started with the punching of practice cards from special copies of actual slips. I regret to say that very few Operators achieved satisfactory speed and accuracy within a reasonable time, although the Punching instructions were clear. Most of the entries on the card were coded, and only the easy ones were left for "eye" coding. As the operators finished punching a batch of slips, the same cards were repunched from the same slips by another operator with his machine set to "check" which had the effect of elongating the original holes. It was not likely that two persons would commit exactly the same mistakes. All the cards were then put in the Auto-verifying machine and wrong cards i.e. those with check holes in different places from the original punching were detected. As all slips and cards were numbered, it was easy to trace out the slip on which the mistake was made and the data was then correctly reproduced.

K. 32. The Operators were expected to punch a minimum of 2500 correct cards per week, and a Bonus was to be paid for numbers punched above that figure. But for many months in the beginning, most of the Operators could not approach this figure, not to speak of exceeding it and earning bonus.

The punching work was done in two shifts, one from 7 A. M. to 1 P. M. and the second, from 1 P. M. to 7 P. M. The progress, for many months, was most unsatisfactory. In order to minimise errors, the Operators became slow but slowness did not improve the quality. The only answer was more and more practice and I found, in later

months, that the faster an Operator worked the less errors he committed. But he needed constant goading and coaxing, interspersed with threats. There were other factors arising from the unsatisfactory location of the Centre which tended to slow work and the original time table had to be revised.

The quality of Punching improved with speed and it was found, on test, that the faster punching operators made less than 2% errors in Punching. To encourage everyone to attain this standard, the bonus was revised on a basis of speed-cum-correctness. At the same time the check punching and verification scheme was modified. Only 10% of Cards of Punching Operators with less than 2% errors were check-punched. Card of punchers with errors between 2% & 5% were check-punched to the extent of 50% and Cards of Punchers with more than 5% errors were check-punched cent per cent. The Supervisors also extracted samples at random, for check-punching and verification. As a result of these measures, speed and output were greatly increased and errors gradually lessened. The cards of all Punchers were subjected to regular verification, and as such checks did not reveal any increase in errors, we can safely assume that punching was sufficiently accurate.

The Punching Operations were carried out in the order of receipt of slips. All slips of Federal Capital Area were punched first and then slips from Hyderabad City. Later, slips of NALF of Sind were taken up. Next, came slips from Rawalpindi Hand Sorting Centre, of which slips of N.-W. F. P. were punched first. Then followed slips of Baluchistan and the slips from Lahore were taken up last. The Punching Operation was over on 30-9-52.

We dealt altogether with 43,18,925 slips for Punching and eventual Machine Sorting.

K. 33. The Sorting machines were installed between March and June 1952. The Operators were trained in batches how to run the machines and gradually, they were put on actual Sorting work. This was not merely a mechanical operation like Punching, but required a fair standard of intelligence and undivided attention.

The Sorting machine operation was performed to start with in one shift, but eventually was changed to two shifts, like the punching. We had 8 Sorting Machines and 2 Sorters for each machine. In addition, one Reproducer was attached to each shift, whose duty, was to repunch data of cards which had been mutilated or wrecked in course of sorting operation. Later in order to economise, as the Sorters became more adept in their work and we could adopt double shifts the second sorter on each machine was withdrawn, and 4 spare sorters for each shift allowed instead. These additional hands were required to get wrecked cards replaced, carry card trays, keep the operation going when the sorters were absent, help in filling up the Machine Sorters Tickets etc.

K. 34. As an annexure to C. C. P. 3 special sorting instructions with diagram were issued by the Census Commissioner for each working. These instructions were complete and there had to be only a few amendments. They were easily understood, copies of the diagrams and instructional sheets of the working currently in hand were given to the operators and fully explained, discussed and demonstrated. The operators kept these instructions before them at all times. Some of the workings were simple and none of them caused any serious difficulty. In all cases what was required of the operators were constant attentiveness and rememberance of the sequence of "runs".

The Sorting scheme was divided into phases and is fully described in section 4.3 of C. C. P. 3. Briefly phases A and B corresponded to parts of the hand sorting programme while phase C went beyond the hand sorting into the field of detailed economic characteristics. Phase A was applicable only to the cards of the Federal Capital Area and Hyderabad City. Phases B and C were used for cards of all persons in the Non-Agricultural section of the Labour Force (NALF).

The work started with phase B of the Provinces. These results were needed urgently as the lack of them caused a bottleneck in the tabulation programme. Sorting started with N.-W.F.P. followed by Baluchistan, Sind (including Sorting for phase A & B of Hyderabad City) and Punjab Phase C was then tackled in the same order. As soon as workings 11 to 14 for N.-W.F.P. were completed, cards of Baluchistan were taken up. Working 15, a provincewise sort—was deferred and taken up last when we had progressed considerably in compilation and tabulation of data, urgently required by the Provincial offices.

On completion of phase C for Sind work on Karachi for phases A & B was undertaken simultaneously with the sort of Punjab cards.

K. 35. The Sorting machine was capable of sorting 400 cards per minute. But inspite of this high speed, the progress, for a long time, was disappointing. Though the Sorters were the best men we could get and included the pick of the Punchers, yet it took time before they could work the Sorting Programme accurately and swiftly. At one time it looked that operations would drag even beyond the revised target date. But due to last minute efforts, because of the Census Commissioner's effective appeal, coupled with the grant of full bonus for the last 2 months, if the sorting programme was completed before the end of February 1953, the sorters finished their job within the scheduled time. The last Sorting operation was done on the 28th February 1953.

K. 36. In machine Sorting errors can only arise from either defective machinery, wrong operation or erroneous transcription from the counters on the machines to the Sorters tickets.

There were, at times, faults in the operation of the counters due to wrong initial adjustment when machines were installed and to sand, damp etc. These faults, if detected in time, did not seriously affect progress, but it created great complications if such defects in counters were only found out after much work had been done. In such cases, entire workings had to be repeated. Other mechanical defects like cards being fed by the machine into wrong boxes, jamming, etc., could be detected immediately and did not result in any appreciable loss of work.

A major trouble was the wrecking of cards. This happened particularly when the weather was hot and sultry. It was most difficult to maintain the cards in perfect condition and free from dust, and when the weather was really hot, the cards sometimes became brittle and broke up in the sorting machine or developed a curl and clogged the feed. The same thing happened if the edges of the cards were damaged by careless handling.

Errors in transcribing data on to the Machine Sorting Tickets (MSTs) were also despite the double checks, not rare, but the workings and MSTs had been so designed that an error in recording one run or working was found out at some later stage. The unavoidably long time taken on sorting was partly due to my insistance on the careful following of the instructions on checking the counters and reconciling all the totals, and by my insistance that the programme should always be consulted when each run started and that too much trust should not be put on memory.

Inspite of our best efforts errors occurred in some MSTs especially during the closing stages. The compilers, who had to agree all the total were put to great difficulties and loss of time in locating and correcting these errors. In a temporary organization, with loss of employment straining men in the face, the quality of work during the closing stages tends to deteriorate even amongst the temporary Supervising staff. In future to control more effectively these tendencies, the supervising staff in all branches—Punching, Sorting and Compilation, should invariably be seconded from the permanent service.

K. 37. As soon as MSTs of a particular working were completed and checked, these were passed on to compilers who entered the data on compilation sheets. Some workings were done on basis of subareas, while tables had to be prepared for Districts and Selected Towns. The data of

sub-areas-had therefore to be added together. Originally, it was intended to send the sorting tickets to Provincial Census offices for compilation and tabulation, but in the interest of speed and accuracy it was finally arranged that the machine centre should send completed drafts, except for data from workings 7 to 9. The figures from these machine workings had to be added to the figures obtained by the Hand Sort, and were therefore transcribed on to hand sorters tickets for ease of compilation in Provincial offices.

In order to provide an even stream of work for the compilers at the Provincial offices data for the Districts and Selected Towns, were despatched as and when they were compiled, without waiting for completion of the entire Province. It has been mentioned that data from Machine Phase B had been sent to all Provinces before taking up the Sorting of Phase C. In completion and despatch of draft tables were followed the regular sequence of first completing Baluchistan, followed by N.-W. F. P., Sind and Punjab. The last draft tables of Punjab were sent on 16-5-53.

The compilers took up compilation and tabulation for each District and Selected Town in the Provinces in order of completion of Sorting for each Province. With progress of sorting and compilation, however, the programme had to be adjusted so that urgently required Provincial data could be sent first. The despatch of draft tables was completed on 16-5-53, when the last tables for Punjab were sent out.

Meanwhile, compilation of data and special tables for the Federal Capital Area was taken up. All tables for the Federal Capital Area and special tables in the "E" series for all Provinces were completed by the end of June 1953.

K. 38. Due to the new delimitation of wards the Karachi Municipal Corporation statistics required to be brought on to a ward basis, which was most difficult task. We had sorted the essential data on Census circle basis, however, so that figures could be built up for different areas. A special table was therefore prepared giving a certain amount of data on the basis of the new wards.

It is not possible from previous census reports to obtain data for past decades for the villages which now form part of the Capital Area and therefore comparisons with the past are limited and approximate. It was unfortunate that due to an oversight we did not carry out the plan of sorting the cards of Parsis and Christians separately. It would have been useful to have shown these two important minority communities of Karachi separately in more of the tables of the Federal Capital Areas.

K. 39. The members of the compilation team were of unequal quality but in course of time, they became fairly efficient. Most of them were sincere workers and did not grudge an extra hours work, but there were many instances of careless work when draft tables had to be revised and correspondence arose from an error in addition or transcription. Still, I feel that in general, the quality of the compilation work had been satisfactory. Whatever errors were committed were detected either in the machine centre itself or at the Provincial office or by the Census Commissioner's office, and their number however, was much less than I might have expected in view of the unexperienced and temporary staff and the constant pressure of work.

K. 40. Apart from the machines used for Sorting other mechanical aids were also adopted for speedy and accurate calculations. The "Plus" adding machines were used to great advantage and so was the automatic numerator machine. For putting identification number on the slips.

K. 41. In the next Census we shall no doubt adopt machine operation on an even wider scale. This was first time that machines were used on a large scale, and the difficulties we had to face were natural, since few people had any acquaintence with their working. In mechanical work, as elsewhere tradition and experience count, both were lacking in this country. In this census the data sorted by machine had to be compiled and tabulated by hand. In the next censuses I feel that tabulation, too,

should be done by machine to ensure uniformity, accuracy and speed.

We have now trained a number of youngmen to operate Punching and Sorting machines. Unfortunately, they will lose this experience if they have no further employment on similar work and uptil now I have not heard of any of my ex-employees receiving a job which will enable him to improve his recently required proficiency.

Apart from my own staff most of whom rendered ungrading services and for whom separate confidential reports have been submitted, I received ready cooperation and help from the Census Commissioner's office, and especially I should acknowledge the great assistance constantly given by Mr. Shamsi, Assistant Statistical Officer. He was the embodiment of cheerful cooperation, and helped us in innumerable ways.

It was a privilege and a pleasure to work under Census Commissioner. He had visited Comilla while I was there and when I came in closer contact with him. His frequent visits to this centre inspired and encouraged us.

CHAPTER 12

NORTH-WEST FRONTIER PROVINCE

INTRODUCTION

This report deals with the first Census of the N.-W. F. P. and Tribal Areas after the establishment of Pakistan. The area covered by the census is exactly the same as in 1941.

The whole area was divided into the following three categories:—

(*a*) Enumerated on standard slips.
(*b*) Enumerated on tribal slips, and
(*c*) Censused on estimation basis.

The Appendix to this chapter indicates the areas which were censused in accordance with each of the above methods during 1941 and 1951. It would be observed that there has been no change in this respect except as regards the following areas:

Name of area.	*How censused.*	
	In 1941	In 1951
Kalam (Swat Kohistan) Malakand Agency.	By estimation.	By enumeration on tribal slips.
Area inhabited by Swathi tribes on the border of the Hazara District.	—Do—	—Do—

Kalam, a small tract on the right bank of Indus Kohistan, covering an area of 822 square miles, has always been treated as a tribal area of the Malakand Agency. On the establishment of Pakistan, however, the Wali of Swat extended his sway over this territory, but as the Government of Pakistan has not yet recognised his sovereignty, it has been treated as a separate unit for purposes of census.

The area inhabited by the Swathi tribes on the border of the Hazara District (Nandihar, Tikri and Deshan) has since been merged in Pakistan vide Government of Pakistan, Ministry of States and Frontier Regions Notification No. F. 3 (67)-F. 49, dated the 7th February, 1952.

The standard enumeration slip adopted in the present census is much more detailed than ever used before. There was also a slight improvement in the tribal enumeration slip which contained the following questions:—

(1) Name,
(2) Age,
(3) Sex,
(4) Tribe,
(5) Married, un-married, widow or divorced.
(6) Means of Livelihood, and
(7) Ability to read and write languages including Mother Tongue, and highest examination passed.

The tribal slip used in 1941 included only the first six questions.

All the settled districts of the N.-W. F. P. and Military Stations in tribal areas were enumerated

as before, on standard enumeration slips. Selected tribal areas and the states on the North-West Frontier were enumerated on tribal enumeration slips. These comprised Swat and Chitral states Kálam, two Tahsils of Dir state and parts of the Malakand and Kurram agencies as well as the area inhabited by the Swathi tribes on the Hazara district border. The standard enumeration slip could not be used in these areas on account of the different conditions of life compared with those obtaining in the settled districts.

The census of tribal areas other than those mentioned above was taken on an estimation basis, because of their inaccessability and the lack of proper enumeration and other census staff. For these areas only the population figures were supplied, as in the past, by local political officers. These figures are generally based on the number of males and females (including children) given by the representative elders of each village to the political officer concerned.

Arrangements for census operations in Gilgit and Baltistan comprising the Gilgit Agency, Skardu political district and the Astor sub-division were also entrusted to the census organisation of the North-West Frontier Province. The census operation in these areas is described in paragraph NWF 40.

SECTION I—ENUMERATION

N. 1. Creation of the Provincial Census Office. Khan Abdul Latif Khan of the Provincial Civil Service (Judicial Branch) took over as Provincial Superintendent of Census, North-West Frontier Province, States and Tribal Areas on the 22nd May, 1950. The office of the Provincial Superintendent of Census, was created with the appointment of a single official, (Head Clerk-cum-Steno) on the 1st June, 1950. An Assistant was added to the office from the 1st October and a Typist from December, 1950. Khan Abdul Latif Khan died suddenly on the 19th September, 1950, at Karachi, where he had gone to attend the second Census Conference. Sheikh Abdul Hamid, Secretary to Government, North-West Frontier Province, Food and Civil Supplies Department, took over charge of the post on the 18th October, 1950, in addition to his other duties. During the interim period of about one month the post of Provincial Superintendent of Census, remained vacant. Captain Ashraf Hussain, Provincial Civil Service, joined as Deputy Superintendent of Census, in December, 1950. He was very helpful during the enumeration period, and later in setting up the census organization for Gilgit and Baltistan. He also looked after the Hand Sorting Centre established in Peshawar, for the sorting etc. of tribal enumeration slips. He was withdrawn by the Provincial Government in August, 1951, due to paucity of officers in the Provincial Civil Service. From the 16th May, 1952, the post was filled by promotion of Mr. Yusuf Ali, who had hitherto been working as Head Clerk-cum-Steno in the Provincial Superintendent's office.

N. 2. Shortage of time for preparation for enumeration. The Provincial Superintendent of Census assumed charge of his duties towards the end of May, 1950. The enumeration had to be taken in February, 1951. There were therefore only eight months within which to complete the pre-enumeration work, namely:—

(*a*) dividing the operative area into census units, viz: Census Districts, Charges, Circles and Blocks.

(*b*) House-numbering and house-listing and

(*c*) training of census staff.

Thanks, however, to the willing co-operation by members of the Revenue Department in rural areas and the employees of local bodies in urban areas, the preliminaries were completed according to schedule.

N. 3. Census areas and Census Officers. The operative area was split up into various divisions which could be conveniently controlled and worked

by each of the several officers of the census organization, namely, District Census Officers, Charge Superintendents, Circle Supervisors and Enumerators. The existing administrative divisions were maintained as far as possible. No difficulty was experienced in working out this arrangement.

In areas enumerated on tribal slips, a simplified method of delimitation was adopted. Each Political Agency, State or Tribal area adjoining a settled district, was treated as a Census District, each Tahsil as a Charge, and each village as a Block. On account of non-availability of literate persons only a limited number of Census Officers were employed in these areas and they combined the duties of Charge Superintendents, Supervisors and Enumerators. For instance, in Chitral State only six persons carried out the operations by moving about from place to place across mountainous country.

The numbers of various census units and the officers employed are shown in appendix 'B'.

N. 4. **General village or town registers, maps and other records of the organization into census divisions.** A great deal of time was taken in preparing General village or Town Registers, etc., in the Districts. In many cases these were not prepared according to instruction. Another detailed list was therefore obtained from each Census District, showing names of Charges, Circles, and Blocks and the location code number allotted to each of them. Charge Location Summaries for each Census District were prepared. A consolidated summary for the whole Province was also maintained. To ensure full coverage of the whole operative area, copies of relevant maps of the Survey of Pakistan were supplied to each District Census Officer, who marked on them the boundaries of Charges and Circles in their respective Districts.

N. 5. **Code of Census Procedure Part I.** The preliminary work of delimitation of areas into census districts, charges, circles, and blocks, and the organization of the census machinery in the settled districts was carried out on the lines indicated in the Procedure Code of 1941 Census, and completed before the new Code of Census Procedure Part I was received in August, 1950. The new Code does not differ materially from the one used during previous census. Adequate copies of the new Code (in English) were supplied to each district census officer for distribution among his Charge Superintendents, Supervisors, and English knowing Enumerators. In rural areas the Charge Superintendents, Supervisors and Enumerators consisted almost entirely of Revenue Department officials, e.g. Tahsildars, Field Kanungos and Patwaris. Some of the lower ranks did not understand English. In order to ensure satisfactory compliance with the requirements of the Code, therefore, each senior Census Officer held several conferences attended by Circle Supervisors and Enumerators to explain the broad outlines of the instructions. The Supervisors and Enumerators made notes of important extracts from the Code in Urdu. The census organization as constituted in rural areas rendered it possible for the senior staff to remain in close touch with the Supervisors and Enumerators and to explain any problems about which they had any doubts.

In urban areas Supervisors and Enumerators knew English and could follow the instructions contained in the Procedure Code without much difficulty.

N. 6. **Recruitment of enumeration staff.** The majority of Enumerators in rural areas consisted of patwaris. In larger blocks they were assisted by Village school teachers. Members of these two departments carried out their duties willingly and cheerfully. The position was not so happy in the urban areas where even the Government and local bodies employees were reluctant to serve as Enumerators. The work was too heavy to be completed by the Government and local bodies employees alone. A large number of non-official Enumerators had, therefore, to be employed. While no appreciable difficulty arose in finding suitable non-officials in small towns, those in larger towns like

Peshawar consented to do the work reluctantly and in serveral cases after they had been threatened with action under the Census Act. The number of Enumerarators actually drawn from each category is as follows :—

1.	Patwaris	1466
2.	Teachers	1282
3.	Other Govt. servants and local bodies employees	1713
4.	Non-officials	913
	Total ..	*5374*

Regular letters of appointment were issued to Enumerators authorizing them to carry out operations without let or hindrance. These letters described briefly the duties of Census Officer and those of the general public.

N.7. **Census date.** The advantages of spreading the enumeration period over a number of days and the difficulties of carrying out enumeration during one night only are explained in detail on pages 10 and 11 of the Administration Report for India for 1941, and do not require recapitulation.

Except in certain parts of the Hazara District, which become snow-bound during the winter months and the Chitral State, enumeration was carried out from dawn of February 9, 1951, to dawn of March the 1st, 1951. The night between the 28th February and the 1st of March, 1951, was the enumeration census night during which the census figures were completed by the inclusion of floating population and additions and exclusions due to births and deaths among the resident population. The system worked successfully and very few persons, if any, escaped enumeration. The census period as fixed fits in with the climatic conditions of the Province, and allows the Enumerators and other census staff as well as the bulk of population in rural areas to attend to enumeration without interference with their normal work or exposure to extreme cold or hot weather conditions.

Fifteen villages of Rash, Bakot, Bagan and Lora, Girdawar Circles of Abbottabad Tahsil and nineteen villages of Kaghan Girdawar Circle in Mansehera Tahsil (both in Hazara District), which usually become inaccessible and impassable on account of heavy snowfall during February were treated as "early areas" for purposes of enumeration. The enumeration in these areas was carried out from 20th November to 10th December, 1950.

For the same reasons the enumeration in Chitral was, according to the original plan, extended over a period of five months beginning from 1st October, 1950 and ending by the dawn of 1st March, 1951, which provided for the enumeration to be carried out alternately in each province of the State. As the tribal enumeration pads did not reach Chitral from Karachi however until towards the end of November, 1950, the work could not be started earlier than 1st December, 1950. The additional Political Agent, who acted as District Census Officer, reports: "Six special Enumerators were appointed. One Enumerator was allotted two provinces, while the other five had one province each. They worked hard during the snow-falls and cold winds without thinking of their comfort and finished the enumeration work by the 8th February, 1951, which is admirable. The rest of the period upto 28th February, 1951, was occupied in revising the slips on account of births and deaths".

N.8. **House-listing arrangements.** After the division of the operative area into various census units and the organization of census staff, the next step was the painting or fixing of an identifying number on the quarters occupied by each household in every block, and then listing them on the household List Forms specially designed in Urdu for the purpose. These forms were supplied to each Charge Superintendent direct from Karachi for use of their Enumerators. Other material such as ink, pen or pencil was supplied by the local bodies concerned. Special Instructions were given

to Enumerators before they started on this work, especially with regard to the definition of a "Household" or "House" as prescribed in the Code of Census Procedure 1951, Part I. These Instruction classes were held by District Census Officers which the Charge Superintendents, Circle Supervisors and as many Enumerators as could be available in the neighbourhood attended. Classes were also held by Charge Superintendents for the benefit of Enumerators within each Charge and were mostly well attended. Each senior Census Officer held two such Instructional Classes. In order to achieve public co-operation the Government's intention behind this task was given wide publicity through large posters displayed in conspicuous places, such as "Hujras" (village gathering places) mosques, post-offices, schools, colleges, railway stations, police stations, courts, etc., in every block, and also through public meetings and press.

N.9. The house-listing and numbering operation as actually carried out. The task of house-numbering and listing was entrusted to Enumerators. This enabled them to become acquainted with the areas in which they had ultimately to carry out final enumeration. In urban areas the existing system (if any) of house-numbering was maintained but generally new numbers had to be given. Paint and other material required for house-numbering were supplied by the local bodies concerned. During my tours of the various localities it was noticed that there was some mis-understanding about the correct meaning of "Household", i.e. the entire homestead or enclosure was treated as one household. The mistake was remedied on the spot by personal explanation.

N.10. Cottage Industry enquiry. An enquiry about the Cottage Industries in the Province was also conducted simultaneously with the preparation of household lists on a separate Cottage Industry sheet in Urdu. The enquiry was intended to cover only the dwelling houses or premises connected therewith, where the home manufacturing enterprises were conducted and which employed fewer than 20 hands (fewer than 10 if power were used). The completed forms of Cottage Industry sheets, however, contained enterprises carried out in shops, and in some cases in factories employing more than 20 persons as also occupations such as tailoring. These were omitted in the final analysis. The first step in the analysis was to allot a code number to each enterprise according to the prescribed classification. The data for enterprises coming under each classified group was then tabulated locally by clerical labour.

N.11. Collection of Household List and Cottage Industries Returns. The Household lists and Cottage Industry returns were collected by each District Census Officer from his Enumerators towards the end of December, 1950. The former were sent by them to the Hand Sorting Centre at Rawalpindi along with enumeration pads and other census material between April and June, 1951, while the latter were sent to the Provincial Superintendent of Census Office in August, 1951. The Household lists were collected from Rawalpindi Centre in December, 1951, after the sorting work had been completed.

N.12. Test of the Enumeration Slip. The Provincial Superintendent of Census and the District Census Officers held classes in July, 1951, to test the ability of the Enumerators correctly to fill the original draft of the standard enumeration slip and to ascertain whether the respondents understood the various questions put to them. The difficulties encountered both by the Enumerators and the respondents were communicated to the Census Commissioner and were discussed at a conference of all the Provincial Superintendents of Census held in Karachi in September, 1950. As a result of these deliberations both the slip and the leaflet of enumeration instructions were amended suitably.

N.13. Code of Census Procedure Part II. The Code of Cenus Procedure Part II (English) was available by November, 1951. This was designed to prepare the census organization for the most vital part of their duties, namely, the actual census

taking and collection of the results. An adequate number of copies of the Code were supplied to each District Census Officer for distribution among his Charge Supdts., Supervisors and such Enumerators as knew English. The senior Census Officers made use of this Code as a text book while conducting classes of instructions to the subordinate census staff. It also served as a reference book for questions arising during the course of enumeration.

N.14. **Instruction of Enumeration Staff.** In order to prepare the Enumerators, on whom devolved the task of actual census taking, strenuous efforts were made to acquaint them fully with the details of their duties. District Census Officers held instruction classes at their respective headquarters with a view primarily to impart training to Charge Superintendents and Circle Supervisors and as many Enumerators as could be gathered together. Each of them held two such classes lasting in most cases a couple of days. The Charge Superintendents held similar classes in their respective Charges to train Enumerators. They held two classes each and in some cases three classes. The Provincial Superintendent of Census personally visited all District and Tahsil headquarters and imparted training to the Charge Superintendents, Circle Supervisors and Enumerators in the presence of the District Census Officers. The Deputy Superintendent of Census explained the method of recording answers in the standard slips in North and South Waziristan Agencies. The Head Clerk of the Office of the Provincial Superintendent of Census gave similar instructions to the Enumeration staff in the Kurram Agency. During his visit to the N.-W. F. P., the Census Commissioner witnessed one or two such classes at Tahsil Headquarters. He held meetings at a number of places to explain to the census staff the method of enumeration and recording of answers on the slip. He also addressed a well attended meeting of Enumerators and members of the public in a cinema hall where slides showing the method of enumeration in America were exhibited.

The material used for imparting training was the finally approved enumeration slip printed in Urdu in the form of wall diagrams and the Enumerators' leaflets containing detailed instructions for recording answers to various questions (both in Urdu and English). Spare copies of enumeration slips were supplied for practising purposes to the census staff at all levels. The enumeration staff did not find any difficulty in recording correct answers to all questions except those relating to economic characteristics, viz: main occupations, subsidiary occupations, occupation in January, and the main economic group in which occupation was followed. The Provincial Superintendent of Census, his Deputy and Head Clerk paid special attention to explain how the answers to these questions were to be recorded. Several members of the public belonging to different occupations and walks of life were gathered together at these meetings to serve as respondents.

N.15. **Distribution of slips and forms.** Indents for the supply of enumeration slips (stitched in pads of 100 or 25 slips each) based on the 1941 population plus 20% on account of natural increase, migration and spoilage including reserves with Provincial Superintendent of Census, District Census Officers and Charge Superintendents, were placed with the Census Commissioner in November, 1950. The pads were supplied direct from Karachi to each Charge Superintendent, District Census Officer and the Provincial Superintendent of Census. The Charge Superintendents distributed them among the Enumerators according to the number of persons entered in the Household Lists for each block. Each Charge Superintendent retained 5% of the pads as a reserve. The supplies made to Enumerators were found adequate except in a few cases in which the shortage was made good from reserves with the Charge Supdts. All the other forms required in connection with the Census were also supplied to Charge Superintendents and District Census Officers direct from Karachi, according to indents submitted by the Provincial Superintendent.

N.16. Publicity. The co-operation of the public during the enumeration period was invited at frequent meetings held under the auspices of the District Census Officers in all urban areas and some of the important villages as well as through the radio and the press. The Government's intention in collecting the various statistics was fully explained by means of posters. It was stressed that answers to census questions would be treated as secret and would not be used for purposes other than the Census.

N.17. Enumerationin action. (*a*) **Settled Districts. In Rural Areas.** The enumeration work in rural areas was carried out mostly by patwaris who did not find any difficulty in performing their duties as they were fully acquainted both with their blocks and the respondents. Local school teachers and other subordinate Government officials assisted them, where necessary. Members of the superior census staff remained closely in touch with the Enumerators and solved such problems as arose on the spot. These were raised in individual cases, especially by Powindahs in the Dera Ismail Khan district, against the propriety of questions relating to women. The District Census Officers and the Charge Superintendents handled these few instances promptly and tactfully by explaining the object of the questions.

In larger towns. In Peshawar Municipality the progress of work of some Enumerators was found to be slow during the first few days of enumeration. The Provincial Superintendent of Census appointed Assistant Enumerators to ensure completion of the work within the prescribed time. The Provincial Superintendent of Census and the District Census Officer paid visits to each block in the Peshawar Municipality and checked the work of Enumerators.

In smaller urban areas. The enumeration work in smaller urban areas was conducted smoothly according to plan. No untoward incident was reported.

In railway colonies, institutions, etc. Railway stations and connected premises as well as institutions such as hotels, clubs, hostels, and other boarding houses, hospitals, orphanages, etc. were treated as separate enumeration blocks, the Enumerators being the manager, keeper or other employees of the concern. Most of the Enumerators in these areas were well educated and intelligent persons. They did not find any difficulty in carrying out their duties.

Public Co-operation. Members of the public generally did not display any keen interest in the census, chiefly because of their inability to appreciate its usefulness. They did not at the same time raise any serious objection to the conduct of enumeration, although some of them could not appreciate the value of questions relating to women i.e. marital status, number of children born to each woman during marriage, etc.

(*b*) **Tribal areas.** Enumeration in the selected tribal areas and Frontier States was conducted with the aid and full co-operation of the Agency or State officials. No objections were raised by the tribesmen. The possibility of extending enumeration in these areas depends very largely on the political situation obtaining at the time of the next census. As far as can be foreseen at present there should then be no difficulty in carrying out the simplified enumeration on tribal slips in the remaining tahsils of the Dir State (in Malakand Agency) and in the tribal areas adjoining the Hazara and Mardan Districts.

N.18. Supervision during enumeration. The senior census staff, namely, the District Census Officers, Charge Superintendents and Supervisors remained particularly active during the enumeration period. They checked the recorded slips and watched the progress of work. Fresh slips were written in places of those found to have been completed inaccurately and additional Enumerators were appointed in places where the progress was found to be slow.

N.19. Collection of the results. The collection of results was attended to by every member of the census organization with great promptness. In almost all cases the Enumerator handed over the results of enumeration, i.e. the number of males, females, and the number of muhajirs and literates, to their respective Supervisors on the 1st March, 1951. The Circle Supervisors' summaries were despatched to the Charge Superintendents either on the same or the following day. The Charge Superintendents' summaries were completed on the 3rd of March, and the District summaries on the 4th of March, 1951. The Provincial Superintendent of Census received the results from all District Census Officers by or before the 6th March. The provisional result for the Province and the tribal areas was sent to Karachi on the 12th March, 1951.

N.20. Publication of preliminary figures. The preliminary figures giving the number of males and females, and literates, were published with the approval of the Census Commissioner, on the 10th April, 1951.

N.21. Transportation of slips to Sorting Centres. The process of collecting the pads of recorded enumeration slips was the same as that adopted in connection with the collection of preliminary results. While all the tribal enumeration slips arrived at the Hand Sorting Centre at Peshawar by the middle of May, 1951, the standard enumeration slips were kept in custody by the District Census Officers until after 17th April, 1951, when the Hand Sorting Centre at Rawalpindi, to which these had to be sent, was opened. The Deputy Superintendent incharge Hand Sorting Centre, Rawalpindi, reported that census material from all the District Census Officers in the N.-W. F. P. had been received by him by the 13th June, 1951. The pads relating to each charge were put in separate bags and sent to the Hand Sorting Centre, Peshawar or Rawalpindi through special messengers by trucks or by rail. To avoid inconvenience the names and the location code numbers of the charges were marked on each bag.

N.22. Comments on the enumeration work of:—

(*a*) **Provincial Superintendent of Census's own office.** During the preliminary stages of the operations (June to mid October, 1950) the office of the Provincial Superintendent of Census consisted of a single clerk who was, by way of courtesy alone, designated as Head Clerk. This office had mainly to deal with the large flow of correspondence from Karachi and to direct instructions to and obtain information from the District Census Officers. During the enumeration period the office remained busy in obtaining telephonic or telegraphic information from districts about the daily progress of enumeration and other relevant questions connected therewith.

(*b*) **Census organization at district level.** No special census staff was employed in the districts. The District Census Officers, who were either Assistant Commissioners or Revenue Extra Assistant Commissioners in the settled districts and the Political Agents and responsible State officials in tribal areas, managed to entrust the clerical duties to one of their subordinates in addition without any extra remuneration. Though already over-worked, it appears that they contrived to find time to attend to the census work.

(*c*) **Census Officers below District level.** Charge Superintendents, Circle Supervisors and Enumerators generally worked well. Disciplinary action was taken against a few members of the Education and Revenue Departments, who refused to carry out their duties or were slow in their work. No remuneration was paid to anyone of them, except to six Enumerators in the Chitral

State, where it was found impossible to get hold of literate persons in the villages.

N.23. Comparison of the organizationin in this census with that of past censuses. There has not been any marked change in the organization of the present census as compared with past censuses, except in the numbers of divisions and Census Officers of each class. Appendix 'D' compares the census organization during 1941 and 1951. A comparison of population per Census Officer is given below:—

N.24. The Cost of Enumeration: explanation of data in Appendix A. A small sum of Rs. 201/11 was incurred on account of cost of stationery supplied by the Controller of Stationery during 1951-52.

N.25. The Census Staff: Explanation of schedule in Appendix B. No paid staff was employed for actual enumeration work in the settled districts. Expenditure on account of travelling allowance of such members of the District Census staff as were already in Government service, was debited to the head of account from which they were drawing their pay. The post of the Provincial Superintendent remained vacant from 20th September to 17th October, 1950. The gaps between the dates of employment of other members of the staff are due to desertions etc. followed by a period of search for suitable substitutes. No substitute was appointed for the peon who left on the 25th August, 1951.

N.26. Recommendations for future guidance. The present practice of reviving the operations after every ten years tends to the deterioration of interest both in official and public circles during the intervening period. As a matter of fact the public do not realize how the census is benefiting them at all and hitherto they have always been suspicious about it for one reason or the other. The interest and co-operation aroused in them during the course of one census is bound to lapse by the time the subsequent operation is started. With a view to keeping pace with modern world developments every new census in this country is likely to cover a wider field and if the old system of disintegration is followed the money incurred and the experience gained in setting up the present detailed census procedure would go waste. The recommendation made in the 1931 and 1941 Census Reports that the census organization should be incorporated into some continuing office of the Central and Provincial Governments and not be allowed to disintegrate entirely, is strongly reiterated. In any event however, the following recommendations are made regarding the creation of the census field organization for the 1961 census:—

AVERAGE POPULATION PER OFFICER:

	District Census Officer.		Charge Supdt.		Supervisor		Enumerator	
	1941	1951	1941	1951	1941	1951	1941	1951
SETTLED DISTRICTS:—								
Bannu.	295930	303046	59186	60609	3441	8913	624	426
D. I. Khan	149065	137985	42590	39424	8057	10221	310	625
Hazara	265410	285313	66352	38906	9478	7508	398	952
Kohat	144702	149515	57880	23002	5788	8543	449	444
Mardan	506539	592354	126634	148088	28141	29617	445	516
Peshawar	283944	298610	62448	74652	11511	9331	448	595

(*a*) **Organization.**

(*i*) Special pay should not only be given to gazetted officers but to all full-time census staff. In the case of ministerial staff 25% of the basic pay would be a reasonable level for special pay. This would do a great deal to avoid difficulties which have been met with in obtaining suitable staff in temporary census offices.

(*ii*) Census office staff should be obtained as far as possible by seconding from the permanent civil service, with special pay as above.

(*iii*) District Census Officers should be given special pay at the rate of Rs. 100/- per month and should be provided with a full-time census clerk. A similar clerk should also be provided in each Municipality and Cantonment (where the extent of the work justifies such appointment) at the expense of the local body concerned.

(*iv*) The system by which Enumerators were obtained either by appointing civil servants who were required to accept the work as addition to their duties, or by finding non-official volunteers who were un-paid, is probably the best method of getting the work done. But efforts should be made to increase the prestige of Enumerators and to ensure that volunteers were men of high standing.

(*v*) The designation of Provincial Superintendent of Census is unsuitable. It should be changed to some title which would indicate the true status of the appointment such as "Deputy Census Commissioner" or "Director of Census Operations".

(*vi*) The Census Commissioner should be relieved of detailed financial administration by giving to Provincial Superintendents of Census powers of a Head of Department.

(*b*) **Operational Methods.**

The following recommendations are made regarding methods of working:—

The District Census Officer should be responsible for the delimitation of his area into various census units. Blocks should be uniform in population as far as possible. Each village should be treated as one block or split up into more; it should never be taken as part of another block. It is most desirable to have sketch maps showing boundaries of each block or village. House-listing and House-numbering are essential. The individual slip system has proved successful and should be continued. It is not likely that local conditions or requirements will change greatly which would make it possible to introduce other methods. The occupation questions should be simplified, and the Household list should be so designed as to provide data on family structure. Self-enumeration house-hold schedule forms may be provided for use by literate persons. Hand sorting would best be organized on a district basis upto at least the level to which it was carried in the present census in the circle sort.

SECTION II—SORTING.

N. 27. Hand Sorting Centres: Organization, size and locations. The sorting of standard enumeration slips and ultimate compilation of the results thereof pertaining to the settled districts of the N.-W. F. P. and Military Stations in tribal areas on the N.-W. Frontier, were entrusted to the Hand Sorting Centre at Rawalpindi. The Hand Sorting Centre at Peshawar was to deal with the work connected with tribal enumeration slips pertaining to tribal areas on the N. W. Frontier and Gilgit Agency. The experiment of directing the sorting

and compilation work for N.-W. F. P. non-tribal slips to Rawalpindi was not successful. Numerous inaccuracies in the block sort resulting incorrect compilation of the first table, namely, Table No. 6-Religion, were noticed. Consequently it was necessary for a batch of N.-W. F. P. Compilers to go to Rawalpindi for reconciliation of the figures. Later, two Compilers from Rawalpindi helped in reconciliation of the various census documents in Peshawar.

The Tribal Enumeration slips were sorted at the Hand Sorting Centre at Peshawar, which was established on the 1st May, 1951, under the supervision of the Deputy Superintendent of Census.

Twenty Sorters, 2 Supervisors, 4 Compilers and 1 Inspector were employed for varying periods as indicated in Appendices 'A' and 'B' to this report. Some sorters were drawn from the Revenue Department, while others were recruited direct. No special equipment for sorting purposes was used. Each Sorter was allowed ample space on which he could conveniently place his lot of the slips.

N. 28. **Commencement of sorting work.** (*a*) **Instructions to staff.** Before the establishment of the Centre, the office of the Provincial Superintendent of Census carried out sorting of a small area, namely, Kalam, as an experiment. Adequate instructions were later on given to the sorting staff as they arrived.

(*b*) **Code Part III: Sorters' Tickets.** On account of the limited scope of the tribal enumeration slips, the detailed procedure of the Code, Part III, was inapplicable. Forms of two Sorters' Tickets (tribal block sort, and Tribal Regional sort covering Mother Tongue and Speech) were suggested in the *Code of Census Procedure, Part III*. The forms of the sorters' tickets for rest of the operation were adopted from those used in 1941.

(*c*) **Scrutiny and correction of slips.** Every slip was scrutinized during the Block Sort and minor discrepancies such as occupations for infants and children, name of respondent not corresponding with sex, etc., were corrected during the course of sorting. No circle abstracts or charge summaries were prepared.

N. 29. **The Phases of the Hand Sorting for Tribal Slips.** The sorting was divided into six Phases, for obtaining the data indicated below:—

First.	Block Sort, for establishing sex divisions, and analysing tribes.
Second.	Regional Sort, for analysing Mother Tongue, Speech, Dependents and others, each divided into literates and illiterates, by sex.
Third.	Literate Sort, for analysing literates, by the languages they can read or write, and by examination passed.
Fourth.	For analysing non-Dependents by Means of Livelihood.
Fifth.	For analysing all slips for basic age group.
Sixth.	For analysing each basic age group by marital status.

N. 30. **Sorting operation in action.** (*a*) During the actual sorting it was found more convenient to do the literate sort analysing the age-groups for "Examination passed" at the same time (phase 3), along with the sorting for the first part of phase 2. Sorting for "Dependents and others, each divided into literates and illiterates, by sex" (included in phase 2), was done along with the sorting for phase 4. Sorting for phase 6 was done in batches on the basis of the analysis obtained for phase 5. The original slips of blocks were placed in separate groups according to the required classification, and counted. This required the Sorters to work in batches which were suitably arranged. The inspector and Supervisors checked the Sorters' work in order to ensure that it was done accurately.

(*b*) The sorters drawn from the Revenue Department worked regularly and well. Those recruited

direct did not display any sense of responsibility in the discharge of their duties. Many of them deserted or resigned as soon as they received a more lasting job. The process of arrivals and desertions continued during the entire sorting period.

(*c*) The accuracy of sorting and counting of tribal enumeration slips may be judged from the table below which compares the provisional figures with those obtained as a result of the sorting:—

The variations are small, except as regards Swat State and Malakand Agency (Protected Area). In these two areas, the difference is due to the fact that the provisional figures were not properly worked out according to the recorded slips. The final totals are based on the results of sorting for Phase 1. The counting of slips after sorting for each classification in other Phases brought out the same totals, which proved the accuracy of the sorting process.

(*d*) The Centre was closed on the 31st July, 1951. A few Sorters were engaged from 3rd October, 1951, to the 3rd December, 1951, for the sorting of tribal slips pertaining to Gilgit Agency. After the Gilgit Agency work was disposed of, the Centre was required to continue in so far as the Compilers were concerned because the N.-W. F. P. compilation and tabulation work was shifted from Rawalpindi to Peshawar.

(*e*) Owing to the simplified nature of the tribal enumeration slips, the coding system prescribed for the standard enumeration slip was not applied.

(*f*) The original recorded slips were used as the sorting media throughout the sorting operation. Except for a large number of tribal pads from Gilgit Agency (which had been attacked by white ants), all the consignments from other places were received fairly in order. During the course of sorting due care was taken of the detached slips and they remained readable and unmutilated to the end.

(*g*) It is recommended that in future census all sorting for the settled districts should be done upto the stage of circle sort under the supervision of the local District Census Officer and the general control of the Provincial Superintendent of Census. After district sort the slips should come to the Provincial Sorting Centre, which may use punched card machine methods. Sorting of tribal enumeration slips should all be carried out at the Provincial Sorting Centre at Peshawar.

SECTION III—COMPILATION AND TABULATION.

N. 31. The organisation of Compiling Staff (*a*) **Recruitment.** Four Compilers were originally employed for the compilation and tabulation of tribal tables. Three of these were employed from the existing sorting staff in the Provincial Centre and one recruited direct. With the transfer of compilation work of the N.-W. F. P. from Rawalpindi, the number of Compilers was increased by two who were recruited direct.

Tribal Area.	Population		Variation.
	Provisional total	Final total	
Chitral State	1,06,00	1,04,648	—1,352
Dir State. (Adinzai & Talash Tahsils only).	45,423	45,938	+515
Swat State.	5,69,618	5,18,596	—51,022
Kalam.	9,741	9,702	—39
Malakand Agency (Protected area)	82,852	77,283	—5,569
Kurram	70,000	69,825	—175
Swati Tribal area on Hazara District border. (recently merged in Pakistan).	33,187	33,188	+1

(*b*) **Method.** The detailed compilation instructions contained in the Census Code, Part III, did not apply to compilation for tribal tables, for which a simplified method in consonance with the modified questionnaire was adopted. The figures in the Block (Village) Sort Tickets for each Phase were added up for every Tahsil or other sub-division in a particular tribal area. These were again added up to get the data for the table in respect of the whole of each area.

N. 32. Compilation and Tabulation of Tribal Tables. Compilation and tabulation work in respect of tribal areas was finished early in September, 1951, and draft tables were submitted by 9th October, 1951. The Tables had subsequently to be revised in compliance with the suggestions made by the Census Commissioner in regard to the form of presentation of each table, as well as the decision to include data with regard to military stations and posts in tribal areas. The submission of final drafts of these tables was completed by the middle of November, 1952. In addition to Village Lists for each enumerated area, the following tables were prepared:—

Table 1—Population.
Table 2—Variation.
Table 3—Religion.
Table 3-A—Tribes and States.
Table 3-B—Estimated strength of Tribes in the Non-Enumerated Areas.
Table 4—Age and Marital Status.
Table 5—Mother Tongue.
Table 6—Speech.
Table 7—Languages of Literacy.
Table 8—Educational Levels.
Table 9—Enumerated population according to Economic Status.
Table 9-A—Analysis of Self-Supporting persons by Occupations.

N.33. Compilation and Tabulation for N.-W. F. P. Districts. For the reasons mentioned in paragraph 27, all the remaining compilation work of the districts and military stations had to be shifted to Peshawar in Janaury, 1952,

Tables for N.-W. F. P. districts were typed and despatched as soon as compilation for a particular table was completed. Some tables required revision for various reasons. Among these, Table 4-Age and Table 7A Speech are noteworthy. The check figures in the Karachi Machine Sorting Tickets and the corresponding Rawalpindi Hand Sorting Tickets did not tally with each other. This affected a number of other tables already issued. The matter was set right after a good deal of correspondence with the Machine Sorting Centre and the Census Commissioner. The trouble was due to the fact that the Rawalpindi Hand Sorting Centre gave different sets of figures for the Defence Services and the Non-Agricultural Labour Force to the Machine Sorting Centre and to this office. In the Speech Table figures for Mother Tongue were included in Hand Sorting Tickets whereas the Machine Sorting Tickets did not include these figures. On the whole the records prepared by the Rawalpindi Hand Sorting Centre were found to be defective and required many minor but irksome internal adjustments.

The preparation of a large number of Tables relating to Economic Characteristics specially presented a lengthy and complicated process, as it involved not only the classification of various occupations etc., as analyzed by Machine Sorting in Karachi but also of Religious groups.

The Housing Tables were prepared from Household summaries based on the Household lists. These were analysed in respect of households with more than five persons per room in each house, so as to distinguish the congested households. Some adjustments had to be made on account of the misunderstanding in regarding to the definition of a 'house' and a 'household' mentioned in Section I of this Report.

An Adding Machine was supplied to this office and was found to be of considerable help.

N. 34. Cost of Compilation Staff. The total expenditure on account of pay of the six compilers employed is Rs. 5,216/12/- vide Appendix A as

against the sanctioned allotment of Rs. 5,400/-. These compilers were employed for varying periods as shown in Appendix B.

The first compiler was appointed with the opening of the Sorting Centre; five more were employed later as and when the necessity arose. Four of them were originally employed for compilation and tabulation work connected with the N.-W.F. Tribal Regions and Gilgit; two more were employed for work connected with the settled districts. Two compilers were discharged on 19-5-52 and 21-6-52; two were removed on 31st December 1952, leaving two to continue upto 28th February, 1953.

N. 35. **Recommendations.** It is suggested that all compilation work should in future censuses be done at the Provincial Centre.

SECTION IV—CONCLUSION.

N. 36. **Printing and publication of Tables and Reports.** The printing and publication of tables and reports were arranged by the Census Commissioner at Karachi, as the Government Press at Peshawar expressed its inability to undertake the work. The only exception was that, six hundred tribal enumeration slip pads one hundred slips each and one hundred tribal enumerator's instructions sheets were printed locally through a private Press, at a total cost of Rs. 239/-.

N. 37. **General Administrative Questions.** (*a*) **Accommodation.** The office of the Provincial Superintendent of Census and the sorting centre were originally located in the Civil Secretariat but later shifted to the Rationing Department premises. No rent was charged by the Provincial Government in either case.

(*b*) **Stationery and Furniture.** When the office as first opened, stationery (including a typewriter) and furniture were obtained on loan from the Civil Secretariat; later on when the office was transferred to the Rationing Department premises the Director of Civil Supplies loaned the use of necessary articles of furniture. The stationery and typewriter were returned to the Civil Secretariat on receipt of supplies from Karachi. Most of the furniture has already been returned to the Director of Civil Supplies, the few articles still in use, will be returned when the office is finally closed.

(*c*) **Disbursement of pay.** Pay was disbursed to the staff regularly every month. Bonus to Sorters, which was sanctioned after the Sorters had left, was remitted to those who could not attend by Money Order. Others received their dues direct.

(*d*) **Budgeting and Provision of Fund.** Budgeting and provision of funds for expenditure were on the whole done in the Census Commissioner's office.

(*e*) **Special requirements—Contingencies.** A sum of Rs. 50/- was sanctioned throughout as a permanent advance to meet contingent expenditure. This was found to be adequate.

N. 38. **Summary of Report and Recommendations.** The response to the census operations both from the subordinate census staff, especially Enumerators and Supervisors, (who worked on voluntary basis) as well as the general public, was on the whole commendable. The fact that it has been possible to extract unusually large and complicated statistics from the answers to the questionnaire recorded by Enumerators indicate the thoroughness and zeal with which the work was done. It can therefore be assumed that the first Census of Pakistan was carried out with as much (if not more) accuracy as obtained in previous Censuses. The recommendations contained in this report are summarised as under:—

(1) At least one year should be allowed within which to complete the pre-enumeration work.

(2) The Census organisation should be incorporated into some continuing office of the Central and Provincial Governments; and the officers granted special pay.

(3) Every effort should be made to get sorters and compilers from the existing revenue staff, or other Government offices.

(4) It would be very helpful if the instructions to Enumerators, Supervisors and Charge Superintendents are compiled in Urdu.

(5) The sorting and other work connected with one Province should not be entrusted to another Province.

N. 39. Census in Gilgit and Baltistan. It was agreed that the N.-W. F. P. Census Organisation would assist the Government of Azad Kashmir by arranging the census operation in Gilgit and Baltistan. The preliminary arrangements were started in December, 1950. As it is impossible to enumerate this area during the winter, the enumeration period was from 27th May to 15th June, 1951, the census night being the 15/16th June 1951. Captain Ashraf Hussain, Deputy Superintendent of Census, N.-W. F. P. visited this area in April, 1951, and set up the organization in collaboration with the local Political Officers. As shown in the Appendix to this chapter, Gilgit Agency was censused on tribal Enumeration slips, while Skardu political District and Astor sub-division, including Military Stations in Gilgit Agency, were censused on standard enumeration slips.

The sorting Centre at Peshawar dealt only with tribal enumeration slips of Gilgit Agency, while the sorting centre at Rawalpindi dealt with the standard enumeration slips of all these areas.

The tribal enumeration slips of Gilgit Agency arrived in Peshawar on the 1st October, 1951. The sorting and compilation of all the six Phases mentioned in para 34, were completed by November, 1951. One table, namely, No. 6-Religion was also prepared. Further tabulation work of this Agency was entrusted to the Chief Enumeration Officer Azad Kashmir, Murree, to whom all the Sorter's Tickets and compilation working sheets were transferred on the 24th November, 1951.

N. 40. Cost of Sorting: Explanation of Appendix A. One Inspector, two Supervisors, twenty sorters, one Typist and one Chaukidar were employed for varying periods as shown in Appendix B, at a total cost of Rs. 4,771/8/- against the sanctioned grant of Rs. 13,870/-, as detailed below:—

1.	Pay of Sorters.	Rs. 3,383	5	0
2.	Pay of Typist and Chaukidar.	Rs. 183	15	0
3.	Dearness Allowance for No. 2.	Rs. 156	4	0
4.	Headquarters Allowance for No. 2.	Rs. 17	8	0
5.	Contingencies (Under C-4 'Other Charges').	Rs. 512	6	0
6.	T.A. of Sorting Staff, etc.	Rs. 513	2	0

The saving was due to the earlier completion of the work.

N. 41. Sorting staff—Explanation of Appendix B. The Sorting staff mentioned in the preceding paragraph was employed for varying periods as shown in Appendix B. Sixteen sorters were finally discharged on 14th July, 1951, on completion of work connection with the N.-W. F. Tribal Regions; the remaining four were allowed to continue on account of the late receipt of tribal enumeration slips from Gilgit. After completion of the latter work these four sorters were also discharged on 31st July, 1951. No substitutes for the Chaukidar and Typist were employed after 16th July, 1951 and 16th September, 1951 respectively. Sorters etc. were appointed as and when necessary. The length of the list is due mainly to the tendency among them to leave as soon as they were able to get better jobs.

CHAPTER 13.

PUNJAB AND BAHAWALPUR STATE

SECTION I—ENUMERATION.

P. 1. Provincial Census Office. I took over as the Provincial Superintendent of Census, Punjab and Bahawalpur State, on the 11th May, 1950. The staff sanctioned for my office constituted of a Head Clerk, Stenographer, Accountant, Despatch Clerk-cum-Typist, and three Peons. I started looking for this staff immediately and by the 29th May had recruited all except the Accountant and the Despatch Clerk-cum-Typist. My Head Clerk was a permanent official of the Punjab Civil Secretariat where he had had some experience of maintaining Government accounts, so the absence of the Accountant for the first few months proved no handicap. Further details regarding the staff will be found in paragraph 21 *infra* and Appendix B to this Report.

I was able to secure office accommodation in the Punjab Civil Secretariat Building, Lahore. The Chief Secretary to Government, Punjab, placed at my disposal two rooms in the Secretariat Building one of which I used as my own office and the other for the staff. The location of my office in the Secretariat was of considerable assistance in the settlement of preliminary matters expeditiously.

As soon as my Head Clerk had joined duty I deputed him to secure the office records of the Census taken in 1941. I studied the Administration Report together with other important relevant files and the Code of Census Procedure, 1939, Parts I and II. This gave me an idea of the work that lay ahead. The knowledge thus acquired, although rudimentary and partly out-of-date due to the prodigious changes during the decade 1941-50, proved to be of immense help. I advise my successor-in-office therefore to make a careful study of the Administration Report and the Code of Census Procedure, 1950, Parts I and II, as soon as he assumes charge of his office. He will then have ample time at his disposal which can best be utilised in this manner. As the census operations progress he will have his hands fully occupied and will not be able to acquaint himself with how I fared and met my difficulties many of which will confront him also unless the system of census-taking undergoes a complete metamorphosis.

P. 2. Nature of duties of Provincial Superintendent of Census. (*a*) In order to take a reliable and accurate census great care has to be taken in the preparatory stages. Until the enumeration starts the primary duty of a Provincial Superintendent of Census is to direct and supervise the field work and for this purpose it is necessary for him to do extensive touring in the territory in his jurisdiction. The area under my charge was more than 600 miles long and as much as 200 miles deep at several points and considering that the Census had to cover the whole of this vast territory, the magnitude of the task of supervising the arrangements in a limited period is quite obvious and needs no dilatation. I had also to be at my headquarters fairly frequently to communicate to all District Census Officers in my jurisdiction the instructions received by me from the Census Commissioner,

Pakistan, in connection with the organization of the arrangements. I had contemplated visiting the headquarters of every tahsil in my jurisdiction at least once before the enumeration, but inspite of my best efforts I was unable to inspect the work of some half a dozen District Census Officers. Had I not used my own car as the means of transport the number of un-visited Districts would have been much more because, apart from the difficulty of finding a suitable conveyance at several stations for reaching the places to be inspected, a good deal of my time would have been wasted in getting in and out of trains. Realising that extensive touring by road would be essential for arranging the field work efficiently I asked for a Staff Car preferably a Station Wagon but was not provided one. I take this opportunity of mentioning the matter here in the hope that this legitimate demand for a staff car for the officer incharge of the Census in the Punjab and Bahawalpur State in 1960 is not overlooked, whatever the decision for the provision of staff cars for the officers incharge of the Census organizations elsewhere in Pakistan. A staff car will be a stark necessity for the pre-enumeration stage and even longer if sorting at each district headquarter were adopted.

Appointment of Deputy Provincial Superintendent of Census. (*b*) Field work constitutes the backbone of a census, hence its inspection is of utmost importance. At several places visited by me I discovered that the persons incharge of organizing the arrangements were totally ignorant of even their primary duties and responsibilities. As it seemed quite impossible for me to inspect the arrangements throughout my jurisdiction single-handed I had to ask the Census Commissioner for an officer to assist me in that work. Consequently the post of the Deputy Provincial Superintendent of Census, Punjab and Bahawalpur State was sanctioned and Khan Ahmad Raza Khan of the Punjab Civil Service assumed charge of the post with effect from the 5th January, 1951, in addition to his duties as the Under Secretary in the Rehabilitation and Refugees Department of the Punjab Government. I utilised his services for the inspection of the arrangements mainly in the areas which I had not been able to visit personally. The post lasted upto the 28th February, 1951 and even though it was so short-lived it proved to be of immense help to me. I think I should mention that, had the post been sanctioned from the start of the Census organization, my work would have been more easily manageable.

P. 3. Shortage of time for preparation for enumeration. (*a*). The Census Act, VII of 1950 was brought on the Statute Book in January 1950. The Government of Pakistan's decision to conduct a Census of Pakistan in February 1951 was conveyed to Provincial Governments and Administrations in March, 1950. The official organizational machinery was not complete until June 1950 when the Census Commissioner, Pakistan, under whose direction and supervision the whole operations had to be planned and organized, assumed charge of his office. Thus there were some 8 months left for the preparations for enumeration as against about 15 months which the official organization for the 1941 Census had had so the acceleration of the pre-enumeration stage of the Census of 1951 was inevitable. However inspite of the rush the organization of the arrangements was completed in accordance with the plan formulated by the Census Commissioner.

(*b*) **Census Calendar.** In order to ensure that the pre-enumeration arrangements in all stages were completed punctually the Census Commissioner prepared a Calendar which was to be the *vade mecum* of all officers connected with the preparations for enumeration. The Census Calendar proved helpful to the field staff and the supervisory staff alike for while it enabled the former to proceed with the preparations in accordance with the plan punctually by stages, the latter were in a position to judge from it the progress of the actual arrangements. The Census Calendar was also made the basis for the submission of Fortnightly Reports on the progress of census operations to the Census Commissioner. By and large the jobs

listed therein were completed punctually in all census districts in the Punjab and Bahawalpur State.

P. 4. Census Areas and Census Officers. As in the past Censuses, the classification of census areas adopted for the 1951 Census was Block, Circle, Charge and District and the officers incharge of these areas were called Enumerator, Supervisor, Charge Superintendent and District Census Officer, respectively.

(*a*) **Block.** On the receipt of intimation from the Government of Pakistan about their decision to hold a census in 1951, the Punjab Government issued a Circular in April 1950 to all Deputy Commissioners asking them to organise the arrangements for the census on the lines embodied in that Circular. The size of a block given therein was 30 to 40 houses but variations to suit local circumstances were permissible. According to paragraph 15 of the Code of Census Procedure Part I, copies of which were supplied to the District Census Officers early in August, 1950, the size of the block was to be much larger. As we had to follow the instructions laid down in the Code steps were taken to reconstitute the blocks so as to make them conform to the requirements of the Code. However the blocks varied in size from district to district and even within the same district all over the Punjab and Bahawalpur State. It may be mentioned that these slight variations did not hinder the progress of the operations in any way.

(*b*) **Circle.** According to paragraph 16 of the Part I of the Code a Circle was to be a compact group of blocks (not more than 12) under a Supervisor. But this criterion could not be strictly maintained in rural areas, where the circles corresponded to the Revenue Patwaris' Halqas which are not uniform in size. The sizes of circles in urban areas also had to be varied in order to secure contiguity.

(*c*) **Charge.** A reference to paragraph 17 of Part I of the Code will show that a Charge, which consisted of a group of circles, had to correspond to a recognised administrative area. In the constitution of charges in the Punjab and Bahawalpur State this criterion was maintained.

(*d*) **Table showing Blocks, Circles and Charges in the Punjab and Bahawalpur State.** The table hereunder gives the number of Blocks, Circles and Charges in the Punjab and Bahawalpur State separately:—

Province/State	Number of:-		
	Blocks	Circles	Charges
Punjab.	50,880	7,488	758
Bahawalpur State.	3,829	525	79

(*e*) **District.** The Census District corresponded to the administrative district except where the latter had administrative Sub-Divisions in which case these also were constituted into separate Census Districts. The Biloch Trans-Frontier Tract, in the Dera Ghazi Khan district and Thal in the Mianwali district though not Sub Divisions, were constituted into Census Districts on account of their separate administrative organization. On this basis the Punjab and Bahawalpur State were divided into 36 Districts. At the end of 1950 summer the Murree Census District was merged in the Rawalpindi Census District.

I think I should explain why the Sub-Divisions were constituted into separate Census Districts. Due to the decision to utilise the revenue agency for census work in rural areas in the Punjab and Bahawalpur State, the Revenue Patwaris and Kanungos were selected to function as Supervisors and Charge Superintendents respectively. In the Sub-Divisions these revenue officials are under their respective Sub-Divisional Officers, and in the interest of smooth and satisfactory progress of the operations, it was considered administratively advisable to make them answerable for their work connected with the Census to the same officers who superintended their revenue work. It may be added that the constitution of the Sub- Divisions into separate Census Districts was tried for the first time in the 1951 Census and that the results fully justified the innovation.

(*f*) **Table showing number of Blocks Circles and Charges in each census district.** The sub joined table gives the number of blocks, circles and charges in the 36 Census Districts of the Punjab and Bahawalpur State.

Sl. No.	Name of Census District.	Number of: Blocks	Circles	Charges
	PUNJAB.			
1.	Lahore ..	3,236	293	23
2.	Kasur ..	2,668	615	37
3.	Sheikhupura ..	1,763	377	51
4.	Gujranwala ..	2,282	440	38
5.	Sialkot ..	3,916	339	35
6.	Narowal ..	2,778	216	25
7.	Gujrat ..	2,349	384	37
8.	Jhelum ..	649	105	9
9.	Chakwal ..	549	95	7
10.	Pind Dadan Khan ..	467	7	7
11.	Rawalpindi ..	3,900	379	28
12.	Murree ..	491	37	4
13.	Campbellpur ..	1,371	180	21
14.	Pindigheb ..	746	143	11
15.	Shahpur (Sargodha) ..	2,885	412	33
16.	Khushab ..	145	29	2
17.	Mianwali ..	690	135	14
18.	Bhakkar ..	366	77	7
19.	Thal ..	411	82	9
20.	Jhang ..	1,446	401	33
21.	Lyallpur ..	4,134	277	42
22.	Toba Tek Singh ..	932	152	24
23.	Montgomery ..	1,547	389	32
24.	Pakpattan ..	1,622	326	49
25.	Multan ..	4,588	671	89
26.	Khanewal ..	765	143	16
27.	Muzaffargarh ..	870	207	18
28.	Alipur ..	362	118	12
29.	Leiah ..	394	83	8
30.	Dera Ghazi Khan ..	1,971	278	26
31.	Biloch Trans-Frontier Tract ..	101	8	1
32.	Rajanpur ..	486	90	10
	BAHAWALPUR STATE.			
33.	Bahawalpur ..	1,600	229	32
34.	Bahawalnagar ..	1,342	204	28
35.	Rahimyarkhan ..	215	32	7
36.	Ahmadpur East ..	672	60	12
	TOTAL : ..	**54,709**	**8,013**	**837**

(*g*) **Enumerator.** The selection of the Enumerators was made in accordance with the instructions embodied in the Code of Census Procedure, Part I. In cases where the blocks had inadvertantly been made too big for one Enumerator to tackle, the Enumerators were afforded relief by the appointment of Assistant Enumerators; but care was taken in such cases to subdivide the blocks carefully and clearly between the Enumerators and their assistants.

I had requested all Heads of Departments to direct their departmental officials to fully cooperate with the Census organization and this step proved quite effective in connection with the appointment of the Enumerators. A large number of school teachers, canal Patwaris and other officials acted as the Enumerators in rural areas. The appointment of revenue Patwaris as the Enumerators for the blocks in which they resided, in addition to their duties as Supervisors, proved particularly useful, for it gave them inside knowledge of an Enumerator's duties, and armed with that knowledge, they were able to guide the Enumerators in their Circles effectively. In the Biloch Trans-Frontier Tract Census District, Dera Ghazi Khan, the Enumerators and other census officers had all to be officials owing to the illiteracy and extreme backwardness of the people. In urban areas, besides public spirited non-officials, the municipal staff and selected Government servants were appointed as the Enumerators.

Strange as it may seem, more difficulty was encountered in securing the services of willing Enumerators in urban than in rural areas. The reason for this is that while in rural areas the network of the revenue machinery, which was already in existence provided a ready-made nucleus for the preparations for enumeration, the arrangements in urban areas, more particularly in cities, had to be organized from scratch and suitable persons did not come forth in sufficiently large numbers to act as Enumerators. Although in had instructions issued by the Punjab and Bahawalpur State Governments requiring all Government servants and municipal staff to assist the census organization by performing such duties as may be required of them in connection with the enumeration, attempts were made frequently to secure exemption from those duties on one ground or another. All such attempts had to be resisted in the interests of the operations.

(*h*) **Supervisor.** Since the revenue administrative machinery, as in the past, was to be utilised for census-taking in rural areas, the functions of the Supervisors were entrusted to the Patwaris. The Supervisors in urban areas were heterogeneous in that the selection had to be made from amongst Municipal Commissioners and other public notables, managers of commercial establishments, senior school teachers, Government and municipal senior clerical staff and the like.

(*i*) **Charge Superintendent.** As already mentioned the Charge in rural areas corresponded to a Field Kanungo's Halqa, so the Revenue Field Kanungos were appointed as Charge Superintendents. The appointment of officials of other Departments as Charge Superintendents was avoided on the consideration that they may not have sufficient spare time to study the instructions with anything like the care they required, or to carry out adequate inspections of the work of their Supervisor and Enumerators. In towns and cities non-official Presidents, and Vice-Presidents, Municipal Commissioners and high municipal officials were appointed as the Charge Superintendents.

(*j*) **District Census Officers.** The District Census Officers were responsible for the preparations for enumeration in their administrative jurisdictions under the control of their Deputy Commissioners and the guidance of the Provincial Superintendent of Census. In the Punjab the Sub-Divisional Officers and the Revenue Assistants were appointed as the District Census Officers, except in the Biloch Trans-Frontier Tract Census District where the Political Assistant to the Deputy Commissioner, Dera Ghazi Khan,

functioned as the District Census Officer. In the Bahawalpur State, the Assistant Commissioners of Bahawalpur, Bahawalnagar, Rahimyarkhan and Ahmadpur East were appointed as the District Census Officers.

(*k*) **Appointment Certificates.** Some statutory powers and functions were vested in the Census Officers under the Census Act, Act VII of 1950. Under sub-section (3) of section 2 of the Act a declaration in writing, signed by the appropriate authority, that a person had been duly appointed as a census officer, was conclusive proof of such appointment. In order therefore to arm all Enumerators, Supervisors and Charge Superintendents with this legal authority in the discharge of their duties, Appointment Certificates were issued to them through their District Census Officers. A districtwise indent giving the probable requirements of the Appointment Certificates was forwarded to the Census Commissioner who despatched blank certificate forms to the Deputy Commissioners direct from Karachi. The Deputy Commissioners were requested to impress upon the District Census Officers to issue the Appointment Certificates to all census officers under them and to take every care in entering their particulars in the certificates correctly. One method of ensuring that correctness, which was suggested to the Deputy Commissioners, was to require the field staff to fill in their respective Appointment Certificates themselves before they were signed by the District Census Officers. Instructions were also issued that in the event of a shortage of the printed Appointment Certificates, typed or cyclostyled copies should be used.

(*l*) **Location Code.** In accordance with the instructions in respect of the Location Code issued by the Census Commissioner, the Code numbers allotted by me to the various census districts in the Punjab and Bahawalpur State are stated below:

Name of Census District.	Code Number	Name of Census District.	Code Number
Lahore	1	Jhang	19
Kasur	2	Lyallpur	20
Sheikhupura	3	Toba Tek Singh	21
Gujranwala	4	Montgomery	22
Sialkot	5	Pakpattan	23
Gujrat	6	Multan	24
Jhelum	7	Khanewal	25
Chakwal	8	Muzaffargarh	26
Pind Dadan Khan	9	Alipur	27
Rawalpindi	10	Leiah	28
Murree	11	Dera Ghazi Khan	29
Campbellpur	12	Biloch Trans-Frontier Tract	30
Pindigheb	13	Rajanpur	31
Shahpur	14	Bahawalpur	32
Khushab	15	Bahawalnagar	33
Mianwali	16	Rahimyarkhan	34
Bhakkar	17	Ahmadpur East	35
Thal	18	Narowal	36

The Narowal Census District was constituted on the creation of the Narowal Sub-Division in the Sialkot District, which was after the District Code Numbers had been allocated, so it was

placed at the end of the list. When the Murree Census District was merged in the Rawalpindi Census District at the end of 1950 summer, the use of the Location Code Number allotted to it was discontinued; but no change was made in the rest of the Location Code.

The second element, namely, the Charge Number was furnished by the District Census Officers. They supplied the Code Number of the District and the Charge to each Charge Superintendent, who then allocated numbers serially to all Circles in his Charge and to the Blocks in each Circle. To start with there was some difficulty in making the staff understand the details of the Location Code but it was soon removed. The Census Commissioner had issued instructions that only Arabic figures should be used in the Location Code and except in one or two cases these instructions were followed. In order to familiarise the Enumerators with the four elements of their respective blocks, which they had to specify on each enumeration slip used by them during enumeration, special stress was laid on the teaching of the Location Code to them during their training.

The Charge index and the General Location Code Index which had to be compiled by the Charge Superintendents and the District Census Officers respectively in connection with the Location Code were duly maintained. The District Census Officers also kept "Census" maps in the scale 1/4" to a mile showing the boundaries and the Code numbers of each charge and prepared their Urban Area Location Codes in the prescribed form.

(*m*) **Provincial Conference of District Census Officers.** As provided in the Census Calendar a Provincial Conference of the District Census Officers was held at Lahore on the 10th July, 1950. The Conference was attended by almost all District Census Officers in the Punjab and Bahawalpur State. I explained to them the main features of the Census which they had to organise and conduct, and also briefed them regarding their duties and responsibilities as District Census Officers. An important decision taken at the conference, which seems worthwhile mentioning here, was that in the interest of speed the Provincial Superintendent of Census should correspond with the District Census Officers direct. I approached the Punjab and Bahawalpur State Governments with this request and they authorised me to by-pass the ordinary channel of correspondence and address the District Census Officers direct. In the Code of Census Procedure, Part I no specific duties were assigned to the Tahsildars and Naib Tahsildars. The intention was that they should generally supervise the progress of the operations within their respective jurisdictions. The consensus of opinion at the Conference was that definite instructions should be issued to put the matter beyond doubt and necessary action was taken to implement this decision.

P. 5. (*a*) **General Village and Town Registers, Maps and other preliminary records.** The General Village and Town Registers were prepared under the supervision of the Tahsildars. These registers showed the names of all villages, hamlets, wards or other well defined and locally recognised areas, the approximate number of houses in each area, the number of blocks and circles proposed for the area together with the Charge in which it could be included, and the names of literate persons who could suitably be appointed as Enumerators and Supervisors. All Municipalities, Towns and Notified Areas as also continuous collections of houses with a population exceeding 5,000 and with definitely urban characteristics were entered in the Town Registers. In Cantonments the preparation of the Town Register for the strictly Military area was the responsibility of the Officers Commanding while the registers for the rest of the Cantonments were prepared by the Executive Officers. On account of the peculiar circumstances obtaining in the Biloch Trans-Frontier Tract in the Dera Ghazi Khan district a modified form for the Village Register was authorised. The Tribal Register, as the Village Register was known there, showed the

sections and sub-sections of tribes, the names of *Bastis*, the number of houses in each *Basti*, the proposed number of blocks and the names of persons qualified to act as Supervisors.

(*b*) **Charge Register.** All Charge Superintendents in the Punjab and Bahawalpur State duly maintained their Charge Registers in accordance with the requirements of paragraph 25 of Part I of the Code.

(*c*) **Maps.** The District Census Officers were required to maintain the following categories of maps in addition to the 'Census' Map of Charges already mentioned:—

(1) maps showing Circle boundaries and the number of Blocks in each Circle in rural areas in scale 1" to a mile;

(2) separate sketch maps of towns showing boundaries of Charges and Circles;

(3) maps showing boundaries of Charges in cities in scale 3" to a mile, if available, otherwise a sketch map; and

(4) sketch maps showing Circle boundaries in cities.

Except where maps drawn to the prescribed scale could not be procured, the aforesaid maps were duly maintained by all District Census Officers in the Punjab and Bahawalpur State.

P. 6. **Code of Census Procedure, Part I.** In the past, the set of rules to be followed in organising the Census operations known as the Code of Census Procedure used to be issued by each Provincial Superintendent of Census. As the start of the Census operations on this occasion was much delayed, the Census Commissioner undertook the preparation of a Code to suit the requirements of all Provincial Governments and Administrations. This had the advantage of uniformity and also saved time, which was an important factor. The outlines of the Code were explained to all District Census Officers in the Punjab and Bahawalpur State in a Conference held at Lahore on the 10th July. Some 800 copies of the Code of Census Procedure, Part I, were received from the Census Commissioner and supplied to the District Census Officers early in August, 1950, for distribution to all Charge Superintendents in their districts. Part I of the Code gave the definitions of the various terms used in connection with the Census operations and also contained instructions about the various pre-enumeration stages such as house numbering, house listing, etc. During my inspections I found that the Charge Superintendents had a fair knowledge of the Code which they had acquired generally without difficulty.

P. 7. **Census Dates.** The period fixed for actual enumeration, namely, from the 9th to the 28th February, 1951, was found to be quite suitable in practice. The period did not coincide with any large-scale seasonal movement of population, such as that at harvest time. There was the possibility of a clash between the Census and the General Elections to the Punjab Legislative Assembly, which, long after the fixation of the Census Dates, were decided to be held in March, 1951. The matter was discussed at a conference held at the Governor's House Lahore on the 9th December, 1950, at which it was decided that the Census Dates should not be altered and that the Elections should be held in such a way that they caused no serious interference in the progress of the Census operations.

P. 8. (*a*) **House Numbering and Listing.** After the delimitation of blocks and the appointment of the Enumerators the next important stage in the preparations for enumeration was that of house numbering and listing. This job had to begin on the 15th September and be completed before the 15th December, 1950. But there were unprecedented floods towards the end of September which caused a serious set-back to the progress of the work in the flood-affected localities. Hundreds of villages were washed away and in the resultant panic it was but natural for the house numbering and listing operations to come to a stand-still. After visiting a couple of such localities I apprised the Census Commissioner of the

situation and requested him to extend the date for the completion of the house numbering and listing. He allowed an extension of one month. As soon as normal conditions were restored however there was an all-out effort to make up leeway and by the end of 1950 the job of house numbering and listing had been completed throughut the Punjab and Bahawalpur State. According to the Census Calendar, Charge Summaries showing *inter alia* the number of usual inhabitants sex-wise had to be forwarded by the Charge Superintendents to their District Census Officers by the end of December, 1950. There was some delay in the preparation of the Summaries with the result that the District Summaries, which should have reached my office by the 15th January, 1951, arrived much later. The delay interfered with the preparation of the preliminary estimate of resident population of Pakistan which was proposed to be published by the Census Commissioner as mentioned in paragraph 57 of Part I of the Code. But even if that object was not achieved, the house lists proved useful in several other ways: firstly, as complete guides to the blocks; secondly, as the means to checking the accuracy of delimitation of the blocks in the final stages of the pre-enumeration preparations; and thirdly, as preliminary estimates of block-wise population which enabled the field staff to detect any omissions or any tendency to inflate the figures at the enumeration stage.

(*b*) **House List Forms.** Each Enumerator compiled his house list in the prescribed form (Appendix C to the Code of Census Procedure Part I) as he went round numbering the houses and other structures in his block. Charge-wise indents for printed house list forms at the rate of one printed form per block were prepared by me in consultation with the district authorities and forwarded to the Census Commissioner along with the names and addresses of the Charge Superintendents, to whom the forms were consigned direct by his office. The Charge Superintendents distributed the forms to their Enumerators.

(*c*) **Provision of paint and other material.** The materials required for house numbering were made available locally. Instructions were issued to all District Boards, Municipal Committees, and other local bodies including Panchayats to arrange, in cooperation with the Census staff, for the numbering of houses within their respective jurisdictions. The provision of paint and other material for house numbering was declared to be a fit and proper matter to be taken under their control. It may be mentioned that in most rural blocks improvised paint made of *geri* was used.

(*d*) **Instructions of Enumerators.** According to the Census Calendar the first instruction of the Enumerators was to begin on the 10th August and end on the 10th September, 1950. In point of fact the Charge Superintendents had started explaining to the Enumerators their duties and responsibilities soon after they had been selected but during the aforesaid period instructions were given them in greater detail in all Census Districts in the Punjab and Bahawalpur State. Special stress was laid on house numbering and listing and by the time this job was due to start namely the 15th September, 1950, the Enumerators had had ample training. It is but obvious that without that training the Enumerators would not have been able to complete house numbering and listing satisfactorily.

(*e*) **Definition of Household.** The definition of "household" adopted for the 1951 Census is contained in paragraph 14 Part I of the Code. During the instructions given to the Enumerators they were fully made to grasp the meaning of the definition. It was pointedly brought to their notice that house numbering had to be done on the basis of commensal family and not according to homesteads or enclosures. I may state that the distinction was maintained throughout the Punjab and Bahawalpur State without much difficulty.

(*f*) **Publicity.** Publicity is an important factor for the eventual success of a census, for unless the people thoroughly understand what is required of them and for what purpose there may well, due

to ignorance or incomprehensibility, be lack of response and even hositility in some spheres, which would adversely affect the operations. In order to eliminate such impediments adequate publicity was given to the 1951 Census almost from the start. On my request some of the leading dailies published editorial notes relating to the Census arrangements in the Punjab and Bahawalpur State mentioning, *inter alia*, how the public could assist the Census organisation, particularly at the house listing and enumeration stages. For the reason, however, that publicity in the Press was likely to reach only a small proportion of the population, the Census Commissioner issued a series of posters suited to the more important stages. The first of the series was a poster on house listing, which had to be exhibited in each block as far as possible. Just before house listing was due to start, some 55 thousand Urdu copies of the poster were despatched by the Census Commissioner's office to the various districts in the Punjab and Bahawalpur State. The District authorities distributed the posters through the Charge Superintendents to the Enumerators who exhibited them at conspicuous places in their blocks. These posters and the house numbers were the first two visible signs of the Census in the country: one came across them wherever one then went. Another form of publicity resorted to was the holding of meetings in the blocks at which the Census officers explained the duties and responsibilities of the public in connection with house listing and enumeration. These meetings helped a good deal in creating a sense of responsibility in the public mind towards the Census.

P. 9. Cottage Industries Enquiry. Availing of the opportunity afforded by the Census the Government of Pakistan decided to conduct an enquiry into the cottage industries of the country at the time of house listing. The object of the enquiry was to collect information on which to plan a better use of the great potentialities of cottage industries with a view to raising the standard of living of the people. It was hoped that the enquiry would assist firstly, in the discovery of lucrative markets, both existing and potential, for the products of the cottage workers and secondly, in arranging for the supplies of the raw materials required by them. The Census Commissioner drew up a form for collecting the necessary data and one copy of the form was supplied to each Enumerator, who had to collect the information listed therein while he was compiling his house list. As already mentioned, the Enumerators had to visit every house in their blocks at the time of house numbering and listing, so it was quite convenient for them to collect the information about the cottage industries simultaneously. Briefly stated, the particulars collected through the cottage industry form were (1) the nature of the work carried on as a cottage industry; (2) the average number of workers (men, women and children) engaged during the working season; (3) whether power-driven machinery was used; and (4), in the case of the weaving industry, the number of looms and the material woven. After completing the forms the Enumerators sent them to their District Census Officers along with the household lists, who forwarded the whole collection of the forms for their districts to the Hand Sorting Centre concerned (Lahore or Rawalpindi) for summarization. It would be too ambitious to claim cent per cent accuracy for the data so collected because not all Enumerators and respondents can be regarded to have given the enquiry the amount of care and attention necessary for attaining perfection. Nevertheless invaluable information has been obtained which should prove helpful in planning schemes for the betterment of our cottage workers. As the classification, sorting and counting of the cottage industry returns had to be done at the Machine Sorting Centre, Dacca, the returns were forwarded there after the types of enterprise (products) had been coded according to the Cottage Industries Classification Code of Products, on Coded Schedule Forms prescribed by the Census Commissioner. All this coding work was done at Lahore under the supervision

of the Deputy Superintendent of Census, Punjab and Bahawalpur.

P. 10. Test of the Enumeration Slip and Questionnaire. The Census Commissioner drew up a set of questions to be asked at the time of the enumeration, called "the Enumeration Slip", and the explanations to those questions and the manner of recording the respondents' answers thereto called "the Instructions for Enumerators". The latter included "the Questionnaire" which showed the actual words to be used in interrogating the public. In order to try the Enumeration Slip and the Questionnaire practically, it was decided to conduct a 'test' census in selected areas from the 25th to the 27th July, 1950. Sample pads of the Enumeration Slip and copies of the Questionnaire were received from the Census Commissioner and supplied to all District Census Officers in the Punjab and Bahawalpur State in sufficient quantities for use in the test census. The District Census Officers were instructed to report to me telegraphically on the 27th July how they had found the Enumeration Slip and the Questionnaire in the test census and to suggest the alterations, if any, considered necessary. Most of their reports were received punctually. In some districts the Enumerators conducting the test census had had some difficulty but by and large the Enumeration Slip and the Questionnaire were found to be suitable. I also personally conducted a test of the Enumeration Slip and the Questionnaire at Lahore during the aforementioned dates. On the 28th July a telegraphic report based on my personal experience and the suggestions made by the District Census Officers was forwarded to the Census Commissioner. The test was an innovation in the history of census-taking in the Indo-Pakistan Sub-Continent. It achieved a measure of success which fully justifies its continuance in future.

P. 11. Code of Census Procedure, Part II, Its issue and use. Part I of the Code of Census Procedure explained the preliminary arrangements which were necessary to be completed before the enumeration. Part II dealt with the actual process of enumeration and matters germane thereto, such as, the checking up of the Census organization, the training of Census Officers, the manner of conducting the enumeration, the instructions for filling up the enumeration slip, the census questions to be asked of the respondents during the enumeration and the collection of the provisional results of the Census. Part II of the Code also was prepared by the Census Commissioner and published by his office. At the end of October, 1950, a district-wise indent, on the basis of one copy per Charge Superintendent, was forwarded to the Census Commissioner whose office despatched the number of copies shown in the indent direct to each District Census Officer, who supplied one copy each to the Charge Superintendents. All Deputy Commissioners in the Punjab and Bahawalpur State received one copy each of Part II of the Code. The Charge Superintendents were required to study Part II of the Code carefully and intelligently so as to be able to instruct the Enumerators in the work of enumeration and to exercise a proper check. I had several occasions to test the knowledge of Part II of the Code possessed by Charge Superintendents and found it to be quite adequate.

P. 12. Instruction of Enumeration Staff. The Enumeration Slip contained 16 different questions some of which were quite complicated, more particularly those pertaining to economic status. Had it been left to the Enumerators to ask the questions, and to take down their answers, as they pleased, it would have been difficult, if not impossible, to put the information so collected to any statistical use. With a view to avoiding such a situation, details of the instruction to be imparted to the Enumerators in connection with the enumeration, were issued by the Census Commissioner in Part II of the Code. According to the Census Calendar the instruction had to be given from the 1st to the 30th January, 1951. In all Census Districts in the Punjab and Bahawalpur State the instruction of Enumerators began by the due date. Many

Charge Superintendents personally conducted the classes of instruction at which practical demonstrations of filling the enumeration slip were held and the Enumerators encouraged to ask questions to clear the doubts in their minds. The Enumerators were also given practice in filling the slips to enable them to know what they had to do at the time of actual enumeration. In order to facilitate the instruction of the Enumerators large wall diagrams containing a facsimile of the enumeration slip were supplied by the Census Commissioner to all Charge Superintendents together with printed practice slips which the Enumerators attending the classes used for practice. All Enumerators had been supplied printed Enumerators' Leaflets in vernacular and they had these leaflets with them for their guidance in the classes. The District Census Officers had duly explained to their Charge Superintendents the importance of the questions included in the Enumeration Slip and the correct use of the Enumerators' Leaflet; so the latter were in a position to instruct the Enumerators properly. It may be added that during the instructon special care was taken to make the Enumerators fully understand the implications of the questions pertaining to economic status. I inspected the training classes in several districts, took part in them myself and gave the necessary guidance. The Census Commissioner paid a visit to the Punjab specially to inspect the work of instruction of the Enumerators. I accompanied him to several places where he saw the work actually in progress. At one of these places he offered himself as the respondent and was "enumerated" by one of the Enumerators attending the class.

P. 13. Distribution of Slips and Forms. According to the Printing Plan included in Part I of the Code an indent showing the probable requirements of the Enumeration Slips had to be forwarded by each Provincial Superintendent of Census to the office of the Census Commissioner. Due to wholesale migration of population from the Punjab (India) and the Punjab (Pakistan) as a result of the Partition no reliable estimate of 1951 population was available. Had the supply of the Enumeration Slips to the District Census Officers been based on conjectures only there was bound to be a shortage or large excess of the Enumeration Slips, both of which had to be avoided. In order to overcome this difficulty all District Census Officers in the Punjab were supplied the 1941 population figures of their districts for each tahsil communitywise and they were asked to work out from these figures the estimated population of 1951 in the Punjab (Pakistan) assuming; firstly, that all Muslim residents of the Punjab (India) had migrated to the Punjab (Pakistan); secondly, that all non-Muslims excluding Christians (*i.e.* Hindus, Jains, Scheduled Castes, Ad-Dharmis and Sikhs) had migrated to the Punjab (India); thirdly, that since according to the figures of 1941 Census the population on non-Muslims excluding Christians in the Punjab (Pakistan) and that of Muslims in the Punjab (India) was in the ratio of 2 : 3 the movement of population between the two Punjabs was in the same ratio, that is to say, for every two emigrating non-Muslims three Muslim refugees had settled in the Punjab (Pakistan); and fourthly, that the natural increase during the decade 1941-50 was 15%. In other words the District Census Officers had to add up the 1941 population figures of Muslims, Christians, and one and a half times the total of Hindus, Jains, Scheduled Castes, Ad-Dharmis and Sikhs and to increase the total by 15%. This formula was considered to be the best that could be adopted for working out an estimate of 1951 population. With a view to meeting unforeseen shortages of the Enumeration Slips it had been decided to keep with each Charge Superintendent, a reserve of 5% on the estimated population of his Charge and a further reserve of 3% with each District Census Officer. The Enumeration Slips were bound in pads of two sizes containing 100 and 25 slips each. The former pads had to be issued to the Enumerators on the estimated population of their Blocks while the latter were to be kept as the reserve. The District Census Officers had to show the reserves in

terms of the smaller pads. About 50,000 Enumeration Slips bound in pads of 25 each had been printed in English for enumerating Europeans, Anglo Pakistanis, etc. The District Census Officers had to indicate separately the number of the Enumeration Slips printed in English, if any, required by them. The supply of the pads was to be made to the Charge Superintendents so their particulars had also to be specified in the indents. In the interest of uniformity the subjoined proforma was circulated to the District Census Officers for the submission of their indents:

Name & Address of Charge Superintendent with Location Code No. of Charge.	Estimated population of 1951 according to the above formula.	Number of pads of 100 slips	No. of pads of 25 slips		Total in District	
			(a) As Ch. Supt's. reserve at 5%.	(b) As DCO's reserve at 3%	(a) 100 slip pads.	(b) 25 slip pads.

A somewhat similar communication was addressed to the District Census Officers in the Bahawalpur State. The State authorities knew the approximate number of non-Muslim evacuees and Muslim refugees in the State and the District Census Officers were asked to determine the estimated population of 1951 keeping in view the population of 1941, the excess of refugees over evacuees with a further addition of 15% on account of natural increase during the previous decade.

The District Census Officers had been asked to forward their indents by the 31st October, 1950. The indents started coming in from the 1st week of November but not all were found to be in order which entailed further correspondence. The first batch of corrected indents was forwarded to the Census Commissioner on the 18th November, 1950, and the last one on the 7th December, 1950. Under the arrangements made by the Census Commissioner the Enumeration Slip Pads were despatched to the Charge Superintendents, direct from Karachi. In order to ensure that the supply of the pads was adequate at all places two further precautions were taken. Firstly, the District Census Officers were asked to check their indents with the total number of usual inhabitants as entered in their chargewise household lists and to telegraph supplementary indents to the Census Commissioner's office if they discovered that their original indents fell short of their likely requirements. Secondly, the Provincial Superintendents of Census had to keep 1½% reserve of Enumeration Slip Pads to meet unforeseen urgent demands. It may be mentioned that both these precautions were fully justified. Quite a large number of District Census Officers asked for further supplies of the pads. The Census Commissioner's office met some of the additional demands while the rest were met from my reserve. I had indented for 20,000 pads of 25 slips each instead of 15,000 pads which worked out as my reserve. But in no time the whole of my reserve got exhausted and I had to ask for 10,000 more pads.

As the Enumeration Slip Pads were to be despatched direct from Karachi it was necessary to

make sure that they had been duly received by the addressees. For this purpose all District Census Officers were instructed to enquire from their Charge Superintendents about the receipt of the pads. My Deputy as well as I made similar enquiries wherever we went on tour. In several cases we arranged for the supply of additional pads after personally looking into the probable requirements.

Steps were taken simultaneously to ensure that the Enumerators' Leaflets had been received by the Charge Superintendents and duly distributed to their Enumerators. This was found to be so in all cases except at Dera Ghazi Khan, where I discovered on the 7th February, 1951, that the District Census Officer Dera Ghazi Khan had received only 200 copies of the leaflet for distribution to his Enumerators whose number was 1,971. I immediately arranged for an additional supply of 2,000 leaflets to him.

P. 14. Publicity and Instruction of public. As already mentioned in paragraph 8 *supra* adequate publicity was given to the Census at all stages. The Director of Public Relations, Punjab, arranged a Press Conference for me at Lahore on the 29th July, 1950, at which I explained the salient features of the 1951 Census to the Press Representatives and I am glad to note that the Press wholeheartedly supported me in making the public census-minded. Short editorial notes and news items kept appearing in the newspapers off and on in which the public was told of its duties towards the census and exhorted to give its fullest cooperation. The District Census Officers sought the aid of the local Press at the district level in arousing the interest of the citizens in the various stages of the census. The Radio Pakistan, Lahore, arranged a series of talks on the significance of the census. Two of these talks entitled "Aims and Objects of the Census" and "Duties of Citizens in connection with Census" were broadcast by me. The Radio Pakistan, Lahore, was also supplied the material for a talk entitled "Collection of Census Data". Publicity was given to the census by posters as well. Besides the poster on house listing already mentioned, there was a poster on enumeration which was circulated blockwise. Both these posters aimed at instructing the public in the importance of the census to the State and its duties and responsibilities in connection therewith. The posters proved quite efficacious. Lastly the field staff had been directed to hold frequent meetings in the blocks for the purpose of educating the public. Such meetings were held in all parts of the Punjab and Bahawalpur State at the various stages of the census operations. They too helped in making the public census-minded.

P. 15. (*a*) Enumeration in action. In all Census Districts in the Punjab and Bahawalpur State the enumeration started punctually on the 9th February, 1951. With a view to securing maximum accuracy in the actual enumeration I published an Urdu leaflet containing "the Do's and Don'ts of Enumeration". Copies of this leaflet were supplied to all Enumerators through their District Census Officers and Charge Superintendents. The leaflet did not contain any fresh instructions. It only brought to the notice of the Enumerators pointedly the more important provisions of the Enumerators' Leaflet. It may be added that the expenditure incurred on the publication of the leaflet gave its worth.

(*b*) **In Rural Areas.** As has been stated already census field work in rural areas was entrusted to the revenue agency. Armed with past experience in census-taking and possessing personal knowledge of the inhabitants, the revenue staff was able to handle the enumeration satisfactorily. The rural population in the Punjab and Bahawalpur State being more static and congenial than the urban population, its enumeration was not such a difficult task. The delimitation of blocks was clearly defined, even in villages having more than one block, so the Enumerators knew their blocks well. During the actual enumeration the Charge Superintendents and the Supervisors were able to carry out frequent inspections of the work of their Enumerators in the course of their routine

duties. All these factors helped the field staff in rural areas to attain a high degree of accuracy.

(*b*) **In Cities and large Towns.** In cities and large towns the enumeration was full of pitfalls. The population was heterogeneous and not quite so steady as the population in rural areas. To combat these difficulties it was essential for accurate enumeration to secure the services of willing and industrious Enumerators. But actually out of the hundreds of Enumerators appointed in cities and large towns, those who shouldered their responsibilities cheerfully were few and far between. Owing to congested streets and buildings the delimitation of blocks was quite complicated which made the task of the Enumerators all the more difficult. At the same time due to shortage of suitable persons to act as Enumerators the arrangements were not ready as well ahead of the enumeration as had been planned. At Lahore, the premier city of the Punjab, for example, the arrangements were quite incomplete even towards the end of January, 1951. The Census Commissioner inspected the arrangements on the 24th January and finding them much behind the schedule he had to ask the Chief Executive Officer of the Corporation of the City of Lahore personally to make an all-out effort for the completion of the arrangements by the 9th February, 1951, the date from which the actual enumeration was due to start. The Chief Executive Officer took special steps immediately, but although there was marked improvement as a result, it would be futile to claim that all went well when Lahore was being enumerated. Similarly the arrangements at Multan were found by the Deputy Provincial Superintendent of Census, Punjab and Bahawalpur to be in a chaotic condition and strenuous efforts had to be made to set them right. The conditions were not much different in Rawalpindi, Sialkot and other cities and large towns. The enumerators mostly were Government or municipal employees and had to carry out the enumeration in addition to their ordinary duties. This made it difficult for them to attain the standard of accuracy achieved by their conferers in rural areas. The supervision of the work of the Enumerators during the actual enumeration too was not upto the level of the supervision in rural areas mostly because the Supervisors in urban areas considered the census work as an unwanted addition to their ordinary duties. As the cumulative effect of all these factors the accuracy of the enumeration in cities and large towns left much to be desired.

(*c*) **In Small Towns and other Urban Areas.** The work of enumeration in small towns was quite satisfactory. The duty of making the necessary arrangements was entrusted to the local administrative unit concerned and by and large the local bodies were able to handle the work efficiently, as firstly, the area to be covered by the enumeration was not unwieldy, secondly, the Enumerators had personal knowledge of the persons residing in their blocks, and thirdly, the supervision of the enumeration was not a difficult task. In urban areas having no local administrative units the enumeration was carried out by the revenue agency in much the same way as in rural areas described above and it was quite satisfactory.

(*d*) **In Railway Colonies, Institutions, etc.** The enumeration in railway colonies was conducted mostly by the railway personnel which had been duly trained. On the whole the enumeration was satisfactory and no special difficulties militating against the accuracy of the enumeration were encountered. The enumeration in hospitals, jails and other similar institutions was properly carried out by the managements of the institutions concerned. They had had due instructions from the District Census Officers how to hold the enumeration in their institutions.

(*e*) **Enumeration of Floating Population.** In order to facilitate the enumeration particularly of the floating population, the question of the imposition of Curfew on the Census Night was considered in consultation with the District Census Officers at the instance of the Census Commissioner. The consensus of opinion was against the imposi-

tion of any such restriction. However the assistance of the police was sought by the District Census Officers for enumerating the floating population in some cities and large towns.

(*f*) **Public Cooperation.** Notwithstanding all the steps taken to secure public support and cooperation there was marked indifference and apathy towards the census operations, which was much more pronounced in urban areas. Following the practice adopted in the past censuses it was decided to pay no remuneration for the duties connected with the 1951 Census and, mercenary as it may seem, the honorary nature of those duties was largely responsible for the non-chalance displayed in the handling of census work. In the initial stages the promised support was quite encouraging and we had high hopes that the first Census of Pakistan, which we were arranging to take, would receive unflinching assistance from the public. But we were destined to be disillusioned for as soon as it got known that the work was to be done honorarily much of that enthusiasm died out. Towards the final stages of the operations the interest of the public further declined due to its preoccupations in connection with the General Elections to the Punjab Legislative Assembly. A contributory cause was the erroneous impression that the census was a device by the Government to check up the allotments of lands and houses secured by the refugees. It took a good deal of time and propaganda to make the refugees understand that the census had nothing to do with the allotments of property and that any information derived by the census officers was enjoined by the Census Act to be treated as secret. Nevertheless the disinclination of some of the refugees to assist in the census operations persisted till the end. I deem it advisable to record that if the future censuses are to be made unqualified success, which they obviously should be in the interests of the country, the public will have to cooperate with the census organisation much more than it did on this occasion.

P. 16. (*a*) **Collection of the Results.** Section 10 of Part II of the Code dealt with the collection of the results of the census. This work had to be completed in accordance with the time-table prescribed in the Census Calendar. But with a view to facilitating the holding of the General Elections to the Punjab Legislative Assembly for which also the services of the revenue agency were required, the Census Commissioner issued a revised time-table for the submission of the results to their District Census Officers by the Charge Superintendents in the Punjab. The revised instructions were circulated by me on the 3rd February, 1951. Under paragraph 7.17 of Part II of the Code the District Census Officers were required to submit from the 9th February, 1951, bi-weekly reports on the progress of the enumeration. As no District Census Officer had complied with the requirements of this paragraph I apprehended delay in the submission of the Distreps prescribed under paragraph 10.16 ibid. Consequently, on account of the extreme importance of the punctual collection of the provincial results, a circular was addressed by me to all District Census Officers in the Punjab and Bahawalpur State on the 17th February in which their attention was specially drawn to that paragraph for punctual compliance. For the facility of the District Census Officers the method of preparing the Distreps was illustrated in that circular. Early in March, 1951, I addressed an urgent communication to all Deputy Commissioners in the Punjab and Bahawalpur State requesting them to take a personal interest in the punctual submission of the Distreps relating to their districts. The first accurate Distrep to reach me was on the 6th March from the District Census Officer Alipur, district Muzaffargarh while the last one came on the 14th idem from the District Census Officer Toba Tek Singh, Lyallpur district. The provisional figures of the population of the Punjab and Bahawalpur State were compiled in my office and communicated to the Census Commissioner over the telephone on the 14th March, 1951. It may be mentioned that some of the Distreps contained obvious discrepancies and

that I had to get these removed by the District Census Officers concerned before the communication of the provisional figures to the Census Commissioner.

(*b*) **Publication of Provisional Figures.** On the 15th March, 1951, the Census Commissioner confirmed the provisional figures of the population of the Punjab and Bahawalpur State and in accordance with his instructions I arranged for their release through the Director of Public Relations, Punjab, in consultation with the Punjab and Bahawalpur State Governments. The figures were published on the 12th April, 1951, districtwise in the form of a table. The figures of the cities (including cantonments, if any), containing more than one lac population were shown underneath the totals of their respective districts. The table also gave the breakdown of the population into males, females, literate persons and Muhajirs. All figures were rounded to the nearest thousand. In the Press Note with which the information was released it was mentioned that the figure were based on the preliminary reports of the Enumerators and were subject to revision after the actual counting and scrutiny of the Enumeration Slips at the Sorting Centres. Some weeks later printed copies of Census Bulletin No. 1 containing the provisional figures of the population according to the Census of Pakistan, 1951 were received from the Census Commissioner and distributed to the Hon'ble Ministers of the Punjab Government, Heads of Departments and Deputy Commissioners in the Punjab and Bahawalpur State.

P. 17. Transportation of slips to Sorting Centres. Originally it was contemplated to organise three Hand Sorting Centres but due to lack of accommodation it was finally decided to organise only two such Centres, one in Lahore and the other at Rawalpindi. On the 9th April, 1951, I communicated to all District Census Officers the name and other material particulars of the Hand Sorting Centre at which the slips of their districts would be sorted and requested them to despatch the slips and other census documents to that Centre as soon as the Deputy Superintendent of Census incharge of the Centre had intimated to them that he was ready to receive the same. As the Sorting Centres had to remain in existence for a specified period and their work completed within that period without fail, the importance of the expeditious despatch of the slips and other census documents was pointed out to the District Census Officers and they were requested to finalise the arrangements for their despatch without any delay. Copies of the circular were sent to the Deputy Superintendents of Census Lahore and Rawalpindi with instructions to notify to each of their District Census Officers the date fixed by them for the delivery of the slips and other census documents. The Deputy Superintendents were further told that in fixing that date they should pay due regard to the readiness of their Sorting Centres to receive the slips and that they should avoid congestion. The delivery of the slips at the two Hand Sorting Centres did not turn out to be as easy as it looked. The reports from the Centres were so disturbing that the assistance of the Chief Secretary and the Divisional Commissioners had to be invoked in the matter. There was a good deal of correspondence with the District Census Officers before the entire enumeration slips and other census documents reached the Centres.

P. 18. (*a*) **Comments on the work of the Provincial Office in the organisation and control of enumeration.** Apart from the supervision of the census arrangements in the field, which has been described already, I had to direct, under the guidance of the Census Commissioner, the preparations for enumeration. Throughout the pre-enumeration stage, instructions for preparing for the census continued to pour in from the Census Commissioner, and since the census work brooks no delay, all these instructions had to be forwarded to the District Census Officers for guidance and compliance with the utmost speed. This entailed a heavy rush which my office coped with by working late hours and on holidays. The Provincial

Office had to distribute, to the District Census Officers, the forms and other printed material received from the Census Commissioner from time to time except where their supply was arranged direct from Karachi. This work also kept my office fully stretched particularly as a high standard of accuracy and expedition had to be maintained in order to eliminate a breakdown or interference in the progress of enumeration due to want of the census instructions or materials. Finally the Provincial Office handled myriad enquiries from District Census Officers and others seeking clarification and information on matters pertaining to the census. All this work too was of an emergent nature. But inspite of several handicaps, of which the most important was the belated start of the census operations, the Provincial Office was able to organise and control the enumeration efficiently.

(*b*) **Comments on Census Organisation at district level.** The census organisation at the district level consisted of the District Census Officer and the clerical staff attached to him in connection with his administrative duties. As the District Census Officers and his staff did the census work in addition to their normal duties the efficiency of the census work at the district level chiefly depended on the personal interest taken by the District Census Officer; but by and large the work was handled quite satisfactorily. Most District Census Officers asked for a special clerk to handle the census work; the allotment of funds to meet the contingent expenditure; and the supply of office stationery. Inspite of my best efforts it was not possible to comply with the first of these requests. As regards the second, the Government of Pakistan requested the Punjab Government to supply service labels to the census staff for use in the correspondence connected with the census and this direction proved helpful. The arrangements for the supply of office stationery to some of the District Census Officers were made by my office as best as could be managed.

(*c*) **Comments on the work of Charge Superintendents, Circle Supervisors, Enumerators and Assistant Enumerators.** The output of work of the Charge Superintendents and Circle Supervisors was quite efficient in rural areas. As already mentioned these functions were discharged there by the Qanungos and the Patwaris whose past experience in census work stood them in good stead. In urban areas however the work of Charge Superintendents and Circle Supervisors generally left much to be desired particularly where the persons entrusted with these duties were non-officials. The efficiency of the Enumerators and Assistant Enumerators presents much the same picture; their work was done well in rural areas but was slipshod in some urban blocks. The reasons for the inability of all urban Enumerators and Assistant Enumerators to attain the standard of efficiency achieved by their conferers in rural areas have already been mentioned in this Report and need not be repeated. To sum up, the work of the census field staff in question was satisfactory in rural areas and small towns; but in cities and big towns there was a certain amount of laxity of control and supervision on the part of some Charge Superintendents and Circle Supervisors and want of adequate industry and application in the case of some Enumerators and Assistant Enumerators.

P. 19. Comparison of the organisation in this Census with that of past censuses. Although the general set-up of this Census was much the same as that of the censuses taken in 1931 and 1941 there were some differences which are herein described. In 1931 the Provincial Superintendent of Census was allowed a Personal Assistant belonging to the Punjab Civil Service some two months before the census date. No such appointment was made in 1941 while I was given a part-time Deputy for about two months just before the enumeration for checking the field work. In 1931 as well as in 1941 the office of the Provincial Superintendent of Census consisted of five clerks as against four clerks including a stenographer allowed for my office. Formerly the Deputy Commissioner used to be in general charge of the

census operations in his district and he appointed the Revenue Assistant as the District Census Officer to supervise the arrangements. As already mentioned, during this Census the District Census Officers, with one exception, were the Sub-Divisional Officers and the Revenue Assistants in the Punjab and the Assistant Commissioners in Bahawalpur State, who performed their census duties under the general control of their Deputy Commissioners. The classification of the census areas, namely, Charges, Circles and Blocks was the same at all the three censuses. The 1931 Census was conducted on General Schedules, which entailed greater labour. The Punjab (as now constituted) including the Bahawalpur State was then divided into 82,926 Blocks. The more convenient method of the individual Enumeration Slip was introduced in 1941 and followed in 1951. This method of enumeration permitted the formation of larger Blocks with the resultant advantage of more selective recruitment of Enumerators. The number of Blocks in 1941 and 1951 was 44,795 and 54,709 respectively. The number of Blocks for this Census was more because, unlike the Census of 1941 when the Blocks were to be constituted on the basis of 125 to 150 houses per Block, the limit of the Block in 1951 was to be from 300 to 500 persons. The number of Charges and Circles in the 1951 Census was 837 and 8,013 respectively as against 499 and 6,297 in 1941 and 466 and 6,690 in 1931. Since, due to the increased number of Charges and Circles, there were more Charge Superintendents and Supervisors, the task of the preparations for enumeration was comparatively easier. The policy regarding the selection of Charge Superintendents, Circle Supervisors and Enumerators remained substantially the same during the three censuses.

P. 20. Cost of Enumeration. The expenditure incurred on taking this Census in the Punjab and Bahawalpur State is shown in Appendix A.

It will be observed that only a sum of Rs. 135/- was spent under the main head B-Enumeration. This amount represents the cost of stationery supplied to some District Census Officers. As mentioned in paragraph 15 under the heading "Public Cooperation" the Enumerators and other census officers received no payment for the work done by them in connection with the census and hence no other expenditure was incurred under this main head. The sum of Rs. 280/- booked against E-Printing was spent on printing the Urdu leaflet containing "the Do's and Doesn't of Enumeration" referred to in the opening part of paragraph 15 *supra*.

P. 21. Census Staff. Appendix B contains the details of the staff employed in connection with this Census. The post of the Provincial Superintendent of Census, Punjab and Bahawalpur State, which carried pay in the senior scale of the Civil Service of Pakistan plus a Special Pay of Rs. 250/- per mensem, remained in existence throughout the life of the Provincial Office. It was a whole-time post but after the 12th July, 1951, when the two Hand Sorting Centres at Lahore and Rawalpindi had started running smoothly the Government of Pakistan, permitted me to work as the Deputy Secretary to Government, Punjab, General Administration Department, in addition to my census duties. The combination of these two duties entailed a good deal of extra labour but on the whole I was able to shoulder the responsibilities of the dual charge satisfactorily. It may be added that after the 12th July, 1951, my basic salary was shared equally by the Government of Pakistan and the Punjab while the Special Pay of Rs. 250/- per mensem attached to the post of the Provincial Superintendent of Census was paid by the Government of Pakistan and that of Rs. 150/- per mensem which the post of the Deputy Secretary carried, by the Punjab Government. As regards the compilation staff shown in Appendix B it may be mentioned that this staff was engaged soon after the organisation of the Hand Sorting Centres with a view to enabling the compilers to acquaint themselves with the hand sorting process during the Block and Circle Sorts. Further details

regarding the work of the staff will be found in Section III—Compilation and Tabulation *infra*.

P. 22. Recommendations for future guidance. It is proposed to record in this paragraph my recommendations for the organisation and the operational methods for the next census in the Punjab and Bahawalpur State. These recommendations are based on actual experience and should prove helpful to the officer who will be incharge of that census. Admittedly a decade is a long time and many changes militating against the practicability of these recommendations may take place during the next ten years. Nevertheless, it seems desirable to put down the suggestions whatever their worth when the next census is taken.

ORGANISATION.

(*a*) **Pay of Census Officers and Staff.** The emoluments attached to the post of the Provincial Superintendent of Census, Punjab and Bahawalpur mentioned in paragraph 21 *supra* were adequate having regard to the onerous and arduous nature of the duties attached to the post. Generally speaking the pay scales allowed to the clerical establishment were also suitable but for the future I invite attention to the suggestion made in this connection in the succeeding sub-paragraph.

(*b*) **Recruitment of staff.** If the post of the Provincial Superintendent of Census continues to be borne on the cadre of the Civil Service of Pakistan there should be no difficulty in selecting a suitable officer to man it. As regards the clerical staff I think I should mention that the selection of such staff is not an easy matter. The Provincial Census Office being a temporary one, and that for a limited period, it is not practicable to engage new hands in the hope of gradually training them. At the same time the efficiency of the Provincial Census Office from the very start is of utmost importance because unlike other offices where a little clerical delay or negligence is generally retrievable, such delay or negligence in a census office may lead to disastrous consequences affecting the whole operations. The best method of recruitment of the clerical staff therefore is to employ experienced clerical officials already in service. But in order to make these posts attractive for good officials adequate additional emoluments, at a fixed percentage on substantive salary, should be allowed to all clerical staff whose services are transferred to the census organisation in future. In the interest of the census operations it is of paramount importance that the clerical posts in the Provincial Census Office are regarded as coveted posts and as stepping stones to promotion if the duties attached thereto are discharged efficiently.

(*c*) **District and Municipal Census Staff.** As far as I can judge the revenue administrative machinery will continue to play an important role in taking censuses in rural areas for some time to come. The Sub-Divisional Officers and the Revenue Assistants therefore will continue to be incharge of the census operations at the district level. Regular clerks were not sanctioned for these officers at this Census and although they were able to handle the work with the assistance of their normal staff I think it would be conducive to efficiency if each District Census Officer were allowed a regular census clerk in future. As already mentioned in this Report there was room for improvement in the arrangements in municipalities and other urban local bodies. My successor will be well advised therefore in paying special attention to the arrangements in such localities. He should, among other things, insist upon urban local bodies taking action to nominate special staff for looking after the census arrangements within their jurisdiction.

(*d*) **Time when work should begin in Provinces for 1961 Census.** As mentioned in paragraph 3 *supra* the time available to us for the preparations for enumeration was much less than that which the previous census organisations had had with the result that many important stages of the operations had to be hurried through. In order to avoid a similar rush at the time of the next census it is recommended that the Provincial

Census Organisation should be set up by November 1959 if the final date for that census will be the 28th February, 1961. The accuracy of a census very much depends upon the efficiency of the arrangements for the field work in all the stages and therefore the earlier the start of the 1961 census organisation the better.

OPERATIONAL METHODS.

(*e*) **Delimitation of Census Areas.** The delimitaion of Charges, Circles and Blocks presented no difficulty in rural areas where the revenue administrative units of the Kanungo's circle, the Patwari's *halqa* and the village, respectively, formed these census areas. However in urban areas, particularly thickly populated cities, the delimitation of Blocks and Circles was not so easy and special care had to be taken in their demarcation. A municipal ward which corresponded to a Charge in urban areas was well understood. The average size of a Block according to the definition contained in the Code of Census Procedure, Part I, was found to be suitable but the Circle which was defined as a compact group of about 12 Blocks was inclined to be big. I suggest that the sizes of Charges, Circles and Blocks in the 1961 Census may be the same as for the 1951 Census except the urban Circles which may be slightly smaller. For the actual delimitation of these census areas however sufficient latitude may be allowed to vary the sizes of the Circles and Blocks to suit local requirements as was done on this occasion.

(*f*) **House numbering and listing.** Paragraph 8 of this Report deals with house numbering and listing. The period allowed for this job, namely three months, was not found to be quite sufficient. Due to the belated start of the organisation of the 1951 Census the period for house numbering and listing had to be curtailed but this resulted in a rush which should be avoided in future. In my opinion not less than five months should be allowed for house numbering and listing, if the house lists are to serve the objects specified in paragraph 8.

(*g*) **Census Slip.** The Census Slip used at this Census proved to be a definite improvement and I suggest its continuance in future. The information to be collected at the 1961 Census will naturally depend on the conditions then prevailing but the 1951 Slip will greatly facilitate the preparation of the Slip to be used for that census. It may be added that but for the questions on economic status, which were not properly appreciated in some cases, the 1951 Census Slip was well understood both by the enumerators and the respondents.

(*h*) **Self-enumeration Forms.** In many advanced countries the enumeration is arranged through self-enumeration forms, it being the duty of the head of each family to fill in the forms correctly and return them to the census authorities by the due date. The use of such forms presupposes a high percentage of literacy. I am not so sure that the conditions in the Punjab and Bahawalpur State in 1961 will be favourable for the introduction of self-enumeration forms but if the system can be introduced in some urban localities it would be worthwhile trying it. It will however be necessary to guard against double enumeration: through self-enumeration forms on the one hand and through the enumerators of the area in which the forms are distributed on the other.

SECTION II—SORTING.

P. 23. Hand Sorting Centres. Soon after the completion of the enumeration at the end of February, 1951, the organisation of the Hand Sorting Centres was taken up. Originally it was contemplated to organise three such centres in my jurisdiction; one each at Lahore (Zone No. 5), Multan or Bahawalpur (Zone No. 6) and Rawalpindi (Zone No. 7). But owing to non-availability of accommodation both at Multan and Bahawalpur, the third centre could not be organised, and as a result, the Lahore Centre, to which all sorting work from proposed Zone No. 6 had to be entrusted, became rather unwieldy. The distribution of the sorting work between the Centres was as follows:—

(1) Lahore Hand Sorting Centre (Zone No. 5). The census districts of Lahore, Kasur, Sheikhupura, Gujranwala, Sialkot, Narowal, Jhang, Lyallpur, Toba Tek Singh, Montgomery, Pakpattan, Multan, Khanewal, Muzaffargarh, Alipur, Leiah, Dera Ghazi Khan, Biloch Trans-Frontier Tract, Rajanpur, Bahawalpur, Bahawalnagar, Rahimyarkhan and Ahmadpur East, i.e., 10 administrative districts of the Lahore and Multan Divisions and 2 administrative districts of the Bahawalpur State.

(2) Rawalpindi Sorting Centre (Zone No. 7). The census districts of Gujrat, Jhelum, Chakwal, Pind Dadan Khan, Rawalpindi, Murree, Campbellpur, Pindigheb, Shahpur (Sargodha), Khushab, Mianwali, Bhakkar and Thal, i.e. 6 administrative districts of the Rawalpindi Division and the normal slips of the North-West Frontier Province.

On the basis of the provisional figures the former centre had to deal with 155 lakh slips including a Muhajir (refugee) population of about 30% while the latter had to handle about 83 lakh slips including 32 lakh N. W. F. P. normal slips and 6 lakh Muhajir slips.

Sh. Muhammad Sharif of the Punjab Civil Service, was appointed as the Deputy Superintendent of Census, Incharge Hand Sorting Centre, Lahore. He assumed charge on the 21st March, 1951, and left for Karachi soon after to attend a Conference convened there by the Census Commissioner for the 28th and 29th March to impart general instructions on the Hand Sorting Plan and to discuss matters connected with the organisation of the Hand Sorting Centres. It was not possible to secure the services of an officer of the Punjab Civil Service for the Hand Sorting Centre at Rawalpindi, so Sh. Abdul Hamid, Deputy Superintendent of the Punjab Civil Secretariat, was selected for the post. He assumed charge at Lahore on the 31st March, 1951, and after some hurried briefing by Sh, Muhammad Sharif joined at Rawalpindi on the 6th April, 1951.

The accommodation for both these centres was arranged in evacuee buildings through the Rehabilitation Department. The Lahore Centre was located in Desmas Mansions, Bank Square, while the Rawalpindi Centre was housed in the Singh Sabha Building, Raja Bazar. The two buildings were quite centrally located but were not sufficiently commodious. They were also not electrified with the result that in the intense heat the staff had to work without fans in cramped space, which had a depressing effect on the general efficiency and output of work. After repeated efforts the Lahore Centre was able to secure an electric connection some time in July, 1951.

P. 24. Recruitment of Staff. The sanctioned strength of the staff for the Hand Sorting Centres, Lahore and Rawalpindi, was as follows:—

		Lahore	Rawalpindi
(I)	**Clerical Staff:**		
	Head Clerk	1	1
	Record Keeper	2	1
	Clerks & Typists	4	2
	Daftri	2	1
	Peons	4	2
	Chowkidar	1	1
(II)	**Sorting Staff:**		
	Chief Inspector	1	1
	Inspectors	4	2
	Supervisors	8	5
	Sorters	140	110

Owing to abnormal pressure of work in the Lahore Centre one Supervisor and 15 Sorters were sanctioned from August to the middle of November, 1951.

(III) **Compilation Staff.**

Chief Compiler—One for both Centres

Compilers	17	8

The clerical staff for both the Centres was recruited locally in the beginning of April, 1951. The recruitment of the sorting staff was adjusted to the amount of work ready for handling at each Centre; the staff for the Lahore Centre being recruited to its full sanctioned strength by the end of May, while that for the Rawalpindi Centre a little later.

With the closing down of both the Centres at the end of December, 1951, the entire sorting staff was disbanded. The Inspectors and Supervisors, however, continued till the end of January, 1952, in connection with the final winding up of the Centres, particularly of the NALF (Non-Agricultural Labour Force) Slips meant for transfer to the Machine Sorting Centre, Karachi. From February, 1952, the two Chief Inspectors and the compilation staff were attached to the Provincial Census Office. The Chief Inspector, Rawalpindi, reverted to his parent department early in March, 1952, and since it was possible to manage without a substitute, no one was appointed in his place.

P. 25. Equipment. As the Hand Sorting Centres had to run for a limited period only, the office furniture required for them was arranged as economically as possible. Furniture was purchased only if the efforts to procure it locally on loan from other offices or on hire from the market failed to fructify. Since the accommodation in both the Centres was insufficient it was not feasible to provide tables and benches for the sorters. They were made to sit on mostly hired *durries* spread over the floor and this arrangement proved both convenient and economical. Chairs and tables however were provided for the use of the supervisory staff.

The Census Commissioner designed a special cane-rack and set of containers for holding the slips during the various stages of sorting. These were ordered locally at Lahore and Rawalpindi. For the Lahore Sorting Centre, where a much larger number of slips had to be sorted, the Deputy Superintendent of Census incharge obtained on loan wooden boxes from the Director of Elections, Punjab. These boxes proved handy and convenient both as receptacles for the slips during the sorting stages and for sorting them. Their use resulted in a good deal of saving.

Some paper, pencils and other articles of stationery were supplied by my office to the two Deputy Superintendents of Census to go on with. They met the rest of their requirements in stationery locally from their respective budget allotments. No particular difficulty in connection with the procurement of stationery was brought to my notice by them.

P. 26. Commencement of Sorting work and Instruction of Staff. When the Hand Sorting Centres had been organised the District Census Officers were asked to despatch the enumeration slips and the connected records to the Centres in accordance with the procedure laid down by the Census Commissioner. The slips commenced coming in by the middle of April, 1951. The training of the Sorting Staff in accordance with the requirements of the Code of Census Procedure Part III was started soon after the receipt of the enumeration slips at the Centres and the sorting work was taken up in right earnest towards the end of April. The smooth working of the sorting plan largely depended on the training of the staff before the commencement of each Phase and no pains were spared by the Deputy Superintendents and the Chief Inspectors in that behalf. Besides holding training classes, they made frequent rounds amongst the sorting staff firstly to appraise the effect of the training secondly to clear the ambiguities; and thirdly to rectify the mistakes discovered in the course of sorting. The Inspectors and Supervisors also guided the sorting staff under their direct charge and kept a close supervision over each stage of the sorting operations in their respective groups.

P. 27. Code Part III; Sorters' Tickets. With the object of ensuring statistical uniformity of

the census results throughout Pakistan, the Census Commissioner issued the Code of Census Procedure, Part III, in loose-leaf sheets from time to time as the sorting work progressed. The instructions were grasped by the two Deputy Superintendents as and when these were received and they explained them to their Inspectors and Supervisors so as to ensure the conduct of the sorting process strictly in accordance with the plan formulated by the Census Commissioner. Sorters' Tickets specially designed by the Census Commissioner for each Phase, which had to form the basis of all compilation and tabulation work, were carefully studied before the commencement of the connected Phase. Special care was taken at all stages to prepare the Sorters' Tickets accurately and checks and tests were applied from time to time to verify the accuracy of the sorting process in accordance with the instructions embodied in Chapter 3 of the Code of Census Procedure, Part III.

P. 28. Block Sort: Scrutiny and Correction of Slips: Discrepancies in Circle Abstracts and Charge Summaries. In the complicated system of sorting the enumeration slips by hand, the Block Sort is the primary operation. It dealt with the slips of one enumerator at a time by dividing them into separate categories of Muhajirs and Non-Muhajirs sexwise. The slips were scrutinised thoroughly for location and for correction of obvious mistakes as also for reconciling the discrepancies in the Circle Abstracts and Charge Summaries. Chapter 3 gave detailed instruction regarding these matters and they were strictly followed. Before taking up the slips for actual sorting the Inspectors, Supervisors and Compilers were detailed to carry out the requisite scrutiny. It was discovered that the Census records of some districts were far too defective and irregular, so the District Census Officers concerned were asked by me to send their representatives to the Hand Sorting Centres to help the staff in making the slips sortable. There were several serious complaints about the non-receipt of certain important census documents from some districts and in that connection also I had to address the District Census Officers concerned. Not infrequently the work had been done in a slipshod manner during and after the enumeration and as a result the totals worked out at the Hand Sorting Centres did not agree with the figures shown in the Enumerators' Reports, Circle Abstracts and Charge Summaries. This necessitated frequent amendments of these documents and even their preparation afresh in some cases.

P. 29. Phases of the Hand Sorting Operation: Special points regarding the work involved in each in the Province. In accordance with the provisions of paragraph 3.103 of Part III of the Code the procedure at the Hand Sorting Centres followed a sequence of work divided into five Phases therein described. One per cent samples were drawn out at the end of some Phases.

Although the two Hand Sorting Centres had made a belated start the progress at each stage of the scheme kept pace with the schedule except when, under the stress of circumstances, the staff had to be diverted to other more urgent work; as for instance, the completion of the Religious working of the Circle Sort with a view to expediting the preparation of Table 6—Population according to Religions.

The subjoined statement shows the dates of the completion of the various Phases:—

Nature of the Phase	Dates of Completion	
	Lahore Centre	Rawalpindi Centre
Phase I-A Block Sort.	4-8-1951	15-6-1951
Religious working of Circle Sort.	4-8-1951	27-7-1951
Phase I-B Circle Sort (Non-Muhajirs & Muhajirs).	28-9-1951	7-9-1951
Phase I—Children Sort.	12-10-1951	28-9-1951
Phase II—Literates.	26-10-1951	5-10-1951

Phase III—Occupations.	3-11-1951	16-11-1951
Phase IV—Age-Groups.	14-12-1951	7-12-1951
Phase V—Fertility etc.	14-12-1951	14-12-1951

As already mentioned the Muhajirs in the Lahore Zone comprised quite a large percentage of the total population. But inspite of this and some other handicaps, the work in that Zone did not lag behind and was completed at the same time as in the Rawalpindi Zone.

P. 30. Sorting operation in action—Classification. The classification of the slips was done by dealing them out into a series of receptacles and labelling them temporarily with the indications of the classes into which they had to be sorted. The first step in the process of sorting was to divide the slips sexwise. This division was maintained throughout the operation, so also the geographical organisation of the slips.

Counting and check of accuracy. In order to ensure that the slips were correctly counted the system of internal checks suggested in Part III of the Code was rigidly followed during the various sorting operations. Further checks and tests were carried out to make certain that the internal checks had been made thoroughly and honestly and the classification properly maintained. The initial checking was provided by the Supervisors while the Inspectors conducted running checks on the classification, counting and addition. Personal diaries were maintained by the Deputy Superintendents of Census, Inspectors and Supervisors showing the daily checking and testing done by them.

Maintenance of batches. In accordance with the instructions laid down in paragraph 3.227 of Part III of the Code the system of team work was introduced during the Circle Sort. Instead of each Sorter handling all workings of the Circle Folder, teams of Sorters, each specialising in a different working, completed the Circle Sort. This specialisation of work proved really efficacious and was adopted in all the remaining phases of the Hand Sorting operations. The system proved helpful in other respects too. Due to desertions and resignations changes in the sorting staff were not uncommon. The team work facilitated the initiation of the new comers into the intricacies of the sorting operation besides enabling the Deputy Superintendents to put the intelligent and experienced Sorters on the more complicated workings.

P. 31. Discipline, Control and Supervision in Sorting Centres; Staff difficulties. As the ultimate responsibility for the efficient running of his Centre rested on the Deputy Superintendent of Census, he had complete charge of discipline and control in which he was assisted by the Chief Inspector. The maintenance of discipline in, or the control of, temporary organisations is bristling with difficulties because temporary employees, due mainly to the absence of any vested interest, are inclined to behave in an irresponsible manner. The Hand Sorting Centres had enough of this mischief in the shape of resignations and desertions which were so alarming to begin with that a serious set-back to the programme of Hand Sorting Operation seemed inevitable. In order to meet the situation the Census Commissioner issued an order in June, 1951, requiring every member of the temporary census staff, who was desirous of leaving his post, to give in writing, to the Deputy Superintendent of Census incharge of the Sorting Centre where he was employed a week's notice of his intended relinquishment of his post so that timely action could be taken for the appointment and training of his substitute. Failure to give such a notice entailed forfeiture of all outstanding dues. Further, the Deputy Superintendents were required to keep in arrears one week's emoluments of each Sorter to enable the orders relating to the forfeiture of the outstanding dues to be enforced effectively when necessary. As the menace of resignations and desertions persisted the Census Commissioner issued further orders withdrawing the concession for the payment of monthly bonus in respect of

Phases lasting over a month and directing that the temporary employees would not be entitled to receive the output bonus unless they were serving at the time of the payment of the bonus which was not to be earlier than 15 days after the completion of each Phase. Exceptions could be made by the Provincial Superintendents of Census in the cases of forced resignations on genuine medical grounds, resumption of studies or other unavoidable reasons. Although it cannot be claimed that as a result of these measures, the resignations and desertions disappeared, the position recorded an appreciable improvement. No other difficulty was encountered in the management and control of the Hand Sorting Centres to a marked extent. The supervision of the work of the Sorters was entrusted to the Supervisors and Inspectors under the general superintendence of the Chief Inspectors. All these officials exercised running checks while the work was in progress and also helped the Sorters out of their difficulties. The Deputy Superintendents too made frequent rounds every day to supervise the sorting. On the whole the supervision of the work was quite satisfactory as far as the limited supervisory staff could manage it.

P. 32. Comments on accuracy of sorting and counting. A reasonable standard of accuracy of sorting was maintained at both Hand Sorting Centres. The cases of slipshod sorting were not uncommon but the supervisory staff was generally able to detect the mistakes. The standard of accuracy largely depends on the amount of check exercised over the work of the Sorters. On an average we had one Inspector and two Supervisors to every batch of approximately 30 Sorters. Practical experience shows that the optimum team would be one Inspector, two Supervisors and 20 Sorters. The standard of accuracy could also be improved, firstly by allowing more time for each sorting phase and secondly by offering higher emoluments to Sorters so as to attract reasonably intelligent persons for this irksome and arduous work. The supervision of counting was greatly facilitated by the supply of "check" figures and presented no difficulty.

P. 33. Termination of the Hand Sorting Operations. The sorting at both the Centres was completed in the middle of December, 1951, and the sorters were relieved of their duties at the end of that month. The intervening fortnight was utilised in providing a general check up of the slips that were meant for transfer to the Machine Sorting Centre, Karachi. The Chief Inspector, Rawalpindi, was sent to Karachi for delivering the slips of his Centre at the Machine Centre there. After he had worked for a few days at Lahore on his return, his services were recalled by his parent department so he had to be relieved on the 8th March, 1952. As it was possible to do without the post the vacancy was not filled. On the receipt of instructions from the Census Commissioner the slips of the Lahore Zone were despatched to the Machine Sorting Centre, Karachi, between June and August, 1952. This step marked the conclusion of the Hand Sorting Operations.

P. 34. Plan for diverting City slips to Machine Sorting Centre Karachi for Phases 4 and 5 and effect of its abandonment. It was originally planned that the slips of the Cities of Lahore, Sialkot, Gujranwala, Lyallpur and Multan in the Lahore Zone, and of the Rawalpindi City in the Rawalpindi Zone, would be transferred to the Machine Sorting Centre, Karachi, for the workings in Phases 4 and 5. But subsequently, on discovering that the number of Non-Agricultural Labour Force slips to be sorted in the Machine Sorting Centre was far beyond expectations, the Census Commissioner decided that the slips of the five cities of the Lahore Zone should be sorted out at the Hand Sorting Centre, Lahore, for Phases 4 and 5 as well. As by then, however, the Sorting Staff had been disbanded the work had to be entrusted to the Compilation Staff. The Compilers, it may be mentioned, completed the work

quite satisfactorily, though that naturally retarded the progress of Compilation. The position regarding the slips of the Rawalpindi City was not affected by this decision because they had been transferred to the Machine Centre, Karachi, before then.

P. 35. Coding. Coding, as defined in paragraph 2.209 of Part III of the Code, is the translation into a specified number of a statement recorded by the Enumerator on the Enumeration Slip and marking that number on the slip at the place set apart for the purpose. It was planned that the following characteristics might be coded in the Hand Sorting process:—

(*i*) Place of Birth, if not born in the district of enumeration.

(*ii*) Nationality, if not a Pakistani, Indian, or Afghan Powindah.

(*iii*) Muhajirs for place of origin, if it is not the same as Birthplace.

(*iv*) Mother Tongue, if it is not one of the nine languages printed on the slip.

In pursuance of the instructions contained in Sections 4 and 5 of Chapter 8, the classification of Occupations and Economic Groups was also to be coded in order to facilitate the work in the Machine Centre, Karachi. The whole coding job was lengthy, complicated and beyond the understanding of ordinary compilers and sorters and therefore the Census Commissioner arranged a Conference of the Provincial Compilation Staff at Karachi in August, 1951 for the purpose of explaining the principles of Coding. The Chief Compiler, and one of his assistants were deputed by me to attend that Conference. They gathered the impression that due to lack of time coding was to be done only in respect of the classification of Occupations and Economic Groups of the Non-Agricultural Labour Force slips and that the sorting for all other variates had to be carried out without it; so, the work of sorting was taken in hand without coding. As the number of slips containing complicated and odd information was not much and teams of more intelligent sorters were able to tackle the slips with due amount of accuracy, in actual working no serious difficulty was experienced by the Deputy Superintendents of Census in extracting the required data. The Chief Compiler secured employment elsewhere and left his post on the 31st October, 1951. Upto that date he had not made a real start in the complicated task of coding at either of the two Hand Sorting Centres. He delivered a short hurried lecture to the staff at Lahore a few days before relinquishing charge but the work was not fully grasped until the Census Commissioner had explained it to the staff at the special request of the Deputy Superintendent of Census, Lahore. The position at the Hand Sorting Centre, Rawalpindi, was much the same. While inspecting that Centre the Census Commissioner noticed that the Non-Agricultural Labour Force slips had not been coded before sorting and he had to direct the suspension of further sorting. He explained the method of coding the slips to the staff and then alone was it possible for the staff to undertake coding. With great difficulty the coding of Occupations and Economic Groups of Non-Agricultural Labour Force slips only was finished before the 31st December, 1951, at both Centres.

P. 36. Use of the original slips as the sorting medium. In past censuses the enumeration used to be on Schedules, which necessitated slip-copying i.e. posting of entries in the Schedules on the slips, before starting the sorting operations for which a large number of copyists had to be engaged. This procedure besides being cumbersome left the accuracy of the census largely at the mercy of the copyists who were prone to making mistakes. In this census a separate slip was prepared for each person at the time of the enumeration and the slips so prepared formed the basis for the extraction of the data needed for the various Tables. The use of the original slips as the sorting media made it possible to produce more accurate and reliable results in a comparatively lesser time.

P. 37. *Cost of Sorting.* The Hand Sorting Centres at Lahore and Rawalpindi started functioning at the beginning of the financial year 1951-52 and continued till the end of January, 1952. The Provincial Census Office directed the working of these Centres according to the instructions received from the Census Commissioner and after the Centres had closed down it remained busy, upto the end of that financial year with the winding up of their affairs. The entire expenditure shown in column (c) of Appendix A to this Report aggregating to Rs. 2,60,047/-, therefore, represents the cost of sorting. The expenditure on the Lahore and Rawalpindi Centres under C-Sorting and Compilation was Rs. 1,33,963/7/- and 92,273/11/-, respectively. The details under the various subheads on which this expenditure was incurred are self-explanatory and call for no comments. The sum of Rs. 214/12/- shown under the head β-Enumeration represents the cost of petrol consumed by the District Census Officer, Lahore, during the Enumeration period and the pay of the driver engaged for the jeep lent him by the Punjab Government.

P. 38. **Sorting Staff.** Appendix B to this Report shows the staff employed on sorting in the two Hand Sorting Centres. The supervisory staff at each Centre consisted of one Deputy Superintendent of Census, who was in charge of the entire establishment, one Chief Inspector, and some Inspectors, and Supervisors. The actual sorting in the different phases was done by the Sorters. As mentioned in paragraph 31 *supra* there were frequent 'changes amongst the Sorters' due to resignations and desertions which often dislocated the work. The pay sanctioned for the Sorters and Supervisors was not in conformity with the salaries allowed to the temporary staff in other departments and this fact was largely responsible for the difficulties experienced in connection with the sorting personnel. I strongly recommend that the pay of a Sorter in future should be equal to that of a Junior Clerk while that of a Supervisor and Inspector, respectively, should correspond to the salaries of a Senior Clerk and an Assistant in the office of a Deputy Commissioner so as to facilitate the procurement of the services of permanent hands on deputation from the local offices.

The posts of the Deputy Superintendents of Census carried a Special Pay of Rs. 100/- per mensem which was fully justified. If the suggestion made in paragraph 39 is adopted and part of the sorting work is done at the district level there should be only one Hand Sorting Centre to finish the rest of the job. The duties and responsibilities of the officer incharge of that Centre will be more onerous and I recommend that he should be allowed a Special Pay of Rs. 200/- per mensem. He should be a member of the Punjab Civil Service, preferably possessing the experience of running big office establishments.

P. 39. **Possibility of carrying out part of the sorting work on a district basis.** I will now proceed to discuss the desirability of carrying out part of the sorting work in each district in future and how far that is possible. It has been mentioned in paragraph 4 *supra* that the bulk of the enumeration was conducted through the revenue staff. The knowledge of local regions, which that staff possesses, must prove helpful in hand sorting at least upto the Circle Sort and it would obviously be advantageous to utilise it. The organisation of small sorting units in the districts would not present much difficulty in matters like the procurement of staff and the office accommodation, as also the transport of enumeration slips, and hence the sorting operations upto the Circle Sort could be handled at these units more speedily, economically and effectively than in large Sorting Centres. For one thing the Children's slips constituting about 30% of the total slips would be discarded at the end of the Circle Sort and for another the preparation of the Village Lists described in paragraph 47 *infra* would be facilitated.

Wider use of Machine Sorting. The slips of the Non-Agricultural Labour Force were transferred

to the Machine Sorting Centre, Karachi after they had been segregated in the Hand Sorting Centres. The use of the Punching and Sorting Machines which saves time and labour and ensures greater efficiency, should be continued at future census though after the Circle Sort at the district level. But in order to avoid additional expenditure which had to be incurred on the transportation of the slips to the Machine Centre Karachi and to eliminate unnecessary delay in the compilation of the Tables in the Provincial Census Office I strongly recommend that if possible the slips from the Punjab and Bahawalpur State should be handled at a Machine Centre located in Lahore.

SECTION III—COMPILATION & TABULATION.

P. 40. Organisation of the Compiling Staff: Recruitment. Of the twenty-five Compilers sanctioned for the compilation work three were appointed at Lahore in the second week of April, 1951, six in May and eight in June. The remaining eight compilers were allocated to the Rawalpindi Centre where they assumed duty in June 1951. The reason for the appointment of the compilation staff earlier than the actual start of the compilation work is given in paragraph 21 *supra*. I must mention that the rate of pay sanctioned for the Compilers, namely Rs. 120/- per mensem, did not attract experienced hands already in Government service and hence all the Compilers had to be recruited directly, who like the sorters, resigned their posts beyond all proportions resulting in the dislocation of work at times. In filling such vacancies the Supervisors, who had worked well on the sorting side, were given preference.

The post of the Chief Compiler, which carried the grade of Rs. 116-8-180/10-250, was offered to Mr. M. A. Majid on a fixed pay of Rs. 200/- plus the usual allowances, on account of his past experience in the 1921 Census. He assumed duty on the 10th May, 1951, but left us in the middle as he secured a better post in October, 1951. The Chief Compiler's post remained vacant for about three months when after strenuous efforts I was able to secure the services of Kazi Akhlaque Hussain, Assistant, Punjab Civil Secretariat. He was allowed his substantive pay plus a deputation allowance of 25 per cent. On account of his previous experience and special taste for statistical work he proved immensely useful. He joined on the 21st January, 1952 and stayed on upto the 30th June, 1953, when the Provincial Census Office closed down finally. The experience gained in manning the post of the Chief Compiler tends to support the recommendation made in paragraph 22 *supra* under the heading "Recruitment of Staff".

P. 41. Compilation Instructions in Code Part III. The compilation instructions contained in Chapter 6 of the Code of Census Procedure, Part III, were most comprehensive and detailed. These were supplemented from time to time by C. C. Circulars and no special difficulty was experienced at any stage in following them. The compilation work was generally conducted according to the Census Commissioner's plan.

P. 42. Compilers' work in Sorting Centres. At the initial stage the compilers were detailed to help in the sorting work, which included the scrutiny of slips. Towards the middle of June, 1951, when Block Sort was sufficiently advanced they started the correction of Circle Abstracts and Charge Summaries. In some cases these documents had to be written afresh as the corrections involved a wholesale revision of the figures. The compilation of working sheets for Table 6-Religion was taken up at both the Centres simultaneously in July 1951 and the Table was submitted to the Census Commissioner in the following month. The Chief Compiler also prepared the Schedule of Economic Divisions with the assistance of a few Compilers, which was sent to the Census Commissioner in November 1951. From time to time the compilers were engaged on working out the Check figures for the various Phases of Sorting and in addition compiled the Tables mentioned below to the extent indicated in columns 2 and 3.

The remaining part of the Tables was completed by them subsequently.

Table	Percentage of Progress at the close of Sorting Centres in January, 1952.	
	Lahore	Rawalpindi
4 A-Infants	70	..
5—Birthplace	81	70
7—Mother Tongues	90	100
19—Muhajirs' Origin	100	..

While at the Centres the Compilers also did some preliminary work regarding the Village Lists and a certain amount of Coding discussed in the succeeding paragraph.

P. 43. Coding. It will have been noticed from paragraph 35 *supra* that due mainly to the lack of understanding only a limited use was made of the system of Coding described in Chapter 8 of the Code of Census Procedure, Part III. In both the Centres it was not considered necessary to Code the slips for Place and Language and no difficulty was experienced in sorting them without coding. In October 1951 the slips relating to the Non-Agricultural Labour Force were taken up for Coding in the essential aspects, such as Economic Groupings and Occupations, and with the assistance of a few intelligent sorters the work was completed at both the Centres by the end of December. Coding in respect of the Cottage Industries was taken up in the Lahore Centre and by the time the Centre closed down, the completed returns for only five districts could be sent to the Machine Centre, Dacca. The remaining job was finished at the Provincial Census Office by the first week of March, 1952.

P. 44. Concentration of the Compilation teams at Provincial Headquarters. The compilation staff of both the Lahore and Rawalpindi Centres joined the Provincial Census Office in February, 1952. For want of accommodation in the Punjab Civil Secretariat a portion of the building rented for the Lahore Centre was retained for housing the Compilation Section, which was placed under the control of Sh. Muhammad Sharif, PCS., Deputy Superintendent Census, Hand Sorting Centre, Lahore, with effect from the 1st February, 1952 in his new capacity as the Deputy Superintendent of Census, Punjab and Bahawalpur State. He continued as such until the finalisation of the compilation and tabulation work. I have been watching the progress of the work in the Compilation Section and apprising the Census Commissioner about it through Weekly Reports.

P. 45. Order in which work was done. By the end of March 1952, in addition to Table 6-Religion alluded to in paragraph 42 *supra* the compilation of Tables 1-Population and 7-Mother Tongues had been completed and typed Master Copies thereof were sent to the Census Commissioner, Pakistan, in April 1952. The other Tables of Part A of Group I were finalised and forwarded to the Census Commissioner as indicated below:—

Table.	Date of submission to the Census Commissioner.
19-A—Muhajirs' Origin	19-4-1952.
11-Labour Force	16-7-1952
19-C—Muhajirs Labour Force	16-7-1952
4-A—Infants	26-7-1952
4-C—Orphans	7-8-1952
2—Towns and Cities	5-8-1952
1-A—Population of Urban Areas	19-8-1952
5—Birthplace	20-8-1952
3—Variations	11-11-1952
9-B—Educational Levels	12-12-1952
19-B—Educational Levels of Muhajirs	12-12-1952
8-A—Languages of Literacy	16-12-1952
8—Literacy	29-12-1952

11—Subsidiary Occupations of Agricultural Labour Force	11-2-1953
14—Agricultural Labour Force & Cultivators' Land Tenure	11-2-1953

P. 46. Comments on different Tables. A detailed list of the Tables prescribed for the 1951 Census is given in Appendix I-A to Part III of the Code of Census Procedure while the instructions regarding their compilation and tabulation issued by the Census Commissioner will be found in Chapter 10 ibid. All the Tables were prepared strictly in accordance with those instructions and no difficulty was experienced in their finalisation. A brief description of each Table is given in the Title Sheet published in Part II of the Statistical Report and need not be reproduced.

P. 47. Village List. The Village List, as its name implies, is a list of villages in each district showing the more important details about every individual village. It was considered that in a predominantly rural country like Pakistan, reliable village statistics should be available and that the opportunity afforded by the Census for compiling that information should be utilised. It may be mentioned that the Village List has been published for the first time in the Census History of the Punjab and that it is hoped that the list will form the basis for the continued collection of such useful statistical data.

The Village Lists were printed at the Punjab Government Press with the permission of the Provincial Government and published in District and Divisional Volumes. The number of the printed copies was 500 per district and 300 per each division. After distributing free copies of the lists to the Central, Provincial and State Governments and their officers the publications were made available for sale to the public through the usual channels.

P. 48. The Housing Table. As mentioned in paragraph 8 *supra* at the time of house numbering and listing, each enumerator compiled a house list in the prescribed form, in which the following information was given:—

1. House number.
2. Name of Head of Household.
3. Type of Structure—whether pucca or kacha.
4. Number of rooms.
5. Usual inhabitants—
   (*a*) Males.
   (*b*) Females.
   (*c*) Total.
6. Remarks.

Each Supervisor prepared an Analysis of Housing forms in Appendix G to Part II of the Code, which listed the Households according to their size vis a vis the number of persons, and also showed separately in respect of pucca houses and other structures, the number of rooms occupied. A Table called Table H-Housing prepared from the original Analysis sheets has been published in Part II of the Statistical Report. As mentioned in paragraph 3.16 of Part I of that Report in which the Table is discussed the veracity of the information in some cases is doubtful.

P. 49. Completion of Compilation work: Incorporation of results of Machine Sorting into Tables. As mentioned in paragraph 34 *supra* the slips of the Non-Agricultural Labour Force had been sent to the Machine Sorting Centre, Karachi, for sorting. The results had to be incorporated in two sets of Tables shown below;—

(*a*) Tables which had been partly completed by the Hand Sorting data.
- 4—Age and Marital Status.
- 7-A—Speech.
- 9—Pupils & Students.
- 9-A—Years of Education.
- 16—Fertility.
- 17—Duration of Marriage.
- 18—Birth and Infant Mortality.

(*b*) Tables on Economic Characteristics.
- 11-A—Occupations of the Non-Agricultural Labour Force.

12—Economic Groups and Industrial Status of the Non-Agricultural Civilian Labour Force.

19-D—Economic Groups and Occupations of Muhajirs.

14—Landowners Economic Activities of persons owning lands.

The Compilation Sheets incorporating the information derived from the Hand Sorting data in respect of the Tables mentioned at (*a*) above were ready by the middle of September, 1952. The Sorters Tickets in respect of the Machine Sorting data started coming in from the Machine Sorting Centre, Karachi, from the middle of January 1953. The last return which related to the Gujranwala town was received on the 10th March 1953 and with strenuous efforts the available squad of compilers was able to complete the Tables as under:

4—Age and Marital Status 7-A—Speech 16—Fertility 17—Duration of Marriage	in April, 1953.
18—Birth & Infant Mortality 9—Pupils and Students 9-A—Years of Education	in May, 1953.

As regards the Tables on Economic Characteristics mentioned at (*b*) above, the required data commenced to come from the Machine Centre, Karachi, in the beginning of April, 1953; the last return arriving on the 20th May. The information was received districtwise except in the case of the selected cities and towns which came in two separate parts; viz. one for the City or Town and the other for the rest of the district. The divisional and provincial totals had to be struck after a proper and careful check with the data already furnished to the Census Commissioner in Table 11-Labour Force. The task was very colossal particularly for the reduced strength of only five compilers but with sustained effort it was possible to complete the work in June.

P. 50. Mechanical Aids. This first Census of Pakistan saw the introduction of mechanical aids in the compilation and tabulation work. The office of the Census Commissioner supplied me three "Plus" Adding Machines, manufactured by Messrs. Bell Punch Co., Ltd., 39 James Street, London, two of which were allocated to the Hand Sorting Centre Lahore, and the third to the Rawalpindi Centre. After the closing down of the latter centre, the third machine was also transferred to the Lahore Centre. The Adding Machines were mostly employed for checking the totals and each working sheet bore a stamp mark indicating that the totals had been so checked. The machines were handy and simple to work. In the last quarter of 1952, the local agent of Messrs Roneo Ltd., under instructions from the Census Commissioner, supplied one Multo Calculating Machine, Model No. 3. He gave a course of instruction to the staff on the operation of the machine. It may be mentioned that this useful machine, which is manufactured in Sweden, does all the four elementary principles of arithmetic viz., addition, subtraction, multiplication and division. The machine was of immense help in calculating the percentages and densities. The employment of these mechanical aids proved both useful and economical and besides ensuring accuracy it accelerated the disposal of work.

P. 51. Cost of Compilation. Appendix A lists the expenditure incurred from year to year. As pointed out in paragraph 44 *supra* the compilation work started in right earnest in February 1952, when the whole squad of Compilers joined the Provincial Census Office. The amount spent from the financial year 1952-53 therefore can be regarded as the cost of compilation. The expenditure during 1952-53 was Rs. 93,219/4/9 including a sum of Rs. 13,960/- incurred on the printing of the Village Lists and Rs. 16,774/7/9 during the four months of March-June 1953. As regards the salaries of Officers and Establishment I only wish to say that had the pay of the Compilers been more in keeping with the salaries attached to

other comparable posts and the Compilers were allowed the usual dearness allowances the difficulty mentioned in paragraph 40 *supra* would have been largely eliminated.

P. 62. Compilation Staff. Appendix B. gives details of the staff. There was no change in the staff of the Provincial Census Office at the compilation stage. The Chief Compiler and the Chief Inspector continued right upto the end of June, 1953. The strength of the Compilers however was reduced from twenty-five to ten on the 1st October 1952, and to five from the 1st March, 1953. The latter continued upto the close of the Provincial Census Office. Whenever the staff had to be reduced an attempt was made to retain the best hands.

P. 53. Recommendations. Compilation is a complicated and difficult work, requiring a good deal of diligence and patience. The grades of pay allowed to the Compilers were too meagre to attract the right type of officials. The scales should be adequately raised so that suitable Government servants can be recruited. Further, experience has shown that the staff allowed for checking and finalising the Tables was not adequate. In future there should be one Deputy Chief Compiler for every six Compilers. Finally I suggest that printed forms should be supplied for Tabulation as well as for final drafts of Tables. This will result in a lot of saving in typing work and also lead to the expeditious disposal of Compilation and Tabulation.

SECTION IV—ADMINISTRATIVE & STATISTICAL REPORTS.

P. 54. Administrative Report. The Administrative Report consists of the following five Sections:—

(*a*) Section I—Enumeration.
(*b*) Section II—Sorting.
(*c*) Section III—Compilation & Tabulation.
(*d*) Section IV—Administrative & Statistical Reports.
(*e*) Section V—Conclusion.

The Report on Section I—Enumeration was prepared by me on my own on the basis of my personal knowledge about the pre-enumeration and enumeration stages. According to paragraph 10.22 of the Code of Census Procedure Part II every District Census Officer had to forward to me a report on the whole census operation in his district as soon as possible after the delivery of the census material to his respective Sorting Centre. These reports were received from most of the District Census Officers and perused by me before I wrote Section I. Section II—Sorting and Section III—Compilation and Tabulation were prepared in consultation with Sheikh Muhammad Sharif, Deputy Superintendent of Census, Punjab and Bahawalpur State. As already mentioned he was incharge of the Hand Sorting Centre Lahore and later of the Compilation Section and on that account was in the best position to furnish the requisite information. The writing up of Section IV—Administrative and Statistical Reports calls for no further comments. Section V—Conclusion has been written partly with the assistance of my Head Clerk, Ch. Nazir Ahmad, and the rest on my own knowledge.

P. 55. Authorship of Statistical Report: Research and Analysis: Subsidiary Tables. The Statistical Report has been written by me with the assistance of Sheikh Muhammad Sharif. He carried out the spade work on the research and analysis necessary before writing the Report under my instructions and general supervision. The various Subsidiary Tables appearing in that Report were got ready by him with the assistance of the Chief Compiler.

P. 56. Time taken in writing Administrative and Statistical Reports. It is almost impossible to indicate the time taken in writing the Administrative and Statistical Reports; but the following facts should give a rough idea. Before the drafting of the Reports was actually taken in hand a good deal of labour had to be put in to collect the required material and the time so spent must be regarded as having been taken in writing the Reports. Furthermore, during the last four months Sheikh Muhammad Sharif and I devoted

most of our time to these Reports and quite frequently we had to work outside office hours and on Sundays and holidays to finish them before the 30th June, 1953, the date fixed for the closing down of the Provincial Census Office.

SECTION V—CONCLUSION

General Administration Questions.

P. 57. Accommodation. My office was housed in the Punjab Civil Secretariat Building so I had no difficulty in finding office accommodation. As mentioned in paragraph 1 *supra* this arrangement proved useful and I suggest its adoption for the next Census provided, of course, the Punjab Government agree to accommodate the Provincial Census Office in the Secretariat Building at that time.

Stationery. Normally the stationery requirements of the Provincial Census Office and the Sorting Centres, which were under the Central Government, should have been indented on the Central Stationery Store, Karachi. As however it was more convenient to obtain the stationery from the Punjab Government's Stationery Office at Lahore, an arrangement was made with the Provincial Government in consultation with the Census Commissioner and most of the stationery articles required by me were purchased from the Provincial Store at Lahore.

Disbursement of Pay. No special difficulty was experienced in regard to the disbursement of salaries to the staff. Bills in the prescribed forms used to be presented to the Accounts Officer concerned and duly passed for payment.

Budgetting. The budget estimates for the financial years 1950-51 and 1952-53 were framed by me and forwarded to the Census Commissioner for approval. The estimates were based on the actual and probable requirements anticipated during each year. Budget estimates for the financial years 1951-52 and 1953-54 (upto the 30th June, 1953) were prepared by the Census Commissioner's office on the basis of the coordinated Census Plan for sorting, compilation and tabulation. In order to enable the Census Commissioner to watch the progress of expenditure, monthly statements of expenditure used to be forwarded to his office regularly. The anticipated savings and excesses were reported through the bi-annual statements of Excesses and Surrenders in the usual way.

Furniture. The furniture required for the Provincial Census Office was lent by the Punjab Government. The arrangements made for the furniture provided in the Hand Sorting Centres are mentioned in paragraph 25 *supra*. As long as the Compilation Section remained in the building previously occupied by the Lahore Hand Sorting Centre, the furniture provided for the latter was utilised. When however the Compilation Section was shifted to the Secretariat Building the rooms allotted to it contained the usual office furniture. The few articles of furniture which had had to be purchased for the Hand Sorting Centres were disposed of.

Special Requirements—Contingencies. I was provided with telephones in my office and residence and the charges therefor were met out of contingencies by book adjustment. The telephones proved to be of immense help. The telephone at my residence had to be surrendered in May 1953 on account of the economy drive launched by the Central Government but this caused no difficulty as the connection was continued in my official capacity under the Punjab Government. I may mention that the two telephones are a stark necessity and should be continued in future. The day to day requirements of my office were met from the allotment under contingencies. In order to enable me to meet such requirements a permanent advance of Rs. 100/- was sanctioned for the Provincial Census Office. This imprest was recouped from time to time through contingent bills presented to the Accountant General, Punjab. The imprest was refunded at the close of the Provincial Census Office. I may add that the allotment under contingencies as well as the permanent

advance proved quite adequate for the requirements of my office.

Miscellaneous. Financial. I was declared as the Drawing and Disbursing Officer in respect of the budget provision for the Provincial Census Office. Similar powers were vested in the Deputy Superintendents of Census incharge of the two Hand Sorting Centres. These powers enabled us to make disbursements from the amounts sanctioned for our respective budget heads. No difficulty was experienced on this account.

P. 58. Disposal of Census Documents. It was decided by the Census Commissioner that only those documents which were likely to be of some use either in the inter-censal period or at the time of the next Census should be preserved. A list of the Census documents which have been retained, and their location, as well as the list of files relating to the Provincial Census Office which have all been retained has been lodged with the Census Branch of the Ministry of the Interior, Government of Pakistan (File No. 14/1/53 Census).

P. 59. Commendations and Acknowledgements. The work of the enumeration staff even if slipshod in some cases was generally satisfactory. The District Census Officers too worked well notwithstanding their other multifarious duties. The interest shown by them in the census work is all the more commendable because they received no additional remuneration for it. I offer my thanks to all of them. I must also thank Mr. H. A. Majid, C. S. P., lately Chief Secretary to Government, Punjab, for his prompt assistance in all matters relating to the Census which I had occasion to bring to his notice.

P. 60. Concluding Remarks. The post of the Provincial Superintendent of Census requires, considerable touring in the pre-enumeration stage; constant vigilance during Sorting and Compilation to obviate delay on the part of the staff, and sustained effort in the final stages for the timely completion of the Administrative and Statistical Reports. I was lucky in all these stages to have the able guidance and valuable assistance of Col. E. H. Slade, Census Commissioner, Pakistan. I hope my successor will be equally lucky in this respect.

CHAPTER 14

SIND

FOREWORD

Sind was a part of Bombay Presidency from which it was separated in 1936 and made into a separate Province. In the Census of 1941, Sind had for the first time a separate Census Superintendent and was treated as a distinct Census Unit, but no full report was written because, on account of the War, the Census operations had to be simplified and could not be brought to the regular conclusion. At the previous Censuses, the Superintendents could not devote much attention to Sind because they had to deal with the very large area of the Bombay Presidency. This is therefore the first report on the Province of Sind and Khairpur State.

The appointment of the Superintendent of Census for Sind was notified on 26-5-1950, Mr. Muhammad Hashim H. R. Abbasi having assumed charge on 7-5-1950. He carried on the operations upto the enumeration stage after which he fell ill and proceeded on leave from 27-3-1951.

The Collector of Hyderabad Mr. Abdul Nabi Agha held the charge in his absence till 26-4-1951 when I took over.

This report has the following 5 main sections:—

I. Enumeration
II. Sorting of the Enumeration Slips.
III. Compilation and Tabulation of the results.
IV. General conclusions.

I have no personal experience of enumeration which was finished before I took over charge. My report on section I is therefore based on the facts ascertained from the records available and the knowledge gathered during a brief touring of a few places. For all the other sections I give an account of what actually happened, the difficulties encountered and suggestions for over-coming them.

SECTION I—ENUMERATION.

S. 1. Creation of the Provincial Census Office. Unlike 1941 Census, when proposals for setting up the office of the Superintendent of Census Operations, Sind, were actively considered more than 2 years in advance of the date fixed for the taking of Census in February 1941, the organization of the office of the Provincial Superintendent of Census for Sind and Khairpur State, was started only 9 months before the period fixed for enumeration. While Mr. Lambrick had nearly 16 months for the organization of preliminary work for the 1941 Census, this time it was compressed into a "dangerously short period" owing, as expressed in the 'Foreword' to the Code of Census Procedure, Part I, to the difficulties experienced in obtaining the required senior staff. Mr. Lambrick had the advantage of the staff being appointed for him in advance from October 1939, with one Gazetted Officer of Mukhtiarkar's grade as his Head Clerk, while Mr. Muhammad Hashim H. R. Abbasi had to select his staff without even knowing what grade of pay was intended to be offered for

the various posts. Actually, he had to work without any clerk from 7th to 28th May 1950. He requisitioned services of 2 clerks from Dadu District but got none. He then got the services of 2 clerks of Hyderabad District from the Collector of Hyderabad and they joined in the end of May 1950.

Considering the volume of work and the complications to be solved owing to the change of conditions, Mr. Muhammad Hashim H. R. Abbasi on the 10th May 1950 proposed a staff of 1 Superintendent, 1 Senior Assistant, 2 Junior Assistants, 2 Clerks, a Typist and the necessary peons, etc.

As against this recommendation, however, Government sanctioned a smaller staff only, and it was ordered that any man borrowed from any Provincial Office should not be allowed to draw anything more than the pay and allowances he was getting in his original post.

Mr. Muhammad Hashim once more made representation which received the support of the Government of Sind, and he started to appoint his office staff to push through the work with the hope that his recommendations would be accepted. The question of the scales of pay of the staff, however, was not decided till the end of September 1950, and the Head Clerk's pay and allowances were not decided until 8th November 1950. In the meanwhile within 5 weeks of their appointments, the Head Clerk and the Camp Clerk, who were the first choice of Mr. Muhammad Hashim proceeded on leave to appear for the Qualifying Examination and Mr. Muhammad Hashim had to request the Collector of Hyderabad to lend him the services of one of his experienced clerks for Head Clerk's post. There was great difficulty in obtaining a staff and keeping them at work. At one time they even gave notice of strike. Mr. Muhammad Hashim therefore strongly recommended their case for the second time but to no effect. This trouble of inadequate staff and insufficiently attractive pay accentuated all the difficulties of shortage of time. It is a wonder that the Enumeration was a success at all.

For office accommodation Mr. Muhammad Hashim was given 1/2 of the Deputy Collector Hala's own office room and his staff was given a little space in the staff room of the Deputy Collector. This arrangement continued till December 1951 when the Sorting Centre was closed and the compilation staff and the Deputy Superintendent had to be accommodated by my side. On my request, Mr. Agha the Collector of Hyderabad allotted the remaining 1/2 of the office room of the Deputy Collector, Hala, and it was occupied by the Deputy Superintendent of Census and the Compilation Staff. The furniture articles used in the office were borrowed from the Collector's surplus stock.

S. 2. Shortage of time for preparation for Enumeration. As rightly remarked in the 'Foreword' to the Code of Census Procedure Part I, the organisation of preliminary work had been compressed into a dangerously short period. The Provincial Superintendent of Census for Sind, Mr. Muhammad Hashim, on taking over charge of his office on 7th May 1950, when he had absolutely no staff, immediately applied himself to the task of securing premises for his office and organising it. The records of previous Censuses of 1931 and 1941 were called for from the Sind Secretariat and after securing them he lost no time in sorting those which were immediately required for settling preliminaries and issued instructions for the organisation of the work in the 8 districts of the Province, Khairpur State and also the Federal Capital of Karachi, which was at first included in his charge, making in all 10 Census Districts. Considering the volume of the preliminary ground work required, which had all to be finished within only 8 months, the Census Commissioner fixed a calendar showing the dates by which every stage of the operation was to be completed. While one item of work was in hand, instructions for starting the other item were being issued. The Provincial Superintendent of Census, the District Census

Officers and the Charge Superintendents had to adhere to the calendar dates and the Provincial Superintendent of Census had to run from one extremity of the Province to the other to see that every member of the Census organization was sufficiently trained and did actually carry out all the instructions and complete the various jobs assigned to him within the scheduled dates. The difficulties experienced in this huge task, which had to be completed within a short period, will be mentioned in the relevant succeeding paragraphs. It will suffice here to say that the work was carried on with unusual speed and there was hardly any time to right the wrongs. Fortunately they were few and not serious. Mr. Muhammad Hashim, the Provincial Superintendent of Census, Sind, deserves great credit for having completed the operations successfully. His exertions however were so strenuous and the mental strain so severe that he fell ill and was forced to take leave on medical certificate immediately after the enumeration was over.

S. 3. Census Areas and Census Officers. The Province was split up into Census Districts, which, besides the Administrative Revenue Districts, included the Municipal Borough of Hyderabad and the State of Khairpur as separate Census Districts. The Deputy Commissioner, Upper Sind Frontier, the Collectors of Districts, the Chief Officer of Hyderabad Municipality and an officer of Khairpur State were appointed and notified as District Census Officers. The Districts were split up into Charges which mainly were the Revenue Talukas, Mahals and the Municipal areas. Exceptions to this general rule was made in cases of some small towns like Gambat and Khairpur (in Khairpur State) which were constituted into separate Charges. The Charge Superintendent, in the case of Talukas was the Mukhtiarkar and the Chief Officer or Secretary in case of every Municipal Area. For the Census District of Hyderabad City which formed 6 Charges, Officers from the Municipal Staff were appointed as Charge Superintendents.

The Charges were split up into Circles each placed in charge of a Supervisor.

The Circles were broken up into Blocks each in charge of an Enumerator. The size of the Block was to be limited to not more than 150 houses in rural areas and if possible less in Urban areas. The average number of persons in a Block was estimated to range from 300 to 500 which was considered enough for an Enumerator to handle conveniently and efficiently. A group of about 12 Blocks was to form one Circle.

In actual practice, however, the limitations aforesaid could not be adhered to. The following statement shows the actual number of Charges, Circles and Blocks in each District and the average population of a Block.

CENSUS ORGANIZATION—SIND & KHAIRPUR

Census District	Number of			Total Population	Average per Block.
	Charges	Circles	Blocks		
1. U. S. F.	7	41	441	3,45,080	782.5
2. Sukkur	13	160	1485	7,33,038	493.6
3. Khairpur	8	39	342	3,19,543	934.3
4. Nawabshah	10	132	1416	6,86,934	485.1
5. Thar Parkar	13	70	927	7,30,395	787.9
6. Hyderabad	16	64	996	8,92,539	896.1
7. Hyderabad Municipality	6	40			
8. Tatta	9	37	557	3,01,886	542.0
9. Dadu	10	76	664	4,16,738	627.6
10. Larkana	11	35	617	5,01,904	813.4
Total Sind	95	655	7103	46,08,514	648.8
Total Sind & Khairpur State	130	694	7445	49,28,057	662.0

The total number of Blocks fixed in 1951 was 7445 which is more than double the number used in 1941 when the average population of a Block was 1200. The area of a Block on an average was 7 square miles as against 14 sq. miles in 1941. As a matter of fact it was not possible to make the Blocks any smaller because hardly any member of the public came forward to undertake the task of Enumeration and more Government Servants could not be made available. This size of a Block should not have been considered to be large in a thinly populated province like Sind if there had been a uniform distribution. This was not the case, however, and we had Blocks containing only 2 persons on one hand and Blocks as large as 5,591 on the other.

While the census areas had been defined in rules 15 to 20 of the Code of Census Procedure Part I, some confusion was caused by a ruling that in Sind the Tapedar's area should be constituted as a Block. A *Tapa* in Sind consists of 5 or 6 *dehs*, the area of which is about 30 sq. miles, and the population between 5,000 to 10,000. Actually a few Charge Superintendents stuck to this rule and had every Tapa constituted into a Block. It took quite a long time on discovery later to break up such unwieldy Blocks. In some cases, the time left was so short that splitting of such Blocks was impossible and the Enumerator had to have Assistant Enumerators if they could be found.

The rule limiting the size of a Census Block to 150 houses was misunderstood in some Charges and this limit was adhered to although it interfered with geographical boundaries of Villages. As a result, a village containing 180 houses was split up into 2 portions, one containing 150 houses was made a separate Block and the other 30 houses added to an adjoining Block. Thus houses in a single village were sometimes spread over 3 Blocks each of which included houses of some other village as well. In the whole of Khairpur State and some Districts of Sind, important villages were constituted into separate Blocks and the entire remaining area of the whole Tapa constituted into one Block. It was therefore impossible to work out the figures of every village for the preparation of the Village List and the Block figures had to be split up with reference to Household Lists to arrive at the figures of every village.

The desirability of making small Blocks was urged on every District Census Officer and they did their best but were limited by the narrowness of time and the difficulty of getting sufficient Enumerators. The reports of District Census Officers on delimitation of Circles and Blocks were received too late for them to re-adjust the areas.

S. 4. General Village or Town Registers, Maps and other Records of the organisation of the Province into Census Geographical Division. The organisation of Census machinery called for the preparation of General Village and Town Registers so as to give a first-hand glimpse of the extent of area of which census has to be taken, the volume of work and the number of personnel that would be required to handle the operations. A register showing for each census District, the names of all Villages, Hamlets, Wards or other definite recognized areas, the approximate number of houses in each, the number of census areas *viz.* charges, circles or blocks and the names of Charge Superintendents, Supervisors and Enumerators appointed for each was prepared and maintained by every District Census Officer. A copy of this register was also maintained by every Charge Superintendent for his Charge. The next step was the preparation of the maps of each Census District showing their division into respective Charges and those again sub-divided into Circles and Blocks to serve as a record for reference. The basic map showed the Charge and its Circles and Blocks, and from the combination of these maps emerged the Census maps of the Districts. The need for the preparation of such maps and registers is manifest. Had there been time for these documents to be prepared with care and attention and had they been scrutinized by the District Census Officer before he finally approved them, there should have been less difficulty in carrying out the subsequent operations

and the results might have been better.

S. 5. Code of Census Procedure Part I—Its issue and explanation to Census Officers. The Census Code Part I laying down the procedure for the preliminary operations to be carried on and preparing the ground for the actual census to be taken, was issued in the beginning of July 1950. Prior to this the Provincial Superintendent of Census had issued instructions to the District Officers for preparatory action. The Census Code explains fully in simple language the various stages of the pre-enumeration arrangements and lays down the dates by which each one had to be completed and calls for periodical progress reports. Copies of this Code were distributed to all the District Census Officers and Charge Superintendents and its provisions were explained to the former at a conference held by the Provincial Superintendent of Census. The District Census Officers then called meetings of the Charge Superintendents and explained the entire procedure. The Charge Superintendents organized training classes of the Enumerators and the Supervisors and demonstrated to them the actual working of the system stage by stage. The Census Commissioner also issued Census Circulars giving detailed instructions about the work in hand and the difficulties brought to his notice by the Provincial Superintendents. The Code and the file of Circulars were guide for every Census Officer and assisted greatly in their task of organizing the census machinery and working to the programme.

S. 6. Recruitment of Enumeration Staff, Number of persons, how found, letter of authorisation. The toughest problem that had to be faced was the appointment of Enumeration Staff. The duty was honorary and onerous and there was poor response from the public. The few individuals who at first showed an inclination to volunteer for census duty, melted away when they discovered that it involved a great amount of labour. Recourse had therefore to be had to the regular employees of Government. Sind Government kindly issued orders to all the Departments to place sufficient number of their employees at the disposal of the Census Department. While the staff of the Revenue Department and the School Teachers responded fully to the call of census duty I regret to say that a few members of other Departments did not co-operate willingly. Municipalities appointed their own staff to do the Census work. In the rural areas the village establishment of the Revenue Department had to shoulder the responsibility and were given the assistance of the local school teachers and of subordinate staff of other Departments. In a very few cases private persons were appointed as Enumerators. In all 7,445 Enumerators and 694 Supervisors had to be found. This large number could only be had with much difficulty and all were not willing workers. All the Census Officers were, however, chosen and given letters of appointment before the end of August 1950 in time to start the preliminary work of numbering the houses.

S. 7. Census Date—Its "pros and cons" as found in practice. 28th February 1951 was fixed as the Census date and apart from the hurry involved there was absolutely no difficulty caused by the choice of that date. The cold season is ideal for holding the enumeration operations and the month of February being comparatively less severe, is eminently suited for the purpose. In Sind this is the most convenient date; agricultural people have neither to do sowing nor reaping and are generally found in their houses. The Officers of the Revenue Department who form the back-bone of the census organization also found it convenient to do the house numbering and other preliminaries of the census operations during the cold weather when they were on tour for field inspection, etc.

S. 8. House-listing arrangements—Instruction of Enumerators—Publicity—Provision of Forms and material—Definition of 'House-hold'. After completing the delimitation of Blocks and Circles and appointing the Census Officers *viz.* the Enumerators and Supervisors for every such area, arrangements for listing houses had to be made. A conference of the District Census Officers was

held at Hyderabad on 10-7-1950 when all the important points were discussed and explained. They then called conferences of the Charge Superintendents and gave them full instructions about the task ahead of them. The Charge Superintendent in turn organized meetings and training classes for Supervisors and Enumerators. The latter arranged meetings of the people and explained to them the object and scope of the census and appealed to them for co-operation and help. To ensure the public support an appeal to the public had been made by Hon'ble Minister of the Interior in June and the Census Commissioner and the Provincial Superintendent of Census both appealed to the public in speeches on Radio Pakistan to co-operate with the Census Officers and assist them when called upon to do so. These, and the posters in conspicuous places in every block informing people about the house numbering had quite a good effect. After the Enumerators were trained, they were supplied with the necessary Household list forms and the material required for numbering the houses. The House-list forms in Sindhi and Urdu were supplied by the Census Commissioner and were sent to the District Census Officers on 19th August 1950 and they distributed them among the army of the Enumerators sufficiently in advance of the starting date *viz.* 15th September. The District Local Boards and the Municipalities were requested to supply the material required for house numbering to the Enumerators in their respective areas as was done at the Census of 1941.

For the purpose of the Census of 1951, a 'house' or 'household' which was the smallest unit, was defined to be a collection of persons living and eating, in one mess with their resident dependents, relatives, servants and lodgers who normally reside together. It thus means the commensal family and not the homestead or the enclosure. This was fully explained to every Enumerator and they were instructed to assign a separate number and either paint or fix it on the quarters occupied by each household, conspicuous enough to ensure rapid identification. This arrangement was adopted for all the rural and urban areas in Sind except for the Military Area of Hyderabad Cantonment where the house numbering was dispensed with by the Station Commander. The refugee huts and camps and all other temporary structures had also to be numbered. Every Enumerator had to go round the Block in his Charge and number every household and prepare the Household List. At the same time, the Enumerator had to collect details of the Cottage Industries on the prescribed forms. The Supervisors had to see that no household was left unaccounted for and there was no overlapping of houses of any two Blocks.

S. 9. The house-listing and numbering operation as actually carried out: Provision of paints and other materials: completeness of numbering work: The Household List. The numbering material used at all places was paint of red colour over white and these materials were supplied by the District Local Boards and the Municipalities for their respective areas.

The house numbering actually was not started in every Charge by 15th September 1950 because the preliminary arrangements were not completed. Except at one place (Nawabshah) where some of the numbers painted on the houses are reported to have been rubbed off and had to be replaced, there was absolutely no difficulty in doing this job.

On completion of the household lists, every Supervisor checked the results as also the summary of total number of households, pukka houses, rooms and inhabitants. The lists were then retained by him for onward submission to the Charge Superintendent.

The house numbering and house listing was finished according to the programme on 15th December 1950 in Dadu District only. In Upper Sind Frontier and Larkana it was finished in the end of December. In all the rest it was finished in January except for the desert portion of Khipro Taluka of Thar Parkar District where there was

trouble with the Hurs and house-listing and enumeration were done together from 19th January to 22nd February with the aid of the Sind Police Rangers.

The work of house-numbering and house-listing was complete in all respects and there was absolutely no instance of omission of any area in any charge. The house-lists were prepared quite accurately, though some of the Supervisors found difficulty with the Summary and it had to be prepared in my office.

S. 10. Cottage Industries Inquiry. A Cottage Industry is an enterprise which manufactures articles of sale or capable of being sold (*i.e.* excludes repairing and service enterprises), is carried on in the home of the chief operative mainly by members of his household, and employees less than 20 people in all (or if power machine used, less than 10 people). This definition was not made clear early enough and Enumerators, little knowing what a Cottage Industry was, went on making a list of all kinds of enterprises. Some of them included repairing shops and service enterprises such as barbers and washermen, and in some cases beggars, cultivators and vegetable shops. The Inquiry forms were full of irrelevant entries. In 23 whole Charges and several whole Circles of other Charges, the Enumerators have simply given blank reports. The inquiry is not therefore either complete or reliable. The inquiry forms when received in my office were fully scrutinized and all the enterprises which were not really Cottage Industries were excluded. Schedules for the remaining entries were prepared and sent to the Machine Centre at Dacca for sorting. The Cottage Industries location table shows the results thus obtained.

S. 11. Collection of Household Lists. Immediately after the house-numbering and house-listing were completed by the Enumerators, the Supervisors collected the household-lists and sent them on to the Charge Superintendent who had to see whether any Block needed splitting up on account of excessive number of residents in it, and to visit at least one Block in every Circle and test the accuracy. He had also to prepare his Summary sheet and send it on to the District Census Officer who had to summarise the details by Charges and send them on to Provincial Superintendent of Census by 15th January 1951. This was done by every District Officer and the Provincial Superintendent of Census sent his preliminary estimate of the resident population to the Census Commissioner on 26-1-1951. On this estimate was based the number of the enumeration slips required for use in every District and their despatch at the proper time.

S. 12. Test of the Enumeration Slip. The draft form of the enumeration slip was discussed at the second conference of the Provincial Superintendents of Census at Karachi in June 1950. The draft forms were tested by the Provincial Superintendent of Census by appointing some junior officers to work as Enumerators of a few random inhabitants. By doing this the difficulties of the Enumerators in asking the questions and those of the respondents in answering them came to light. The final form of slip differs from the one used in the Census of 1941 inasmuch as the latter contained only the question numbers for each of which the Enumerator had to refer to the instructions to see what it was. In the slip of 1951, the questions to be put to the respondents were brought out comprehensively. Wherever possible, the replies were recorded by simple symbols. This simplified form of slip, and the leaflet containing an explanation of every question and how the answer was to be recorded in the slip made it easy for the Enumerator to do the work with confidence and there was hardly any chance of any mistakes being committed by any of them. Actual scrutiny of the slips however showed that a few Enumerators probably either not fully trained or men of poor stuff, repeated certain regular errors. The entries regarding economic groups and occupations were frequently inadequate and in some slips some of

the columns were not filled in at all.

S. 13. Code of Census Procedure Part II—Its issue and use. Part II of the Census Code deals with the actual taking of the Census. The object of the booklet was to amplify the Enumerators' leaflet and act as a Training Manual. It describes the methods to be used at every stage, gives detailed explanations of the questions, answers queries which may be raised, and sets out the exact way in which the answers had to be recorded. This book served as a guide to the instructors who had to conduct the classes of training the Enumerators and the other Census staff. It was also used as a reference book by the officers who had to refer to it frequently for finding out answers to the numerous questions which arose during the actual taking of census. This book not only made the work easy and interesting but also simplified the task of the officers who had to decide the practical difficulties. Advance copies of this book were distributed in October 1950 and the printed copies in November 1950 to all the District Census Officers, giving them sufficient time to train the Census staff for the enumeration work and solve all the difficulties encountered by them. These detailed instructions, made available sufficiently in advance, ensured that the enumeration was successfully completed on the due date, though the time was far too narrow.

S. 14. Instruction of Enumeration Staff—Enumerator's Leaflet—Wall diagrams—Practice slips —Explanation of the questions specially those on economic characteristics. In a gigantic operation like the Census which was the first of its kind for the new State of Pakistan, systematic training of the Census Staff at every stage was most essential. After the Census Commissioner's Conference of Provincial Superintendents on 18th, 19th and 20th September 1950, a conference of District Census Officers was held on 2nd November 1950 when all of them participated in the discussion on the work that had already been done and on the enumeration which was soon to start. These officers were requested to give full instruction to the Charge Superintendents who had to organize regular training classes for the Supervisors and the Enumerators none of whom had to be allowed to work unless he had attended the classes. In accordance with these instructions training classes were held in every Circle and demonstrations of the filling up of the Enumeration Slip and about the questions to be asked, were made to all the Census Officers to give them full idea of the work they had to do. The Enumerator's instructional pamphlet was studied and the way in which to record the answers particularly in respect of the economic groups was explained. Forms of slips were available for practice. Large diagrams of facsimile enumeration slips were hung on the walls in the training classes to enable the instructor to draw the attention of the trainees to the points he was explaining to them.

S. 15. Distribution of Slips and Forms. The enumeration slips were stitched in pads of 25 and 100 and every Enumerator had to get his quota calculated on the census figures of 1941, plus allowances for natural increase and migration, and a 10 per cent. margin in reserve. Every Charge Superintendent was also to have 5 per cent. of the total slips required in his area in reserve, the District Census Officer 3 per cent, the Provincial Superintendent of Census 1½ per cent. and the Census Commissioner ½ per cent. Indents were prepared by the Provincial Superintendent of Census and it was arranged for the printers to despatch the pads to every Charge Superintendent direct except for a few Talukas of Tatta District situated far away from Railway Stations whose slips were sent through the District Census Officer, Tatta. Pads reached all the officers by the end of December 1950 and were immediately distributed to the Enumerators. The Enumerators were instructed to use ordinary paper for slips if their stock was consumed and it was not possible for them to get more slips, but nowhere in the whole province was this required. The Enumerators generally had sufficient pads for enumeration

and where it was necessary, adjustments of excesses and deficits were made by Supervisors, Charge Superintendents and District Census Officers.

S. 16. Publicity and instructions to public—Posters—Meetings—Press—Radio. It is important that the Census should catch every man and for this it is essential to have full co-operation of the public. Neighbours and house-holders can help the Enumerators by drawing their attention to the new arrivals or people who appear to be omitted. To ensure this co-operation, a publicity campaign through Press, Radio and Posters was started and the organisation of public meetings by the Enumerators in their areas helped considerably in attaining a fairly high standard of success. In the city of Hyderabad broadcasts with the aid of loud-speaker vans and exhibits in Cinema Houses produced a maximum degree of success.

Radio talks on the importance of the Census and its implications were given by the Census Commissioner from Radio Pakistan and Mr. Muhammad Hashim addressed the public from the same station in Sindhi explaining the object and the manner of filling in the Census Slip.

The usefulness of such publicity campaign cannot be over-stressed and by these measures a fair degree of that public support and co-operation, which is so very essential, for the correct and accurate taking of a census, was in fact secured.

S. 17. Enumeration in action in:

(1) Rural areas
(2) Larger towns
(3) Smaller urban areas
(4) Railway colonies, institutions etc., and public co-operation.

(1) The period of enumeration was fixed from dawn of 9th February to 1st March 1951. For all the rural areas of Sind, however, this period was extended so as to start from 1st January. In no rural area could, however, the enumeration be started on 1st January as the pre-enumeration arrangements had not been fully completed by that time. Almost everywhere, however, the work had been started by the beginning of February and it was everywhere completed on the "Census Night" *i.e.* by dawn of 1st March 1951.

(2) In Hyderabad City and other large towns the enumeration work started on the 9th February and was completed on the 28th February without any difficulty. Curfew Order was applied to the Hyderabad City by the District Magistrate on the Census Night and all the houseless and floating population enumerated on that night.

(3) In all urban areas and big Railway Colonies at Rohri, Kotri, Sukkur and Dadu, the enumeration was done during the fixed census period and completed on the due date. At small Railway Stations, the enumeration was finished in a day or two.

(4) In institutions *i.e.* Hotels, Clubs, Boarding Houses, Prisons etc., the enumeration was generally done by the ordinary Enumerators on the last one or two days.

There was full co-operation of the public at all places except in Upper Sind Frontier, Larkana, Thar Parkar and Nawabshah Districts where some people at first objected to give information on female fertility or births, but everywhere when things were explained to them most of them gave all the required information. In case of only 68,880 married and widowed women is this information missing.

S. 18. Supervision during enumeration. One of the points stressed at every conference or gathering of Census Staff was the exercise of constant supervision over the work of the Enumerators both by the Supervisors and the Charge Superintendents. There was a system of check reports from all Enumerators on 10th, 14th, 18th and 28th February showing the progress of the work done and the number of slip pads required. The Supervisors and Charge Superintendents went about seeing the Enumerators at work and checking that they were filling the slips according to instructions. At several places the Charge Superintendents had to give the Enumerators

assistance of other men in reserve to get the work completed on the due dates. The periodical reports and the systematic supervision and check over the Enumerators this time did a great deal to make the Census complete.

. **S. 19. Collection of results.** The Code of Census Procedure laid down a system of report of provisional figures by Enumerators at the time of handing in their completed slips and thence through Supervisors and Charge Superintendents to District Census Officers who again compiled the provisional results of his District and communicated the same telegraphically to the Provincial Superintendent of Census and also the Census Commissioner. The Provincial Superintendent of Census then consolidated the provisional figures communicated by the District Census Officers and wired the total for the entire province to the Census Commissioner. All this was done with alacrity within the stipulated period fixed for each stage and within 15 days of the completion of enumeration, the provisional results were in the hands of the Census Commissioner for publication.

S. 20. Publication of preliminary figures. The provisional figures of population for every district were published in a form of pamphlet—Bulletin No. 1 on 30th April, 1951. Thus the Census results were in the hands of every one within 2 months of the date of completing the enumeration.

S. 21. Transportation of slips to sorting centres. On completing the enumeration on the 1st March 1951, every Enumerator had to deliver all the Enumeration Pads and Household Lists along with his report to the Circle Supervisor who had to check the number of pads and verify that the total number tallies with that issued. He had then to pass a receipt for the records received from the Enumerator and prepare an abstract showing the number of people enumerated in every Block of his Circle and the number of pads used and delivered the records of his Circle to the Charge Superintendent. The Charge Superintendent had then to prepare a summary giving the details for urban and rural areas separately and send it on along with the pads and the household lists arranged by Blocks and Circles to the District Census Officer who had to keep them till they were called for at the Hand Sorting Centre opened at Hyderabad. This Centre was opened in April 1951, and records were sent for from one District at a time. The records of every District were received under police escort through a clerk who had to give the charge of the records of every Block according to the Supervisor's Abstract. While the records of all other Districts when received, were on check found to be complete, those of two Talukas in Hyderabad District were found short but the Charge Superintendents were able to supply the deficit on its being pointed out.

S. 22. Comments on the work of Provincial Census Superintendent's Office, the District Census Officers, the Charge Superintendents, Supervisors, Enumerators and Assistant Enumerators in the organization and control of enumeration.

Provincial Census Superintendent's Office. It has been shown in para 1 of this report that the staff of the Provincial Census Superintendent's office consisted of disgruntled hands borrowed from the District Revenue Establishment of Hyderabad and were unwilling workers. They were however tactfully controlled by Mr. Muhammad Hashim, my predecessor, who extracted good work from them till the question of their pay was finally decided and by that time enumeration had also been completed. It appears that the office was prompt enough in issuing instructions and sending out forms and stationery and also fairly regular in issuing correspondence and issuing reminders. The Head Clerk appears to have worked keenly in the hope that he was to be raised to a Gazetted Post and his pay doubled, but when he found that the Census gave an increase of only Rs. 35/- over his basic pay, he lost interest and proceeded on leave on medical certificate.

District Census Officers. All the District Census Officers excepting Hyderabad City, whose Chief Officer was the District Census Officer, and Khairpur State which had a separate District Census Officer for it, were the District Collectors, all of whom are overburdened with their normal multifarious duties. Being the Administrative Heads of their Districts they had to undertake the task since they alone could accomplish it with success. But the increased and exacting pre-occupations of the Collectors over the rehabilitation of refugees required the Provincial Superintendent of Census to do a good deal of their Census work for them by touring in their Districts.

Charge Superintendents. In rural areas these were all Taluka Mukhtiarkars and Mahalkaris; in urban areas they were the Municipal Chief Officers or Secretaries. Most of them attended to the Census work with the care and caution it deserved and employed all their staff to complete the various stages on the scheduled dates. There were of course a few who needed constant reminders. None of them fortunately lagged behind the final census date on which it was completed everywhere.

Supervisors. These officers had to be most vigilant and assiduous in the duties assigned to them. They were responsible for training all the Enumerators in their Circles. They had to go round their Circles and see that Enumerators were working strictly in accordance with the instructions. They had to correct any mistakes of the Enumerators and assist them, if necessary, to complete their jobs. These officers appear on the whole to have done full justice to their jobs, but some of them were weak in instruction and the enumerators under them were not fully trained.

Enumerators and Assistant Enumerators. These Census Officers formed the backbone of the Census machinery and they were the real operators. The quality of their work much depended on the amount of interest they took in it. Most of them are Government Servants who have to shoulder the additional burden without any extra remuneration. The general tendency has been to get the work over by slipshod methods. The Enumerators of large Blocks not only lagged behind the schedule at every stage, but also the quality of their work was poor. On the whole, however, the work of the Enumerators was satisfactory. The standard of organization and work in general depended on the personality and qualities of the Charge Superintendent. The whole hearted cooperation of all these officers left nothing to be desired.

S. 23. Comparison of the organization in this Census with that of past Censuses. As in the past Censuses the principle of the fullest possible articulation of the Census with the existing administrative machinery was followed in the Census of 1951. The basis being the Revenue Department, the Collectors, Mukhtiarkars, Supervising Tapedars and Tapedars acted respectively as District Census Officers, Charge Superintendents, Supervisors and Enumerators.

In 1941 the Superintendent of Census for Sind was appointed in October 1939 and his office staff was appointed before he joined. This time the Superintendent Census was appointed in May 1950 when he had to submit his recommendations about the number of posts of clerks and their scales of pay to be sanctioned and it took about 6 months to get the final sanction.

In 1941 the Provincial Superintendent of Census had discretion to evolve an enumeration scheme suited to the Province subject to a limited number of co-ordinating principles laid down by the Census Commissioner. In 1951 the Census Commissioner issued the Census Code laying down full instructions for every stage of the work to be done in every province. He also issued Circulars for the guidance of the Provincial Superintendents of Census and District Census Officers.

In 1931 and prior to that Census, the enumeration was conducted as a "One-night" count of the *de-facto* population and the Tapedars seem to

have been given the duties of Enumerators in the earlier stages. House numbering appears to have been done exclusively by them. After completing this stage, the staff of all other Departments and the Local Bodies appears to have been employed and along with them a substantial number of private persons. On the final night a very large number of additional Enumerators was employed and in most cases the original Blocks in which the preliminary enumeration had been done were split up so that an Enumerator could go round within 4 or 5 hours of the night. In 1931 the average number of houses to these Blocks appears to have been 39, the number of Blocks was 20,000 in the whole Province of Sind and Khairpur State; the number of Circles was 1,700; on an average a Block contained a population of 200 and a Circle had 12 Blocks. The average area of a Block then was 2½ to 3. sq. miles.

In 1941 the non-simultaneous system having been adopted the size of Blocks was increased and the number of Enumerators correspondingly decreased. The size of the Blocks generally remained unaltered from start to finish and was in charge of the same Enumerator.

An average Block covered an area of about 14 square miles, with 230 houses and a population of 1,200 persons. There were 616 Circles and 3,700 Blocks. In 1951, however, the size of Blocks was much reduced and the number of Enumerators increased so that there were in all 7,445 Blocks, on an average each covering an area of 7 sq. miles containing population of 662 souls. It was therefore easy for every Enumerator to deal with the area in his charge and finish the job within the prescribed date.

In 1941 the Household Lists were prepared first, then Enumeration of the household population was done at the same time as house numbering in a long round of over 3 months while the adjustment of this work and record of the floating population was made in a second round of seven days in rural areas and three days in urban areas. In 1951 however house-numbering was done along with house-listing in about 3 months and the actual enumeration was done in a fixed period of 20 days from 9th February to 28th February in urban areas, and of about a month in rural areas. The record of floating population and the adjustment of births and deaths and other movements of population was done on the Census Night.

The Census of 1941 aimed at enumerating the people at their normal place of residence i.e. the place where a person had resided for the greater part of the period of 6 months from 15th September 1940 to 15th March 1941, though he might be absent at the time of enumeration. Government servants were enumerated at the place where they resided on 1st March 1941 and people who had crossed the border of the province and were absent on 1st March 1941 were not enumerated. As against this system the 1951 Census provided that all house population had to be enumerated with the only exception of those persons who were not expecting to be in their normal residence at any time during the enumeration period and they were to be included in the population of the place in which they happened to be residing during that period.

S. 24. The cost of Enumeration. Except for the staff appointed for the office of the Provincial Superintendent of Census, no separate staff for doing the census work was appointed in any District or Charge. The District Census Officers who are the Collectors of the Districts and the Charge Superintendents who are the Talukas Mukhtiarkars or Chief Officers of the Municipal towns had to assign the Census duty to one or two of their subordinates who had to do it in addition to their own duties. In the city of Hyderabad however some staff was appointed and paid from the Municipal funds. The Enumerators and Supervisors were almost all Government servants who had to do the Census work in addition to their own duties. The cost of enumeration will therefore include only the pay of the Provincial Superinten-

dent of Census and his staff, the cost of stationery etc. as shown in Appendix 'A'.

S. 25. The Census Staff. Appendix 'B' shows the Census Staff sanctioned for the office of the Provincial Superintendent of Census excepting this no separate staff was appointed in any District or Charge. The post of Steno-typist generally remained vacant as no trained hand could be had on the pay sanctioned for the post. Even the clerk and the typist did not stick to the job. The post of Head Clerk required a man of experience and skill and men from the Revenue Department had to be borrowed to fill in this post. There were frequent changes in the Head Clerks as none was willing to stick to the job.

S. 26. Recommendation for future guidance. (*a*) **Organization.** It was agreed at a Conference of the Provincial Superintendents of Census held in February 1952 at Lahore to recommend that the Census organization should be incorporated into some continuous office of the Central and Provincial Governments, and not be allowed to disintegrate entirely.

(*i*) **Recruitment of Officers and the Staff:** In case no permanent census office is set up and the next census organization is to be similar to the present one, it will be absolutely necessary to appoint the Superintendent of Census from 1st January of the year preceding that in which the enumeration is to be completed. He should be an experienced officer of outstanding merit who knows the Province and its people, and should be a young man of sound health to do the arduous job and finish it. On assuming the charge, the Provincial Superintendent should have the discretion to select men working in the District Offices or in the Sind Secretariat and services of those men should be immediately placed at his disposal. He should have a Head Clerk in the Mukhtiarkar's grade who should have worked successfully as a Head Munshi or a Chitnis and who should be experienced in accounts and running an office. Inclusive of the Head Clerk he should have the following staff:—

1. Head Clerk in Mukhtiarkar's grade.
2. One Senior Clerk in 'D' grade.
3. One Steno-Typist.
4. Two Junior Clerks.

The designation of Provincial Superintendent of Census is not very appropriate and does not fully signify the status of the officer. "Superintendent" is generally the Head of an office staff and no senior officer likes to be addressed in this way. The designation should be "Deputy Commissioner of Census" for the officer placed in charge of the census work of the Province.

(*ii*) **The pay of the officers and staff.** It is essential that the pay of the officers and their staff should be fixed before their appointment. Though the Government ordered grant of special pay of Rs. 250/- in addition to the grade pay for the Provincial Superintendent of Census, Sind, Mr. Muhammad Hashim was given his grade pay only and not the special pay. I have been given the special pay in addition to my pay I was drawing in my previous post but not the grade pay. In future the scales of pay and allowances of the post should be fixed before an officer is called upon to hold it. Considering the arduous nature of the Census duties and the very high responsibilities involved it is necessary that the pay fixed for the post should attract officers of outstanding education, zeal and ability. I recommend that the officer should be given his grade pay plus a special pay of 25 per cent. over his pay. In addition, he should be given Permanent Travelling Allowance of Rs. 250/- or more as is given to the other Provincial Officers to cover his expenses of extensive touring in the interior of the Province.

The other staff appointed for the Provincial office should be drawn from the District Revenue Department and they should be given special pay of 25 per cent. of their normal pay. Recruitment of new men should, as far as possible, be avoided. New men do not stick to their jobs in a temporary Department unless they are offered at least double the pay they get in other permanent Departments. Moreover, they are irresponsible and do not mind their discharge from service. On the other hand the men drawn from the Permanent Department should be satisfied with the

25 per cent. increase in their pay and they will work with care to earn good reports for their personal files.

(*iii*) **Arrangements for District and Municipal Census Offices.** No additional staff for the District and Municipal Census' Officers was appointed this time and the existing staff of the District or Municipal Census Officers had to attend to this work. The staff of every office is designed to deal with their normal duties, and it is not safe to impose on them the additional duty of doing the census work which needs exclusive attention. Collectors appointed as District Census Officers and Mukhtiarkars who are Charge Superintendents can give little time to the census work although in itself it is a heavy burden. Every District Census Officer should be given one Clerk of 'D' grade viz. Rs. 100—5—150 and every Charge Superintendent one Clerk of 'E' grade viz. Rs. 41—3—110. The approximate expenditure on this account will be rupees one lac for one year.

(*iv*) **The system of obtaining Enumerators.** The difficulty of finding sufficient enumerators was reported by some District Officers who at a late stage were forced by lack of men to combine two Blocks under one Enumerator. This time the whole army of Enumerators, with negligible exceptions consisted of either Government or Local Bodies' employees and they added the work to their regular duties without additional remuneration. There may be less difficulty in finding Enumerators in future as the introduction of compulsory primary education in the Province will double the number of primary teachers who can serve as Enumerators. The P. W. D. staff is also expected to expand materially after the Lower Sind Barrage starts functioning after about 2 years. It is however necessary, in my opinion, to give the Enumerators a little fixed sum for the additional burden they have to shoulder. This will create a sense of responsibility in them and will also induce them to offer their services willingly. The amount should be paid at the end of the Census operations only on production of a certificate from the Charge Superintendent of satisfactory performance of duties at all stages. Similarly the Supervisors should also get an amount for the additional duty they are called upon to do. For every Enumerator I recommend an amount of Rs. 30/- and for every Supervisor Rs. 50/-. These amounts should cover their expenses on short trips that they may have to undertake. The total expenditure on this account will be about 3 lakhs of rupees.

Hitherto in Sind the Tapedar who is considered to be the most over-worked officer of the Revenue Department has been the key man in the census organization and has been doing most of the space work and working as an Enumerator as well. Owing to the growth of his other work, he cannot spare much time for the Census. Either he has to neglect his own work or the census work; it is impossible for him to attend to them both satisfactorily. We cannot however do without him because it is he who prepares the general village register, the Town register and the maps, knows the boundaries of the Blocks, Circles, etc. and has to guide the Enumerators at every stage of the operations. He should therefore continue to do this work only and should not be made to work as an Enumerator. I have already shown that hereafter we may expect to have more school teachers and P. W. D. staff to work as Enumerators: it should not therefore be necessary for the Tapedar to do so. He should be the Supervisor and responsible for the completion of the census work in his Tapa. The Supervising Tapedar who has hitherto been doing the duty of a Census Supervisor, may in future be appointed as Census "Inspector" responsible for the census work of his Circle.

For the appointment of Enumerators all the Officers under the Provincial Government should, as has been the practice, be instructed to place the services of as many of the men working under them as they can spare, at the disposal of the Charge Superintendent in whose area they are stationed.

(*v*) **Time at which work should begin in Sind for 1951 Census.** With 28th February 1961 as the Census date, the census work should begin from 1st January 1960. This time it was started late in May 1950 and the various stages of the operations had to be rushed through to complete them by the appointed date. Good organization and systematic check of the work at every stage is

essential. The entire census machinery except the Provincial Superintendent of Census and his staff consists of the persons who are full time busy with their own duties. It is therefore essential to give them sufficient time to do the work, check it and remedy the defects at every stage. If the work starts 4 months earlier than it started this time, I am sure there will be no difficulty in completing the operations on 28th February 1961.

(*b*) **Operational methods.**

(1) **Delimitation of census areas.** Dlimitation of areas for taking Census is very important and requires very careful consideration. The success of the entire operations depends on the care and attention with which the area of a District is split up into Blocks, Circles and, Charges. While the Census results are compiled and tabulated according to these areas, their size and the travelling conveniences available in them have to be considered with a view to make it possible for an Enumerator, Supervisor or a Charge Superintendent to handle it ably without great inconvenience and difficulty. In the Census of 1951, the time being too short, delimitation was done haphazardly with no regard to the administrative geographical units, their size and area with the result that some Blocks were simply unmanageable and others consisted of parts of different geographical units.

For the future Censuses the following suggestions may be helpful:—

1. Every Revenue District and a city having population of over one lac should form a Census District.
2. Every Ward of a city, every Municipal town and every other town having population of over 5,000, every Revenue Taluka and Mahal should be a separate Charge.
3. Every Mohalla in a city, Ward in a Municipal town and Tapa in a Taluka or in a Mahal should form a Circle. In towns of 3,000 and over, there should be a separate Circle for a defined part of town consisting of about 8 Blocks.
4. A Block should on an average consist of 150 houses and its areas should not be more than one square mile in urban areas and 7 square miles in rural areas except in desert and Kohistan where the maximum area of a Block may be 25 square miles. A *deh* should be a unit for rural areas and a Mohalla in urban areas. A *deh* or a Mohalla can be split up in two or more whole Blocks but in no case should their parts be included in one Block with parts of different Dehs or mohallahs.

(*ii*) **House-listing and house-numbering.** House listing and house-numbering is the main foundation of the whole census structure. The entire area is surveyed and all inhabited houses are numbered and listed. Omission of a house in any area, overlapping of areas, or double numbering of houses will lead to wrong enumeration. It is essential that every Enumerator should be shown the whole area in his Block and his house-listing work checked by the Supervisor. The best man for this job is the Tapedar, who should take his Enumerators round their Blocks, give them instruction on numbering and listing the houses, and supervise and check their work while they are doing it. The Charge Superintendent and the Sub-Divisional Officers should also check this work while on tour.

House-listing and numbering was done at the same time in one round in the Census of 1951 and no difficulty of any kind was reported from any Charge. The same system is recommended for the future Census. The reasons are obvious. The Census machinery to a large extent consists of Government servants who have to do the work in addition to their own duties. Once they are on the spot to number a house, it takes them no time to enter it in the list.

The material required for numbering the houses should be supplied by the Municipal and District Local Boards as at present.

(*iii*) **The Census Slip.** The Census Slip adopted for the 1951 Census has proved to be very successful. Not only the Enumerators found it easy to fill it up but it provides for detailed information about the characteristics of the population. It is however to be admitted that very few Enumerators could fill in the Slip properly in columns

Nos. 11, 12 and 13 regarding occupation and economic groups. This was because they had not got the list of occupations and it was beyond their comprehension to classify them by economic groups. For the future I recommend that list of the main occupations of Sind should be given in the Enumerator's Leaflet and if the question regarding economic group cannot altogether be omitted from the slip it should be done on a simple list. In many cases, this information can be gathered from the occupation.

(*iv*) **Self Enumeration Forms.** The system of distributing self enumeration forms cannot be recommended for Sind Province as the great majority of the population is still illiterate. If the forms are distributed to the literate families only, it is going to be difficult to get them filled in and returned on a fixed date. The Enumerator will have to visit them a number of times to get the forms back. Then the entries in these forms will have to be transcribed on the slips which will be an additional burden on the Enumerators.

SECTION II—SORTING.

S. 27. Hand Sorting Centre: Organization, size and location. A Hand sorting centre, for extracting information recorded on the enumeration slips prepared by the enumerators for the entire population of Sind and Khairpur State and compiling the results, was organized at Hyderabad Sind in a rented building known as Holmstead Hall belonging to the Hyderabad Municipality. This is the biggest hall in the city and is generally used for Public meetings and other social functions. It is just by the side of the Fort and is situated on the incline named after it. The main hall is very commodious and airy and the whole sorting staff the Compilers and the Deputy Superintendent could conveniently work there. A small hall partitioned off the main hall was used as Record room. This room is used as a public Library and possession of it was given after about 2 months after the sorting work had started. A monthly rent of Rs. 150/- was paid for the portion of the building used for the Hand sorting centre. The hall is the well suited for a hand sorting centre and provides all the facilities of exercising control, constant supervision and making easy distribution of work in an organization where the number of workers is as large as 60.

S. 28. Recruitment of staff. The sanctioned staff for the hand sorting centre was 45 sorters, 3 supervisors, two Inspectors, one Chief Inspector and 7 Compilers who had all to work under the Deputy Superintendent of Census. The Deputy Superintendent was a *Mukhtiarkar* lent by the Sind Revenue Department. All the rest were directly recruited on a temporary basis. No experienced men in the Provincial Offices were willing to join this Department, nor in fact could any be spared due to the gaps caused in office staff by the migration of the Hindus. An entirely new batch of raw hands, most of whom were either school-boys or college students who found the job convenient to finance their study, was collected with much difficulty. Every one of them had to be trained. The Inspectors and the compilers learnt each job and worked side by side with every new sorter for a week or so, till the latter could be trusted to work independently. The great difficulty was that sorters would not stick to the job even for a month. Instances are not wanting in which sorters deserted the posts after they had worked for only a week. For the entire sorting period of 7 months there was always a party of new sorters under training. The main reason for all this trouble was that the department apart from being temporary, required the staff to work continuously for full 8 hours a day as against only 6 hours for which the Provincial Offices work. The staff was mostly indifferent; they were not acquiring any merit for their future career and merely worked for their low wages so long as they could do no better.

S. 29. Equipment. A small amount of Rs. 900/- was sanctioned for purchase or hire of articles of furniture and other equipment required for sorting operations. The essential requirements were:—

1. Tables and Chairs.
2. Cupboards.
3. Containers for Slips.
4. Pigeon-holes for every sorter..
5. Racks.

The furniture could not be had on hire in Hyderabad and purchasing from the very small amount sanctioned was simply impossible. A few tables and chairs and one Cupboard were

borrowed from the Collector's office. I had therefore to ask every sorter, supervisor, Inspector and compiler to bring in his own chair and table and almost all of them very willingly did so. I should not, however, omit to mention that a few men who were appointed as sorters did not join because they could not arrange to get a Table and a Chair.

770 tin slip containers measuring 6"x6"x14" and 1020 measuring 5¾"x5¾"x7" were made locally at Hyderabad at a total cost of Rs. 1,218-6-0. They served the purpose quite well. The pigeon-holes required for every sorter would cost a large amount, but slip-containers fastened together to form sets of 12 holes were very successful.

Racks were required for sorting the slips by charges and districts. 6 such racks of Dayal wood were prepared locally at a cost of Rs. 300/-. These were not very strong but served the purpose well enough, and after the Hand Sorting Centre was closed, they were used for the compilers' records. Racks are indispensible for the hand sorting centre. Unless the records are arranged by Geographical divisions, there is a danger of the slips of the regions or categories being mixed together. Once such a muddle is caused, it is extremely difficult to clear it up. Racks should therefore be ready before the sorting work is actually started. I had very great difficulty in getting these racks made and did not have them ready until about a third of the sorting work was completed. In the absence of the racks and the record room, possession of which was only given long after the work had started, the records had to be kept on the floor with the result that a few containers got mixed up. Fortunately this was noticed when the slips were issued for the next phase and the mistakes were rectified.

S. 30. Starting the Sorting Centre and teaching the staff. Soon after the enumeration was over, the Census Commissioner called a Conference of all the Deputy Superintendents at Karachi and demonstrated to them the sorting procedure. Mr. Ali Mohammad, Mukhtiarkar of Hyderabad, who was to be appointed as Deputy Superintendent was deputed to attend the conference, but he was not relieved by the Sind Government and did not in the end join as Deputy Superintendent. When I took over charge as Superintendent on 26th April, 1951, the Hand Sorting Centre had not been organized. Some twenty sorters and one Inspector had been engaged by the Collector of Hyderabad, who held interim charge of the post of the Provincial Superintendent of Census. He had secured the Holmstead Hall premises, but no enumeration slips had been sent for from the District Census officers. I myself was quite new to Census work; I was not only not a Census Officer in the 1951 enumeration but during the whole of my service career of 32 years I had had no chance of doing Census work in any capacity. I had therefore to learn myself before I could train the entirely new staff.

I started first with collecting furniture, and requested the Revenue Commissioner for Sind to lend the services of Mr. Mahboobali as Deputy Superintendent and after much correspondence he agreed. Mr. Mahboobali joined on 29-5-1951.

On 28th April 1951 the Census Commissioner visited Hyderabad and I had the opportunity of learning much about my work from him. He very kindly visited the Centre and actually got the sorting work started himself on the slips of Hyderabad District which we obtained from the Collector's Office.

My Head Clerk was put in charge of the Centre which I was visiting practically every day. I had to read the Census Codes parts I & II, and the chapters of Part III as they were received, and then give instructions and training to the men at work. I actually found that the staff had not the slightest idea even of how to read the enumeration slip. They had to be taught every thing from the beginning. After the men already appointed became conversant with their work, more were appointed in batches, trained and put to work. Unfortunately, with one or two exceptions all the staff employed was quite inexperienced; even the supervisors, Inspectors and the Compilers needed elementary instruction before they could actually do their supervision work.

S. 31. Code part III. A little before the task of enumeration was completed the Census Commissioner of Pakistan started series of circulars in advance giving the instructions with regard to

the organization of Hand Sorting Centre and the general outline of the Sorting procedure. Side by side detailed instructions about the work in hand were issued in paragraphs of the Census Code Part III. The object of this code was to ensure statistical uniformity of the Census results throughout the whole of Pakistan. It was considered impossible to write a finished hand-book which could deal in advance with all the problems which would arise and moreover the whole operation had to be planned far too hurriedly. This Code was therefore built up during the course of the sorting and compilation operations by issue of its pages in instalments and where necessary by replacement of pages and by amendments. Sufficient instructions were however received for the work currently in hand and also for the direction of the work for a month or so ahead. This book contains very useful and detailed instructions for every item of work and served as a guide for the officers and the staff.

S. 32. Sorters Tickets. The whole sorting operation was divided into five phases each one of which was sub-divided into a number of Workings. For every phase a Sorter's Ticket was designed by the Census Commissioner to record the result of sorting and counting the slips. The sorter had to tally the total of all the sorted categories with the total number of slips handled by him, which number was noted as a check figure at the top of every sorter's ticket. By this means there was a check on every sorter's work and a check on the work already done. There was absolutely no chance of the slips being un-accounted for.

S. 33. Sorting in operation. The Hand Sorting operations started with the scrutiny and correction of enumeration slip received from the District Census Officers. Any entries in these slips which appeared to be obviously wrong or vague had to be corrected by reference to the other entries on it and blanks left in error had to be filled in. In the peculiar circumstances in which the sorting was started at Hyderabad, complete scrutiny of all slips could not be made. The Provincial Superintendent of Census Mr. Muhammad Hashim had fallen ill; the Deputy Superintendent had not been appointed; Sorters were without work for two weeks; neither racks nor the record room was available and everyone was as hazy about the work as I was myself. The men who had sat idle had immediately to be put to work. There was however no trained staff to scrutinize the slips until the Supervisors, Inspectors and Compilers were appointed and trained. In these circumstances, the slips of the first District did not receive the essential scrutiny and correction which they needed and this was realized when they passed through other phases of sorting and had to be corrected then.

After scrutiny, the slips were corrected and checked against the Charge Superintendents' Summaries. Differences were very numerous but generally quite small. The regular sorting then proceeded in accordance with the plan.

The slips of Hyderabad City were all sent to the Machine Sorting Centre at Karachi after a special city sort which classified the slips into main religious groups.

The entire hand sorting scheme provided for checks and inter-checks of figures after every operation. If the sorting or counting was incorrect at any stage, it came to light at the next stage. The checking of the work of Sorters by the Supervisors and Inspectors and the internal checks minimized the chances of mistakes, and a fair standard of accuracy was maintained throughout the operation.

S. 34. Discipline, Control and supervision in sorting centre. Discipline, control and supervision were essential in carrying out the sorting operation successfully. The staff consisted mostly of school boys and college students and unless they were fully controlled they had no sense or responsibility. Some of them had to be summarily discharged for their carelessness, insubordination, irregularity and sheer laziness.

Inspite of a sorter being given consolidated pay of Rs. 63/- plus a bonus which would amount to Rs. 7/- p.m. depending on his work, whereas the pay of a clerk in the Provincial Offices at Hyderabad is Rs. 50/-, very few willing workers could be had. They had to be trained before they were actually put on sorting work and much of the effort pu

into their training was wasted as hardly a day passed when a sorter did not resign or desert. There were some dishonest sorters who attempted to get through the job by filling in bogus figures without actually sorting the slips and counting them but the strict checks exposed them and they were immediately discharged. Even among the inspectorial staff some irresponsible persons had to be punished for signing Sorter's Tickets without carrying out the necessary checks.

The Deputy Superintendent, who was in charge of the Hand Sorting Centre, maintained constant vigilance and supervision. Every supervisor had to circulate continually amongst his team of sorters checking the classification and counting of the slips here and there. Similarly, the Inspectors had to carry on a continuous running check of classifications, counting and addition. The minimum percentage of work to be checked was prescribed at 10 but occasionally the work done by a sorter was checked 100 per cent. I myself paid frequent and surprise visits to the Centre and checked the work of several sorters every time. Thus the utmost accuracy both of classification and counting was achieved.

S. 35. **Accuracy.** Despite these efforts it is almost impossible to achieve 100 per cent. accuracy in counting and sorting the slips by hand. This standard can be had only by machine sorting. At a place where millions of loose slips of paper, divided into several thousand packages each pertaining to a different category and to a different area, are handled by a large team of sorters who have absolutely no experience, it is too much to expect perfect accuracy. The Hand Sorting operations were however so well planned and provided with such internal checks that there was little chance of serious error, but the following considerations indicate that some element of discrepancy must be admitted:—

(1) On two occasions slips of one area were found mixed up with those of another area; this was disclosed by the inter-check provided in the sorting system.

(2) Two sorters were detected having filled in the sorter's tickets without actually sorting or counting the slips.

(3) The work of only 4 or 5 efficient sorters was found to be reasonably free from mistakes. All others were found committing mistakes every time their work was checked.

(4) The fact that the Census is once in ten years makes it inevitable that the staff is quite inexperienced and the termporary nature of the sorter's job tends to make them indifferent especially as they know they cannot be easily replaced by better hands.

With such instances at hand I should estimate the extent of inaccuracy to be 2 per cent., but this was probably halved by revisions due to the vigilant supervision, control and check exercised by the Deputy Superintendent, Mr. Mahboobali.

S. 36. **Termination of Hand Sorting operation.** According to the time table, preparation for opening a Hand Sorting Centre was to be made from 15th March 1951 when Nucleus staff had to be appointed and the operation was to be completed on 31st October 1951. In Sind the first batch of 21 sorters and one Inspector was appointed on 10-4-1951; the work actually started on 28th April 1951. After finishing with all the phases of Hand sorting and drawing the 1 per cent. samples the Hand Sorting Centre was closed on 30th Nov. 1951. The Supervisors and Inspectors continued for one month more and were kept busy in sorting the slips received back from the Machine Sorting Centre and reconciling the discrepencies pointed out by the Officer incharge Machine Centre, Karachi.

S. 37. **Plan for diverting city slips to machine centre.** Hyderabad city slips were sorted at the Machine Sorting Centre, Karachi. A high proportion of its population is in the Non-Agricultural Labour Force and such slips had to be sorted anyway for occupations and economic groups. Before these slips were sent to the Machine Sorting Centre, they were classified into religions and batches made of Dependents, Children and Others.

S. 38. **Coding.** In several places on the slips, where the information recorded presented difficulties in sorting, code numbers were provided to translate the information into numericals. The slips which had to be sorted by machines had all

to be coded. For the slips dealt with at the Hand Sorting Centre, coding was done by my compilers for Muhajirs Origin, Birthplace, Nationality and Mother-tongues. Coding of Cottage Industries was also done in my office.

Coding of the Hyderabad city slips and NALF slips sent to the Machine Sorting Centre was done by coders at Karachi with the assistance of compilers deputed from my office.

S. 39. Use of the original slips as the sorting media. The system of using throughout the Hand Sorting process the original slips prepared for every individual by the enumerators on the spot was completely successful and avoided the cost, time and inaccuracy involved in copying slips from a schedule. The slips stood the handling extremely well and were still legible and intact at the end of the sorting.

S. 40. Cost of Sorting. Appendix 'A' shows the details of expenditure incurred on Hand Sorting, etc., at the Hand Sorting Centre at Hyderabad. The total amount of expenditure is 31,004-15-0 excluding the pay of the Deputy Superintendent who was incharge of the Centre and whose pay is debited to the Hand "Superintendence ". This works out to Rs. 628/- per one lakh slips. In addition to the pay and allowances of the sorters, supervisors and Inspectors, the pay of the compilers has been included in the expenditure on sorting as all the compilers actually worked in the sorting centre till it was closed. "Other Charges" include the cost of tin containers, the racks and other equipment as also the rent paid for the building.

S. 41. Sorting Staff. Appendix 'B' shows the staff entertained at the Hand Sorting Centre. This staff was appointed in batches on different dates when required. Some of the sorters' posts remained vacant for short periods on account of paucity of suitable candidates.

S. 42. Recommendations. Before concluding this section of my report I feel it necessary to make suggestions and recommendations, with particular regard to the difficulties experienced at the sorting operations, for the consideration of those who will carry through the operations at the next Census of Pakistan in 1951.

(*a*) **Organisation.** If a Provincial Hand Sorting Centre is required in 1961, the Holmsted Hall building is the best suited for the purpose. It should be taken over, with the library room and side rooms, and furnished with tables, chairs, tin containers, pigeon holes and racks before the staff is appointed. The Census records of all Districts should be sent for early and kept arranged on the racks.

(*b*) **Staff.** The Inspectorial staff should be drawn from the Provincial Government offices and should be given special pay of 25 per cent. over their basic pay. By 1961 offices will be fully staffed and able to spare men to work in the Census office. As far as possible, sorters should also be drawn from the Provincial offices. After receiving training for a week they should be tested and appointed only if they satisfy the required standard.

(*c*) **Scrutiny.** After the staff has gone through the full course of training the most reliable of them should be put on scrutinizing the slips, which should not be passed on to the sorters till all the necessary corrections are made in them.

(*d*) **Geographical Divisions.** In 1951 the slips of a particular area were distributed among several sorters at every stage. I recommend that slips of one or two Charges according to the amount of work involved in them should be entrusted to every sorter who should handle them from the block sort right up to the district-wise sort. At that stage all the sorters who handled slips of the district should form a team.

(*e*) **Circle Sort.** All the other phases of sorting were easy but the Circle Sort (Phase 1-B) had 14 Workings. It is suggested that this phase should be split up.

(*f*) **Bonus System.** This system should be repeated. It worked very well and helped in getting an increased output.

(*g*) **Office hours and holidays.** The staff was generally unhappy about the office hours. They had to work continuously for 8 hours a day as against 6 hours for which the other local offices work. The office hours and holidays should be the same as for the local offices.

(*h*) **Pay of the staff.** Scales of pay were fixed for the staff but it was ordered that those who were deputed from the Provincial offices should be given the pay they were drawing in their parent office. Experienced men were as a matter of fact not available but had they been they would not have been willing to join the Census without an addition to their pay. Experienced men should be preferred to the new recruits who have no sense of responsibility and they should be given special pay of 25 per cent.

(*i*) **Machine Sorting.** Machines have been used for sorting and counting punched cards at Karachi and Dacca this time and their wider use in the next Census may be indispensable. They are not only very quick but also very accurate. This time they dealt with a limited number of slips of cities and of Non-Agricultural Labour Force. At the next Census they should be used for the entire sorting work.

(*j*) **Local Hand Sorting.** If this is done, there need be only a little preliminary sorting of slips which can best be done at small Hand Sorting Centres organized at every Taluka Headquarters. Here supervisors and enumerators can conveniently scrutinize the slips. They are in a much better position to supply or rectify omissions or inaccuracies than the provincial centre which has to make poorly completed slips "sortable" by a series of intelligent guesses. These Taluka Centres should also sort and count the slips by Sex, Religion, and the main economic divisions (Labour Force, Dependents etc.) and send them in these packets to the Sind Machine Sorting Centre, which should be at Hyderabad.

SECTION III—COMPILATION AND TABULATION.

S. 43. The organization of the compiling staff; recruitment. 7 posts of compilers were sanctioned for compiling and tabulating the Census results of Sind and Khairpur State. As it was not possible to get experienced men from other offices new men had to be appointed. Two were graduates and the others had either passed Inter Science or had failed to pass it at the last examination. All these candidates were interviewed and put to a test in Arithmatic and essay writing and the best were appointed. Excepting one who had served as a Head Clerk to the District Census Officer Hyderabad City, and joined on 5th May 1951, all were quite new to the work and joined later in June 1951, when the sorting of slips was in progress. All these Compilers had to be trained before they were actually put on work. Many of them left after a few months and had to be replaced by training new recruits. Suitable men were hard to get and often posts were vacant for a month or two.

S. 44. Compilation instruction in Code Part III. The Census Code Part III (CCP. 3) chapters 6, 7, 8, and 10, contain very useful instructions about compilation, coding and Tabulation.

These instructions were issued by the Census Commissioner sufficiently in advance of the dates on which the figures for every Table were to be compiled and tabulated. Detailed instructions on compilation were issued for Tables 1, 4-A, 4-C, 5, 6, 7 and 19-A but, after the compilers were sufficiently trained, instructions for compiling other tables were not considered necessary and were not issued. The general guidance in CCP. 3 helped a great deal in doing the compilation and tabulation work accurately and completing it within a reasonably short period.

S. 45. Compiler's work in Sorting Centre. At the early stage of sorting the team of Compilers was employed to scrutinise the Enumeration slips received from the District Census Officers and correct the obvious mistakes in them. They had also to examine the records received from the D. C. Os. and arrange them according to geographical areas.

The compilers played a very important part in the actual sorting of the slips. When any new phase of sorting was started they had to study the relevant chapter of the Census Code and train the sorters. Very often they sat with the new sorters and corrected early mistakes on the spot.

Each compiler was incharge of the enumeration record of one or two districts and before the slips of any area in that district were issued to sorters he determined the check figure and entered it in

the sorter's tickets. After a Phase of sorting was completed the compiler had to take back the Sorter's Tickets from the Sorters, examine the entries made in them, and see that the total of the categories classified in every working tallied with the check figures. He then took charge of the Sorter's Tickets and compiled the figures in them for the various tables.

Coding of slips was another very important duty of the Compilers. They had to study the coding schedules given in Census Code Part III and write appropriate code No. in those columns of the slips, sorting of which was otherwise considered to be difficult.

The information regarding distribution of population by religions was most urgently required and the Table 6 giving this information had to be compiled even before phase 1 of the sorting operation was completed. The compilers compiled the figures for this Table from the sorter's tickets of Phase 1-B and completed it by the end of August 1951. After completing this Table, the Compilers had to make a record of the final figures of Circle Sort so that they can be added up to give the check figures for every region or district for use in the subsequent Phases of sorting. This record supplied information regarding the main economic status of the population by religions.

After each Block sort was completed, the compilers had to check the results with the figures of total population in the Supervisors Abstracts and the Charge Superintendent summary and correct them wherever necessary. They had then to prepare discrepancy notes for any differences exceeding ½ per cent. and communicate them to the Charge Superintendent concerned. Besides this the compilers assisted the Record Keeper in issuing slips to the Sorters and getting the same back from them. They also rectified any mistakes of sorting or of counting slips which were detected at the beginning or end of any sort.

S. 46. Numerical Coding. Coding is the act of translating a statement recorded in words on the slips into a number, and marking it in a specified place on the slip. This enables the sorter to classify the data without reading the words or understanding their meaning. For slips intended for sorting by punched card machines coding is essential. In hand sorting, coding was done for itemes which presented special difficulties, and the compilers were put on to this work during the course of the Phase 1-B, Circle Sort, to code for place of Birth, Country of Nationality, place of origin of Muhajirs and Mother Tongues.

Having the slips coded by the Compilers, who were specially trained in this work, not only made the sorting easy, but greatly minimized the chances of mistakes of classification.

For the slips of Hyderabad City and those of Non-Agricultural labour force of the whole province it was ordered by the Census Commissioner that the coding should be done by the coders at Karachi with the help of two Compilers of my office, who were deputed to the Machine Centre for this purpose.

Besides coding the slips, the Compilers coded the enterprises in the Cottage Industry Schedules which were sent to the Machine Centre at Dacca.

These schedules contained many irrelevant entries and had to be fully scrutinised before preparing the new ones for despatch to the Machine Centre at Dacca.

S. 47. Concentration of the Compilation teams at Provincial Head Quarter. After completing the sorting operation in November 1951 the Compilers started preparing draft of Village List and sent it to the Charge Superintendents for vetting. As soon as they finished this, the Machine Centre at Karachi sent slips of Inactive persons and persons belonging to Agricultural Labour Force sorted out from the slips of "Other Occupations" sent to them for the Machine Sort. The Compilers had to sort out these slips and included them in the Sorter's Tickets for Phases 3-A and 3-C. They had also to reconcile the discrepancies in the number of slips sent to the Machine Centre, pointed out by the Deputy Superintendent of Census, Incharge Machine Centre Karachi. These discrepancies were partly due to carelessness of the Sorters and Supervisors entrusted with the packing of the slips and preparing the schedules for despatch to the Machine Centre and partly due to the careless counting and handling of the slips at the machine centre. The compilers had to labour

hard to reconcile these discrepancies and were occupied by this work for about a month.

Side by side with this work the compilers were attending to the village list for which they had to make a number of back references to Charge Superintendents to reconcile discrepancies. After completing the village list, the compilers were kept very busy compiling the Provincial tables and they also had to prepare the subsidiary statements, charts and maps required for inclusion in the statistical report.

S. 48. Order in which work was done. After completing the village list which took them more than 4 months the compilers prepared the Cottage Industries schedules. Tabulation work proper was actually started in April 1952 but many of the tables could not be completed without the machine sort results which were received long after the due dates. Following is the order in which the compilation and tabulation work was actually done:—

The tables were divided into two groups; Group 1 included tables based mainly on hand sorting and group 2 those mainly obstained from machine soting. Pt. 1 of Group 1 was comprised of tables for which data was forthcoming from the early phases of the hand sorting and Pt. I of Group 2 contained the agricultural economic tables which required mainly hand sorting data.

Table No.	Excluding the Machine sort results for Hyderabad Municipal Area &/ or NALF Compilation & Tabulation completed in.	Data regarding Hyderabad Municipal Area &/ or NALF received from Machine Centre in.	Draft Table finalized in.
	GROUP 1	PART 1	
6			August 1951
1, 2			April 1952
3, "H"			May 1952
4A, 4C, 5, 7, 8, 8A, 9B, 11, 19A, 19B & 19C,	July 1952	October 1952	13-12-1952
	GROUP I	PART II	
4, 7A, 9, 9A, 16, 17 & 18	August 1952	December 1952	January 1953
	GROUP II	PART I	
11 C-1, 11 C-2, 14	September 1952	January 1953	February 1953
	GROUP II	PART II	
11 B, 12, 13, 15 A, 15 B, 19 D		February & March 1953 (revised)	March 1953

S. 49. Comments on different tables. Except for the Anciliary Tables I, H and Village List which were prepared from the information supplied by the Charge Superintendents and required much time and labour, there was absolutely no difficulty in either compiling the figures or preparing the Tables as all of them were interlinked with each other. The figures of one Table provided check for figures of the other Tables. For instance Table 6-Religion which was the first Table to be produced provides a check for the Total Population and the Number of persons in each Religion. Table 1 provides a check for the total population and the Sex Composition, and Table II provides a check for the number of persons of each sex according to their main economic status. With

these checks preparation of Tables was not only easy but the accuracy of every Table was guaranteed as well. Any time there was a mistake in totalling the figures in the sorter's tickets, in the compilation sheets or in the Tables, it came to light atonce and was rectified. The only difficulty was that with the exception of a few tables prepared from the Hand sort results only, Compilation of the figures of hand sort results for all the other tables had to be done at one time and that of Machine sort at the other, and several discrepancies in the machine sort results had to be reconciled before they were compiled and tabulated. Group II part II tables were the last of all to be prepared. The figures supplied by the Machine Centre for these tables were received in the end of January and on check they were found to need correction. These Tables could therefore not be finalized until the end of March 1953 just before the office was closed.

S. 50. The Village List. With the object of providing a permanent record of the information regarding the small geographical areas obtained during the Census, it was decided to prepare the village lists. This is the first of its kind and nothing like it was prepared at any of the past Censuses. It contains the population figures and number of houses in each deh with details of local importance, and the names of important Villages in every deh. The figures of population and houses were worked out from the charge Superintendent's summaries and the local information was supplied by the Mukhtiarkars.

As most of the Charge Superintendent's summaries from which the List was prepared did not give the figures of population and the number of houses for every village separately, much difficulty was experienced in collecting the data for the list. As already said delimitation of blocks in almost every district was defective and the boundaries of Census blocks often did not coincide with the geographical units. Figures for a Deh which is the smallest geographical unit in Sind had therefore to be worked out by splitting the figures of the blocks by reference to the household lists.

The original draft of the Village List was prepared in my office by the Compilers. It showed the number of every Block and the population as found on actual sorting and counting at the Block Sort. Copies were sent to the Mukhtiarkars (Charge Supts.). With instructions to adjust the figures by reference to the household list for every Deh. Very few charge Supdts. cleared the draft immediately, and it had to be returned to many Charge Superintendents a number of times. Several of them could not even give the names and area of the dehs in their Talukas and the correct details had to be obtained from the Head Record Office at Hyderabad. In several cases the Mukhtiarkars had to be requested to send their staff to prepare the List in my office under the supervision of the Deputy Superintendent. All of this was most difficult work for the Compilers and they were all fully occupied with it for about 4 months. It was finally completed in March 1952.

Besides the figures of Population, Houses and Area, the List contains very important local details like existence of Municipality, Notified areas and Sanitary Committees, Railway Station, Primary School, High School, Post Office etc. about every deh. The names of Tapas, Dehs and Villages have been shown both in English and Sindhi in the list so that the public as well as the Government offices can conveninetly make use of it. It should greatly simplify all future censuses.

S. 51. The Housing Table. This table gives the details of population, the number of households, number of congested houses and average number of persons per household and per room. This table was compiled from an analysis prepared by every Circle Supervisor, in the form given in Appx. G to CCP. 2, but the analysis sheets submitted by many of the Charge Superintendents were wrong and had to be re-prepared by the Compilers of my office. The figures for the number of congested houses required arithmetical calculations, and the compilers took about one month, which I felt was rather longer than necessary, to prepare this Table. This will be a very useful document and is included in the table book of the Province.

S. 52. Mechanical Aids. One Adding Machine and one Multo-Calculator Machine were supplied to the Compilation Branch of my office. The add-

ing Machine was very useful specially in checking the vertical and horizontal totals of every table. The other Machine was generally utilised for working out percentages. Both these Machines helped a great deal in compilation and tabulation work.

Machines for punching cards and for sorting and counting the punched cards were used at the Machine Centre Karachi where all the slips of Hyderabad City and of the NALF were sorted. The hand Sorting Centre was thus relieved of the most difficult and laborious sorting of such slips.

S. 53. Cost of Compilation. After closing the hand sorting centre in the end of November 1951, the entire compilation staff were engaged in compilation and tabulation work. The total amount of pay and allowances drawn by them from 1-12-51 to 31-3-1953 is Rs. 14,183/-.

The full team of seven compilers and one Chief Compiler continued upto 31-1-1953 after which 3 posts of Compilers were abolished; 2 more posts of Compilers were abolished with effect from Ist March 1953 so that in the last month *viz.* March 1953 there were only two Compilers and one Chief Compiler.

S. 54. Recommendations. I have already said in my recommendations in Section II of this report that the inspectoral staff for the sorting centre should be drawn from the Provincial Government Offices. The compilation staff should likewise be appointed from among permanent hands of provincial government offices. This would not only avoid frequent changes and the consequent loss of time and energy in training new people every now and then but it would also be conducive to more sense of responsibility among the compilers. Men experienced in Accounts should be preferred.

It has been suggested in para 41 (*i*) and (*j*) that after the slips go through the preliminary sorting at taluka headquarters, they should be sorted by Machines. As sorting of some slips at the hand sorting centre and the others at Machine centre this time has caused a little confusion resulting in delay in finalising the tables and writing the report, I strongly recommend that this system shoud not be repeated at the next Census. If machines are utilised, a separate Machine Centre should be opened for sorting the slips of the Province.

SECTION 4 CONCLUSION

S. 55. Disposal of Census Documents. By the time the Census organisation in the Province came to an end, no final decision had yet been taken regarding the form of the inter-censal organization for the continuation of census work and the custody of census records. Since however steps had to be taken for the safeguarding of census material, the Census Commissioner issued a circular (No. 676) on the subject. In accordance with the instruction laid down in that circular one per cent. sample enumeration slips, sorter's tickets, compilation working sheets, census maps, household lists and charge location code summaries were sent to the Census Commissioner's Office. Corrected circle supervisor's abstracts and corrected charge summaries for Tehsils, Municipalities and Hyderabad Cantonment were destroyed as copies of these documents were already with the Tehsildars or equivalent officers. Discarded enumeration slips and cottage Industries Returns were burnt.

Office correspondences and other records were sent to the Chief secretary to the Government of Sind for deposit.

S. 56. Acknowledgements and Commendations. Before concluding I would like to acknowledge the assistance rendered by the District Collectors and the various charge Superintendents to my predecessor Mr. Mohammad Hashim in completing the preliminary operations of house numbering and house listing in a very short period and for their full co-operation in completing the task of enumeration on the appointed day. I must also express my gratitude to the Heads of several departments and the various Local Boards and Municipal Administrations for their assistance in lending the services of their establishment for appointment as enumerators and supervisors and their full co-operation in carrying out the task of enumeration. I am extremely grateful to the secretaries of the departments of Sind Government and the Collectors of districts for their help

in supplying me some of the material used in this report. The Khairpur State authorities were always prompt in carrying out the Census operations at every stage and they fully responded to my request made to them from time to time for supplying the information required of them and I sincerely acknowledge the assistance rendered by them to me and my predecessor. I must also record my appreciation of the work done by my Deputy Superintendent Mr. Mahboobali who had to work hard with me continuously for nearly two years. His successful management of the Hand Sorting Centre, wherein about 60 temporary hands not easily amenable to discipline were working, and his energetic control over the compilation and tabulation work is commendable. He was also very helpful to me in collecting material for writing Chapters I and II and getting the subsidiary Tables prepared for the other chapters. Further I wish to record appreciation of the very hard work done by the Chief Compiler Mr. Ubadullah and two other Compilers Messrs. Syed Enayat Ali and Md. Alim Abasi. My Head Clerk Mr. Alibakhsh Kaka and my Steno-Typist Mr. Mushtaq Ahmed deserve credit for the very hard work they had to do specially during the last 2 months.

All these men except Mr. Enayat Ali are young men and can usefully be employed in the next Census organization.

APPENDICES

APPENDIX A (1)

PAKISTAN

Total Financial Expenditure—1950/51 to 1953/54 inclusive

In Rupees

Heads	Total	Census Commissioner's Office	Baluchistan	
A-SUPERINTENDENCE				
A-1 Pay of Officers	4,95,262	2,03,774	48,963	1
A-2 Pay of Establishments	3,32,372	1,01,636	24,877	2
A-3 Allowances, Honoraria etc.	2,27,568	91,461	26,147	3
A-4 Other Charges	1,12,906	49,707	9,862	4
A-5 Passage	2,000	2,000	..	5
Total Superintendence	11,70,108	4,48,578	1,09,849	6
B-ENUMERATION	79,395	9,051	16,358	7
C-SORTING				
C.1 MACHINE SORTING & COMPILATION				
C.1 (1) Pay of Officers	15,799	7,576	..	8
C.1 (2) Pay of Establishments	1,82,465	1,15,328	..	9
C.1 (3) Allowances, Honoraria etc.	28,293	18,139	..	10
C.1 (4) Other Charges	2,17,651	2,12,549	..	11
Total Machine Sorting & Compilation	4,44,208	3,53,592	..	12
C.2 HAND SORTING & COMPILATION				
C.2 (1) Pay of Officers	25,137	..	..	13
C.2 (2) Pay of Establishments	5,17,319	..	17,560	14
C.2 (3) Allowances, Honoraria etc.	48,574	..	2,475	15
C.2 (4) Other Charges	38,814	..	1,150	16
Total Hand sorting & Compilation	6,29,844	..	21,185	17
Total Sorting & Compilation	10,74,052	3,53,592	21,185	18
D-MISCELLANEOUS	..	..	..	19
E-PRINTING & PUBLICATIONS	5,72,115	4,96,841	3,638	20
TOTAL	**28,95,67**	**13,08,062**	**1,51,030**	21

APPENDIX A (1)

PAKISTAN

Total Financial Expenditure—1950/51 to 1953/54 inclusive

In Rupees

	East Bengal	N.W.F.P.	Punjab	Sind	Heads
					A-SUPERINTENDENCE
1	97,880	28,096	57,861	58,688	A-1 Pay of Officers
2	96,058	24,975	59,654	25,172	A-2 Pay of Establishments
3	49,808	16,315	27,313	16,524	A-3 Allowances, Honoraria etc.
4	26,998	3,306	19,569	3,464	A-4 Other Charges
5	..	..	..	..	A-5 Passage
6	2,70,744	72,792	1,64,397	1,03,848	Total Superintendence
7	53,434	202	350	..	B-ENUMERATION
					C-SORTING
					C.1-MACHINE SORTING & COMPILATION
8	8,223	..	..	..	C.1 (1) Pay of Officers
9	67,137	..	..	..	C.1 (2) Pay of Establishments
10	10,154	..	..	..	C.1 (3) Allowances Honoraria etc.
11	5,102	..	..	..	C.1 (4) Other Charges
12	90,616	..	..	..	Total Machine Sorting & Compilation
					C.2 HAND SORTING & COMPILATION
13	15,762	..	9,375	..	C.2 (1) Pay of Officers
14	2,69,569	8,789	1,90,680	30,721	C.2 (2) Pay of Establishments
15	30,568	687	14,230	614	C.2 (3) Allowances, Honoraria etc.
16	22,197	512	11,952	3,003	C.2 (4) Other Charges
17	13,38,096	9,988	2,26,237	34,338	Total Hand Sorting & Compilation
18	4,28,712	9,988	2,26,237	34,338	Total Sorting & Compilation
19	..	..	..	..	D-MISCELLANEOUS
20	57,226	239	14,121	50	E-PRINTING & PUBLICATIONS
21	**8,10,116**	**83,121**	**4,05,105**	**1,38,236**	TOTAL

APPENDIX A (2)

CENSUS COMMISSIONER'S OFFICE

Total Financial Expenditure—1950/51 to 1953/54

In Rupees

Heads	1950-51	1951-52	1952-53	1953-54	Total
A-SUPERINTENDENCE					
A-1 Pay of Officers	52,256	58,179	50,139	43,200	2,03,774
A-2 Pay of Establishments	18,000	22,398	39,838	21,400	1,01,636
A-3 Allowances, Honoraria etc	21,002	22,449	33,010	15,000	91,461
A-4 Other Charges	23,270	9,919	8,918	7,600	49,707
A-5 Passage	..	..	..	2,000	2,000
Total-Superintendence:	1,14,528	1,12,945	1,31,905	89,200	4,48,578
B-ENUMERATION	915	8,136	..	..	9,051
C-SORTING					
C.1 MACHINE SORTING & COMPILATION					
C.1 (1) Pay of Officers	..	..	5,396	2,180	7,576
C.1 (2) Pay of Establishments	..	47,707	61,360	6,261	1,15,328
C.1 (3) Allowances, Honoraria etc	..	4,550	11,666	1,923	18,139
C.1 (4) Other Charges (inclusive of rental charges etc. of statistical machines)	..	17,633	1,71,326	23,590	2,12,549
Total-Machine Sorting & Compilation		69,890	2,49,748	33,954	3,53,592
C-2 HAND SORTING & COMPILATION					
C.2 (1) Pay of Officers					
C.2 (2) Pay of Establishments					
C.2 (3) Allowances, Honoraria etc					
C.2 (4) Other Charges					
Total-Hand Sorting & Compilation					
D-MISCELLANEOUS	..	..	..	..	..
E-PRINTING AND PUBLICATIONS	3,73,883	33,825	19,133	70,000	4,96,841
TOTAL	**4,89,326**	**2,24,796**	**4,00,786**	**1,93,154**	**13,08,062**

APPENDIX A (3)

BALUCHISTAN

Total Financial Expenditure—1950/51 to 1953/54.

In Rupees

Heads	1950-51	1951-52	1952-53	1953-54	TOTAL
A-SUPERINTENDENCE					
A-1 Pay of Officers	13,002	17,952	17,615	394	48,963
A-2 Pay of Establishments	4,892	7,280	12,705	..	24,877
A-3 Allowances, Honoraria etc.	10,262	8,759	7,067	59	26,147
A-4 Other Charges	3,673	3,185	3,004	..	9,862
Total-Superintendence	31,829	37,176	40,391	453	1,09,849
B-ENUMERATION	13,359	2,999	..	..	16,358
C-SORTING					
C-2 HAND SORTING & COMPILATION					
C.2 (1) Pay of Officers		..			..
C.2 (2) Pay of Establishments		17,560			17,560
C.2 (3) Allowances, Honoraria, etc.		2,475			2,475
C.2 (4) Other Charges		1,150			1,150
Total-Hand Sorting & Compilation		21,185			21,185
E-PRINTING & PUBLICATIONS	1,100	1,700	838	..	3,638
TOTAL	**46,288**	**63,060**	**41,229**	**453**	**1,51,030**

APPENDIX A (4)

EAST BENGAL

Total Financial Expenditure—1950/51 to 1953/54.

In Rupees

Heads	1950-51	1951-52	1952-53	1953-54	TOTAL
A-SUPERINTENDENCE					
A-1 Pay of Officers	19,355	30,760	36,507	11,258	97,880
A-2 Pay of Establishments	7,182	10,743	68,144	9,989	96,058
A-3 Allowances, Honoraria etc.	11,699	13,815	12,972	11,322	49,808
A-4 Other Charges	9,156	10,009	7,464	369	26,998
Total-Superintendence	47,392	65,327	1,25,087	32,938	2,70,744
B-ENUMERATION	51,577	1,857	..	..	53,434
C-SORTING					
C.1 MACHINE SORTING & COMPILATION					
C.1 (1) Pay of Officers		4,102	4,121		8,223
C.1 (2) Pay of Establishments		21,774	45,363		67,137
C.1 (3) Allowances, Honoraria etc.		3,041	7,113		10,154
C.1 (4) Other Charges		4,118	984		5,102
Total-Machine Sorting & Compilation		33,035	57,581		90,616
C-2 HAND SORTING & COMPILATION					
C.2 (1) Pay of Officers		15,762			15,762
C.2 (2) Pay of Establishments		2,69,569			2,69,569
C.2 (3) Allowances, Honoraria etc.		30,568			30,568
C.2 (4) Other Charges		22,197			22,197
Total-Hand Sorting & Compilation		3,38,096			3,38,096
E-PRINTING AND PUBLICATIONS	1,478	..	55,748		57,226
TOTAL	**1,00,447**	**4,38,315**	**2,38,416**	**32,938**	**8,10,116**

APPENDIX A (5)

NORTH-WEST FRONTIER PROVINCE

Total Financial Expenditure 1950/51 to 1953/54.

In Rupees

Heads	1950-51	1951-52	1952-53	1953-54	TOTAL
A-SUPERINTENDENCE					
A-1 Pay of Officers	9,281	7,841	10,019	955	28,096
A-2 Pay of Establishments	5,054	8,558	10,868	495	24,975
A-3 Allowances, Honoraria etc.	7,144	5,028	3,770	373	16,315
A-4 Other Charges	1,344	1,345	617	..	3,306
Total-Superintendence	22,823	22,772	25,274	1,823	72,692
B-ENUMERATION	..	202	..	..	202
C-SORTING					
C-2 HAND SORTING & COMPILATION					
C.2 (1) Pay of Officers		..			
C.2 (2) Pay of Establishments		8,789			8,789
C.2 (3) Allowances, Honoraria etc.		687			687
C.2 (4) Other Charges		512			512
Total-Hand Sorting & Compilation		9,988			9,988
E-PRINTING & PUBLICATIONS	239	..	..	..	239
TOTAL	**23,062**	**32,962**	**25,274**	**1,823**	**83,121**

APPENDIX A (6)

PUNJAB

Total Financial Expenditure 1950/51 to 1953/54

In Rupees

Heads	1950-51	1951-52	1952-53	1953-54	TOTAL
A-SUPERINTENDENCE					
A-1 Pay of Officers	16,944	15,997	18,600	6,320	57,861
A-2 Pay of Establishments	4,902	7,534	40,160	7,058	59,654
A-3 Allowances, Honoraria etc	9,062	6,121	9,563	2,567	27,313
A-4 Other Charges	3,861	3,942	10,936	830	19,569
Total-Superintendence:	34,769	33,594	79,259	16,775	1,64,397
B-ENUMERATION	135	215	..	..	350
C-SORTING					
C-2 HAND SORTING & COMPILATION					
C.2 (1) Pay of Officers		9,375			9,375
C.2 (2) Pay of Establishments		1,90,680			1,90,680
C.2 (3) Allowances, Honoraria, etc.		14,230			14,230
C.2 (4) Other Charges		11,952			11,952
Total-Hand Sorting & Compilation		2,26,237			2,26,237
E-PRINTING AND PUBLICATIONS	161	..	13,960	..	14,121
TOTAL	**35,065**	**2,60,046**	**93,219**	**16,775**	**4,05,105**

APPENDIX A (7)

SIND

Total Financial Expenditure 1950/51 to 1953/54.

In Rupees

Heads	1950-51	1951-52	1952-53	1953-54	TOTAL
A-SUPERINTENDENCE					
A-1 Pay of Officers	13,612	16,991	25,071	3,014	58,688
A-2 Pay of Establishments	3,393	5,216	15,673	890	25,172
A-3 Allowances, Honoraria etc.	5,391	5,494	5,339	300	16,524
A-4 Other Charges	1,914	1,049	501	..	3,464
Total-Superintendence:	24,310	28,750	46,584	4,204	1,03,848
B-ENUMERATION	..	..	..	..	..
C-SORTING					
C-2 HAND SORTING & COMPILATION					
C.2 (1) Pay of Officers		..			..
C.2 (2) Pay of Establishments		30,721			30,721
C.2 (3) Allowances Honoraria etc.		614			614
C.2 (4) Other Charges		3,003			3,003
Total-Hand Sorting & Compilation		34,338			34,338
E-PRINTING & PUBLICATIONS	50	..	..	..	50
TOTAL	24,360	63,088	46,584	4,204	1,38,236

Appendix B (1)

LIST OF STAFF ENTERTAINED

OFFICE OF THE CENSUS COMMISSIONER

Name of post	Grade of pay	No. of posts in the years			
		1950-51	1951-52	1952-53	1953-54
Census Commissioner.	Rs. 3000/- p. m.	1	1	1	1
Officer on Special Duty & Dy. Secretary (ex-officio)	Current pay of his grade.	1	1	..	..
Under Secretary.	Current pay of his grade.	..	..	1	..
Assistant Statistical Officer.	Rs. 350-25-500	1	1	1	1
Investigator.	Rs. 250-20-450	..	..	1	1
Assistant in Charge.	Rs. 200-15-500 *plus* a special pay of Rs. 40/- p. m.	1	1	1	..
Assistant.	Rs. 160-10-250-15-400	2	2	4	4
Stenographer.	Rs. 160-10-250-15-400 (*plus* a special pay of Rs. 30/- p. m. for Census Commissioner's Stenographer.)	2	2	1	1
Steno-Typist.	Rs. 85-6-115-15/2-175-10-225 *plus* shorthand allowance of Rs. 20/- p. m.	..	..	1	..
Upper Division Clerk.	Rs. 85-6-115-15/2-175-10-225	..	3	3	5
Lower Division Clerk.	Rs. 60-4-100-EB-5-120	6	5	5	7
Draftsman.	Rs. 75-5-100-5-180	..	1	1	2
Daftary.	Rs. 38-1-45	1	2	2	2
Peon.	Rs. 28-½-32	6	6	6	5

Appendix B (2)

LIST OF STAFF ENTERTAINED

BALUCHISTAN

Name of post	Grade of pay	No. of posts in the years			
		1950-51	1951-52	1952-53	1953-54
Provincial Superintendent of Census.	Current pay of his grade *plus* a special (Census) pay of Rs. 250/- p. m.	1	1	1	..
P. A. to PSC/Deputy Superintendent of Census.	Current pay of his grade *plus* a special (Census) pay of Rs. 100/- p. m.	1	1	1	1
Head Clerk.	Rs. 120-8-200-25/2-225 *plus* a special pay of Rs. 30/- p. m.	1	1	1	..
Accountant & General-Clerk.	Rs. 120-8-200 *plus* a special pay of Rs. 20/- p.m.	1	1	1	..
Steno-Typist.	Rs. 72-4-100-5-130 *plus* Rs. 20/- p. m. as short Hand allowance.	1	1	1	..
Record Keeper.	Rs. 115-5-130	..	1	1	..
Compiler.	Rs. 120/- p. m. (fixed pay)	..	5	3	1
Clerk.	Rs. 120-8-200	..	..	..	1
Typist.	Rs. 55-3-70-3-100	..	1	1	1
Inspector.	Rs. 120-8-200	..	1	..	..
Supervisor.	Rs. 72/- p. m. (fixed pay) *plus* an average bonus of Rs. 7/- p. m.	..	2	..	..
Sorter.	Rs. 63/- p. m. (fixed pay) *plus* an average bonus of Rs. 7/- p. m.	..	20	..	..
Daftary.	38-1-45	..	1	1	..
Peon.	Rs. 33-$\frac{1}{2}$-37	3	4	3	1
Chowkidar.	Rs. 33-$\frac{1}{2}$-37	..	2	1	1

Appendix B (3)

LIST OF STAFF ENTERTAINED

EAST BENGAL

Name of post	Grade of pay	No. of posts in the years			
		1950-51	1951-52	1952-53	1953-54
Provincial Superintendent of Census.	Current pay of his grade *plus* a special (Census) pay of Rs. 250/- p. m.	1	1	1	1
Deputy Superintendent of Census.	Current pay of his grade *plus* a special (Census) pay of Rs. 100/- p. m.	1	1	1	1
Deputy Superintendent of Census. (Compilation)	Current pay of his grade *plus* a special (Census) pay of Rs. 100/- p. m.	..	1	1	1
Head Assistant.	Rs. 150-10-250-15-400 *plus* a special pay of Rs. 50/- p. m.	1	1	1	1
Stenographer.	Rs. 120-10-200-EB-10-300 EB-25/2-350	1	1	1	1
Accountant.	Rs. 120-10-200	1	1	1	..
Clerks.	Rs. 75-6-105-5-140-15/2-185	2	2	2	2
Typists.	Rs. 60-4-120-5-140	1	1	3	3
Senior Compiler.	Rs. 150-10-210.	..	..	1	1
Compiler.	Rs. 120/- p. m. (fixed pay)	..	..	40	10
Chief Inspector.	Rs. 150-10-210	..	..	4	..
Daftary-cum-Record Supplier.	Rs. 30-1-40	1	1	1	1
Peon.	Rs. 25-½-35	5	5	7	6

Appendix B (4)

LIST OF STAFF ENTERTAINED

EAST BENGAL

FOUR HAND SORTING AND ONE MACHINE SORTING CENTRES.

Name of Post	Grade of pay	No. of posts in the years	
		1951-52	1952-53
Deputy Superintendent of Census.	Current pay of his grade *plus* a special (Census) pay of Rs. 100/- p. m.	5	1
Head Clerk/Accountant.	Rs. 150-10-210.	5	1
Record Keeper.	Rs. 100-5-175	4	..
Clerk.	Rs. 60-4-120-5-140	5	1
Typist.	Rs. 60-4-120-5-140	5	1
Chief Inspector.	Rs. 150-10-210	4	..
Inspector.	Rs. 120-10-200	8	..
Supervisor.	Rs. 72/- p. m. (fixed pay) *plus* an average bonus of Rs. 7/- p. m. (for Hand Sorting Centres) Rs. 250/- p. m. (fixed pay) for Supervisors in the Machine Sorting Centre.	26	2
Sorters.	Rs. 63/- p. m. (fixed pay) *plus* an average bonus of Rs. 7/- p. m. (for Hand Sorting Centres) Rs. 90/- p. m. (fixed pay) *plus* a bonus of Rs. 30/- p. m. approx. (for Machine Sorting Centre).	414	14
Punchers.	Rs. 90/- p.m. (fixed pay) plus a bonus of Rs. 30/- p. m. approx. (for Machine Sorting Centre).	40	40
Senior Compiler.	Rs. 150-10-210.	1	..
Compiler.	Rs. 120/- p.m. (fixed pay)	40	..
Daftary.	Rs. 30-1-40	5	3
Peon.	Rs. 25-½-30	15	3
Chowkidar.	Rs. 25-½-30	5	1

Appendix B (5)

LIST OF STAFF ENTERTAINED

OFFICE OF THE CHIEF CENSUS OFFICER, KARACHI/DEPUTY SUPERINTENDENT OF CENSUS, MACHINE SORTING CENTRE, KARACHI.

Name of post	Grade of pay	No. of posts in the years			
		1950-51	1951-52	1952-53	1953-54
Chief Census Officer.	Rs. 480/- p. m. (fixed pay) a retired Government servant.	1	1	..	..
Deputy Superintendent of Census.	Current pay of his grade *plus* a special pay of Rs. 100/- p.m.	..	..	1	1
Head Clerk.	Rs. 85-6-115-15/2-175-10-225 *plus* a special pay of Rs. 30/- p.m.	1	1	1	1
Upper Division Clerk.	Rs. 85-6-115-15/2-175-10-225	1	1	..	..
Lower Division Clerk.	Rs. 60-4-100-EB-5-120	1	1	1	..
Typist.	Rs. 60-4-100-EB-5-120	1	1	1	1
Senior Compiler.	Rs. 160-10-250-15-400	..	1	1	1
Compiler.	Rs. 120/- p. m. (fixed pay)	..	10	10	10
Supervisor.	Rs. 160-10-250-15-400	..	2	2	..
Sorter.	Rs. 90/- p. m. (fixed pay) *plus* a bonus of Rs. 30/- p. m. (Approx.)	..	14	14	..
Puncher.	Rs. 90/- p. m. (fixed pay) *plus* a bonus of Rs. 30/- p. m. (Approx.)	..	40	40	..
Daftary.	Rs. 38-1-45	..	1	1	..
Peon.	Rs. 28-½-32	2	3	3	2
Chowkidar.	Rs. 28-½-32	..	2	2	1

Appendix B (6)

LIST OF STAFF ENTERTAINED

NORTH WEST FRONTIER PROVINCE

Name of post	Grade of pay	No. of posts in the years			
		1950-51	1951-52	1952-53	1953-54
Provincial Superintendent of Census.	A special (Census) pay of Rs. 400/- p.m. in addition to his pay as Secretary to Govt. NWFP, Food and Civil Supplies Department.	1	1	1	1
Deputy Superintendent of Census.	Current pay of his grade *plus* a special pay of Rs. 100/- p. m.	1	1	1	1
Head Clerk-cum-Stenographer.	(i) Rs. 195-20-475 *plus* a special pay of Rs. 40-- p. m.				
	(ii) Rs. 120-10-300.	1	1	1	1
Typist & General Clerk.	Rs. 65-5-130	1	1	1	1
Accounts Clerk.	Rs. 105-10-225	1	1	1	..
Record Keeper.	Rs. 65-5-130	..	1	..	..
Clerk.	Rs. 40-3-90	..	1	..	..
Typist.	Rs. 40-3-90	1	2	1	..
Compiler.	Rs. 120/- p. m. (fixed pay)	..	5	5	2
Inspector.	Rs. 150/- p. m. (fixed pay)	..	1	..	..
Supervisor.	Rs. 72/- p. m. (fixed pay) *plus* an average of bonus of Rs. 7/- p. m.	..	2	..	..
Sorter.	Rs. 63/- p. m. (fixed pay) *plus* an average bonus of Rs. 7/- p. m.	..	20	..	..
Daftry.	Rs. 30-1-40	1	1	1	1
Jamadar.	Rs. 22-½-30	1	1	1	1
Peon.	Rs. 22-½-30	2	3	2	2
Chowkidar.	Rs. 15-1/3-20	..	1	..	..

Appendix B (7)

LIST OF STAFF ENTERTAINED

PUNJAB

Name of post	Grade of pay	No. of posts in the years			
		1950-51	1951-52	1952-53	1953-54
Provincial Superintendent of Census.	Current pay of his grade *plus* special (Census) pay of Rs. 250/- p. m.	1	1	1	1
Deputy Superintendent of Census.	Current pay of his grade *plus* special (Census) pay of Rs. 100/- p. m.	1	2	1	1
Head Clerk.	Rs. 250-10-350	1	1	1	1
Stenographer.	Rs. 150-10-200-10-300.	1	1	1	1
Accountant.	Rs. 116-8-180-10-250	1	1	1	1
Despatch Clerk-cum-Typist.	Rs. 60-4-100-5-120	1	1	1	1
Chief Compiler.	Rs. 150-10-250-15-370 *plus* a special pay at 20% of his pay.	..	1	1	1
Compiler.	Rs. 120/- p.m. (fixed pay)	..	25	25	5
Chief Inspector.	Rs. 116-8-180-10-250 *plus* a special pay of Rs. 20/- p. m.	..	2	2	1
Inspector.	Rs. 116-8-180-10-250.	..	7	..	..
Head Clerk/Accountant.	Rs. 120-8-200-10-250	..	2	..	..
Record Keeper.	Rs. 75-6-105-7-175	..	3	..	..
Clerk.	Rs. 60-4-100-5-120	..	3	..	..
Typist.	Rs. 60-4-100-5-120	..	3	..	..
Supervisor.	Rs. 72/- p. m. (fixed pay) *plus* an average bonus of Rs. 7/- p. m.	..	13	..	..
Sorter.	Rs. 63/- p. m. (fixed pay) *plus* an average bonus of Rs. 7/- p. m.	..	250	..	..
Daftary.	Rs. 30-1-40	..	3	1	1
Peon.	Rs. 25-½-30	3	11	5	4
Chowkidar.	Rs. 25-½-30	..	2	1	..

Appendix B (8)

LIST OF STAFF ENTERTAINED

SIND

Name of post	Grade of pay	No. of posts in the years			
		1950-51	1951-52	1952-53	1953-54
Provincial Superintendent of Census.	Current pay of his grade *plus* a special (Census) pay of Rs. 250/- p. m.	1	1	1	1
Deputy Superintendent of Census.	Current pay of his grade *plus* a special (Census) pay of Rs. 100/- p. m.	..	1	1	1
Head Clerk.	Rs. 120-10-210 *plus* a special pay of Rs. 25/- p. m.	1	1	1	1
Camp Clerk (Steno-Typist)	Rs. 120-10-210	1	1	1	1
Clerk.	(i) Rs. 100-5-150 (ii) Rs. 60-3-120-4-140	1	2	1	..
Record Keeper.	Rs. 100-5-150	..	1	..	..
Typist.	Rs. 60-3-120-4-140	1	2	1	1
Chief Compiler.	120-10-210	..	..	1	1
Compiler.	Rs. 120/- p. m. (fixed pay)	..	7	7	2
Chief Inspector.	Rs. 120-10-210	..	1	..	..
Inspector.	Rs. 100-5-150	..	2	..	..
Supervisor.	Rs. 72/- p. m. (fixed pay) *plus* an average bonus of Rs. 7/- p. m.	..	3	..	..
Sorter.	Rs. 63/- p. m. (fixed pay) *plus* an average bonus of Rs. 7/- p. m.	..	45	..	..
Daftary.	Rs. 41-3-80-3-110	1	1	1	1
Naik	Rs. 30-1-40	1	1	1	1
Peon.	Rs. 25-½-35	3	5	4	2
Chowkidar.	Rs. 25-½-35	..	1	..	..

Appendix C

LIST OF CENSUS PUBLICATIONS AND PRINTED FORMS

Form No.	Title	Languages
Pre Enumeration Period		
1.	Test Enumeration Slip.	English.
1-A.	Enumeration Leaflet.	English.
2.	Appointment Certificate.	Urdu, Sindhi, and Bengali.
2-A.	Despatch & Acknowledgement Form.	English one side and Urdu on the other.
3.	Code of Census Procedure Part I.	English.
4.	Household List	Urdu, Bengali and Sindhi.
5.	Cottage Industries Form	Urdu, Bengali and Sindhi.
6.	How and Why (Publicity Brochure)	English.
Enumeration Period		
7.	Questionaire & Instructions for Enumerators (Leaflets)	Urdu, Bengali, Sindhi, and English.
7-A.	Instructions for Enumerators of Tribal Areas (Leaflets)	Urdu.
8.	Household Summary Form	Urdu, Bengali and Sindhi.
9.	Enumeration Slip	Urdu, Bengali, Sindhi and English.
9-A.	Enumeration Slip for Tribal Areas (Red)	Urdu.
10.	Supervisors' Summary Abstract Form	Urdu, Bengali and Sindhi.
10-A.	Charge Supdts' Summary Form	English.
11.	Code of Census Procedure Part II.	English.
11-A.	Annexure to Code of Census Procedure Part II.	English.
12.	Progress Report Forms.	English.
13.	Poster (Household List)	Urdu, Bengali and Sindhi.
13-A.	Poster (Enumeration)	Urdu, Bengali.
13-B.	Poster (Enumeration)	Urdu, Bengali.
14.	Wall Diagram	Urdu, Bengali and Sindhi.
15.	Practice Slip Sheets	Urdu, Bengali.
16.		
17.	Charge Location Code Summary	English.
17-A.	Inter link leaf for Form No. 17.	English.
18.	Self Enumeration Slip.	English.
19.	Code of Census Procedure Part III. (Cyclostyled)	English.

Appendix C

LIST OF CENSUS PUBLICATIONS AND PRINTED FORMS—*(Contd.)*

Form No.	Title	Languages
19-A	Annexure I to C. C. P. III. (Sh. No. 1 to 73)	Blue Prints of Layout of Census Tables.
	Annexure II to C. C. P., III. Programme of Work for Machine Sorting, & M. S. T. (Cyclostyled)	English.
20.	Block Sorters' Ticket (Rubber Stamp)	English.
21.	Circle Folders	English.
22.	Weekly Progress Report (Hand Sorting)	English.
22-A	Weekly Progress Report (Machine Sorting)	English.
23.	Sanads for Enumerators, Supervisors and Chg., Supdts.	English on one side and Urdu-Bengali on the other.
24.	Sorters' Work Sheet.	English.
24-A.	Operators' Work Sheet.	English.
25-A.	Sorters' Ticket (Persons not in Civilian Labour Force, excluding dependents)	English.
25-B.	Sorters' Ticket. (Machine City)	English.
25-C.	Sorters' Ticket. (Muhajirs)	English.
25-D.	Sorters' Ticket. (Children)	English.
25-E.	Sorters' Ticket. (Literates)	English.
25-F.	Sorters' Ticket. (Cultivators)	English.
25-G. (Revised)	Sorters' Ticket. (Non-Cultivators)	English.
25-H.	Sorters' Ticket. (Ages)	English.
25-J.	Sorters' Ticket. (Women)	English.
26.	Compilers' Working Sheet (Standard ruling)	English.
27.	Dividing Cards	..
28-A.	Label for permanent census records.	English.
28-B.	List of contents for consignment of slips transferred from H/CTR. to M/CTR.	English.
28-C.	Label for packets of slips transferred from H/CTR. to M/CTR.	English.
28-D.	Label for Permanent Sample.	English.
28-E.	Progress Report (Compilation and Tabulation)	English.

Appendix C

LIST OF CENSUS PUBLICATIONS AND PRINTED FORMS—*(Concld.)*

Form No.	Title	Languages.
28-F.	Label for Foreign Nationals' slips packages in E. Bengal.	English.
28-G.	Pakistanis abroad	English.
28-H.	Sketch Map of East Bengal	..
28-I.	Sketch Map of Sind.	..
28-J.	Sketch Map of Baluchistan	..
28-K.	Sketch Map of Punjab.	..
28-L.	Sketch Map of N.W.F.P.	
Priced Publications.		
29.	Census Bulletin No. 1. (Provisional Tables of Population)	English.
32-A.	Census Bulletin No. 2. (Population according to Religion)	English.
32-B.	Census Bulletin No. 3. (Urban and Rural Population and Area)	English.
32-C.	Census Bulletin No. 4. (Population according to Economic Categories)	English.
32-D.	Census Bulletin No. 5. (Detailed Age Tables in 5 year groups)	English (Issued restricted)
30.	Village List of East Bengal (District Pamphlets)	English & Bengali.
	Village List of Punjab. (District Pamphlets & Divisional Volume)	English & Urdu.
	Village List of Bahawalpur State (District Pamphlets State Volume)	English & Urdu.
	Village List of Sind & Khairpur State (District Pamphlet & Provincial Volume)	English & Sindhi.
	Village List of Khairpur State	English & Sindhi.
	Village List of N.W.F.P. (District Pamphlets & Provincial Volume)	English & Urdu.
	Village List of Frontier Regions Tribal Area wise Pamphlets	English & Urdu.
	Village List of Baluchistan (Provincial Volume & District Volume and States Union Vol.)	English & Urdu.

CENSUS REPORTS.

Vol. 1 .. General Report and Tables for Pakistan, showing Provincial Totals.
Vol. 2 .. Baluchistan and States Union Report and Tables.
Vol. 3 .. East Bengal Report and Tables.
Vol. 4 .. N. W. F. P. and Frontier Regions Reports and Tables.
Vol. 5 .. Punjab and Bahawalpur State Report and Tables.
Vol. 6 .. Sind and Khairpur State Report and Tables.
Vol. 7 .. West-Pakistan Tables of Economic Characteristics.
Vol. 8 .. East-Pakistan Tables of Economic Characteristics.

Appendix D

LIST OF ABBREVIATIONS

AIC	Assistant Incharge.
ALF	Agricultural Labour Force.
ASO	Assistant Statistical Officer.
BST	Block Sorter Ticket.
CC	Census Commissioner.
CC Circular	Census Commissioners' Circular.
CCPI	Code of Census Procedure—Part I.
CCPII	Code of Census Procedure—Part II.
CCPIII	Code of Census Procedure—Part III.
CCSC	Census Commissioners' Statistical Committee.
DCO	District Census Officer.
DISTREP	Telegraphic District Report.
DSC	Deputy Superintendent of Census.
DSC H.Q	Deputy Superintendent of Census—Headquarters.
HH List	House Hold List.
LDC	Lower Division Clerk.
Ministry of F.A. & C.R.	Ministry of Foreign Affairs and Commonwealth Relations.
MSTS	*Machine Sorting Tickets.*
NALF	Non Agricultural Labour Force.
N.W.F.P.	North West Frontier Province.
OSD	Officer on Special Duty.
P.A.	Personal Assistant.
PSC	*Provincial* Superintendent of Census.
P.W.D.	Public Works Department.
SDO	Sub Divisional Officer.
T.A.	Travelling Allowance.
UDC	Upper Division Clerk.
US	Under Secretary.

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CHARTS

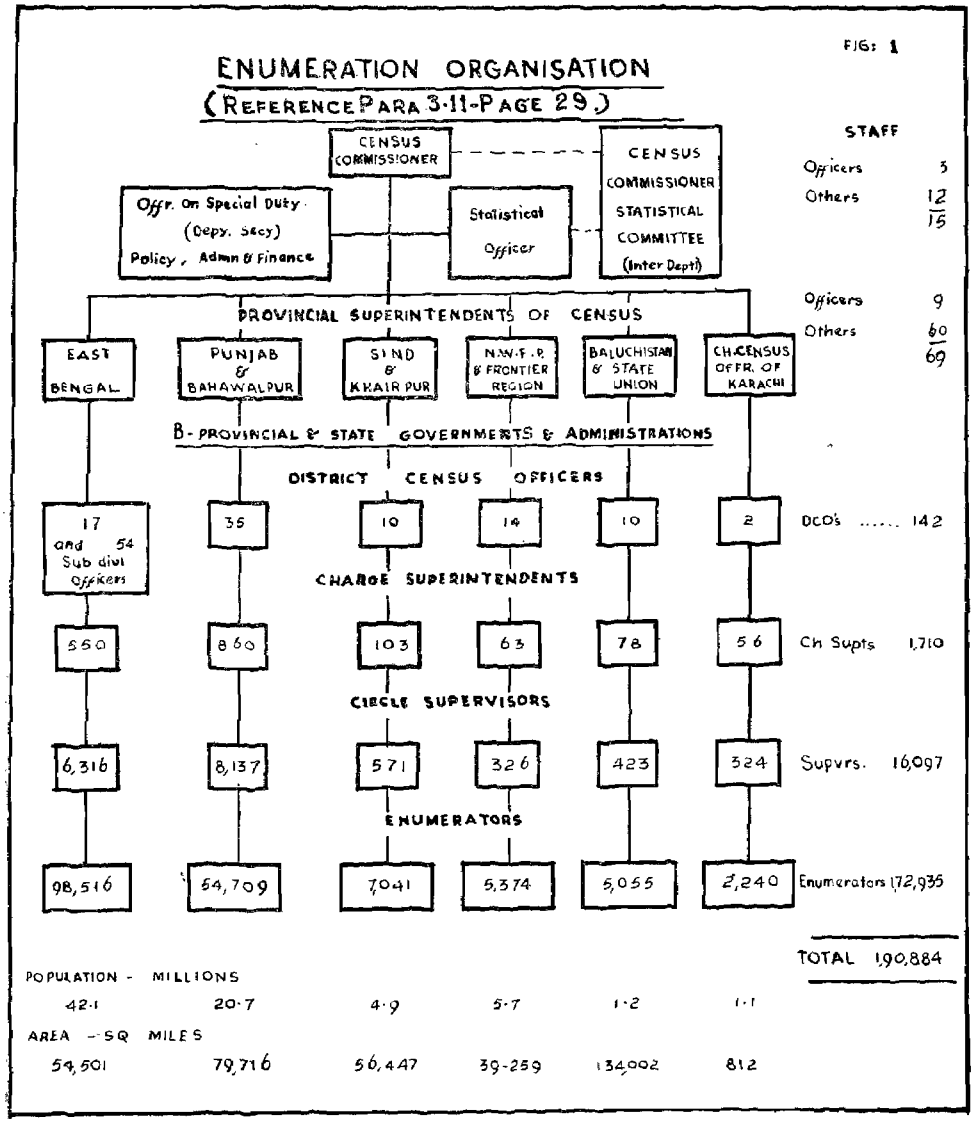
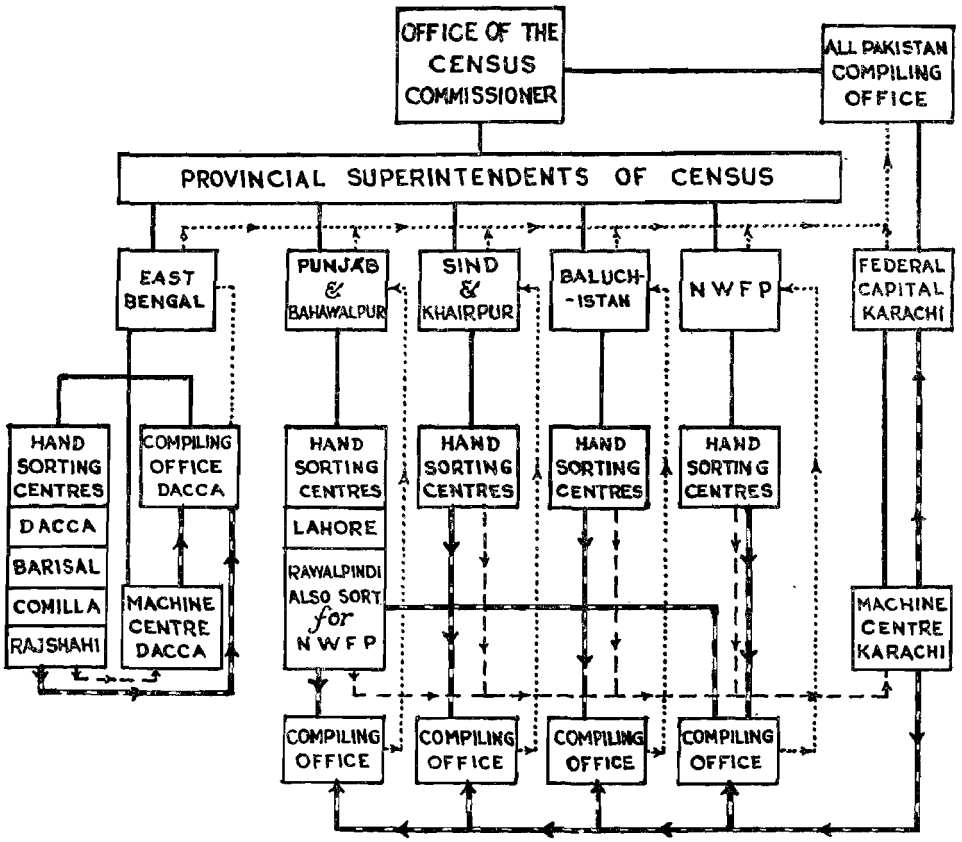

FIG: 1
ENUMERATION ORGANISATION
(REFERENCE PARA 3·11-PAGE 29.)
CENSUS COMMISSIONER
CENSUS COMMISSIONER STATISTICAL COMMITTEE (Inter Dept)
Offr. on Special Duty (Depy. Secy) Policy, Admn & Finance
Statistical Officer
PROVINCIAL SUPERINTENDENTS OF CENSUS
EAST BENGAL
PUNJAB & BAHAWALPUR
SIND & KHAIRPUR
N.W.F.P. & FRONTIER REGION
BALUCHISTAN & STATE UNION
CH. CENSUS OFFR. OF KARACHI
B- PROVINCIAL & STATE GOVERNMENTS & ADMINISTRATIONS
DISTRICT CENSUS OFFICERS
17 and 54 Sub divl Officers
35
10
14
10
2
DCO's 142
CHARGE SUPERINTENDENTS
550
860
103
63
78
56
Ch Supts 1,710
CIRCLE SUPERVISORS
6,316
8,137
571
326
423
324
Supvrs. 16,097
ENUMERATORS
98,516
54,709
7,041
5,374
5,055
2,240
Enumerators 172,935
STAFF
Officers 3
Others 12
15
Officers 9
Others 60
69
TOTAL 190,884
POPULATION - MILLIONS
42·1
20·7
4·9
5·7
1·2
1·1
AREA - SQ MILES
54,501
79,716
56,447
39-259
134,002
812

FIG: 2

POST-ENUMERATION ORGANISATION

(REFERENCE : PARA 5·04 ~ PAGE 50 .)

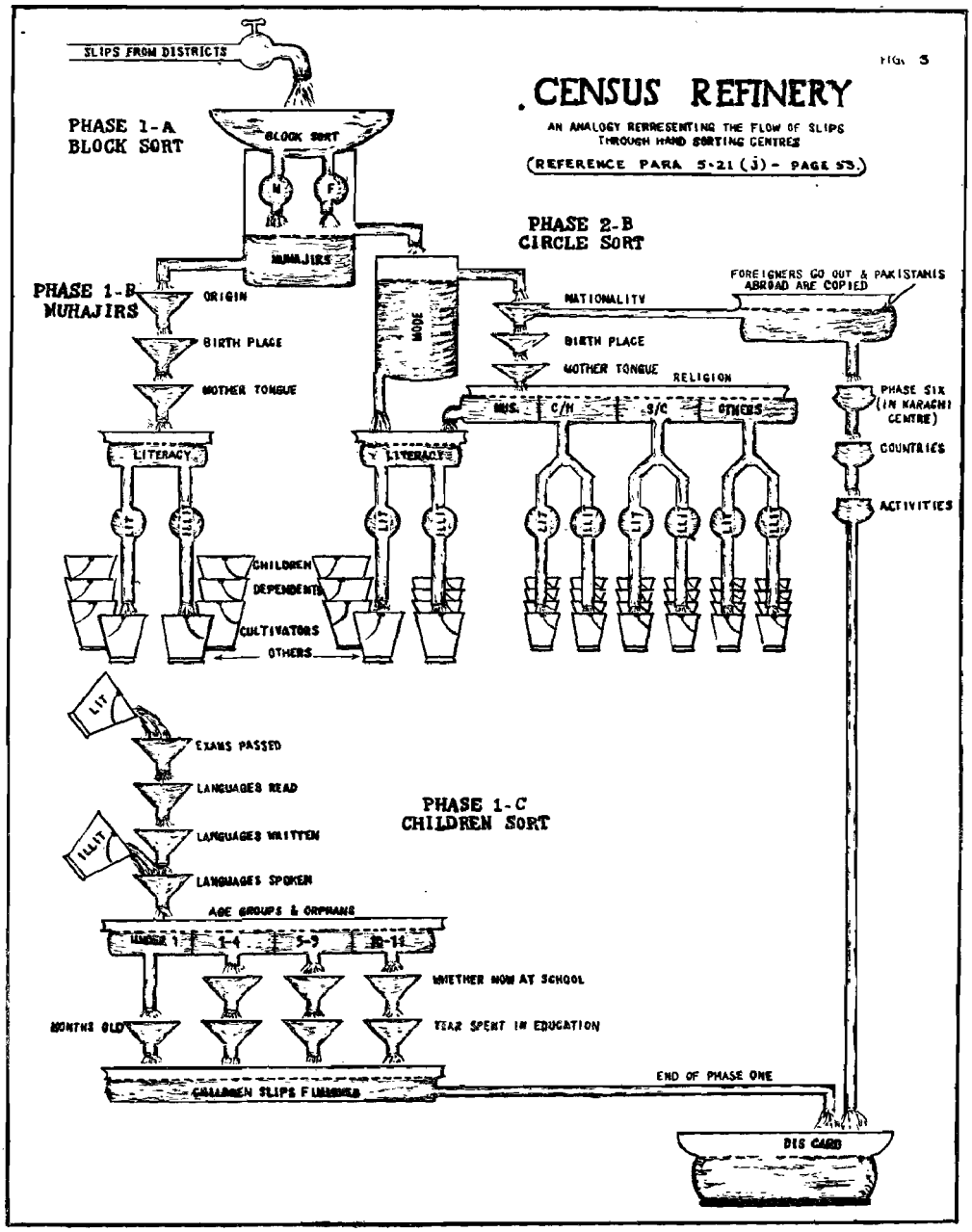


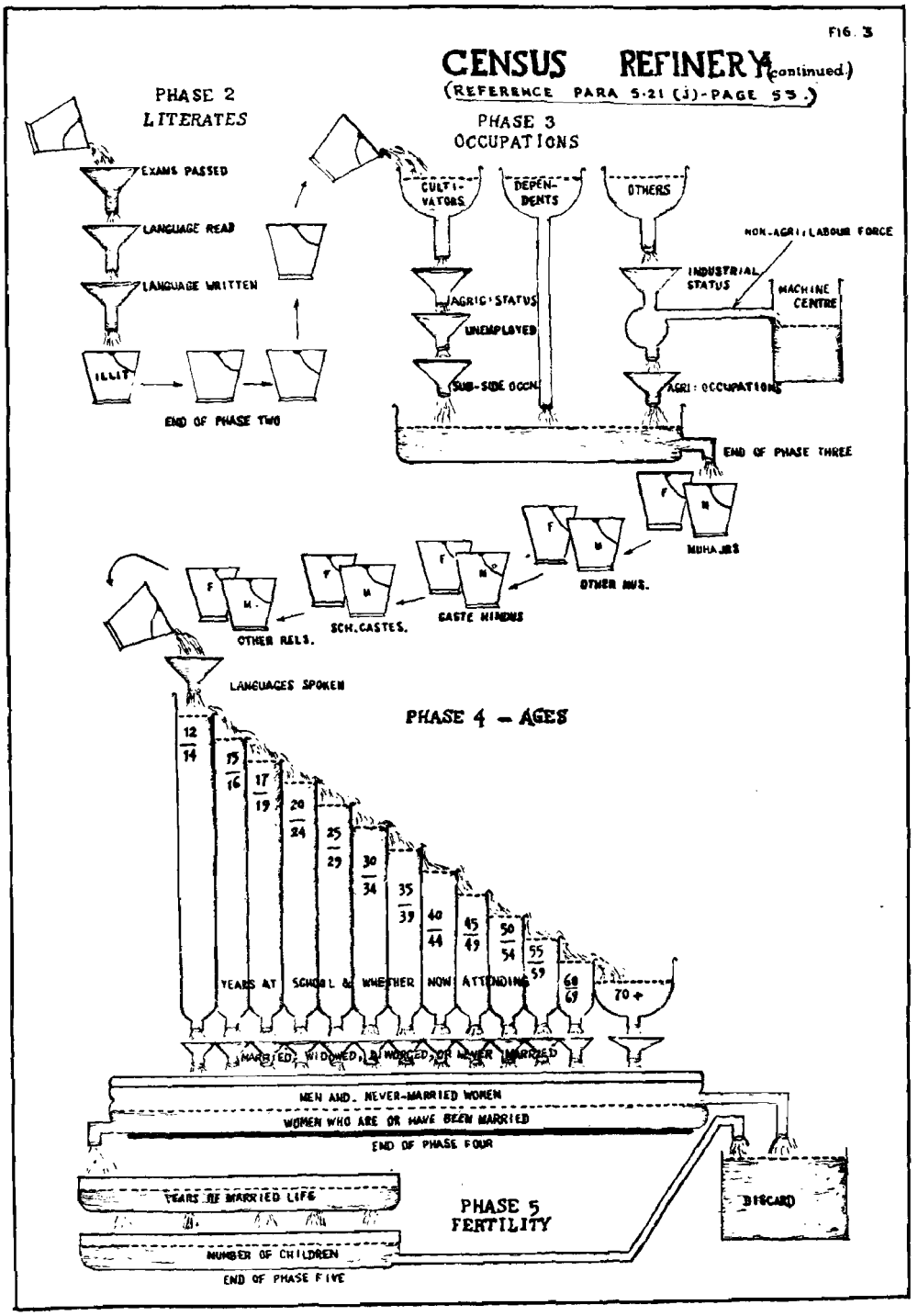
DIRECTION & CONTROL.

FLOW OF SORTERS TICKETS.

FLOW OF SLIPS OF N A L F & CITIES.

FLOW OF DRAFT TABLES.


SLIPS FROM DISTRICTS
FIG. 3
CENSUS REFINERY
AN ANALOGY REPRESENTING THE FLOW OF SLIPS THROUGH HAND SORTING CENTRES
(REFERENCE PARA 5-21 (j) - PAGE 53.)
PHASE 1-A
BLOCK SORT
BLOCK SORT
M
F
MUHAJIRS
PHASE 2-B
CIRCLE SORT
PHASE 1-B
MUHAJIRS
ORIGIN
BIRTH PLACE
MOTHER TONGUE
MODE
NATIONALITY
FOREIGNERS GO OUT & PAKISTANIS ABROAD ARE COPIED
BIRTH PLACE
MOTHER TONGUE
RELIGION
MUS.
C/N
S/C
OTHERS
PHASE SIX (IN KARACHI CENTRE)
COUNTRIES
ACTIVITIES
LITERACY
LITERACY
CHILDREN
DEPENDENTS
CULTIVATORS
OTHERS
LIT
EXAMS PASSED
LANGUAGES READ
PHASE 1-C
CHILDREN SORT
ILLIT
LANGUAGES WRITTEN
LANGUAGES SPOKEN
AGE GROUPS & ORPHANS
1-4
5-9
10-14
WHETHER NOW AT SCHOOL
MONTHS OLD
YEAR SPENT IN EDUCATION
END OF PHASE ONE
DIS CARD


FIG. 3
CENSUS REFINERY (continued)
(REFERENCE PARA 5.21 (J)-PAGE 55.)
PHASE 2
LITERATES
EXAMS PASSED
LANGUAGE READ
LANGUAGE WRITTEN
ILLIT
END OF PHASE TWO
PHASE 3
OCCUPATIONS
CULTI-VATORS
DEPEN-DENTS
OTHERS
NON-AGRI: LABOUR FORCE
INDUSTRIAL STATUS
MACHINE CENTRE
AGRIC: STATUS
UNEMPLOYED
SUB-SIDE OCCN.
AGRI: OCCUPATIONS
END OF PHASE THREE
F
M
MUHA.RS
OTHER INS.
CASTE HINDUS
SCH.CASTES.
OTHER RELS.
LANGUAGES SPOKEN
PHASE 4 – AGES
12/14
15/16
17/19
20/24
25/29
30/34
35/39
40/44
45/49
50/54
55/59
60/69
70+
YEARS AT SCHOOL & WHETHER NOW ATTENDING
MARRIED, WIDOWED, DIVORCED, OR NEVER MARRIED
MEN AND NEVER-MARRIED WOMEN
WOMEN WHO ARE OR HAVE BEEN MARRIED
END OF PHASE FOUR
YEARS OF MARRIED LIFE
NUMBER OF CHILDREN
PHASE 5
FERTILITY
DISCARD
END OF PHASE FIVE