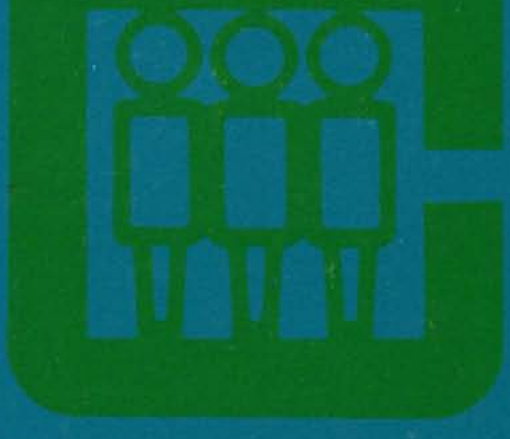
Hong Kong Population and Housing Census

1971 Technical Report



Census and Statistics Department

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FOREWORD

This volume is the last major publication in the series of reports on the 1971 Hong Kong Population and Housing Census. Now that the results of the Census have been made available to the public in detail, it is appropriate to take a look at the actual mechanics of how the Census was taken, whether the organisation worked satisfactorily, and whether the experience of the 1971 Census can supply any guidelines for Hong Kong census-takers in the future.

The first chapter of this volume contains an historical account of census taking in Hong Kong; the report on the 1931 Census contained a similar section. While the nineteenth century censuses, and even those of the pre-war period, are chiefly of historical interest to the modern census-taker, the debt of the 1971 Census to that of 1961 must be fully acknowledged. As mentioned in the text, Mr. K.M.A. Barnett was the first of Hong Kong's modern Census Commissioners, and had to create from scratch a complete organisation, because no one remembered the 1931 Census, and only a few persons were available who had taken part in the 1941 wardens' census. The difficulties of setting up a complete geographical organisation, to cover every corner of a territory such as Hong Kong, were immense. In addition, however, Mr. Barnett brought his considerable scholarship and wide knowledge of Chinese language and custom to bear on the difficult problems of Hong Kong Census definitions and classifications. This is particularly evident in the classifications of place of origin and usual language specially devised for the Hong Kong Chinese population, which were used almost without amendment in the 1971 Census. The results of the 1961 Census were published only eighteen months after the enumeration.

After taking the 1966 By-Census, Mr. Barnett went on in 1967 to establish what was in effect Hong Kong's first Department of Census & Statistics, which brought together, at that time, the very scarce skills of Hong Kong's demographers and economic statisticians. With this new organisation as a base, Mr. Barnett laid the foundations of the 1971 Census. As mentioned in Chapter 2 of this report, he secured the most up-to-date advice from the United Nations, ECAFE Secretariat and before handing over to his successor in January 1970, took the basic decisions on the main topics to be included in the census and on the computer processing of the census results. His learning and dedication therefore contributed a great deal towards the planning of the 1971 Census.

It is extremely difficult, in a large and manifold operation such as a decennial population census, to give adequate acknowledgement to the many people who contributed towards its eventual realisation. As mentioned in Chapter 2, considerable help was given by members of working parties and an advisory panel of experts and scholars in framing the population and housing census questions.

The actual census team, briefly mentioned in Chapter 2, was led by Mr. M.C. Morgan, Senior Administrative Officer, who was appointed Assistant Commissioner in charge of the Census & Social Statistics Division in September 1969. His drive and leadership were mainly responsible for the successful carrying out of the many census tasks, and the co-ordination of the field work with the statistical planning and data processing. The statistical section was headed by Mr. Benjamin MOK Ni-hung, Senior Statistician, who successfully combined a demographic training and experience in the 1961 Census with the new techniques of computer data processing. He was thus the ideal person to head the statistics section and to liaise with the government computer centre. Mr. Joseph LEE Man-kong, Statistician, had received advanced training in demography and census techniques and among other assignments, worked out the system of imputation described in Chapter 8. Miss LAM Chow-lo, Statistician, was responsible for devising most of the codes described in Chapter 3, and the tabulation plan. The head of the administrative section Mr. O.K. Dallah, Senior Executive Officer, and his assistant, Mr. R.M. Omar, Executive Officer, were able, with their experience of the 1961 and 1966 censuses, to resolve all problems of recruitment, training, payment and deployment of some 21,000 temporary staff described in Chapter 5, as well as organising the accommodation, stores, finance and publicity described in Chapter 6. The unfailing support of Mr. S. Young, Government Printer, and Mr. R.K. Cheng, Assistant Government Printer, enabled dead-lines to be met.

The field and geographical section was headed by Mr. HUI Yip-keng, area superintendent, supported by Assistant Area Superintendents Messrs. F.H. Kikabhoy, E. CHIN Man, YIP Lam-sang, HO Chok-nam and CHEUNG Tat-pang. They, together with the 40 district supervisors, were responsible for the detailed geographical work described in Chapter 4, as well as the selection and training of the 941 chief enumerators, 1913 field editors and 18,405 enumerators described in Chapter 5, and the actual enumeration described in Chapter 7. It is regretted that space forbids the listing by name of the large number of

people who left their usual jobs or school work to take part in the census enumeration. The 1971 Census results are a tribute to their hard work and efforts.

Chapters 8, 9 and 10 of this volume describe the data processing of the census results by the Hong Kong government computer, without which it would have been impossible to produce the detailed cross-tabulations. The support of Mr. G.B. Thompson, the government data processing advisor, was of crucial importance, particularly during the initial planning period when the adoption of the UDT form and the enhancement of the government computer were being discussed. Assistance from International Computer Limited was necessary throughout the census data processing work, in which the new ICL FILAN language was used for the first time; Mr. J. McCloud of ICL wrote the program for the First Pilot Land Census while Mr. Stephen LAU Ka-man was a permanent member of the Census Data Processing Committee from 1969 onwards. The government census systems analyst was Mr. Bill POON Pak-wai and the census programmers Mr. John TSE Si-yin, Miss YU Po-kwan, Mr. LAW Kui-leung and Mr. LI Yan-pak. During the actual data processing period, Mr. W. McDonald, Computer Manager, Mr. Joseph CHAN, computer room supervisor, and their staff spent long hours on census work. Mr. Joseph LEE, Miss LAM Chow-lo and Miss YU Po-kwan played an important role in the data input phase.

The writing of this report was again a joint effort. The original plan was drawn up by Mr. M.C. Morgan before his departure in January 1972. Miss LAM Chow-lo wrote Chapters 1 and 3. Additional research on the early censuses was undertaken by Mr. FUNG Yat-kong, Librarian of the department. Mr. R.M. Omar wrote Chapters 2, 5 and 6. Mr. HUI Yip-keng wrote Chapter 4, while Chapter 7 was a joint effort of the five assistant area superintendents. Chapter 9 was a joint effort of Mr. Benjamin MOK and Mr. Joseph LEE who also wrote Chapters 8, 11 and 12. Chapter 10 on the computer operations was written by Mr. Bill POON. Mr. B.V. Williams and Mr. Joseph LEE did the final editing, and Mr. LEONG Moon-cheong, Statistical Officer, was responsible for the appendices and index.

Although description of some of the census operations may appear to be somewhat detailed, it is considered that such an important and large-scale operation as the Hong Kong decennial census should have a permanent written record. It is hoped that this report may be of somewhat more than academic interest to census-takers elsewhere in the world, and to our own successors in 1981.

There is one last point which I must mention. This volume was intended to be a critical account of the operations which it describes. I do not think it is entirely successful in this respect. The records kept at the time and the memories of those who took part do not exactly distort the story but show events only in their best profile. Self evaluation is clearly not easy. I urge readers who find these comments justified to riposte with a better volume.

K. W. J. Topley,

Commissioner for Census and Statistics.

July, 1973

CHAPTER 1

HISTORY OF POPULATION CENSUSES IN HONG KONG

1.1 Introduction

This historical section raises almost as many questions as it settles. This is not so much a piece of criticism as a suggestion that competent researchers may find opportunity to further develop the themes which could only be broached in this volume.

1.2 Early Censuses 1841–1876

The history of censuses in Hong Kong can be traced back to the very early days of Hong Kong. The result of the earliest count on record was published in the Government Gazette of May 15th, 1841, which showed the "Original Gazetteer and Census" population of the various villages of Hong Kong Island to be 7,450.

In 1844, a registration ordinance was introduced "to secure tranquillity and good order in the Colony ..... and to prevent the resort thereto of abandoned characters and of persons without any ostensible means of subsistence". However, according to the Historical Survey in the 1931 Census Report, owing to opposition from "the better elements of the population", the bill had to be modified so that it "applied the principle of registration only to the poorest classes". Under this ordinance, the Registrar General (who in 1913 was retitled Secretary for Chinese Affairs) was authorised to conduct a periodic census by the householder method, "the said Registrar General ..... shall, when and so often as he may be directed by the Governor-in-Council, cause to be delivered or left at the residence or place of business of any householder, a blank return to be filled up before a certain day to be therein named with the names and number of persons in his employment or residing within his or their house ..... and shall ..... describe the sex, country and occupation of every person so resident." New registration and census ordinances were promulgated in 1846, 1857 and 1858.

Under these ordinances, from 1844 to 1867, a "Census of Hong Kong on December 31" was published annually in the Gazette. The results were tabulated by racial composition, adults and children by sex. Figures of the floating population on different types of vessel in the various harbours and bays were also published, together with a classification of public and private buildings and shops by trade in Victoria and the villages on the Island.

The population increased considerably during the Taiping Rebellion period from 1850 to 1864. In 1851, it was 32,983. Kowloon was included as a subdistrict after its cession in 1861, bringing the total population to 119,320.

The 1864 figures were accompanied by a short report from the Registrar General, the first census report to be published. This mentioned that as in previous years, no return had been made of "street coolies" but an estimate of 2,000 had been added to cover "persons living in matsheds or with no fixed dwelling place." The 1866 Census results showed a decrease in population which was probably caused by the depression of trade and the uncertainty felt by the Chinese over the new Victoria Registration Ordinance 1866, introduced to record all households in the City. In that year educational returns by type of school were published for the first time.

In the Report for 1867, the Registrar General pointed out that it was impossible to show the real population from the census returns when the census was taken on December 31. "It will be remembered, too, that the Festival of the New Year fell much earlier than usual, and thus, having a good reason for visiting their native places, the Chinese residents seized opportunity of going home, thereby reaping the double advantages of performing an almost sacred duty and being absent from Hong Kong when the provisions of the new Ordinances (relating to registration and sanitation) were to be carried into effect. ..... But as year by year, uninfluenced by local causes, the Chinese do leave the Colony at Christmas time to spend their own nearly approaching festive season in their own country, it is impossible to compile census returns, showing the real population of Hong Kong at that time. I would suggest the easy remedy of postponing the Census which would in due course be taken at the end of December 1868 to June 1869." This was in fact done, and the 1869 Census was taken on 1st June.

No census was taken in 1870 and only three censuses took place during the 1870s. The census for 1870–71 took place on 2nd April 1871 when these returns were "required to complete the decennial census which will be taken on April 2nd throughout the Queen's Dominions." The total population was

124,198. The occupations of the population, as well as the religions and age-groups of other Asian residents and Europeans were included for the first time. In 1872 when a new Registrar General was appointed, the census was taken on 1st December. The total population (including military and naval establishments) decreased due to "the withdrawal of the Native Regiment, and by there having been no large Men-of-war in the Harbour on the 1st December." The next census was on 4th Dec. 1876, when the population increased to 139,144, mainly due to further development in Kowloon.

1.3 The 1881 Census

The first Census Ordinance under this specific title was published on 14th March 1881. Its main provisions were :

" – Notice of the intention to take such census, and of the date of such intended taking, shall be published in the Gazette at least ten days previously.

– Schedules shall be prepared, under the direction of the Governor, for the purpose of being filled up by or on behalf of the several occupants of every dwelling house or place of residence in the Colony, and by or on behalf of the persons on board every vessel in the waters of the Colony with such particulars as to the Governor-in-Council may seem fit.

– The master or keeper of every school, gaol, prison, hospital, or public or charitable institution, and the manager of every dock, factory, or place employing over twenty persons, and the proprietor or manager of every hotel, and the master or person in charge of every vessel lying within the waters of this Colony shall be the enumerators of the inmates thereof or the persons residing therein.

– Every person who, without lawful excuse, wilfully refuses or neglects –

(a) to fill up and sign, according to the truth of the case, or to alter or amend in any particular, if required to do so by the enumerator, any schedule so left at his house or place of residence; or

(b) to deliver the same to the enumerator or other officer when required to do so; or

(c) to furnish information to any enumerator or to permit any enumerator to obtain information on board his vessel; or

(d) to answer any such question as aforesaid put to him by any enumerator or other officer;

shall, on summary conviction before a Magistrate, be liable to a penalty not exceeding twenty-five dollars. "

This appears to codify the practice in previous years where the census was carried out by the householder method.

The 1881 census was held on April 3, again in conjunction with the decennial census of the British Dominions. The then Governor, Sir John Pope Hennessy, interpreted the results in a speech in the Legislative Council. The favourable commercial climate was reflected in the increase of more than 20,000 Chinese residents; new occupations and trades such as glass manufacturers, hitherto absent, appeared in the census returns, while Chinese were recorded in occupations such as banker, dentist and barrister at law hitherto entirely European. The population enumerated was 160,420. However, the 1891 Report remarked: "But as, for some reason which I have not been able to discover, five per cent was added in the case of the Chinese residents in Victoria and the villages and ten per cent in the case of the boat population of Victoria to the actual numbers ascertained by the taking of the Census, it is probable that the figures of the 1881 Census are rather in excess of what was the real population than below it."

1.4 The 1891 Census

According to the Registrar General's report, "the date fixed for taking the Census in Great Britain and its dependencies was the 5th of April. As it was known that many of the Chinese resident in Hong Kong would be absent from the Colony during the month of April in order to be present at the worshipping of tombs festival in China (Ching Ming), it was decided to take the Census in Hong Kong on the 30th April. On further enquiries being made, it was found that many of the absentees would not return till May, and it was also ascertained that a large number of Chinese leave the Colony

every year about the end of April and beginning of May to attend a festival in honour of the Queen of Heaven held at a place on the mainland of China called Chik Wan. Under these circumstances the date for taking the Census was again postponed till the evening of the 20th of May, as it was obviously undesirable to take a Census of the people at a time when many of the residents would not be in the Colony."

In view of the very bad sanitary conditions, a survey had been carried out by the district watch force in 1890 to estimate the degree of overcrowding in the City of Victoria. The Registrar General reported: "In order that the figures ascertained by the Census might be compared with those contained in the overcrowding report, the enumerators appointed to enumerate the population of the city of Victoria were instructed to follow the division of the City into 275 blocks, made by the late Surveyor General, for the use of the Committee appointed to inquire into the question of overcrowding and adopted by them in their report, each enumerator being assigned one or more blocks according to the estimated population." This appears to be the first example of the demarcation of census districts in Hong Kong. The final population was given as 221,441.

1.5 The 1897 Census

This Census was taken on the night of the 20th January. The difficulties of the early Hong Kong censuses are graphically described in the technical section of the Report: "The suitability of the date was questioned by some who maintained that it was so near to Chinese New Year's Day, which fell this year on the 2nd February, that the usefulness of the returns would be diminished owing to the custom, prevalent among the Chinese, of returning home for the New Year. ..... The Chinese population fluctuates exceedingly, and is affected one way or another by each one of the numerous festivals observed in China, and it is not easy to decide upon the best occasion for taking a census, but probably the most suitable time is early in the Chinese eleventh moon" (i.e. December).

"In Wanchai there was current a report that all persons born in Hong Kong were to be at once re-vaccinated. ..... In the same district, on the first day on which the schedules were distributed, several women left their homes and ran away to the hill-side at the back of the town..... There was the usual number of persons who thought that they were being served with writs. In many cases it required some persuasion on the part of the enumerator to induce people to take the schedule, and I am afraid that where obstinacy seemed impervious to reason the enumerator was driven to refer rather roughly to the penal clauses of the Census Ordinance. ..... The Registrar General's Office received the assistance of the Chinese press in an endeavour to give as much publicity as possible to the intention of the Government to take a census and to allay the usual suspicions, and I do not well see what more could have been done beyond perhaps making an attempt to reach the people through their children by preparing a brief lecture in Chinese on a census and asking the Chinese teachers of the grant-in-aid schools to explain it to their scholars."

"Victoria itself was divided for census purposes into four blocks. ..... Blocks B and D were enumerated entirely by the Police. In Blocks A and C they enumerated the European, American and other non-Chinese portion of the population and the Chinese living in buildings and tenements occupied by them, whilst the mass of the Chinese population in these two blocks ..... was numbered by 76 Chinese enumerators working directly under the Registrar General, and supervised by six Chief Watchmen. ..... thirteen were District Watchmen, the rest were volunteers. They were paid $4.00 for the work, but it is quite certain that very few, if any, would be willing to do the work again for the same sum. ..... The average number of inhabitants to each section ..... should not be more than 1,250, and no section should have more than 1,600 inhabitants. ..... As the New Year holiday had commenced, a number of teachers of the grant-in-aid schools were able to act as enumerators, but in term-time their assistance cannot be expected."

"The floating population was numbered by the Water Police. ..... More than half the work was completed by the morning....., but when once the boats had begun to move there was naturally more difficulty in discovering those which had not been numbered. To ensure accuracy, the work ought to be completed in one day, and steps taken to intercept boats leaving and entering the harbour." It would thus appear that the boat population were enumerated directly, rather than by the householder method. This in fact applied to many other illiterate sections of the population. "..... it must be remembered that the lower classes are quite unable to fill up the census schedules themselves and that this has to be done for them by the enumerators who have also to re-write a great many schedules which have been incorrectly filled up."

1.6 The 1901 Census

The 1901 Census was again held on the 20th January. A special Census Officer, Mr. P.P.J. Wodehouse, was appointed. : "It was considered advisable to hold it on the same day as in 1897 in order to facilitate the compilation of comparative statistics. In other respects, also, the date was a most suitable one, owing to the fact that Chinese New Year fell on the 19th instead of the 2nd February, as in 1897, and did not therefore I consider, affect the numbers of the normal Chinese population."

"The Census of the City of Victoria was, as on previous occasions, taken by a staff of specially engaged Chinese enumerators under the direction of the Census Officer. The Police were in charge of the Census of the Non-Chinese quarters of the City, the Chinese floating population, the out-lying villages and the Kowloon Peninsula."

"In view of the experience gained in 1897, I decided to adopt the 'double block' system, under which each census block is worked by two enumerators, instead of one, the size of the blocks being correspondingly increased. The two enumerators work together, and not singly. This enables a great deal of time to be saved, as one man can interrogate the inmates of a house, while his companion taken down in writing the information thus obtained. It is also more acceptable to the enumerators, who, in the course of their work, have frequently to intrude on private families, and saves them a certain amount of embarrassment."

"Those portions of the City of Victoria, which were told off to the Registrar General, were divided into 53 double sections, which were designed to contain as nearly as possible about 3,000 persons each. It was a matter of some difficulty mapping out these blocks, as the 1897 ones were more or less useless for the purposes of comparison, but on the whole they turned out very fairly correct. I personally accompanied the Head District Watchman round each block, and ascertained the boundaries, which practically precluded the enumerators from making the mistake of overlapping a neighbouring section, when distributing the schedules."

"Out of 107 Chinese enumerators, 5 were members of the District Watchman Force, the remainder being engaged by the Census Officer. A good many of them had had previous experience of the work in the Census of 1897. Each pair of enumerators was accompanied by a District Watchman in uniform, whose duty it was to see that no houses were overlooked. Nearly the whole of the Force was thus employed. The distribution of schedules commenced on the 17th January, and, with a few exceptions, they were nearly all collected again before the 28th."

"Special preparations were made in the Kowloon Peninsula, in view of the rapid growth of that part of the Colony, and of the inadequacy of the enumerating staff in 1897, six European Police, three Indians and ten Chinese were employed in addition to whom thirteen civilian enumerators were engaged. The Peninsula was divided into 15 sections, with two enumerators to each. The hired enumerators were in every case accompanied either by an Indian or a Chinese Police Constable."

"The work of distributing the schedules was commenced on the 17th January at 7 a.m., and by dint of working eight hours a day, the enumerators succeeded in finishing that task and re-visiting all parts of their districts before the night of the 20th January. The schedules were all collected again by 9 a.m. on the 25th January, which result is most creditable to all concerned. A large number of the schedules left in the outlying villages had to be filled up by the enumerators, and considerable inconvenience and delay was caused by people taking away the papers left at their houses to be filled up elsewhere, and finally not bringing them back to their own homes. In very few instances did the enumerators get back the same schedule which they had originally left at a house, and in one case a schedule delivered at Yaumati was collected at Hok Un."

"The census of the Chinese floating population was taken by the Water Police. It was decided that this should be done in the day time and not at night (as in 1897). The principal objections to the latter course are that it is difficult to distinguish in the darkness which boats have been enumerated and which have not, and that the crews of the various craft have to be roused from their sleep, which causes considerable delay. On the other hand, the fact of the boats being continually on the move presents a serious objection to enumeration in the day time. Steps were taken to overcome this difficulty by stationing launches at each end of the Harbour to prevent boats entering and leaving while the Census was being taken. Several extra launches were engaged, in addition to those of the Water Police, and the work was practically finished in one day."

"A few grant-in-aid school-masters volunteered to act as enumerators. A certain number of them, as well as many professional petition writers, filled up schedules for a small consideration. It is a

question whether the practice should be encouraged or not. It results in the schedules being filled up properly without trouble to the enumerators, but, on the other hand, in the greater number of causes, the schedules are not brought back to the houses at which they were originally left, and considerable confusion and inconvenience results."

The total population recorded was 368,987 including 102,254 in the New Territories which had been leased to Britain from 1st July 1898. The 1901 Census Report included one table on the New Territories population by district and sex only. The 1906 Report mentions that in 1901 in New Kowloon, "a house to house visitation only was made by the Police and the people were not required to fill up schedules." The 1911 Report says of the New Territories enumeration: "These figures, however, are of little value, as there was no census taken in the proper sense of the word ..... I understand that the totals were arrived at by ascertaining the number of houses in a village, and then guessing the average number of occupants of each dwelling."

1.7 The 1906 Census

In 1906, the same Census Officer (Mr. P.P.J. Wodehouse) was appointed as for the 1901 Census. "A partial census of the Colony was taken on the night of Tuesday, 20th November, 1906. The Census was confined to the original Colony of Hong Kong and to that part of the New Territories, called New Kowloon, which lies to the South of the Kowloon Range of hills."

"I adhered to the 'double-block' system, which was so successful in 1901, for the Census of the City of Victoria. Each block was worked by two Chinese enumerators accompanied by a District Watchman in uniform. As I pointed out in 1901, this is a better plan than making the enumerators work singly. It was necessary to make a few alterations in the blocks into which the City was divided in the previous Census, and 7 new ones were added, making a total of 60. All those which contained 3,000 persons and upwards in 1901 were reduced in size so as to allow for the probable increase of population in 5 years, while some of the smaller ones were enlarged. They were designed, as usual, to contain about 3,000 persons, but it is not an easy matter to do this with any degree of accuracy, owing to the changes which take place in the course of 5 years. ..... On the whole, however, the census blocks were of a suitable size, and the largest one only contained 4,800 people. The population of most of them had been over-estimated ....."

It was possible to deal with this large work load since the householder method was used. "120 Chinese enumerators were engaged by me to enumerate the Chinese population of the City of Victoria. ..... Great care was taken that the enumerators were thoroughly acquainted with their sections and between the 3rd and 10th November, they were given their books properly filled up and were shown round the blocks by the District Watchman in charge of each."

"10 European Police Sergeants, 3 European and 13 Chinese Constables enumerated those portions of Victoria, which are inhabited chiefly by Non-Chinese. ..... The European Police Officers were provided with special rough books in which to enter the numbers of the schedules left at each house, and the proper enumerators' books were only used when the schedules were being collected. This supplied a want that had been felt in 1901, and the work was greatly facilitated."

"The Census of the Kowloon Peninsula, the Peak and the Hong Kong village of Aberdeen, Stanley, Pokfulam and Shaukiwan was also taken by the Police. In Old Kowloon the Police were assisted by 10 specially engaged Chinese enumerators. The Sections were the same as those used in 1901. In New Kowloon, which comprises the Police districts of Sham Shui Po and Kowloon City, 5 Chinese enumerators were employed in addition to the Police. The present is the first detailed Census which has been taken of this portion of the Colony."

Regarding the Marine Census, which was taken by the Water Police "I was very much struck by the ready way in which the Chinese boat people gave the information required of them ..... They gave their ages without any hesitation, often volunteering those of the members of the crew who happened to be ashore at the time. It was evident that most of them remembered the previous Census and knew exactly what was required of them."

"Officers, appointed for that purpose by the Commodore-in-charge and the General Officer Commanding the Troops, took the Census of the Naval and Military Establishments."

"The Census of the British and Foreign Mercantile Marine was taken by the Harbour Department. These officers were greatly hindered in their work by the attitude of many of the masters of vessels, who refused to give the enumerators any assistance, and seemed to look upon the Census as a joke."

The total population recorded was 319,803.

1.8 The 1911 Census

Mr. P.P.J. Wodehouse was again appointed Census Officer.

"The decennial Census of the Colony was taken on the night of Saturday, 20th May. A date in the early summer is not so suitable as one in the winter, so far as this Colony is concerned, but there was no alternative on the present occasion as it was necessary for the local Census to take place on a date approximating as early as possible to that fixed for the General Census of the British Empire. The enumerators were considerably hampered by the inclemency of the weather, there being almost continuous rain. In the Kowloon City District operations had to be suspended for a time on account of floods."

"The Census was on a very much more ambitious scale than had ever before been attempted in this Colony, and the work of the Enumerators, and more especially of the tabulating staff, was correspondingly increased. Full particulars were obtained for all the inhabitants of the New Territories and the Floating Population. . . . . Columns recording Religion, Married State, Degree of Education, and Infirmities, were added to the Census Schedule."

"What is known as the Slip System was employed for the first time in this Colony. Schedules are distributed in the usual way, but, after collection, the particulars regarding every individual are copied off on to a separate card, and the latter are then sorted for the various Tables. This system was strongly recommended by the Indian Census Officials, and is certainly superior to the old method of obtaining all the information required by searching through the schedules."

"The particulars about each individual are copied off from the schedules on to small cards. To facilitate the work of tabulation, certain information is conveyed by the colour of or marks on the cards." Four kinds of cards were used for the non-Chinese population and 10 for the Chinese population, five for males and five for females e.g. "white, with blue square on the face of the card, for Chinese males other than Puntis, born in the Province of Kwang Tung."

"The next work is to sort the cards, tie them up into bundles, according to the descriptive marks, and enter the number of cards in each bundle on the back of the top card. The cards for each section must be kept in a separate pigeon-hole. . . . . When the work of tabulation begins, the distinctive marks greatly facilitate the preparation of some of the Tables."

"Shortly before the Census day, arrangements must be made for the enumerators to come up in batches to receive their instructions, be told off to their sections, and (if in Victoria) to meet the District Watchmen who are to accompany them."

It appears that the enumerator method was officially employed for the less educated sections of the population: "Books of Schedules of 25 pages each were used for the Census of the New Territories Floating Population and various rural districts in the Colony. These were filled up on the spot by the Enumerators in the course of a house visit. . . . . but the necessity of making a second visit to every house for the purpose of schedule collecting is done away with. The books are also very much more convenient for card-copying than loose schedules."

"When these books are used, the Census cannot, of course, be completed in a single day. The time taken varies from a couple of days, as in the case of Lamma Island, to 3 months, as in the Northern District of the New Territories. It is impossible to employ any other method for dealing with the Boat Population, as to distribute schedules is out of the question."

The total population was 456,739. "No Census of the Royal Navy or Garrison was taken locally. . . . . The returns from H.M. ships on the Station, and from the local Naval Establishments were sent to England to be included in the Census of the United Kingdom. This was also the case with the British troops in garrison. About half the Indian troops had already been enumerated in India. Returns for the remainder were obtained by me, and sent to the Indian Census Officer, together with a detailed report on the local Indian community."

1.9 The 1921 Census

"The Census of the Colony was taken in the City of Victoria, Shaukiwan and the Kowloon Peninsula (expect Kowloon City) on April 24th; in the New Territories and Hongkong villages between March 24th and April 24th; in the Harbour from April 23rd to April 26th." This census was conducted by the Census Officer, Mr. J.D. Lloyd.

"The date fixed for the Census proved to be very unfortunate :–

(a) In the New Territories the majority of the inhabitants were found to be absent from their houses the whole day long, being busily engaged in preparations for planting the first crop of paddy, and the enumerators experienced considerable difficulty in obtaining the requisite informaton.

(b) In the Island of Hong Kong and the Mainland, large numbers of the Chinese adult male population were absent in their native villages, the date being the middle of the Ching Ming Festival; thus in several middle class residential sections the females were found to equal or exceed the males. The enumerators also reported difficulty in many cases, where all the adult males in a family were absent, in obtaining the necessary information from the females left behind.

The Ching Ming Festival also caused great difficulties in holding together a sufficient number of enumerators, many enumerators who had been appointed and carefully trained, resigned or left the Colony without notice just as the schedules were ready for distribution, and others had to be found and receive hasty instructions at the last moment."

"The schedule adopted was simpler than in 1911, questions as to language, religion and infirmities being omitted. Proposed columns for 'race' and 'industry' were excised from the final draft, hence it was impossible to classify the cosmopolitan non-Chinese population except by nationality, thus Javanese, Malays and Annamites had to be included with Europeans from their respective countries. The omission of the column for 'industry in which employed' has rendered the compilation of the table of occupations extremely laborious and the result not very satisfactory, because the Home classification, which presupposes such a column, was ordered to be used for the first time in the Colony."

"The Census of the City of Victoria, Shaukiwan and Kowloon was taken under my direct supervision, the outlying districts of Hong Kong and Kowloon, the New Territories and the Floating Population by the Police under supervision of an Assistant Superintendent of Police, who was temporarily detached for this duty. The aim kept in view with reference to the part of the work undertaken by the Police, was to relieve them of all work other than supervision. The District Watchmen's Committee kindly placed the bulk of their men at my disposal, and they proved of considerable assistance. Each Chinese Watchman engaged was in charge of two sections: they helped to clear up misunderstandings and keep a check on the enumerators. The Naval and Military authorities kindly co-operated in the distribution and collection of schedules for civilians living in quarters under their control."

"Advance copies of the English and Chinese schedules were forwarded to all Government and grant-in-aid schools and the largest of the Chinese private vernacular schools, and the co-operation of the masters was solicited in explaining to their pupils the objects of the Census and the correct methods of completing the schedules. Advance copies were also forwarded to all the newspapers, and during the week immediately preceding the Census, general instructions were widely advertised in the English and Chinese Press."

"For tabulation the slip system was again used, but before the next census it will be necessary to consider whether the use of tabulating machinery would be justified, if the population increases at anything like the present rate: otherwise a large number of clerks will be required, who will need a large amount of office accommodation, and may be difficult to recruit at a reasonable wage if employment happens to be good at the time."

"Careful instructions were given to the enumerators to serve a schedule on every cubicle in separate occupation; whole families would probably be omitted if this instruction were not complied with, since the tenant of the whole flat would not bother about getting the details from the subtenants of the separate cubicles. ..... the prevalence of a wide-spread belief amongst Chinese women of the middle and lower classes in the alleged inhuman designs of the Public Works Department on infantile life undoubtedly affected the number of children of both sexes recorded between the ages of 4 and 10. The rumour referred to is in short that the Government intended to build a huge bridge across the harbour to Kowloon resting on 99 piers, and that a certain number of young children of both sexes were required to be buried alive under the foundations of each pier in order to ensure its stability. ..... The rumour however quickly vanished under the outspoken comments of the enlightened Chinese Press, and the enumerators found no difficulty in collecting the schedules. However the figures are suggestive that many young children were not recorded; ..... the increase of children being less than that of women of child-bearing age."

In the New Territories "the enumerators obtained the required information direct from the heads of each household and themselves entered it in specially prepared books of convenient size."

"The age tables have been adjusted to the European method of reckoning, but it is probable that some Chinese gave the age of children of one year according to the English method; this would make the adjusted figures for under one year slightly too high, and those for under two slightly too low."

"The system on which occupations have been classified is far more elaborate than that used in 1911, and is based on the method of classification as revised for the 1921 Census of the United Kingdom. The number of separate entries has been increased from 146 to 475. Though in the instructions printed on the back of the schedule a special warning was given against inaccurate and vague descriptions of occupation, a large number contented themselves with describing their occupation as 'work' 'business' 'manager' 'shop-assistant' 'coolie' 'artisan' 'apprentice' etc."

The usual difficulties arose in the Marine Census: "uniform marking of each kind of craft when dealt with is also very important. A good deal of time was wasted because enumerators could not tell at a glance if a particular vessel had been enumerated."

"No attempt was made to enumerate the persons on board sea going ships in the harbour. As Hong Kong is only a port of call for a large number, their stay in port is short, and the addition of the crews and passengers to the figures gives a purely fictitious additon to the population, while the expense and difficulty of boarding each individual ship on the Sunday afternoon throughout this extensive harbour make the task not worthwhile attempting, when the figures for the crews can be obtained from the Harbour Office records without any trouble and expense."

The total population was given as 625,166. The Census Officer estimated that the normal population might be greater than the figures of the Census by 30,000 due to temporary absence, "but at no time were there any grounds for holding the opinion that the population was in the neighbourhood of one million, as was at one time alleged."

1.10 The 1931 Census

This Census was held on 7th March 1931. The Census Report contained 2 Historical Survey of Censuses in Hong Kong.

"A new Ordinance, No. 4 of 1931, based on the Census Act of 1920, was accordingly passed by Legislative Council on February 5, 1931. Regulations were made by the Governor-in-Council under Section 3 of the Ordinance, and a Census Order, directing that a Census should be taken on March 7, 1931, was issued on February 12, 1931."

"In previous censuses in Hong Kong, the Householder Method was mainly adopted with a post-census addition of the Canvasser Method ..... An attempt was made to fill in the gaps left by the illiterate by having the schedules filled in by the enumerators when collecting them." Because of this, "previous censuses have been carried out in Hong Kong with roughly one-third of the number of enumerators which other Colonies would require for similar numbers."

In 1931, the enumerator and two-visit method was first adopted "the method of having a preliminary census followed by a rapid revision on the morning after Census Night ..... The enumerator could, during the preliminary period ..... enter at his leisure particulars of the persons likely to be in his 'block' on the census date."

"In dividing up the city of Victoria, Kowloon Peninsula and other parts of the Colony into enumeration blocks or sections, the aim was that no block should contain more than 600 persons to be enumerated by one enumerator ....., and a Chief Enumerator of Supervisor was appointed on an average to every 35 blocks in Hong Kong Island and 45 blocks in Kowloon. Similarly in the New Territories where the work supervision was done by the police, there were 191 enumerator areas in the Northern District and 81 in the Southern District. In all cases the enumerators were appointed to blocks as near to their homes as possible; in many cases they enumerated the building in which they themselves lived."

"It was not possible completely to carry out in the New Territories the system of a preliminary canvass followed by a final revision, because some places are so inaccessible that one visit only could be made by launch."

"The Census of the Population Afloat was carried out by the Chief Junk Inspector and 11 Chief Enumerators. 302 Enumerators were appointed ..... Each vessel, when enumerated, received a slip bearing a large red C which was pasted on a conspicuous part of the vessel to show that particulars of the occupants had been taken. This method was considered better than the white cross painted on the vessel on previous occasions, as being less easily copied."

"Some time before the Census Date an attempt was made to interest the population of the Colony in the purposes and methods of the Census by a series of articles in the Press ..... Copies of this article together with specimen copies of the census forms were forwarded to all the schools in the Colony."

"Mechanical tabulation was not adopted in Hong Kong for two reasons. The machines are very costly and the expense would not have been justified in the present state of the finances of the Colony for the comparatively small number of people to be enumerated. Moreover, though the machines are errorless, it was considered that the possible errors in coding and punching the cards by local temporary staff would be very numerous."

"In default, then, of the expensive machinery necessary for code-punching and electrical sorting, the Hong Kong census statistics have been arrived at by hand sorting of cards, on to which the information from the schedules had been transferred by differences in colour, differences in shape, by transcription, by abbreviation and by code numbers. Race was determined by the colour of the card. Sex was similarly determined by having the top right-hand corner cut off in the case of all females. Races were denoted by using cards of the following colours:– White – Chinese; Pink – Europeans, Green – Indians; Blue – Local Portuguese; Yellow – Eurasians; Orange – Japanese; Red – All other races."

The total population recorded was 840,473.

1.11 The 1941 Census

"A census of the Island of Hong Kong and the mainland (not including the New Territories) was taken on the nights of 13th/14th and 14th/15th March, 1941." The object was "to ascertain the approximate number of people for whom, in the event of an emergency arising, it was necessary to provide food and protection. The Hong Kong Corps of Air Raid Wardens was entrusted with this work." The census was organized by Mr. C.T. Bailey, who was attached to A.R.P. Headquarters.

" 'A count of heads' would probably be a more accurate term than 'census', as the information sought was limited to :–

(a) The name of the principal tenant.

(b) The number of persons who would normally be sleeping on the premises on the night the enumerator called; divided into age groups – one to nine years old; ten to sixty years old; sixty-one years old and over.

(c) The number of each race.

Heads of Departments submitted returns for Government Quarters, protected areas, etc., which were inaccessible to Wardens. The number of persons in the various refugee camps was supplied by the Medical Department."

"No endeavour was made to include in the count persons sleeping on junks, etc. moored in bays and harbours on the Island or mainland coast, but the Harbour Master supplied figures compiled from the number of vessels."

"For the purpose of the census the Colony was divided into groups of three A.R.P. Sectors..... Three Sectors (nine to eighteen Wardens) were under command of a Group Warden or his Deputy. ..... The total number of Wardens taking part in the count was 3,061..... Owing to the obvious difficulty in visiting some of the more remote villages ..... after dark, the census in these places was taken during daylight on 8th and 9th March, 1941. Information with regard to the population in some of the other outlying villages was obtained from the elders of the villages."

"At approximately 5.30 p.m. on 13th March, the actual count began and continued until 11.30 p.m. Wardens usually worked in twos or threes, all entering a house together and one going to each floor. At 11.30 p.m. house visits ceased and Wardens proceeded to count sleepers in the streets, on stairways and on roofs. Here they merely counted heads and did not discriminate between age groups or race, although it may be taken that all were Chinese. On the night of 14th March, work again commenced at about 5.30 p.m. and many Divisions completed their count by midnight."

"In some of the more congested Divisions, ... it was necessary to continue for a third night but everywhere the count was completed on the night of 15th March – this with the exception of a few isolated houses, where it had been impossible to gain admittance on account of refusal, absence of tenants, etc. These latter necessitated special calls at a later date by selected Wardens."

"The figure, amounting to a total of 1,444,337. ..... No count was made in the New Territories. A rough estimate of the population of these areas ..... would bring the total population of the whole Colony to a figure of about 1,640,000."

1.12 The period 1941 – 1961

At the end of the War in 1945, the population was estimated at 600,000. With the restoration of normal administration by 1946 it was estimated to have attained its pre-war figure of 1.6 million.

In 1947, a Department of Statistics was set up and plans were developed to hold a population census in November 1948, but because of fluctuations in the population resulting from political developments in China, the census was first postponed to 1950 and then cancelled. Instead, the Department took up the task of registering all persons of the age of 12 and over, and the Government Statistician was gazetted as Commissioner of Registration. The registration branch of the Department later became the Registration of Persons Office. Registration work began in 1949 and was completed in September 1951, with a total of 1,627,608. The total estimated population in 1951 was 2,015,300.

The Statistics Department disbanded in 1952; in its place a statistical branch was set up in the Commerce & Industry Department.

1.13 The 1961 Census

In 1959, it was decided that a population census should be held in 1961, as it was realised that the information on Hong Kong's population was becoming more and more uncertain. The year 1961 was set as it continued (albeit with a 30 year gap) the decennial series and, further more, it matched general practice elsewhere. As a consequence of this decision, a separate Census Department was set up with Mr. K.M.A. Barnett as Commissioner; and a new Ordinance No. 2 of 1960 was enacted to replace the 1931 Ordinance. Certain changes and improvements were incorporated in the New Ordinance, for the ease of administration. For example, whereas the 1931 Ordinance had required the making of detailed regulations by the Governor-in-Council for each census, in the new legislation all legal census requirements were incorporated into the ordinance, and subject to a census order, the Commissioner for Census was empowered "to make such arrangements and to do all things as are necessary for the taking of a Census."

Based on the experience of previous censuses, the date selected was the 7th March 1961 for the Land Census, and 11th February 1961 (Chinese New Year) for the Marine Census. The holding of the Marine Census at a separate date when all boats were likely to be in harbour for the festival was an innovation, as was the use of aerial photographs from helicopters as a check of the coverage.

A further new feature was the holding of pilot marine and land censuses, the first in January 1960 and the second in October 1960. "Pilot or trial censuses had not previously been held in Hong Kong, but modern technique considers them advisable. In Hong Kong there had been no census for 30 years and no staff were available with experience at a responsible level of any previous census, which made a pilot census imperative. Such a census would serve primarily as a large scale test of the organization, but if carefully planned could also provide a good estimate of the total population and of its main characteristics."

Since this was the first census for 30 years, existing house lists and maps compiled by other government departments had to be completed, checked on the ground and brought up-to-date. The whole of Hong Kong was divided into 10 census areas, which in turn were divided into 49 land districts based on town planning boundaries, and 14 marine districts following those used by the Marine Department. "The districts were further divided into divisions, and the divisions into blocks; each division being the responsibility of one chief enumerator and each block that of one enumerator ..... it is safe to plan for an average of 300 and a maximum of 450 persons per enumerator, and for an average of 20 and a maximum of 25 enumerators per chief enumerator."

"It was decided to ask the University, the post-secondary colleges, training colleges and secondary schools to recommend such members of their staff and students (in the case of secondary schools from the two top forms) as were willing and considered suitable. Those candidates thought suitable for training as chief enumerators were formed into classes, with a liberal allowance for failure, and put through a ten-period course of instruction, followed by a test. Those successful were called upon to officiate as enumerators in one or other of the pilot censuses. If satisfactory they were then enrolled as chief enumerators in the main land or marine census, and the pick of them were also invited to instruct classes of enumerators."

As regards census topics, new topics not included in previous censuses were as follows :–

- Type and tenure of accommodation
- Place of origin
- Usual language
- Number of children living
- Educational attainment (in school levels)
- Employment status, industry, and occupation were asked in more detail than in previous censuses and the codings were based on modified international standard classification
- for farmers, land tenure and principal crop
- for fishermen, method of fishing

As in 1931, the enumerator method was employed, because "in Hong Kong, it is not feasible to compile a comprehensive pre-census list of householders." Once again, the two-visit method of enumerator was adopted. "Finally, at a reasonably early hour on Census morning, or soon after the evening meal time on the evening before, the enumerator must make a quick check of all his households to verify, by the evidence of his own eyes if possible, that all those whose particulars he had recorded were at home on Census night. Those newly moved in were asked for their identity card numbers and last previous address, and the exact moment of any birth and death which had occurred during the enumeration period had to be noted." For those who had moved during the enumeration period, tracing forms were completed to be checked against their former residence for duplication.

"For some sections of the population, for whom a two-visit enumeration was impracticable, the census had to be planned on a single visit basis, requiring more enumerators. These sections included the boat people, lodging-house dwellers and street sleepers."

As regards data processing: "In Hong Kong there is no permanent organization to process vital statistics, apart from the registration of births and deaths. It was therefore necessary to complete the processing during the lifetime of the Census Department which was set at 30th April 1962. This could be done only by mechanical tabulation. The task did not seem large enough to justify hiring (and training special staff for) the most modern high-speed electronic equipment, and it was decided to use column punched cards and counting sorters."

"To lessen the time lag between collecting the data and beginning to process it, it was decided to use mark sensing. This is a system of marking cards by a special pencil in such a way that the punching machine can sense the marks (by electrically conductive brushes) and translate the marks into a predetermined pattern of punched holes, after which the punched cards are fed into the sorter-counter machines as usual."

"The process of card marking in the field was combined with a complete check of schedules. This was done by each enumerator exchanging his completed schedules with those of another enumerator. . . . ."

Intensive publicity by talks, pamphlets, booklets for schools, films, radio programmes and television was carried out.

Again for the first time, a post-enumeration check was carried out on 8th & 9th April 1961 for both land and marine. A sample of slightly over 0.5% stratified by census area was checked for age, sex and inclusion in the main censuses. The total population recorded was 3,129,648.

1.14 The 1966 By-Census

The Census Department was disbanded in 1962 and the work of preparing population projections was taken over by the statistical branch of the Commerce & Industry Department. In 1963, Mr. Barnett was appointed Commissioner for Census & Statistical Planning in an Office forming part of the Colonial Secretariat, with the task of preparing a report on the future development of statistics in Hong Kong. In 1965, it was decided that a by-census should be conducted in 1966, and that this should be undertaken by the Census & Statistical Planning Office.

The By-Census was conducted by a two-stage stratified random sample using the 1961 geographical divisions updated where necessary. "Within each census district census divisions were listed in the same order as 1961, new divisions being added at the end of each district. Within each division, enumerator blocks were listed in the same order as for the 1961 Census, additional blocks again being put at the end. From this list the primary sampling units of the land census (enumerator blocks) were drawn as a 5% random sample stratified by districts. . . . . The second stage sample was, for all blocks in the ordinary enumeration, a 20% linear sample with random entry point . . . . . As the primary sample was 5% of the enumerator blocks and all the households in this 5% primary sample constituted the frame for the secondary sample, the final sampling fraction was expected to approximate 1%."

"Sampling at the enumeration stage made it necessary to use high quality enumerators and by the kind co-operation of the Education Department nearly all of these were found from the three Teachers' Training Colleges. In order to avoid cutting into the curriculum of the Colleges, a date had to be found in the early part of the summer vacation. . . . . "

The marine census was held on 22nd June. "Since Dragon Boat day fell on 23rd June, it was decided to end the enumeration period on the afternoon preceding that day" (when all boats would be in port). The land census was held on the 2nd August. It was recognised that a summer census might be dislocated by a typhoon. "To deal with this possibility it was decided to increase the enumeration period for the boat census by 1½ days and that for the land census by 5 days."

Training of enumerators, organization of field work and publicity were similar to 1961.

As regards topics, "In view of the impossibility of isolating small fractions of the population in a 5% or smaller sample, certain of the 1961 questions were simplified or omitted. At the same time opportunity was taken to try out new methods of putting certain of the questions, and of introducing new topics." These were :

- Type of household (i.e. domestic or collective)
- Economic status in household
- Number of children ever born

"The land census was divided into three distinct operations . . . . . On his first visit the enumerator had to identify every household residing in his block, list them in a predetermined order . . . . . and deliver to the head of each household one card containing four questions to be answered in writing and collected on a subsequent visit. . . . . " These four questions, to be answered on a voluntary basis, were :–

- Have you heard about this By-Census ?
- If yes, from which of the following sources ?
- What is the total income of the household ?
- A list of all members of the household by sex and age by Chinese reckoning

"On completing the first round of visits the enumerator submitted his Record Book (with the household column completed) to his Chief Enumerator for the second stage sample to be drawn . . . . . "On receiving back his Record Book the enumerator then began his second round of visits, making a complete enumeration of every person in the households marked for sampling. Substitution was not permitted. At the same time he collected back, from the 80% of households outside the secondary sample, the completed household cards.

"On the morning of 2nd August, 1966 the enumerator made his final visit to the sample households to update the details already recorded on the schedule, and to collect back the rest of the household cards."

1.15 Conclusion

In the very early days, the priority for census taking was only a count of numbers by race and sex in broad age groups, and the techniques adopted were informed by this. However, the development of the Colony and the growth of its population gave rise to increasing demands for more detailed statistics about the people of the place and the effect of this may be seen in the development of the nature of the questions asked and of the techniques for obtaining, analysing and recording the answers.

The householder method was employed in Hong Kong right up to 1931; this fitted in (certainly in the early stages) with the simple nature of the censuses but even so there must have been considerable difficulties in relation to the level of education of much of the population. Be that as it may, it is apparent from the census reports over the years that, as the census questionnaire became more detailed, there was an increasing need for many of the household schedules to be completed by the enumerators who collected them. Finally, in order to secure accurate and acceptable data, the canvasser (or enumerator) method was introduced for the 1931 Census, and this was continued in the post-war censuses taken in 1961 and 1966. After a lapse of 30 years due to the War and its aftermath, the 1961 Census, although it required the building of a completely new organisation, followed the same approach as the 1931 Census, except for a much more detailed census questionnaire to meet the demands of government and private organisations for more information about the population. The mechanical tabulation of census results was also adopted for the first time in Hong Kong; this enabled extensive cross-tabulations not possible in the early censuses to be produced. The 1971 Census was built on the experience acquired in 1961.

CHAPTER 2

PLANNING OF THE CENSUS

2.1 The Census & Statistics Department

In early 1967, the staff of the Census & Statistical Planning Office consisted of the Commissioner for Census & Statistical Planning and a statistician for population projections, life tables and vital statistics, together with supporting clerical staff. In June 1967, a reticulation unit was re-established as part of this office, consisting of one assistant area superintendent and eight district supervisors who had previous experience of this work in 1961 and 1966. Their duties were to maintain permanent maps and records and to undertake house-listing for the 1971 Census.

The Census & Statistics Department was established on the 4th December 1967, by combining the Census & Statistical Planning Office with the Trade Statistics Branch of the Commerce & Industry Department. With the establishment of this new department, a nucleus of statistical staff were available for planning the 1971 Census.

In November 1967, an ECAFE Seminar held in Bangkok on the organisation and conduct of population and housing censuses was attended by the Commissioner and Deputy Commissioner (designate) for Census & Statistics. This proved of substantial value for the planning of census work.

2.2 Method of data processing

An initial decision was that the 1971 Census should, as in 1961, be a 100% count taken by the enumerator method. This immediately led to the question of what method of data processing should be used.

In the 1961 Census, the original data was first entered by the enumerators on schedules, and later transcribed by them on to mark-sensed Hollerith cards using special pencils. The mark-sensed cards were automatically punched from the electrically conductive pencil marks recorded in the designated places on the cards. The census tables were then compiled manually by sorting the specific columns of the cards in a counter-sorter. In the 1966 By-Census, which was taken on a sample basis only, the data from the enumerators' schedules was punched manually on to Hollerith cards and verified in the normal way. Tabulations were again made by counter-sorter.

For the 1971 Census, it was considered that the ICL 1902 computer recently ordered by the Hong Kong Government should be used, as this was the fastest and most accurate means of processing a large volume of data. It would also make possible the production of census tabulations in more detail. This decision was important because it dictated the manner in which the Census would be carried out.

As an adjunct to the computer, the Hong Kong Government had ordered as an input device a universal document transport (UDT), a light scanning device which read pencil bar marks on a specially designed form (see Chapter 9). This UDT had been ordered primarily to deal with the automatic marking of large numbers of public examination papers. The candidates for these examinations marked their answers on multiple-choice answer forms which were then read into the computer through the UDT and automatically corrected.

In view of the large number of enumerators required, it was anticipated that the majority of them would have to be pupils from the upper forms of secondary schools. By 1971, these pupils would all be accustomed to using UDT forms in their examinations, and it would then be feasible to mark the census data direct on to UDT forms for direct input through the document reader. This proposal had important effects on the organisation of the field enumeration and the data processing of the 1971 Census.

2.3 Census topics

A further constraint which arose from the proposal to use the document reader was that the UDT forms containing the census questions required a year to print. Before the form design could be finalised, the coding system had to be developed, the form designed and the whole system fully tested in the field. It was therefore necessary that the list of topics should be finalised before the end of February 1968.

Consultations were held in early 1968 with those government departments whose requirements were of priority and represented topics appropriate for census operation. As a result, an agreed list of personal topics was drawn up which was based also on United Nation's recommendations and the experience of the 1961 Census and the 1966 By-Census. There were 19 personal questions :–

- Relationship to head of household
- Sex
- Age
- Date of birth
- Conjugal status
- Place of birth
- Place of origin
- Place of marriage (subsequently changed to age at first marriage)
- Number of children born alive
- Number of children living
- Usual language
- Language other than usual (subsequently changed to ability to speak English)
- Educational attainment
- Employment status
- Number of hours worked
- Industry
- Occupation
- Place of work
- Place of study

These were little changed in the final schedule (see Chapter 3).

In this initial planning stage, there was considerable interest in the proposal to hold a full Housing Census for the first time in Hong Kong. In order that future plans for the provision of public housing should be placed on a firm basis, the Hong Kong Housing Board asked that the Housing Census should try to establish the number of households and persons inadequately housed, defined as not having self-contained accommodation with its own water supply and toilet facilities. Although this information was available for government and aided housing, it was lacking for the private sector. The Board further asked for these households to be classified by the type and sub-type of accommodation which they occupied, tenure, household income and rent paid. The latter two topics were considered to be particularly important, since the Board intended to recommend the provision of public housing for all those who could not afford self-contained accommodation in the private sector.

A working party on housing questions was then formed, on the basis of the intention to take a complete census of buildings, housing and establishments, to be carried out in November 1970 in conjunction with the final house-listing and pilot census for the Population Census. Following discussion in this working party in early 1968, it was provisionally decided that there should be four questions on **buildings** :–

- Type
- Construction materials of outer walls
- Use
- Year or period of construction

four on **living quarters** :–

- Address

- Type
- Number of rooms/bed spaces
- Facilities : water supply, toilet, bathroom, kitchen

six on **household** :–

- Type
- Number of persons
- Sub-type of accommodation
- Tenure
- Household income
- Rent

and four on **establishments** :–

- Name
- Type of economic activity
- Number of employees
- Rent.

In view of the widespread interest in the Census, an Advisory Panel on population census questions was also formed, on which university representatives, businessmen and other acknowledged experts were invited to serve. Membership of this Advisory Panel was as follows :–

Dr. R.E. Mitchell	Director of Social Survey Research Unit, Chinese University of Hong Kong
Prof. M.K. Hopkins	Professor of Sociology, University of Hong Kong
Dr. Hon. S.Y. Chung, O.B.E.	Managing Director, Sonca Industries Ltd., Chairman, Federation of Hong Kong Industries
F.W. Stephens, Esq.	Vice President, American International Assurance Co. Ltd.
Mr. James M.H. Wu	Managing Director, China Cold Storage & Engineering Co.
Mr. A. Murdoch Keith	Executive Director, Hong Kong Council of Social Service

The panel held discussion in early 1968. Members agreed generally with the questions proposed, and the most important point raised was whether some of the population questions, such as those on economic activity, could be covered on a sample basis. However, it was decided that this would be too difficult to administer in view of the proposal to employ schoolboys and girls as enumerators.

2.4 Progress during 1968

During 1968, the reticulation work described in Chapter 4 made steady progress. All existing maps had to be copied and updated in accordance with the actual situation on the ground.

After the decisions of the working parties, discussions took place with the government departments concerned on drafting the codes for the main census topics: in particular, type of living quarter and sub-type of accommodation for the Housing Census; and place of origin, activity status and industry for the Population Census.

Considerable discussion also took place with the Transport Department and the Traffic & Transport Survey Unit of the Public Works Department regarding questions on transport to be included in the Census. Transport consultants Wilbur Smith & Associates had been engaged by the Hong Kong Government to carry out a long-term road study for Hong Kong. At their request, a question on car ownership was added to the household schedule and a question on mode of transport (to place of work or study) to the personal schedule.

In March 1968, it was agreed by the Hong Kong Government Data Processing Committee that the computer and UDT document reader should be used for the Census. It appeared that International Computers Limited (ICL) were developing a comprehensive software system which could be used to edit the raw data and produce those census tabulations recommended by the United Nations. Since this system required a computer with a minimum configuration of 32K words core storage and exchangeable disc drives, and since other government requirements were increasing, the Committee recommended that the government computer should be enhanced, and this was approved in June 1968.

Following this decision, considerable discussion and correspondence took place with ICL, concerning this census system and the design of UDT forms to be used. The Registrar General's Department in Britain, and the Statistics Division of the ECAFE Secretariat in Bangkok were also consulted. In August 1968, during his leave, the Deputy Commissioner for Census & Statistics had discussions with ICL and the Registrar General's Department in Britain.

Progress was also made in drawing up a preliminary census time-table and in drafting the Census Plan, in order to assess the number of temporary staff required for field enumeration. A preliminary critical path diagram covering the various operations was drawn up. The final version of this diagram is shown at Appendix 2.1.

2.5 Pre-test

By February 1969, the drafting of codes had progressed sufficiently for field testing. A small-scale census pre-test, organised by the vital statistics section of the Census & Statistics Department, was therefore carried out on 3rd to 5th February 1969. Some 20 officers, district supervisors from the reticulation section and survey interviewing officers from the consumer price index section of the Department acted as enumerators. About 200 households, containing about 1,000 persons, were approached on a voluntary basis. The object of this exercise was to test in the field the coding of the various topics proposed, the use of the UDT form, the handling and marking of the forms, instructions and definitions, and enumerators' load.

It was found in the pre-test that the enumerators had difficulty in applying some of the definitions laid down in their instructions manual, especially those for defining a unit of building and a unit of establishment. They also had difficulty in obtaining information regarding the construction materials of the outer walls and the year of construction of buildings, since these could not be ascertained by observation.

Since most of this latter information could be obtained from records maintained by the Public Works and Rating & Valuation Departments, it was therefore decided that the Census of Buildings should be omitted, and that the Census of Establishments would be carried out separately from the Housing Census. However, for simultaneity in recording living quarters, households and persons, and for inter-linkage of the information to produce more useful tabulations, the Housing Census and the Population Census would be conducted in one integrated operation. In general, the method of data processing, i.e. use of direct marking on to UDT forms for input into the computer, was considered to be feasible for the main Census.

2.6 The Census Plan

With the results of the pre-test, it was then possible to finalise the Census Plan and submit it to the Governor-in-Council for approval. This plan was in considerable detail covering all important aspects of the census operation. The main points were as follows :–

Basic approach — The plan recommended that the Census should be a "de facto" one. It is also recommended that it should be conducted by the "enumerator" or "canvasser" method rather than the "householder" or "self-enumeration" method, and that two visits should be made to each household to ensure accuracy of the data collected.

Dates — In determining the appropriate dates for the enumeration, the likely weather conditions were discussed with the Royal Observatory. It had been decided that February/March would be the best period, but the date chosen should not be too close to the Chinese New Year (27th January 1971), since the population would be occupied with preparation and visiting relatives during this period. The dates recommended were as follows :–

First Pilot Land Census	20th September 1969
Pilot Marine Census	3rd February 1970
Second Pilot Land Census	March 1970
Census of Establishments & House Listing	November 1970
Marine Census	24th January 1971
Land Census (Population and Housing)	9th March 1971
Post-Enumeration Check	13th April 1971

The two pilot land censuses and one pilot marine census were considered necessary to ensure that any serious weaknesses found in the system could be corrected in good time; this was particularly important with regard to the data-processing arrangements.

Census questions — 20 personal questions, eight household questions and three living quarter questions were proposed – for further details see Chapter 3.

Field organisation — The field staff proposed was one area superintendent, five assistant area superintendents (one for each census area), 40 supervisors (one for each census district), 1050 chief enumerators and assistant chief enumerators (one of each for each census division) and 21,000 enumerators (one for each enumerator block) – for further details see Chapter 5.

Data processing — Data would be marked on to UDT forms which would be read by document reader directly into the government ICL 1902 computer. Editing and consistency checks would be performed by the computer – for further details see Chapters 8, 9 and 10.

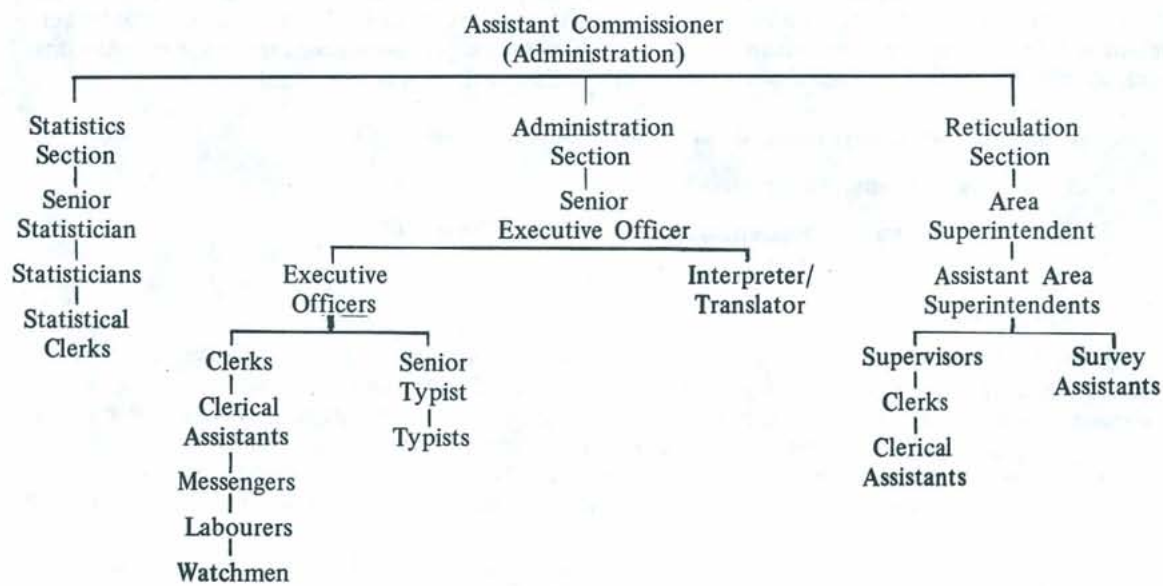
Finance — Staff costs were estimated at HK$2.4 million, honoraria to field staff at HK$5.2 million and other charges at HK$1.9 million, a total of HK$9.5 million – for further details see Chapter 6.

The Census Plan was approved by the Governor-in-Council on 15th July 1969; and the financial commitments by the Finance Committee of the Legislative Council on 6th August 1969.

2.7 The census division

With the approval of the Census Plan and the voting of the necessary funds, action was put in hand to recruit the staff required to conduct the operation. A census division was set up in the Census & Statistics Department in September 1969. This was headed by an experienced administrative officer as Assistant Commissioner and divided into three sections, the statistics section, the administration section, and the reticulation section. The organisation of the census division is shown below and a list of key personnel is at Appendix 2.2.

Tab. 2.7.1 The Census Division – Organisation Chart



Statistics section — This section was headed by a senior statistician, assisted by two statisticians and six statistical clerks. This section was responsible for :–

- the production of the various manuals of instructions for the census enumeration staff
- the design of the census codes to meet both local needs and those of the United Nations
- the design of the various types of forms, particularly the UDT forms
- the design of the programs for processing the census results by computer.

The two statisticians were already in post in the vital statistics section of the Census & Statistics Department. These two officers had experience of the 1966 By-Census and were to handle the complex details of devising the questionnaires, codes, tabulations, the training manual and other matters. In December 1968, one of these statisticians had returned after attending a one-year course of study leading to a M.Sc. degree in demography in the London School of Economics and Political Science. The senior statistician was appointed in December 1969. This officer had previous experience both as a demographer in the 1961 Census, and subsequently as the officer-in-charge of the Government Computer Centre. His responsibility was to co-ordinate the professional work, and in particular to be responsible for the design of the data processing system and liaison with the computer staff on detailed problems which might arise. In June 1969, before joining the Census & Statistics Department, this officer attended an international seminar in Wiesbaden, West Germany, sponsored by the Federal Republic of Germany under the auspices of ECAFE on "Population statistics and the use of computers with special reference to Population Censuses."

Administration section — This section was established in July 1969 under the control of a senior executive officer, assisted by two executive officers, one interpreter/translator, 43 clerks, one senior typist, eight typists, four messengers, 40 labourers and two watchmen. This section was responsible for :–

- the recruitment of census enumeration staff
- the setting up of field centres
- the organisation of training classes
- the arrangements for transport, stores, finance and publicity.

Both the senior executive officer and one of the executive officers had previous experience in the organisation of the 1961 Census and the 1966 By-Census. The senior executive officer had been Secretary to the Census & Statistics Department since early 1968 and had played a large part in drafting the Census Plan. He also attended the Wiesbaden seminar in June 1969.

Reticulation section — This section had been set up in late 1967 before the Census & Statistics Department was established. In November 1969, the existing assistant area superintendent was promoted to area superintendent for the period of the Census, and five assistant area superintendents were appointed from experienced supervisors. In addition 40 census supervisors, four census survey assistants, 14 clerks and 40 clerical assistants were also recruited. This section was responsible for :–

- all mapping work in connection with the Census (see Chapter 4)
- the formation of enumerator blocks
- control of temporary census enumeration staff (see Chapter 6).

2.8 Legislation

In the Census Plan, it had been pointed out that some minor amendments to the Census Ordinance might be required to permit the taking of a census of establishments and a census of housing. As the Ordinance stood at that time, it authorized the taking of a census of population only, and it was thought that the opportunity should also be taken to correct various other deficiencies which had come to light since the 1960 Ordinance was first enacted. Discussions on the drafting of the necessary amendments were held with the Legal Department and the amendments were approved by the Legislative Council in May 1970.

The Census (Amendment) Ordinance 1970 enlarged the scope of the principal Ordinance to enable other types of censuses, such as censuses of establishments and housing, to be taken in addition to a census of population.

The 1960 Ordinance had stipulated that all census forms and returns must be destroyed by fire within nine months of taking the census. This was amended to provide that the date by which the returns should be destroyed should be stated in the Order directing that the census be taken.

Two sections which dealt with offences were designed to increase the restrictions on the disclosure of information. One section made it an offence to disclose to any person not employed in the execution of a duty under the Ordinance, information so arranged as to enable identification of any person, undertaking or business which had come to his knowledge in the course of his duty as a census officer. Another section made it an offence for any person having possession of information which he knew to have been disclosed in contravention of the Ordinance, to publish or communicate that information to any other person.

During the course of the census operation, the following census orders were approved by the Governor-in-Council and published in the Government Gazette :–

Census Order 1969	15th Jul. 1969	First Pilot Land Census
Census Order 1970	20th Jan. 1970	Pilot Marine Census
Census (No. 2) Order 1970	24th Feb. 1970	Second Pilot Land Census
Census (No. 4) Order 1970	22nd Dec. 1970	Marine Census
Census Order 1971	16th Feb. 1971	Land Census
Census (No. 2) Order 1971	16th Feb. 1971	Post-Enumeration Check

Copies of the orders are at Appendices 2.3 to 2.8.

2.9 First pilot land census

In accordance with the Census Plan, the first pilot land census was carried out in September 1969 by the newly formed Census Division. In addition to census staff, eight teachers and 51 students were employed. Two complete census divisions, one urban and one rural, together with some scattered enumerator blocks, were covered. About 2,000 households containing some 10,000 persons were enumerated.

The purpose of this pilot census was to test the full census system: the questions and codes which had been revised as a result of the pre-test; the use of assistant chief enumerators to check the enumerators' work; the acceptability of the UDT forms by the document reader; computer programs for input and validation; and also to obtain sufficient factual information for devising the imputation rules.

The field work was carried out satisfactorily and the enumerators generally had no difficulty in applying the definitions and codes. The only exception was in respect of a question on number of "conjugal family nuclei", recommended by the United Nations, which had been included in an attempt to analyse household composition. This posed considerable problems for the enumerators, since the concept was entirely unfamiliar both to them and to the respondents. It was therefore decided that this question should not be attempted in the main Census.

The computer input of the UDT forms of this pilot census was carried out towards the end of October 1969. Nearly 30% of the forms were rejected by the document reader, mainly because the enumerators had not marked them firmly enough. Since this rate of rejects was totally unacceptable, drastic measures had to be taken to improve the quality of the enumerators' marking of the forms. The following were the main changes made as a result of this pilot census :–

- the title assistant chief enumerator was changed to field editor to emphasize that these officers were responsible for checking and correction of the marking of the UDT forms
- two field editors instead of one were assigned to each chief enumerator division, in order to carry out a 100% check of the forms rather than just a sample
- a standardised training programme was drawn up for all enumerators to ensure uniformity of interpretation of definitions and codes, and marking of the forms

- Special emphasis in this training was placed on the need for the UDT forms to be handled carefully during the enumeration and for heavier bar marks to be made on the forms
- the UDT form layout was revised to make it easier for the enumerators to follow
- a checking strip was devised to help the enumerators check the number of bar marks for each question in the UDT forms
- the UDT forms for the main Census were to be printed by security printers in Britain to ensure that the forms were of the exact measurements required by the document reader
- the enumerator's cardboard box was to be made with tougher materials in order to give greater protection to the UDT forms.

2.10 Census holiday

In order to allow the census operation to make use of the services of teachers and senior form school boys and girls as enumerators, and school buildings as field centres, it was agreed in November 1969 after discussion with the Education Department that a special 15 day census school holiday should be declared from the 27th February to the 13th March 1971.

2.11 Pilot marine census

In order to decide whether additional questions were to be included in the pilot census of the floating population, a working party was formed composed of representatives of the Marine and Agriculture & Fisheries Departments. Two meetings were held in July and December 1969. Three additional questions, i.e. type of craft, engine horsepower of mechanized fishing vessels and alternative accommodation of fisherfolk households, were proposed.

The pilot census was held in February 1970 during the Chinese New Year at three anchorages. About 40 enumerators were employed and 227 boats and about 1,700 persons were enumerated. The purpose of this pilot census was to test the enumeration procedure to be adopted for the main Marine Census, questions and codes, and the computer programs for input and imputation. At the same time, the opportunity was taken to test the procedure for conducting a future sample census of the floating population.

To avoid using the UDT forms which might get wet and be spoilt during the enumeration, the data was initially recorded on schedules and later transcribed on to the UDT forms at the field centres. This method was found to work satisfactorily and was therefore adopted for the main Marine Census. The newly introduced system of having two field editors under one chief enumerator also worked very well, and achieved a considerable improvement in the quality of form marking and a consequent reduction in the rate of computer rejects.

2.12 Second pilot land census

A second pilot land census was held in March 1970. 10 census divisions, representing a complete cross-section of housing types and socio-economic groups, were chosen. 10 chief enumerators, 20 field editors, and 264 enumerators were employed. About 10,000 households and 42,000 persons were enumerated from the 15th to 20th March 1970. As this was the last in the series of pilot censuses, all important aspects of the Census Plan had to be fully tested prior to the actual enumeration, including the training programme; the field organization; the revised UDT form; the full data processing system; and the system of assigning two field editors to each chief enumerator division. In particular, the computer programs for input, organization, imputation and tabulation described in Chapters 8 – 10 were fully tested. Emergency measures in the event of a large number of enumerators resigning or falling ill during the period of enumeration were also simulated.

As a further measure to ensure accurate marking of the UDT forms, a mobile squad of senior field editors, made up of statistical clerks of the Census & Statistics Department was set up to make visits to each field centre and inspect the work being done by the field editors. This assistance was appreciated by the field editors and it was therefore decided to have such a squad in the main Census.

The enumeration of special classes was also included in this pilot census. Two army barracks were enumerated, after military personnel had been trained as enumerators. Since it was anticipated

that there would be language difficulties with minority linguistic groups, as in the 1961 Census, a mobile squad of enumerators speaking Chinese dialects other than Cantonese and foreign languages was formed and tested.

Since the final version of the UDT forms had to be ordered from Britain before the results of the second pilot land census were available, it was not possible to make any further changes as a result of this pilot census. Fortunately, the design and coding system was found to be satisfactory and easily followed by the enumerators.

The field work was carried out successfully and the census organisation was proved to be efficient and adequate for undertaking the main Census. The changes introduced after the first pilot land census in the marking and checking of the UDT forms were also found to be effective, and as a result, the number of forms rejected by the document reader was cut down to about 8%.

2.13 Conclusion

The establishment of the Census & Statistics Department with a census planning section more than three years before the 1971 Census was necessary to prepare the Census Plan and to form the nucleus of the full census organisation. This lead time was essential in view of the complexities of a modern census. However, the full Census Division with the senior administrative, statistical and organisational staff was not set up until two years later and only eighteen months before the actual census. More detailed planning of the questionnaires and codes, and of the field operation would have been possible if the full census team had been assembled right at the beginning of the project.

The decision to appoint an administrative officer rather than a statistician as head of the census operation was based on previous experience in the 1961 and 1966 censuses. In fact, the division of responsibility worked well. The geographical field work, and the recruitment, training and deployment of the field force described in Chapters 4 to 6 were almost entirely administrative operations. The small professional statistical staff available were fully occupied with the technical aspects of working out the census codes, the design of the UDT forms and the tabulations, and, in particular, the detailed logical editing rules required for the data processing by computer described in Chapters 7 to 10.

The early decision in early 1968 to use a document reader and computer for the data processing of the Census was quite essential. Since the Census & Statistics Department had no previous experience of using a computer to process census results, much planning and consultation with the systems analyst of the Government Computer Centre was necessary to design the data processing system to be adopted and the necessary technical details. This part of work required to be done at an early date, so that the proposed system of data processing for the Census could be fully tested prior to the actual enumeration.

The UDT forms to be used for the Census had to be first tested in the field, then revised and tested a second time before they were finalised for printing. Because the UDT forms could not be printed locally to the precise measurements required by the document reader, it was necessary for the design of these forms to be finalised at least one year prior to the actual enumeration, to allow for printing in Britain. The time for this part of work was only just sufficient. A further problem arose from the fact that certain important details of the ICL FILAN software system were not fully ready until the last moment, and this meant that much of the preparation and testing of the computer programs had to be left until a very late stage.

The Census was, in fact, in many respects computer-led. Once the decision to use computer processing and UDT forms had been taken, it was essential that these forms were accurately marked. Much of the effort of the planning and supervisory staff was therefore devoted to producing accurate form marking by the enumerators, which could otherwise have been employed in strengthening field supervision aimed at ensuring that accurate data was collected from the households being enumerated.

The decision to have a pre-test and two pilot censuses for the 1971 Land Census proved to be absolutely necessary. The pre-test revealed some fundamental problems, and provided the basis for formulating the final Census Plan. All the important aspects of the Plan were tested in the field in the first pilot census and certain major faults in the system were rectified in good time. The second pilot census was in effect a dress rehearsal for the main Census; only minor defects in the field operation system were discovered, and these were corrected in good time before the full enumeration took place.

However, this final pilot census was not able to test adequately the full data processing system. The movement of forms in the input phase of data processing was not sufficiently simulated. Again, due to the delay in delivery of the software package to be used for the Census, the computer programs

for imputation and tabulation were not ready in time for the live runs of the pilot census results. Certain faults in the data processing system were therefore not ascertained until the processing of the main census results. This is discussed further in Chapter 8.

CHAPTER 3

CENSUS CONTENT

3.1 Introduction

This chapter describes the topics covered by the 1971 Census and the underlying concepts which formed the basis for the census questions. The selection of the topics was based on questions included in the 1961 Census and 1966 By-Census for comparability purposes, and also on the recommendations and requirements of Hong Kong Government Departments. These questions included most of the topics recommended by the United Nations as basic and useful for international comparability; a comparative table of such questions included in the censuses of 1961, 1966 and 1971 is at Appendix 3.1.

As mentioned in Chapter 2, the questions asked were grouped into three major sectors :–

- living quarter
- household
- person

3.2 Living quarter characteristics

The purpose of obtaining information concerning the characteristics and facilities of living quarters was to establish the "stock" of living quarters in Hong Kong, classified by type of living quarter and the facilities within each type. Every unit of living quarter, whether occupied or unoccupied during census period, was enumerated, to ensure that the "stock" was complete.

By "living quarter" was meant a place of accommodation which is either used exclusively by one household or shared by a limited number of households for living, eating and sleeping. A unit of living quarter had the following two characteristics :–

- internal connection so that the occupants could move between the rooms/cubicles without going outside on to public corridor, landing or staircase, and
- direct external access to the street, corridor, landing or staircase without going through someone else's accommodation.

In accordance with United Nations' recommendations, living quarters originally intended for habitation but used wholly for other purposes at the time of the census were excluded from the census coverage, while structures not intended for habitation but occupied at the time of the census were included. Buildings in the course of construction were excluded.

Three questions were asked on living quarter characteristics :–

- Type of living quarter
- Number of rooms
- Facilities in living quarters

Type of living quarter — The classification of living quarter units was based on the type of building in which they were located. Since the vast majority of living quarters in Hong Kong were in conventional permanent buildings, the United Nations classification for housing units was not generally applicable. Although four major groups were distinguished, Group O **Domestic building of durable materials** with nine sub-groups contained 88% of all living quarters enumerated. The code L1 for type of living quarter is at Appendix 3.2.

Number of rooms — A room was defined as an area enclosed by a permanent partition reaching to the height of the ceiling. It might be sub-divided into cubicles, which are spaces enclosed by partitions (usually of a temporary kind) not reaching to the height of the ceiling. As defined in the Census, a room or cubicle was one used for living, eating, sleeping or cooking; hence bathrooms, toilets and sculleries were not counted. All rooms and cubicles available to the household in the living quarter for living, eating, sleeping or cooking were enumerated, including those which were not being used during the census period, but excluding those used solely for non-domestic purposes.

Facilities in living quarters — The facilities in living quarters enumerated were bathroom, toilet, kitchen and water supply. Households accommodated in living quarters were asked whether their living quarters were equipped with these facilities. The definition of each used in the Census was as follows :–

- **bathroom** : a wash room containing either a bath or shower. It had to be inside the living quarter and used exclusively by the household occupying the premises.
- **toilet** : a flush toilet, not a non-flush type such as a bucket. It had to be either in a separate room or combined with a bathroom inside the living quarter. Where the occupants of the living quarter shared a toilet communally outside the living quarter, they were recorded as having no toilet facilities.
- **kitchen** : a room or cubicle primarily used for the preparation of meals. One which was also used for sleeping at night was counted as a kitchen, provided it was mainly used for cooking. A space which was specially set aside for cooking but did not conform to a room or cubicle as defined in the previous paragraph was not counted as a kitchen.
- **water supply** : a piped water supply from a public system installed either within the living quarter, or within the building in which the living quarter was situated, for shared use with the occupants of other living quarters. Living quarters which had a water supply either from private or public wells or from hill-side streams were not considered as having water supply facilities, even though the water might be laid on to the living quarter by pipes.

Households accommodated in premises not intended for domestic purposes, such as landings or staircases, and persons sleeping in their working premises, were enumerated as having no facilities.

3.3 Household characteristics

Seven questions were asked to provide information on economic and housing characteristics of households. These questions were not asked of collective households, because their social and economic characteristics were not required for census purposes.

As used in the Census, the term "household" meant any group of persons, whether related or not, who lived together in the same living quarter and shared the same food, or one person who was responsible for producing his own meals and no one else's (i.e. a one-person household).

The seven questions on household characteristics were :–

- Number of persons in household
- Type of household
- Tenure
- Sub-type of accommodation
- Rent
- Household income
- Car ownership

Number of persons in household — Details of the number of persons in households was required for the study of changes in household size which in turn was required mainly for planning housing needs.

Type of household — There were two broad categories of households distinguished in the Census, namely, domestic households and collective households.

A domestic household included related family members and unrelated persons if any, such as friends, servants and hired hands living together under the same roof and sharing the household food. Servants and employees who lived quite separately, with their own dependants and cooking arrangements, were regarded as separate domestic households. A person living alone (except in a hotel, hostel or dormitory), or a small group of unrelated persons sharing the same living accommodation and the household expenses as "partners", were also counted as domestic households.

Domestic households were further classified into three sub-categories :–

- domestic households occupying the whole of a living quarter

- domestic households sharing a living quarter with one or more other households, e.g. separate households within the same living quarter
- domestic households within an institution, i.e. domestic households living within the boundaries of an institution but not depending on the institution for meals.

A collective household included unrelated persons occupying the same living accommodation and sharing some form of communal catering. The household expenses were not shared by the members but were taken care of by :–

- charitable bodies or the government, i.e. members did not pay for their own food and lodging; e.g. old people's homes, orphanages, blind people's homes, treatment centres, prisons, reformatories; or
- private and other institutions, where members paid for their food and lodging at a fixed rate; e.g. hotels, hospitals, sanatoriums, boarding houses, boarding schools, hostels; or
- employers, where free food and lodging was provided on the basis of some agreement; e.g. quarters in factories or workshops, shops with living accommodation for fokis.

The code H1 for type of household is given at Appendix 3.3.

Tenure — Tenure referred to the terms or conditons under which the accommodation was held. Information was obtained on whether the household :

- owned the living quarter; or
- rented the living quarter, either as sole tenant or as the main tenant; or
- rented part of the living quarter, either as a co-tenant or as a sub-tenant; or
- occupied the living quarter free, with or without permission.

The code H2 for tenure is given at Appendix 3.4.

Sub-type of accommodation — A living quarter contained sub-units of accommodation, such as rooms, cubicles, cocklofts or bedspaces. A household might occupy the whole living quarter, or some sub-units within it if the living quarter was shared with some other household or households. The enumerator had to ascertain by observation the sub-type of living accommodation within a living quarter occupied by a domestic household, and also to what extent these domestic households had to share the living quarter and facilities with other households.

27 sub-types of accommodation were distinguished in code H3 at Appendix 3.5.

Rent — This was defined as the amount actually paid periodically for the accommodation occupied by a household. In the Census, the total rent for January 1971 was asked. This included any fixed sum paid monthly by the household for services such as rates, water, electricity and communal cleaning and a separate note had to be made of the services included. A scale ranging from less than HK$50 to HK$1,000 and over in six unequal brackets was used. In the lower part of the scale, which included the majority of households, the brackets were of HK$50 and HK$100, and in the upper part of HK$200. Owner-occupiers were recorded as "rent free".

The code H4 for rent is at Appendix 3.6.

Household income — This question referred to the monthly household income from all sources for all members of the household combined for January 1971. The term "income" meant the total monthly receipts, whether earned (salaries, commissions and earnings from part-time work, but excluding annual bonuses), unearned payments (dividends, interest, rent, remittances, pensions, etc.) or profits from the household's own business. Information was not obtained of the exact amount, but on the basis of a scale ranging from HK$200 or less to HK$4,500 or more in nine unequal brackets. In the lower part of the scale, which included the largest number of households, the bracket were of HK$200 and in the upper part, of HK$300, HK$500 and HK$2,000.

Some difficulty was caused by the fact that the Chinese New Year in 1971 fell in January and a number of individuals had received an annual bonus, often amounting to a month's salary or more. The enumerators were instructed to ensure that this was not included in the monthly household income.

The income question was asked of the household rather than of the individual, because it was believed that it would be easier for the enumerators to obtain. In addition, a box on the UDT form had to be marked of any members of a household who had free meals provided by their employers.

The code H5 for household income is at Appendix 3.7.

Car Ownership — This question was included at the request of the Traffic & Transport Surveys Unit of the Public Works Department and the Transport Department, to collect information on the number of cars available for the exclusive use of households, and the relationship between car ownership and household income. The question was asked in two parts. Firstly the enumerator had to ask :–

– "How many cars are owned by the members of the household?"

Then the enumerator had to ask :–

– "Apart from that, how many cars were available for the exclusive use of the members of your household yesterday?"

The latter number of cars included company cars used at home, cars loaned on a long or short term basis by one friend to another, relatives' cars and cars left in the care of individuals whilst the owner was away from Hong Kong; but excluded "pak pais" (illegal taxis), hired cars, vehicles serving individual block of flats, pool cars etc.

3.4 Personal characteristics

17 questions were asked to provide information on personal and economic characteristics of the population :–

- Relationship to head of household
- Sex
- Age
- Date of birth
- Place of birth
- Place of origin
- Conjugal status
- Age at first marriage
- Number of children born
- Number of children living
- Usual language
- Ability to speak English
- Educational attainment
- Activity status
- Industry
- Occupation
- Number of hours worked per week

Relationship to head of household — For the purpose of the Census, each household was required to have one, but only one, head. In an ordinary domestic household, the head was usually the eldest member of the family, or that person who was acknowledged as the head by the other household members.

All other household members were classified in relation to the head. In a collective household consisting of less than 20 unrelated persons, some responsible person was chosen as the head of household, and the others coded as "other person not related to the head". The questions asked were :–

– "Who is the head of household?"

– "What is your relationship to the head of the household?"

The code P1 for relationship to head of household is at Appendix 3.8.

Sex — Distribution by sex is one of the basic topics in any demographic enquiry. Only slight difficulties were experienced in completing this question.

Age — Age was defined as the number of complete years a person had passed on Census Day, 9th March 1971, since his birth. Ages of infants less than one year old were separately recorded by complete months of age.

For international comparability, the age reported by the respondent had to be in western reckoning. However, in Hong Kong, there was still a considerable number of middle-aged or older Chinese who calculated their ages according to the lunar calendar. Age by Chinese calculation may be one, two or even three years in advance of the equivalent of the western age, depending on the time of the year at which the census is taken. In order to help the enumerators obtain the correct western age for respondents who reported their ages by Chinese reckoning, a conversion table from Chinese to western ages was compiled. This conversion table indicated the correct western age for each Chinese age reported from 1 to 81, after checking the respondent's reported year of birth with the check data listed in the table, such as the Chinese dynastic era and year of cycle of stems and branches (干支) and a zodiacal animal (生肖). In fact, the enumerators could easily ascertain the age of anyone who could only remember the cycle or the zodiacal animal of his year of birth, by referring to the corresponding western age in the conversion table. The questions asked were :–

– "How old are you?"

– "Do you calculate your age by Chinese reckoning or by Western reckoning?"

A copy of the conversion table is at Appendix 3.9.

Date of birth — The most reliable way of getting the accurate age of a person is to ask for his date of birth. Unfortunately, many people could not remember their exact date of birth, especially those who calculated their age by Chinese reckoning.

Results from the pre-test held in February 1969, in which the exact date of birth of each person was asked and recorded on the form, showed that many could not give an answer to this question; and that for those who could, the answer was mostly incorrect when the date of birth was checked with the age reported. After this experience, in order to check whether age and date of birth reported were consistent with one another, it was considered best to record the year of birth (which was more likely to be remembered correctly), and to distinguish date of birth as **before** or **after** Census Day (i.e. 9th March 1971). Anyone whose date of birth was before Census Day was recorded as one year older than anyone born after it. Even if a respondent could not recall very well in which month he was born, he could fairly safely say in which part of the year it was. This relation between age and date of birth was used in the imputation phase of data processing to correct inconsistencies in age.

This method of asking the year of birth and date of birth was tested in the first and second pilot land censuses and was found practicable. In addition, an index was prepared for determining the western year and "before or after Census Day" for those who reported a date of birth using the lunar calendar, since the corresponding date in the lunar calendar for 9th March differed from year to year. The question asked was :–

– "What was your date of birth?"

A copy of this lunar/western calendar index is at Appendix 3.10.

Place of birth — Place of birth was defined as the part of China or the country in which a person was born. The classification of place of birth was based on the main ethnic/linguistic groups within China and was unchanged from 1961. In the pre-test and first pilot land census, the classification of place of birth outside China was on a continent basis, but it was later discovered that a more detailed breakdown was necessary, so that information could be obtained on the main groups of foreign nationals resident in Hong Kong. The classification of countries outside China was therefore expanded to show these countries separately. The question asked was :–

– "Where were you born?"

The code P2 for place of birth is at Appendix 3.11.

Place of origin — This question was not recommended by the United Nations, but was included in the 1961 Census and the 1966 By-Census, in place of a question on race. Since the people of Hong Kong are largely immigrants from the nearby Kwangtung Province, this topic could provide useful information for the comparative study of the characteristics of different ethnic groups.

Place of origin used the same classification as place of birth and was defined, for Chinese, as the part of China from which the family originally came, and for non-Chinese, as nationality or country of origin. The question asked was :–

– "What is your place of origin?"

The code P3 for place of origin, which is the same as that for place of birth, is at Appendix 3.11.

Usual language — By usual language was meant the language currently spoken at home by the enumerated person with members of his family. This question was asked of everyone. In the case of small children who had not yet begun to talk intelligibly, the language recorded was that of the next eldest child or of the mother.

The classification of usual language was based on the 1961 codes of the major linguistic groups most commonly found in Hong Kong, i.e. Cantonese, Hakka, Hoklo, Sze Yap and English. Hakka is an ethnic-linguistic group, but is not confined to a geographic area, so does not appear in place of birth or origin. Hoklo is a general term including a broad group of dialects which it would have been difficult for a Hong Kong enumerator to distinguish individually. All other languages of China were classified as one group, and no classification was made of major languages other than English and Chinese, because of their small number. A separate class was reserved for the dumb. The question asked was :–

– "What language do you speak at home?"

The code P4 for usual language is at Appendix 3.12.

Conjugal status — Conjugal status related the personal status of each individual to the marriage laws or traditional customs of Hong Kong. Each individual was identified as either never married, married, widowed, or divorced/separated.

The conjugal status of a person was recorded as claimed by the respondent. No attempt was made to distinguish between legal and consensual unions or between legal and customary divorces/ separations. Couples who had to live separately because of economy or employment, but remained in fact man and wife, were not classified as separated. The question asked was :–

– "Are you married?"

Age at first marriage — This question was not included in the 1961 Census, nor in the 1966 By-Census. It was added in the 1971 Census because the information obtained would be useful, in conjunction with that on the number of children born, for studying the relationship between fertility and the age of marriage. This question was asked of all ever-married men and women. The question asked was :–

– "What was your age at first marriage?"

Number of children born and living — The number of children born was asked of all ever-married women and men, the purpose being to establish the fertility pattern of both women and men. The total number of live-born children included all children ever born to a woman whether fathered by the current husband or a previous husband, and regardless of where the children were living at the time of the Census. For a man, the total number included all live-born children born to him by his wife, or by any previous wife or concubine. In both cases, adopted children or step-children were not included.

The number of children living was also asked of all ever-married women and men, and referred to children born as defined above. This question was asked in order to measure wastage rates. It included all children who were still living at the time of the Census, regardless of their age and where they were residing. All married women were asked :–

– "To how many children have you yourself given birth?" and

– "How many of the children born to you are still alive?"

All married men were asked :–

– "To how many children by you has your wife (or wives) given birth?"

– "How many of the children born to your wife (or wives) by you are still alive?"

In the case of a single parent, the widow was asked :–

– "To how many children did you yourself give birth?" and

– "How many of the children born to you are still alive?"

The widower was asked :–

– "To how many children by you did your wife (or wives) give birth?" and

– "How many of the children born to any wife by you are still alive?"

Ability to speak English — Ability to speak English was assessed by whether a person could conduct a short conversation in English or could understand and answer questions put to him in that language. This question was put to all persons whose usual language was other than English. Since English is, generally, the language of government and of international business in Hong Kong, this question was asked to measure the proportion of the population who could speak it, and to establish whether this asset had any direct relationship to socio-economic status. The enumerators had to ask, in English :–

– "Do you understand English?"

– "Where did you learn it?"

If the respondents understood these two questions and replied intelligibly in English, they were regarded as being able to speak English.

Educational attainment — This question referred to the last or highest grade of school a person had reached and was asked of all persons. For those who were still attending school at the census period, this question referred to the class or grade in which the enumerated person was studying. The main levels in the classification of educational attainment were those recommended by the United Nations, but the classification was expanded to take into account the educational system in Hong Kong.

In the previous two censuses, 'kindergarten' was grouped with 'no schooling' because at that time it was not considered significant. In 1971, however it was classified separately since there were by then a considerable number of children attending kindergarten. The question asked was (for those still attending school) :–

– "In what class or grade are you at present?"

For those no longer at school the question was :–

– "What was the highest level of education you reached at school?" (including day or night school)

The code P5 for educational attainment is at Appendix 3.13.

Activity status — Activity status referred to the relationship of each person to current economic activity. Each person was classified as working for a living (economically active), or as supported by someone else or depending on private means (economically inactive). In order to distinguish these two categories, it was necessary to lay down a criterion; and for the purpose of the Census, this was fixed at 15 hours at work during the seven days prior to the time when the person was enumerated.

Economically active persons aged 10 and over were divided into two groups :–

– **full-time workers** – those persons, including unpaid family workers, who had worked full-time during the time reference period, regardless of their method of remuneration; persons who had a job, but were temporarily absent from it because of illness or injury, vacation or other leave of absence were also classified as full-time workers.

– **part-time workers** – those persons who were primarily either students, home-makers or retired, but who had also worked for 15 hours or more during the time reference period.

Economically active persons who had worked for less than 15 hours during the time reference period were enumerated as currently unemployed. This did not apply to farmers or fishermen, since their working hours were variable, depending on the time of year and the weather. Two groups of unemployed persons were distinguished :–

– those who never worked before or job-seekers;

– those who had work previously but were out of work during the time reference period.

The economically inactive comprised all persons who did not work for a living and children under 10. They were sub-divided into three main groups :–

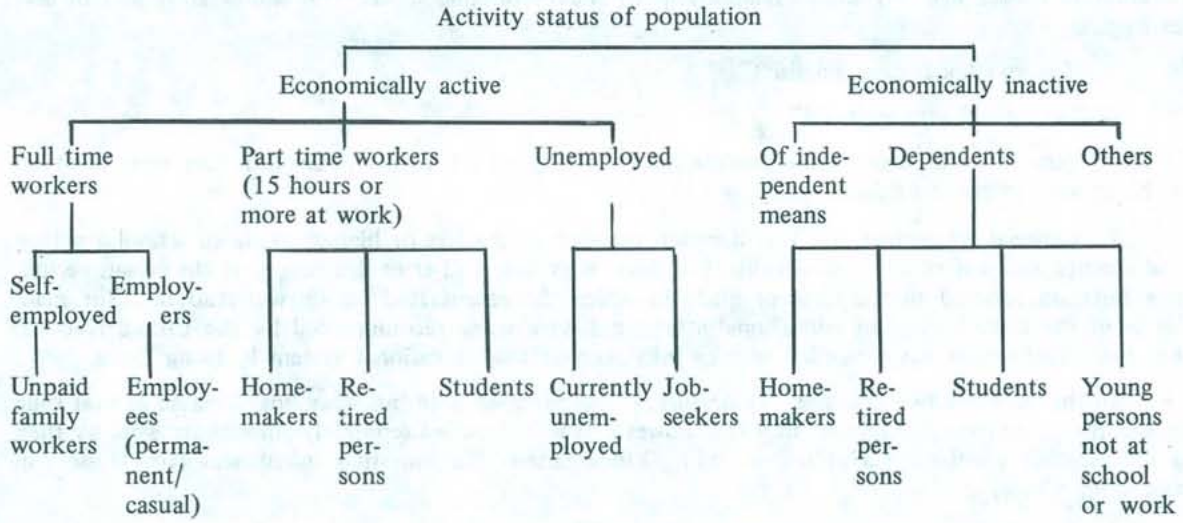
– those who had private means, such as income from rents or investments,

– those who were supported by others, i.e. home-makers, retired persons, students attending educational institutions and not working part-time, and young persons of school age who were neither working nor at school,

– others, such as inmates of penal or charitable institutions.

The breakdown of activity status is shown in the following diagram.

Tab. 3.4.1. Breakdown of population by activity status



All persons over 10 years old were asked :–

– "Do you work for a living?"

If the answer was "yes", they were asked :–

– "How many hours did you work during the last seven days?"

Those who had worked more than 15 hours in the past seven days were asked :–

– "Are you **self-employed**, an employer or an employee?"

Persons who did not work for a living were classified as home-makers, students, retired persons or of independent means. The first three categories were asked further questions :–

– "Did you do any work during the last seven days?"

If the answer was "yes", they were asked :–

– "How many hours did you work?"

Persons of independent means were asked :–

– "What is your means of livelihood?"

The code P6 for activity status is at Appendix 3.14.

Industry — Industry referred to the activity of the establishment or organisation in which an economically active person worked during the time reference period, or last worked if unemployed.

The classification of industry was based on the 1968 edition of the International Standard Industrial Classification of All Economic Activities. However, whereas the ISIC is a 4-digit classification,

in the Hong Kong Census, it had been decided to adopt a 2-digit classification, because the coding was being done by the enumerators themselves. It was therefore necessary to combine certain of the major ISIC divisions. At the same time, because of the importance of certain industries in Hong Kong, some ISIC major groups had to be expanded. For example:

- ISIC Major Division 6: Wholesale and Retail Trade etc., was combined with Major Division 8: Financing, Insurance, etc.
- ISIC Major Division 1: Agriculture and Fishing, was divided into two division: Agriculture, which was further subdivided by principal crops, and Fishing, which was subdivided by methods of fishing;
- ISIC Major Division 3: Manufacturing, was expanded into three divisions: Manufacturing (Textiles); Manufacturing (Chemical, Metal and Plastic Products); Manufacturing (Others); and Construction and Engineering, which included ISIC Major Division 5: Construction.

If a person worked in two or more industries during the time reference period, he was classified to the one in which he spent the most hours; if this was not possible to establish, the one from which he received the most income. The question asked was :–

- "In what industry are you working?"

The code P7 for industry is at Appendix 3.15.

Occupation — Occupation referred to the kind of work an economically active person actually did during the time reference period, or the last job he had if unemployed.

The occupational classification was based on the 1958 edition of the International Standard Classification of Occupation. However, to produce a 2-digit classification, certain modifications were made:

- ISCO Major Group O: Professional, Technical and Related Workers, was expanded, as in the 1966 By-Census, into two groups in order to ascertain the number of qualified technologists as against technicians,
- ISCO Major Group 1: Administrative, Executive and Managerial Workers was subdivided into a further group: Senior Officials in Government Service,
- ISCO Major Group 2: Clerical Workers, and Major Group 3: Sales Workers, were combined.
- ISCO Major Group X: Workers not Classifiable by Occupation, was combined with Armed Forces.

If a person did two or more kinds of work during the time reference period, the one at which he spent most hours was recorded. If the hours were the same, the one from which he received the most income was recorded. The question asked was :–

- "What is your occupation?"

The code P8 for occupation is at Appendix 3.16.

Number of hours worked per week — This question was asked of all persons who had a regular job, and it referred to the total number of hours the person had worked during the seven days prior to the time when he was enumerated. This information was not collected from the unemployed and the economically inactive persons. Hours of work were not recorded for farmers and fishermen; this was because it was not considered feasible to ascertain their exact hours of work, which were often dictated by the weather and season. The question asked was :–

- "How many hours did you work during the last seven days?"

3.5 Transport characteristics

The following questions were included in the personal schedule at the request of the Traffic & Transport Surveys Unit of the Public Works Department :–

- Place of study
- Place of work
- Mode of transport
- Time of arrival at study/work.

Place of study — This question was only asked of those persons still attending school, including workers doing part-time studies. The full name and address of the school or educational institution was recorded on the UDT form by the enumerators, so that it could be coded into traffic zones by special coders from the Traffic & Transport Surveys Unit. The question asked was:–

– "What is the full name and address of your school?"

A copy of the map for traffic sub-zones is at Appendix 3.17.

Place of work — This referred to the establishment in which employed persons performed their occupation, and it was asked of all currently employed workers, including students with part-time work. This information was not collected from the unemployed or the economically inactive persons, or from farmers and fishermen, or from persons whose place of work was not fixed. The full name and address of the establishment in which the person worked was recorded on the form, so that sufficient information could be supplied for coding the data according to traffic zones. The question asked was :–

– "What is the full name and address of your place of work?"

The geographic code for place of work was the same as that for place of study.

Mode of transport — This question was asked of all persons who had either a place of study, or a place of work, or both. For students with part-time work, the question referred to the mode of transport used in travelling to their place of study, and for workers with part-time studies, the mode of transport used in their trip to work. Multiple answers were permitted, and all the modes of transport used by a person to get to school or work in one single trip were recorded. Separate fields in the bar-format section of the UDT form were used for modes of transport in Kowloon/New Territories, Hong Kong Island, and cross-harbour trips by ferry.

Those who worked in the same premises in which they lived, those who had no fixed place of work, those engaged in farming or fishing, and persons who walked to school or work were recorded as having no mode of transport. This question was not asked of the unemployed and economically inactive persons other than students. The question asked was:–

– "What methods did you use the last time you went to school or work?"

The codes for mode of transport are printed on the UDT form at Appendix 7.8.

Time of arrival at study/work — This question was asked of every person who had to travel to his place of study or work. The enumerators had to mark the time to the nearest quarter hour a.m. or p.m. of arrival on the last occasion that the respondent went to work or study.

In the February 1969 pre-test, this question was asked in relation to two predetermined peak periods of the day, 7 to 10 in the morning and 4 to 7 in the afternoon. However, it was later decided that information should be collected on the actual time that respondents used various modes of transport, in order to build up a complete picture of transport usage throughout the day. The question asked was :–

– "What time did you arrive at school or work the last time you went there?"

3.6 Marine vessel characteristics

In the Marine Census, two topics concerning marine vessels were decided, after discussion with the Marine Department and the Agriculture & Fisheries Department, with the purpose of enumerating all occupied vessels in Hong Kong waters. These were :–

– Type of craft

– Engine horse-power.

Type of craft — The type of each craft enumerated was ascertained by observation or enquiry. As in the 1961 Marine Census, vessels were classified into seven types according to their function. Sketches of these types were included in the enumerators instruction manual. Vessels were enumerated only if they served as living quarters.

Fishing vessels, which were defined as water-borne constructions primarily built for fishing and used as such at census time, were not sub-classified into different types, because this distinction could be found from the type of activity in which the fishermen were engaged.

The code C1 for type of craft is at Appendix 3.18 and pictures may be found at the centre pages.

Engine horsepower — This question was applicable to fishing vessels only, and the purpose was to find out how many fishing vessels were mechanized. The horsepower of the engine was asked as a means of classifying the fishing fleet by engine capacity and hence range of operations. This information was not recorded for non-mechanized fishing vessels and non-fishing vessels.

The code C2 for engine horsepower is at Appendix 3.19.

3.7 Marine household characteristics

There were fewer questions asked of marine households than land households, because some questions, such as rent and car ownership were not relevant to households living on board vessels. Five questions were asked :–

- Number of persons in household
- Type of household
- Tenure
- Alternative accommodation
- Household income

Number of persons in household — Household was defined in the same way as in the Land Census, but the number of persons included all persons who had passed Census Night, 22nd/23rd January 1971 at the beginning of the enumeration period, on board the vessel, regardless of whether they were present at the time of enumeration.

Type of household — This was defined and classified in the same way as in the Land Census.

The code H1 for type of household is at Appendix 3.3.

Tenure — By tenure was meant the terms or conditions under which the vessel was held.

The code H2 for tenure is at Appendix 3.4.

Alternative accommodation — This question was asked of heads of marine households who were also fishermen. Its purpose was to find out how many fishermen had alternative accommodation on shore and what type of accommodation.

The code H3 for alternative accommodation is at Appendix 3.20.

Household income — This question was defined and classified in the same way as in the Land Census, except that the income referred to the calendar month of December 1970.

The code H5 for monthly income is at Appendix 3.7.

3.8 Marine personal and transport characteristics

21 questions concerning the personal and transport characteristics of the marine population were exactly the same as those in the Land Census, both in definitions and classifications.

3.9 Disability

A topic which provoked much discussions was whether the extent of physical and mental disability among the Hong Kong population should be enumerated in the Census. The Working Party on Questions (see Chapter 2) recommended that this topic be excluded, because the enumerators were not sufficiently qualified and would not be able to obtain accurate results. However, the Medical & Health and Social Welfare Departments and several voluntary organisations concerned with the welfare of the disabled urged that the opportunity should be taken to obtain some information about the number of the disabled and their types of disability.

In the first pilot land census, the head of household was asked if there was any disabled person in the household, and a box was inserted at the bottom of the personal UDT form for marking the answer. However, no question on the types of disablement was asked.

It was finally agreed that an attempt should be made to obtain information on the types of disablement, so that the Medical & Health Department could use the results as a frame for subsequent more intensive studies. The method adopted in the main Census was for each enumerator to ask the head of household and record in his record book the age, sex and type of disablement of any disabled persons in the household.

The types of disablement were limited to four, so that the enumerators' work would not be made too complicated. These were :–

- loss of locomotion
- physical loss of limbs
- loss of senses/speech
- mental defects.

The chart for classifying types of disablement is at Appendix 3.21.

Generally speaking it must be considered that an unsatisfactory result was achieved. Although the distribution of disabilities was plausible the total number of disabled persons enumerated (14,588) was so far below numbers recorded elsewhere in the world as to carry little conviction.

Although this area of endeavour cannot be ignored the problem it appears must be tackled outside a full population census context.

3.10 Conclusion

The topics which were asked in the 1971 Census were in general those recommended by the United Nations. While on the whole the questions chosen were answered satisfactorily, the following discussion outlines some problems encountered in the collection of information on certain topics and pinpoints certain inadequacies in the data collected.

Type of living quarter and sub-type of accommodation — In the census schedule, "type of living quarter" meant the type of building or structure in which a living quarter was located, whereas "sub-type of accommodation" meant the space inside a living quarter, which was actually occupied by a household. In spite of painstaking efforts to explain the differences between these two concepts to the enumerators during their training, they still had some difficulty in distinguishing one from the other in actual enumeration. It was found in the post-enumeration check that the enumerators had made more mistakes in these two questions than in any other. In order to avoid the confusion, it is considered that in future censuses, a 3-digit classification should be devised which combines these two codes, type of living quarter and sub-type of accommodation, into a single concept.

Conjugal family nucleus — This topic was recommended by the United Nations and it was initially proposed to include a question on it in the Census for the analysis of household composition. However, in the first pilot land census in September 1969, it was found that this question posed very considerable problems for the enumerators. They were totally unfamiliar with the concept of "family nucleus" and in consequence, on many occasions reported incorrect answers. For this reason, it was decided to drop the question in the main Census. It appears that this question should not be asked by the enumerators, but the information derived at the data processing stage by reference to the relationship of each person in the household to the head. By this method, any problem would be transferred to the coding stage. Provided that well trained coders are available, it is considered that this topic could be included in future censuses.

Monthly household income — A question on household income was first attempted in the 1966 By-Census on a voluntary basis, and the response rate was on the whole satisfactory. In order to secure better response, it was decided to ask this question on a compulsory basis in the 1971 Census. It is a common experience in all countries that accurate income data is extremely difficult to collect. In Hong Kong, the population was not accustomed to this type of enquiry, and there was inevitably some suspicion as to the uses to which the data would be put. It is therefore not surprising that other sources of information indicate that there was an overall understatement of total household income in the Census.

Since this question referred household income for January 1971 which included the Chinese New Year, there was a problem whether New Year annual bonuses should be counted. Strictly speaking, an annual bonus is part of the annual income of the household, and therefore should be apportioned over

the twelve calendar months. However, since it was considered too difficult for the enumerators to do this, they were specifically instructed to exclude New Year annual bonuses from the household income for January 1971.

Again, since the income information was collected on a household basis, it was not possible to correlate it with personal economic characteristics such as education, occupation and industry. It is therefore considered that in future censuses, income information should be collected on an individual basis. The reported personal income can then be checked to some extent against the occupation of the respondent. Personal income data can also be cross-tabulated with occupation and industry to give a more complete analysis of the economic characteristics of the population. It should however be noted that improvement in income data might be achieved by collection from a sample only of the population.

Age at first marriage — This question was included in the Census because it was considered that the information obtained would be useful, in conjunction with that on number of children born, for the analysis of marital fertility. Since this question was asked of all ever-married women without differentiating between first and second or subsequent marriages, the data on marital fertility so derived did not technically meet the full requirements for demographic analysis. Nevertheless, in a Chinese community, re-marriage among the widowed and divorced is very uncommon, any bias in the data collected would not significantly affect such analysis. In view of the fact that complete and accurate vital statistics data are now available in Hong Kong, it is considered that this topic need not be included in future censuses. If detailed information on marriage and fertility is required, it could be collected from a sample of the population.

Number of children born and living — Information on numbers of children born and living was collected in the Census. It would however appear from the census results that the number of children born alive, especially for women in the older age groups, might have been understated because some respondents had omitted to mention children who had died in infancy. On the other hand, it is also possible that the number of children living might be overstated because some enumerators recorded the same number as children born. Since accurate data on infant and child mortality are now available in Hong Kong from vital statistics records, it is for consideration whether this topic needs to be included in future censuses.

Industry and Occupation — In the 1971 Census, the classification for industry was based as far as possible on the 1968 edition of the International Standard Industrial Classification of All Economic Activities (ISIC) and that for occupation on the 1958 edition of the International Standard Classification of Occupations (ISCO), with modification to suit local conditions and for comparability with the 1961 census data. However, since the data had to be coded by the enumerators themselves, simplified 2-digit classifications were devised. The census results showed that much details concerning patterns of industry and occupation were sacrificed because of these broad classifications. It is therefore considered that, in future censuses, 3-digit classifications should be adopted for these two topics, and the coding of the data be carried out by specially trained coders. For purposes of international comparability, the 3-digit classifications should follow closely the ISIC and ISCO; however, at the same time measures will have to be taken to maintain comparability of data with previous Hong Kong Censuses.

Transport questions: Place of work or study, Mode of transport, Time of arrival and Number of cars owned or available — These questions were included in the 1971 Census at the request of the Public Works and Transport Departments for the collection of specific information on trip preferences and car ownership. They were asked of the entire population, rather than a sample, because of the problems of sampling procedure envisaged in relation to field control. In the pilot censuses, it was found that the enumerators had some difficulty in completing the answers to these questions. To avoid these mistakes being repeated in the main Census, more detailed instructions on completing this section of the UDT forms were included in the training manual for enumerators. However, there were still some instances where the enumerators recorded inconsistent answers for mode of transport and time of arrival. The coding of the addresses of place of work and place of study to traffic zones also caused difficulties, since, in many instances, the addresses recorded by the enumerators were not complete. In fact because a limited number of trained coders were available only some 20% of the results were coded and the remaining data discarded. It is therefore considered that, if these questions are to be asked in future censuses, they should be asked of a sample of the population only, so that better quality data may be collected. It is also for consideration whether questions of such a specialised nature are appropriate for a population census; it is possible that more accurate data would be collected from specialised surveys.

CHAPTER 4

GEOGRAPHICAL WORK

4.1 General considerations

A population census requires detailed and accurate maps, in order that the census administrative divisions may be marked out and subdivided into enumeration areas. If possible, a list of living quarters should also be prepared in order to estimate the number of enumerators required.

As a preliminary to the 1971 Hong Kong Census, detailed geographic work was required in order to :–

- update all existing maps so that they could be used by the enumerators
- estimate the number of enumerator staff required for the economic yet comprehensive coverage of the whole territory
- enable the census data, once collected, to be processed in a logical manner by geographic sequence.

4.2 1961 Census

For the 1961 Census, a special section was set up to handle the field work for the preparation of census enumeration maps and lists of domestic buildings. The work of this section was to divide the whole territory first into census districts and subsequently into enumerator blocks. Measures were taken to ensure that there was no overlapping of areas or omissions from the network of enumerator blocks. This section, besides being responsible for the reticulation work, which is the technical term for the work described above, was also responsible for the production of enumerator block maps and dwelling lists.

However, at that time, detailed survey maps were not available for most of the rural areas; moreover, the section was set up only about one year before the actual enumeration. This meant that for many parts of the rural New Territories and for squatter areas within the urban areas, it was only possible to produce lists of dwellings, and no detailed maps were available to guide the enumerators.

4.3 1971 Census preparations

As mentioned in Chapter 2, a reticulation section for the 1971 Census was established in June 1967. Ample time was therefore available to update maps covering the whole territory; and to devise a system of geographical codes to facilitate enumeration control, data processing and computer tabulation. This section also compiled a list of all buildings and structures and marked them on to existing detailed maps. It was thus possible to provide all enumerators with very accurate maps of their enumeration blocks showing all structures containing living quarters, and a list of structures known to be occupied in each block.

4.4 1961 census areas and districts

In planning the 1961 Census, it was accepted that the conventional administrative areas would be appropriate for census purposes except in the New Territories. At that time, the New Territories Administration had divided the area into five administrative districts, and the Census Department adopted boundaries which corresponded as closely as possible to these administrative boundaries. The one exception was that the boundary of the New Kowloon Census Area was extended on the eastern side to include the villages of Ma Yau Tong, Mau Wu Tsai, and the Rennies' Mill settlement, and on the western side to include the Lai Chi Kok amusement park and the village of Kau Wa Keng.

Thus, in 1961, there were a total of 8 land census areas, 3 urban and 5 rural. These areas were then divided into 49 land census districts. The Hong Kong waters were divided into two marine census areas viz. waters adjoining Hong Kong Island, Kowloon and New Kowloon and waters adjoining the New Territories. These were further subdivided into 14 marine census districts.

4.5 1971 census areas and districts

In 1965, the Colony Outline Plan had adopted the 1961 census areas as primary planning units, and the census districts, modified in some instances, as the basis of secondary planning units. Thus, although a considerable redistribution of population had taken place between 1961 and 1971, the original census district boundaries were maintained in order to meet town planning requirements, and to maintain comparability with the 1961 Census.

No changes were made to the 1961 land census area boundaries. However, for town planning purposes, some slight modifications were made in the boundaries of the land census districts on Hong Kong Island between North Point and Shau Kei Wan, Aberdeen and South, and Mid-levels and Peak districts. In order to conform more closely with the administrative boundaries used by the New Territories Administration, there was also a modification of the boundary between Sai Kung North and Sai Kung South census districts. A map of the census districts for Hong Kong Island, Kowloon and New Kowloon areas is at Appendix 4.1 and for the New Territories at Appendix 4.2.

As regards the marine census areas, it had become apparent that, with the decreasing numbers of the floating population, it was not necessary to divide the Hong Kong waters into two marine census areas, and it was agreed with the Agriculture & Fisheries Department and the Marine Department that for the 1971 Census, the whole of the Hong Kong waters would be regarded as one census area. This resulted in a small saving in senior supervisory staff without detriment to efficiency. The boundaries of the marine census districts had however not proved entirely satisfactory in 1961; so the Shau Kei Wan and Tsuen Wan marine districts were each divided into two new marine districts. Thus in 1971 there were 16 marine census districts within one census area. A map of the marine census districts is at Appendix 4.3.

The 1971 census areas and districts were therefore as follows :–

Tab. 4.5.1. – 1971 Census areas and districts

Area	Districts
Hong Kong Island	Central, Sheung Wan, West, Mid-levels & Pokfulam, Peak, Wanchai, Tai Hang, North Point, Shau Kei Wan, Aberdeen, South
Kowloon	Tsim Sha Tsui, Yau Ma Tei, Mong Kok, Hung Hom, Ho Man Tin
New Kowloon	Cheung Sha Wan, Shek Kip Mei, Kowloon Tong, Kai Tak, Ngau Tau Kok, Lei Yue Mun
Tsuen Wan	Tsuen Wan, Tsing Yi, Ma Wan
Yuen Long	Tuen Mun, Ha Tsuen, Ping Shan, Shap Pat Heung, San Tin, Kam Tin, Pat Heung
Tai Po	Sheung Shui, Ta Kwu Ling, Sha Tau Kok, Fan Ling, Tai Po, Sai Kung North, Sha Tin
Islands	Tai O, Tung Chung, Mui Wo, South Lantao, Peng Chau, Cheung Chau, North Lamma, South Lamma
Sai Kung	Sai Kung South, Hang Hau
Marine	Yau Ma Tei, Victoria, Shau Kei Wan, Tai Tam, Aberdeen, Deep Bay, North Lantao, West Lantao, Cheung Chau, Tsuen Wan, Ma Wan, Lamma, Junk Bay, Port Shelter, Tolo, Mirs Bay

4.6 Tertiary planning units

Since the boundaries of the 1971 census areas and districts coincided closely with the 1961 boundaries, some districts showed considerable variation in area or population size. For example the largest land district (Sai Kung South) was about 88.70 sq. kilometres (21,918 acres) in area while the smallest (Sheung Wan) was a mere 0.69 sq. kilometres (170.30 acres). One district (Kai Tak) had a population of over 500,000 while another (Ma Wan Island) contained less than 1,000 persons. Moreover, and in spite of considerable efforts to achieve uniformity, the individual requirements of some government departments had resulted in their adoption of administrative districts which differed from the

census districts. Nevertheless, these departments required details of the size and characteristics of the population in these particular areas. In order to meet this requirement, areas smaller than census districts had to be formed, so that the data could be built up into the required aggregates. It was decided that the smallest town planning unit, i.e. the tertiary planning unit or T.P.U. should be adopted for the 1971 Census.

4.7 Street blocks

However, even then some administrative divisions adopted by government departments cut across tertiary planning units. In addition, the planning of certain technical services, e.g. drainage, required population data by smaller geographical units. It was therefore necessary to make arrangements so that the census data could, if required, be tabulated into these smaller units. In conjunction with the Town Planning Branch of the Public Works Department, the tertiary planning units were therefore further subdivided into a series of street blocks. In the urban areas, a street block was, geographically, a block or several blocks of buildings bounded on all sides by streets which serve as readily identifiable boundaries on the ground. It could also be a group of housing units with similar socio-economic characteristics e.g. resettlement cottage area, squatter area etc. and bounded on all sides by physical geographical features. A map showing tertiary planning unit 2.2.5 and street block 17 within it is at Appendix 4.4.

In the rural area, it was obviously impossible to demarcate street blocks, and so a system of village clusters was devised within the tertiary planning units. Although each village had its own name, the boundaries between village areas were often traditional rather than functional. It was therefore necessary to group adjacent villages into clusters as a preliminary to the formation of enumerator blocks. In some instances these were large villages and in others several small villages grouped together. An example is shown on the plan at Appendix 4.5.

The result was that the whole territory was divided into 234 tertiary planning units, and within these tertiary planning units, 2,301 street blocks and 1,233 villages clusters were delineated. The following table shows the distribution of tertiary planning units, street blocks and village clusters within each census area.

Tab. 4.7.1 – Census districts, tertiary planning units, street blocks and village clusters by census areas. (Land)

Census area	No. of census districts	No. of T.P.Us.	No. of street blocks	No. of village clusters
Hong Kong Island	11	55	1,034	–
Kowloon	5	21	600	–
New Kowloon	6	35	580	3
Tsuen Wan	3	20	87	74
Yuen Long	7	38	–	342
Tai Po	7	34	–	466
Islands	8	19	–	181
Sai Kung	2	12	–	167
Total	49	234	2,301	1,233

4.8 Maps

As the up-to-date aerial survey of the whole territory, which had been started in 1965, was virtually completed in 1970, maps for the 1971 Census did not present the problem that they had in 1961. Hong Kong was adequately covered by maps of various scales published by the Crown Lands & Survey Office of the Public Works Department.

For the delineation of census areas, census districts, and tertiary planning units, the 1 : 7,920 (8 ins. to 1 mile) scale maps were used for the urban areas, and the 1 : 25,000 maps for the rural areas of the New Territories and outlying islands. Maps of these scales were not, however, sufficiently detailed for use by enumerators, so very much larger town planning maps called survey sheets were used to show details of each block. For Hong Kong Island, Kowloon and New Kowloon, the 1 : 600 survey sheets were used and for the New Territories, the 1 : 1,200. In November 1968, two survey assistants with long service in the Survey Branch of the Public Works Department were recruited to the Census Division to mark all new buildings on to existing detailed maps.

4.9 Updating of Maps

The original reticulation staff of eight district supervisors was gradually built up to 40, assisted by four survey assistants. In the urban areas, the supervisors updated the Crown Lands map survey sheets for their districts by plotting on reclaimed land, new roads, etc., noting new constructions and deleting demolitions. They also walked over every street in their assigned district. They listed, street by street, the house number of each building, its number of storeys and the number of living quarters on each floor.

In rural areas, teams of one supervisor and one survey assistant improved the survey sheets by putting in geographical features, such as streams, footpaths, nullahs, churches, schools, post office pillar boxes, shop signs and similar visible land-marks to assist the enumerators who were to undertake the census work. They plotted on to the survey sheets and numbered all houses, huts, shacks and sheds which were used for dwelling purposes.

The field work itself was particularly arduous because the terrain of Hong Kong varied greatly. Conditions ranged from the crowded city areas of multi-storey buildings adequately served by public transport, to the widely scattered villages in the remote areas of the New Territories, where transport was not available and it was necessary to walk and climb many miles. In remote rural areas and the islands, special transport had to be arranged and government launches and even helicopters were employed to visit some areas.

4.10 Formation of enumerator blocks

The system of tertiary planning units, street blocks and village clusters once established, the next step was to form enumerator blocks. Based on experience gained in the 1961 and 1966 censuses, it was decided that the average enumerator's load should be about 300 persons in compact government and aided housing estates, 250 persons in urban multi-storey buildings, 200 persons in village areas and even less in remote rural areas. Based on the number of floors in each building, the number and type of living quarters on each floor, and the estimated occupation for each living quarter, the supervisors made a rough estimate of the population of each building. From this, the population of each street block was estimated. Taking into account the topographical lay-out of the area, the supervisors then marked out enumerator blocks of suitable work load by cutting the street blocks or lumping them together. These blocks were provisionally marked on to a field working survey sheet (A sheet). At the same time, a list of all buildings in each enumerator block was compiled.

The block details in the field survey sheets were then checked by the assistant area superintendents, and carefully transferred to the master survey sheets (B sheets) in Census Headquarters. Altogether there were 1,886 'B sheets' :– 701 of 1 : 600 for the urban areas and 1,185 of 1 : 1,200 for the rural areas and islands. The full updating process took almost three years.

A working map for each enumerator was produced by photostating copies of sections of the 'B sheets' by Rank Xerox machine; the boundaries of each enumerator block being marked on by hand. Each of these maps was also marked with a north point, a graphic scale and a geographic code number: tertiary planning unit/street block/enumerator block. Three copies of each enumerator map were made: one for the enumerator himself, one for the district supervisor, and the third for retention in Census Headquarters as a master record. Each enumerator block map was accompanied by a block detail list giving the following information: census area, census district, survey sheet, tertiary planning unit and street block numbers; street name, house numbers and number of floors in each building. In certain instances, where a large multi-storey building was divided into two or more enumerator blocks, this list also showed the floors to be covered by each enumerator, since this could not be indicated on the plan. An example of an enumerator map for an urban block is at Appendix 4.6 and block detail list

at Appendix 4.7. For rural blocks, the detail list gave, in addition, the boundaries of the village cluster and the approach road to the village. An example of an enumerator map for a rural block is at Appendix 4.8 and block list at Appendix 4.9.

4.11 Census divisions

The final step in this pre-census geographical work was to re-group enumerator blocks together to form administrative units to be controlled by chief enumerators, i.e. census divisions.

The number of enumerators who could be effectively supervised by each chief enumerator varied according to terrain and housing conditions. The size of census divisions was therefore fixed from the point of view of control. The number of enumerators in a census division ranged from 13 in a remote New Territories area to 23 in many government housing estates; the average number was 20. An example of a census division map is at Appendix 4.10. In all, 861 census divisions were formed containing 17,303 enumerator blocks. The distribution of these divisions and enumerator blocks by census areas is given in the following table :–

Tab. 4.11.1 – Census land divisions and enumerator blocks by census area (Land)

Census area	No. of census divisions	No. of enumerator blocks
Hong Kong Island	232	4,716
Kowloon	151	3,107
New Kowloon	315	6,254
Tsuen Wan	52	1,051
Yuen Long	45	902
Tai Po	48	947
Sai Kung	6	112
Islands	12	214
Total	861	17,303

Thus the geographical division of Hong Kong for the purpose of the Census necessitated two overlapping systems: one for administration and control of data collecting staff, and one for processing and subsequent presentation of the census data. This may be illustrated as follows :–

Administration	Data processing
Census area	Census area
Census district	Census district
Census division	Tertiary planning unit/Street block
Enumerator block	Enumerator block

Census areas, census districts and enumerator blocks were common to both systems. Census divisions were based on estimated population and were necessary for control of enumeration staff. Tertiary planning units and street blocks were town planning areas for which data was required for technical planning purposes. See Appendix 4.10.

To permit effective data processing, it was important to ensure that census divisions were entirely within census districts, and that individual enumerator blocks did not overlap census district boundaries. It was not possible to construct enumerator blocks in such a way that their boundaries did not cross tertiary planning units, but enumerators whose blocks crossed a tertiary unit boundary were issued with separate maps and sufficient records and forms to enable them to collect data separately for each tertiary planning unit.

4.12 Further updating

The pre-census geographical work was performed with great care, and the enumerator block maps were prepared at a time as close as possible to the actual enumeration. However, during this period,

the rapid growth and change in the urban areas often resulted in the enumerator block maps, prepared only a few months previously, being out-of-date by the actual enumeration period. To overcome this problem, enumerators were taught during their training how to record additions, deletions and alterations to buildings, if these were found on inspection to be different from their block maps and lists. It was stressed repeatedly during the training that it was their duty not to rely entirely on the written details, but to enumerate all persons and living quarters within the boundaries of their blocks.

After the census enumeration had been completed, all block maps and lists used by enumerators were returned to Census Headquarters and carefully checked against the master maps which were updated as necessary. Occasionally, this meant further field checking by the district supervisors. The object was to keep all building details up-to-date for future surveys and decennial censuses.

4.13 The Marine Census

The census areas and districts used during the census of the marine population have already been described above. It was not possible to delineate census divisions and enumerate blocks in the same manner as for the land population, due to the fact that the boats were mobile and rarely anchored in the same place for any appreciable length of time. A different field work technique had, therefore, to be employed.

The district supervisors assigned to control the census of the marine population counted the number of boats anchored in the 16 marine districts at regular intervals during the period before the Marine Census. Using plans of typhoon shelters and other anchorages, they plotted the number of boats found to be regularly anchoring in these areas. Photographs were taken at regular intervals from high buildings and high points on land, especially when boats were heavily concentrated, as during the Chinese New Year holidays, and these were compared over time to note changes in the size of boat clusters. An example for Aberdeen Harbour is at the centre pages. During the Chinese New Year, all boats normally return to their home anchorages. The pilot marine census was, therefore, held during this period in 1970, partly to test various census methods, but also to obtain an accurate count of boats in the various anchorages. During this period, aerial photographs of all anchorages were taken from helicopters by senior census officers. These photographs were compared with figures obtained from observation at sea-level, so that an accurate assessment of the number of boats could be made for all marine census districts.

These estimated figures were then plotted on plans of all the harbours in Hong Kong. Marine census divisions were delineated in each harbour plan using prominent land marks ashore, fairways and fire-lanes between concentrations of boats. Each division so formed became the responsibility of a chief enumerator.

This procedure was only adopted for anchorages containing boats which plied in local waters or fished from local ports. A special enumeration of ocean-going vessels was made at the same time as the census of the land population.

4.14 Conclusion

For the 1971 Census, it was originally planned that each enumerator block should contain about 200 persons in rural census districts and between 250 and 300 in urban districts, this being considered the number which could be handled by one enumerator within the ten-day census enumeration period. However, the formation of consistent enumerator blocks requires an accurate initial estimate of the number of persons living in each domestic premises within each street block. While the listing of buildings described above was completed satisfactorily, the second stage of population estimation was more difficult. The method used was to take an overall average occupation rate for all living quarters irrespective of type. The estimates were based on the very high occupation rates discovered during the 1961 Census, while in fact there had been considerable rebuilding and subsequent decrease in densities during the inter-censal period.

Thus, the population estimation based on this average occupation rate for each living quarter did not reflect the true housing situation in some urban census districts. The degree of sharing (i.e. the number of households occupying each living quarter) varied to a large extent in different types of living quarter and in different census districts. In old tenement floors, for example, the degree of sharing was very high and therefore the occupation rate for each living quarter was higher than the average. On the other hand, self-contained apartment flats put up in the late 1960s were generally

occupied by only one household, and the use of an average occupation rate over-estimated the number of persons in them. Thus, since the population of street blocks had been estimated by this procedure, it was inevitable that the final cutting of enumerator blocks was not entirely consistent. A check on the variability of the size of the enumerator blocks was made after the Census had been completed. The results of this check are given in the table below :

Tab. 4.14.1 – Distribution of enumerator block size

Enumerator block size	No. of enumerator	Percentage of total
100 & under	734	4.3
101 – 150	2,125	12.3
151 – 200	3,951	22.9
201 – 250	4,493	26.0
251 – 300	3,782	21.9
301 – 350	1,599	9.3
351 – 400	420	2.4
401 & over	163	.9
Total	17,267	100.0

This shows that about 40% of enumerator blocks were of less than 200 persons, 48% between 200 and 300 persons and 12% of 300 persons or more. This uneven distribution of work load among the enumerators was obviously unsatisfactory and should be avoided as far as possible in the future.

Therefore, for future census work, it is important that regular-sized enumerator blocks are formed. The first step to achieve this is to maintain a permanent and updated list of living quarters by types and street blocks throughout the whole territory. The second step is to make more accurate estimates of the population of each street block, using an average occupation rate for each type of living quarter derived from multiplying the degree of sharing and the average household size. The list of living quarters by types and by street blocks obtained in the 1971 Census will be continuously updated by the permanent reticulation team of the Census Department. The degree of sharing in different types of living quarter, and the average household size obtained from the 1971 Census, should also be updated by annual surveys. The continuing availability of accurate and detailed maps, and updating of population estimates is vital for future census taking, and will result in pre-census geographical work being reduced to a minimum.

CHAPTER 5

RECRUITMENT AND TRAINING OF CENSUS STAFF

5.1 Field organisation

One of the major operations to be undertaken in the 1971 Census was the recruitment, training and supervision of a sufficient number of field staff to carry out the enumeration. It had already been agreed, in the early planning stages, not to rely on the filling in of the census schedules by the householders themselves and therefore enough enumerators had to be recruited so that personal visits could be paid to each household and all persons in it enumerated.

Based on the geographical divisions described in Chapter 4, the census field staff was organised as follows:–

Territory	Area Superintendent
Census Area	Assistant Area Superintendent
Census District	Supervisor
Census Division	Chief Enumerator
Enumerator Block	Enumerator

The area superintendent, assistant area superintendents, and supervisors were engaged as government servants on temporary terms or seconded from other government departments for the whole period of the Census, while the chief enumerators and enumerators were recruited for the enumeration period only. A chart illustrating the organisation of the field force is at Appendix 5.1.

Area superintendent — In the 1961 Census, there were three area superintendents, one for each census area, i.e. Hong Kong Island, Kowloon/New Kowloon and the New Territories. This number was necessary in order to monitor the reticulation programme in preparing a complete set of survey maps and lists of domestic buildings, almost from scratch, for the first modern census in Hong Kong. However, since no changes were made to the 1961 land census area boundaries, the reticulation work for the 1971 Census was very much less onerous. For 1971 it was therefore considered that also for better control, there should be only one area superintendent for the whole of the territory of Hong Kong. Liaison with various organisations, which was formerly carried out by the area superintendents, could be done at the level of assistant area superintendent in each census area. This post was filled on an acting basis by an assistant area superintendent who had experience of the 1961 Census and the 1966 By-Census.

Assistant area superintendents — In 1961, there had been five of these officers, one each for Hong Kong Island, Kowloon/New Kowloon, the New Territories, Colony Waters and the New Territories Waters. For 1971 it was decided that five would also be required; however, because of the decrease in the marine population and the increase in the population in New Kowloon, their areas of responsibility were redistributed as follows: Hong Kong Island, Kowloon, New Kowloon, New Territories, Marine. The five posts were filled on an acting basis from January, 1970 by supervisors with experience in either the 1961 Census or the 1966 By-Census. These officers worked directly under the control of the area superintendent. They were each assigned a geographic area of responsibility; this was usually a census area except in the New Territories where the five census areas were combined. Within these areas, they were in charge of all geographical and enumeration field work. They were each responsible for a number of supervisors, as shown in the organisational chart.

Supervisors — The 40 district supervisors worked directly under the control and supervision of their respective assistant area superintendents. Although, as mentioned in Chapter 4, the territory had been divided into 49 land and 16 marine districts, it was considered that 40 supervisors would be adequate for the proper conduct of the operation as, in some cases, one supervisor could take charge of two or more census districts. Within their districts, supervisors were responsible for:–

- mapping out their districts into enumerator blocks
- physically checking these blocks on the ground
- training their own chief enumerators and field editors
- supervising the enumerator training classes
- supervising and controlling their enumeration field staff during the enumeration period.

Chief enumerators — The main duty of these officers was to supervise the work of about 20 enumerators in a census division. They had to advise and assist the enumerators in locating the boundaries of their blocks and in the details of their work. They were also responsible for the issue of stores and the checking and collection of completed forms at the end of the enumeration period. As the bulk of the enumerators were school boys and girls, it was considered that school teachers from primary and secondary schools would be most suitable for these posts.

Assistant chief enumerators (field editors) — In the 1961 Census, enumerators had exchanged schedules with fellow enumerators and coded each others' schedules from the original written data. For the 1971 Census, consideration was given to the feasibility of employing a large number of specially trained coders to code every UDT form before input to the computer; however, it was decided that this would be impractical. Nonetheless, some advance in the direction of more exact coding was very desirable, because of the need to input clean data to the computer. It was therefore decided that this could be achieved by training a force of assistant chief enumerators, whose job would be to check the work of the enumerators to ensure that all the UDT forms are completed and accurately coded. As mentioned in Chapter 2, the number of these staff was doubled, i.e. two to each census division and their title changed to field editor after the first pilot land census in September 1969. It was considered that students from the Universities and Colleges of Education would be most suitable for these posts.

Enumerators — The duties of these staff were the same as in the 1961 Census and the 1966 By-Census : to visit the households, to ask the questions on the form and to fill in the answers. It was therefore necessary that they be literate in Chinese and reasonably well educated. Also, because of the careful handling and marking required of the UDT forms, a good standard of general intelligence was required. It was considered that senior secondary school students in Forms 4, 5 and 6 fulfilled these criteria with the additional advantage that they were accustomed to marking UDT forms which were used in the public examinations. In order to ensure that volunteer students were available, the decision was taken to declare a school holiday during the census period.

5.2 Numbers of field staff required

Based on experience in the 1961 Census and the 1966 By-Census, it was decided that one enumerator could enumerate 200-300 persons in the 10-day enumeration period. As mentioned in Chapter 2, the Census Plan had made an initial estimate, based on the experience of 1961, of 21,000 enumerators. Since each chief enumerator could control about 20 enumerators, it was estimated that 1,050 would be required.

By early May 1970, the geographical work described in Chapter 4 had reached a stage where it was possible to estimate more accurately the number of field workers required to carry out both the Marine and Land Censuses. This number, distributed by census areas, was as follows :–

Tab. 5.2.1 – Provisional number of temporary field force by census area

Census area	Supervisors	Chief enumerators	Field editors	Enumerators
Hong Kong Island	8	230	479	4,621
Kowloon	5	152	330	3,086
New Kowloon	9	318	645	6,300
New Territories	9	160	322	3,370
Marine	8	65	125	695
Total	39	925	1,901	18,072

This number did not include the field staff required for the enumeration of special classes (see Chapter 7 for definition), and was subject to adjustment when reticulation work was completed. Since not all field staff recruited would be suitable and since there would obviously be drop-outs during training, it was decided that approximately double the numbers required should be recruited in the first instance, i.e. 33,000 enumerators, 2,100 chief enumerators, and 3,700 field editors.

5.3 Recruitment of field staff

On the basis of these provisional requirements, following discussions with the Education Department, a General Schools Circular was issued in June 1970 inviting applications from teachers and students to serve as temporary field staff. The circular said that volunteers would be required for both the Marine and Land Censuses. It was made clear in the circular that, because of the heavier responsibilities required of chief enumerators and field editors, qualified teachers, teachers in training in the Colleges of Education, and University undergraduates should apply for these posts; while secondary school students in Forms 4, 5 and 6 and Middle 4, 5, and 6 could undertake the duties of enumerators. The Land Census holiday was mentioned, and the rates of pay for the various posts were also stated. At about the same time that the General Schools Circular was issued, a separate approach for volunteers for field editors was made to the three Colleges of Education and the two Universities.

The response to the circular was quite satisfactory for chief enumerators and field editors, but very disappointing so far as enumerators were concerned. By August 1970, two months after the circular had been issued, only 6,787 students had applied. Applications for the posts of chief enumerator and field editor far exceeded the number required and indeed, at one stage, outnumbered those for enumerator. Sufficient students however, had volunteered for the Marine Census in January 1971. From further discussions with the Education Department, it appeared that the poor response was mainly because students in the upper forms were concerned about their final examinations in May 1971, and for this reason, certain schools were not encouraging students to volunteer for census work.

It was therefore agreed that another General Schools Circular appealing for volunteers should be sent after the commencement of the new school year in September. A second circular was accordingly issued on 8th September 1970. As a result of this second circular, the recruitment situation improved, and by the end of the month, a total of 13,812 applications had been received. On the basis that it was intended that enumerators should serve in the same census area in which they lived, there were sufficient recruits for Hong Kong Island, but not for the other census areas.

In view of this, it was decided to intensify the recruitment drive. Between the 1st and 10th October 1970, district supervisors of the Census Division called on heads of various schools in their districts and made an appeal for their support in enlisting recruits. This personal approach was particularly important in the remoter parts of the New Territories, where in some cases the villages were so remote that the enumerators had to be recruited from schools which were not actually located in the villages to be enumerated.

This recruitment exercise by the district supervisors was most successful. However, experience with the 1961 Census showed that not all those selected would, in fact, take up the job even after training. Allowance had therefore to be made for drop-outs, failures in the test, and for those who, for one reason or another, could not take up the duties of enumerator after they had been selected. Because of these problems, applications continued to be accepted until one week before the commencement of training. By the last week of November 1970, 33,563 applications had been received. These figures included a number who had originally applied for the posts of chief enumerator or field editor but who, because they were not selected for training, agreed to be trained as enumerators.

In both recruitment circulars, and in the recruitment drive by the district supervisors, it was emphasized that all efforts would be made to post enumerators to work as near to their homes as possible, and it was hoped that this could be carried out for all districts. In the event, all districts had their sufficient quota of recruits, with the exception of Lei Yue Mun district in the New Kowloon census area. Since applications for Hung Hom in Kowloon and North Point and Shau Kei Wan on Hong Kong Island were more than required, arrangements were made to transfer the excess applicants to work in Lei Yue Mun.

5.4 Training of field staff

The system of training field staff for the 1971 Census was a staged one. First, in August 1970, the district supervisors were given a special one-day training course on methods of instruction by the Government Training Division. This training included the techniques of instruction and practical sessions. They were given lectures by the area superintendent on interview method, and by the statisticians of the statistics section on the definitions of census questions and classifications.

Each district supervisor was responsible for training the chief enumerators and field editors of his own census district. The chief enumerators were, in turn, responsible for training the enumerators

in their own census divisions. After the second pilot land census in March 1970, the instructions for enumerators were revised and expanded, translated into Chinese, and printed in a booklet with coloured pages to distinguish the various codes. This was the basic training manual for the census and was issued to each member of the field staff during training for use during the census operation.

In order to achieve uniformity in training the very large number of enumerators by different chief enumerators, a teaching brief was drawn up with the advice of Government Training Division. All lecturers were given strict instructions to follow this brief closely. Teaching aids were provided in the form of blow-ups of the UDT forms and a page of the enumerator record book. To ensure that the teaching brief was followed, senior officers of the department conducted surprise visits to all of the centres while training was in progress. A copy of the brief is at Appendix 5.2.

As additional training aid, special exercises were written and printed for classroom practice for chief enumerators, field editors and enumerators. A special film was also produced. This training film, which stressed the important points a census officer should follow in the course of his duties, was made by the Government Information Services in close co-operation with the Census Division.

5.5 Training of chief enumerators

When applications for the posts of chief enumerator and field editor closed at the end of September 1970, over 10,000 applications had been received. It was not possible to train all those who had applied, and the district supervisors therefore went through each application to select those to be called for training. In the end, over 2,000 applicants were selected. Due to the limited number of classrooms available in schools, three training sessions were held as follows:–

- 5th to 15th October – Marine Census – 8 classes, 100 trainees
- 23rd October to 3rd November – Land Census Group A – 30 classes, 1200 trainees
- 9th to 17th November – Land Census Group B – 26 classes, 1040 trainees.

The lectures, given by district supervisors, were held in the evenings from 7 to 9 p.m.

The training programme consisted of a series of 12 lectures spread over six days. The main emphasis was placed on the definitions in the census questions for the enumeration of persons, and on the method for recording this information on the UDT forms. As the candidates were all teachers, or teachers undergoing training, it was not necessary to teach them methods of instruction. A copy of the chief enumerator training programme is at Appendix 5.3.

The final selection of candidates to serve as census chief enumerators was based on the results of a test which was held at the end of the series of lectures. As most of the trainees would be working under the supervisors who had taught them, the final selection for each census district was made by the district supervisors. Those selected were immediately allocated their census divisions, and arrangements were made for them to train the enumerators in their own division.

5.6 Training of field editors

Because of the lower honorarium offered, considerably less applications were received for the posts of field editor than for those of chief enumerator. 3,625 candidates were selected for training. The training, again given by district supervisors, was held in the same schools from 7 – 9 p.m. Four training sessions were held as follows:–

- 19th to 23rd October – Marine Census – 8 classes, 125 trainees
- 23rd to 27th November – Land Census Group A – 30 classes, 1,200 trainees
- 30th November to 4th December – Land Census Group B – 29 classes, 1,160 trainees
- 7th to 11th December – Land Census Group C – 21 classes, 840 trainees.

The training programme consisted of eight lectures spread over four days. In the lectures, emphasis was placed on the coding and checking of the UDT forms. A special printed manual for field editors was also provided. A copy of the field editors training programme is at Appendix 5.4.

Selection of candidates to serve as field editors during the enumeration period was based on the results of a test held at the end of the series of lectures. Final selection was again made by district supervisors.

Shortly after the commencement of the actual census operation, several field editors submitted their resignations. This resulted in some districts, in particular Kai Tak, being under strength. To remedy the situation, competent enumerators were promoted to fill these vacancies. These enumerators were given special briefings by the supervisors before commencing work.

5.7 Training of enumerators

As soon as each group of chief enumerators had been appointed, arrangements were made for them each to train the enumerators for their own census division. Over 2,000 students had applied as enumerators for the Marine Census and, of these, 1,025 were selected for training. The course ran from 23rd to 27th November, 1970, during the training period for the Land Census chief enumerators.

A total of 65 classes were held in selected schools in the evening. The training programme consisted of eight lectures spread over four days. At the end of the training, a test was held, and the test paper were marked by chief enumerators who also made recommendations for the final selection.

At the beginning of December 1970, the number of enumerator candidates for the Land Census exceeded 33,000. This included those who had applied to be chief enumerators or field editors, but had not been selected and had agreed to serve as enumerators.

Because of the large numbers, training had to be split into two separate groups, and arrangements were also made for training a third group if necessary. The first group training was from 14th to 18th December, 471 classes for over 18,000 candidates were held as follows:–

Area	Classes	Trainees
Hong Kong Island	120	5,400
Kowloon	83	3,638
New Kowloon	181	6,322
New Territories	87	2,661
Total	471	18,021

Two weeks before the start of the training sessions, candidates were notified to attend and some immediately withdrew their applications possibly because the timing of the training programme was inconvenient to them. This had been anticipated during the recruitment exercise, and arrangements made to allow for it. One of the reasons for the withdrawals was that the dates for the training classes clashed with the mid-term examinations in some schools. Arrangements were made for the 969 students concerned to be trained in a special third group of 24 classes.

The training of the second group lasted for five days from the 4th to 8th January 1971. A total of 393 classes were held and over 15,000 candidates were trained as follows:–

Area	Classes	Trainees
Hong Kong Island	112	5,040
Kowloon	68	2,929
New Kowloon	137	5,143
New Territories	76	2,532
Total	393	15,644

As with the first group, many students could not attend lectures because the training dates clashed with their school's mid-term examinations. Alternative arrangements were made to train them from 18th to 22nd January 1971, when another 21 classes were specially held.

Training was held in school buildings in the evenings from 7.15 p.m. to 9.15 p.m., so as to give sufficient time for trainees to arrive at their place of training as quite a number of them had to attend school in the afternoon. During the periods of training, each centre was manned by a supervisor with clerks to assist him with the issue of stores and to guide trainees to their correct classrooms. The

supervisors also met the chief enumerators before the lectures, during breaks between lectures, and after the lectures, to sort out any difficulty which a chief enumerator might encounter in the course of his teaching and to give any additional briefing.

The training was similar to that given to chief enumerators, but in addition, the proper method of conducting an interview was taught; trainees were told to be courteous, patient and polite. Special emphasis was placed on the careful handling and marking required of the UDT forms. A copy of the training programme for land census enumerators is at Appendix 5.5.

On completion of training, a test was held and the test papers of each class corrected by the chief enumerator in charge of the census division concerned, who also made the final selection. Each district supervisor also test-marked a sample of the enumerators' examination papers in his district and checked the final selection list. The assignment of enumerators to their blocks was carried out by the district supervisors. The original copy of the attendance and examination sheet for each class was then passed to the census administration section for preparation of the paysheets.

5.8 Final briefing and initial payment of field staff

The rates of honorarium approved for the 1971 Census were $15 for all those who successfully completed the training and passed the test. ($5 for those who failed the test but attended five or more lectures). Payments for the actual census were :—

- chief enumerators $400 (plus $100 for lecturing to enumerators)
- field editors $300
- enumerators $200

To assist the enumerators in meeting their travelling and incidental expenses during the enumeration period, it was necessary to advance them one-quarter of their honoraria and to pay them their test bonus and attendance fees before the Census. In addition :—

- each enumerator had to be briefed and instructed as to when and where he should report on the first day of the operation
- all census officers were issued with identity cards and were required to take an oath in accordance with the Census Ordinance not to divulge any information which they became aware of in the course of their duties
- the training film dealing with the main points of enumeration procedure had to be shown.

For general convenience, it was decided to combine these exercises in one operation and to conduct it by areas over a period of one month. Because the number of persons concerned was over 21,000, it was not possible to perform this operation in one day as was attempted in 1961. The programme of payment was conducted in 10 centres over a period of seven days between 7th to 21st February 1971.

Since the numbers involved were quite considerable, premises had to be obtained with a compound in which to marshall the enumerators, sufficient rooms to house them during payment, and a large hall to show the film. It was decided that large schools provided all these facilities and the loan of school premises was therefore requested and a standard procedure was drawn up.

Where possible, these exercises were held in a secondary school. Enumerators were marshalled on the playground by census division under their chief enumerator. They were then conducted to a classroom where they were sworn in by a Deputy Commissioner of Census, and signed the Census Officers Declaration at Appendix 5.6. They were then given their advance of pay, and issued with their identity cards, specimen at Appendix 5.7. They then moved to the school hall for the showing of the training film and final briefing.

5.9 Replacements and reserves

Altogether, over 1,000 selected enumerators failed to turn up for the swearing in. However, this drop-out had been anticipated, and arrangements made to meet it. At the end of each payment exercise, the district supervisors took a list of the drop-outs in their districts and telephoned them to confirm that they declined the offer of appointment. The supervisors then selected the next suitable candidate from the examination list. Special arrangements were made for attestation and issue of identity cards for these replacements.

On the first and second day of the actual census enumeration, there were still enumerators submitting their resignations. Some did so because they did not like the block to which they had been assigned; others, because they thought that the work would be too difficult. Fortunately there were only 85 such resignations, and replacements were found without much difficulty from a reserve pool of 200 enumerators distributed by census areas which had been formed as a safeguard against such an eventuality. During the enumeration period, therefore, there was never a shortage of enumerators.

When the Census had been completed, the arrangements made to pay the field staff the balance of their honoraria were similar to those for the preliminary payment. All census officers were required to return their identity cards, and payment was made when these were handed over to the paying officer. District supervisors were required to sign a certificate that the census officers under their control had carried out their duties satisfactorily, and that there had been no dereliction of duty by any officer. The final payments were also spread over a period of seven days from 9th to 20th April 1971 in the same 10 centres.

5.10 Conclusion

From the experience of the 1961 Census, it was decided at an early date that there was no other major source of manpower for enumerators except secondary school students. The fact that a sophisticated computer form, to be marked and coded by the enumerators themselves, was to be used was another reason for deciding on secondary school students, since they would have had experience in handling and marking this type of form.

Although it was possible, after personal approach to school headmasters, to obtain the required number of field staff for the 1971 Census, it was necessary to recruit down to Form 4. After the Census, it was felt that these younger students were generally not sufficiently mature for this work. They were a bit too young to understand fully the details of the field procedure required, and the various concepts and definitions used in the Census. It therefore seems desirable, for future census taking, to recruit students as far as possible from the sixth forms of secondary schools and from the Universities and Colleges of Education as enumerators. In this connection, it is important that sufficient publicity be directed towards teachers and students at an early date to arouse their interest in census work, and that attractive honoraria be paid to persuade them to forgo their studies or other activities. It is also important that the dates for training sessions be arranged in such a way as not to clash with the examinations in schools.

Because of the decisions to administer a full census questionnaire to a population of four million in a 10-day period, it was necessary to employ over 18,000 enumerators. The only way this number could have been reduced would have been by asking householders to complete certain details themselves or by using sample enquiry.

Because of the expected drop-out rate during training and failure in the tests, it was decided to aim at an initial recruitment of nearly twice the final number required. However, since enumerator applicants were allocated to the census divisions nearest their homes for training, and since only about half the trainees in each division were eventually selected, selection was not necessarily based on an overall standard in the test. This caused a difference of standards of enumerators between divisions, and a certain amount of dissatisfaction among trainees.

The system of two-stage training inevitably led to some differences between what the district supervisors taught the chief enumerators and what the latter taught their enumerators. Considerable efforts were made to ensure conformity in instruction content and in the interpretation of census concepts. However, since it was impossible to ensure absolute conformity in content and delivery among different instructors, and since the training of chief enumerators only occupied 10 hours, there were inevitable differences between chief enumerator divisions.

For the training of field staff in future censuses, it is important that the chief enumerators should be trained more intensively and for a longer period before they are assigned to train their enumerators. As regards enumerators, steps should be taken by means of initial aptitude or practical tests to screen off those definitely unsuitable and therefore reduce the number to be trained. It would then be possible to give more intensive training to the smaller numbers, and hence ensure a more even and better standard. It is also important that the training of enumerators should not take place too long before the actual enumeration, so that the enumerators will retain what they have been taught.

CHAPTER 6

ADMINISTRATION AND OTHER PREPARATIONS

6.1 Accommodation

For a period of eight months before the enumeration period, and for one year after it, additional office space was required :–

- to accommodate the census planning staff
- to serve as the field headquarters for the Kowloon and New Kowloon census areas
- to store the UDT forms and other census stores
- to accommodate staff for editing work in connection with rejects.

It was estimated in the Census Plan that approximately 20,000 sq. ft. of space would be needed for these purposes.

6.2 Census Headquarters

For use as Census Headquarters and field headquarters for the Hong Kong census area, the fifth floor of International Building in the Central District of Hong Kong comprising an area of 10,900 sq. ft. was leased for a period of 24 months commencing from 1st October 1969.

6.3 Whitfield Barracks

For the Kowloon and New Kowloon census areas field headquarters, the possibility of taking over some disused army huts in the former Whitfield Barracks in Tsim Sha Tsui, Kowloon was investigated. Four huts were available for use; and the surrounding area, formerly a parade ground, was ideal for the parking of lorries for the loading and unloading of stores. The huts were used for storing the six million personal and household UDT forms; for holding stores and other printed documents for the training of census enumeration staff; and for offices for the field staff of the Kowloon and New Kowloon census areas headquarters.

The interior of all these structures were in a bad state of repair, and considerable alterations were necessary to install the air-conditioners needed to keep the UDT forms in good condition. However, it was decided to accept this accommodation, mainly because of the availability of parking space. The cost of renovating the four huts was about $288,000. Work started in July 1970 and the huts were handed over to the Census Department on 10th September 1970 just in time for the arrival of the UDT forms from England. Photographs of these huts may be found in the centre pages.

6.4 Field centres

In addition to the main field headquarter, it was important that suitable premises be found to accommodate the field staff during the enumeration period. These field centres were required :–

- to facilitate control by supervisors and chief enumerators
- to hold the large amount of census forms and other stores
- to provide a base, where the enumerators could mark and code the UDT forms
- to furnish space for the field editors to check the completed UDT forms.

The only suitable public buildings for census purposes were schools. Discussion on using schools throughout the urban areas as census field centres commenced as early as June, 1970, with the Education Department and, for remote rural districts, with the New Territories Administration. By October 1970 details were finalised. Since a census holiday had been declared to enable students to undertake enumeration duties during the Land Census, the schools required were free for use during the period of enumeration.

Since the Marine Census was not on a very large scale, and because no census holiday was proclaimed for it, only a few vacant rooms in 12 schools, situated near the anchorages, were obtained to accommodate the enumeration staff. In the Land Census, however, 91 field centres were set up and 913 classrooms were used.

Each census division was allocated one classroom in which the chief enumerators, field editors and enumerators worked daily during the enumeration period. Each district supervisor was also allocated one classroom to serve as a district centre. In some instances however, where the district covered a large area or a supervisor had to cover two districts, he was allocated classrooms in two separate schools to serve as district centres. A full list of field centres is at Appendix 6.1.

6.5 Printing

Throughout the census operation, it was important that the forms and documents required should be printed sufficiently early to allow ample time for packing and distribution to the field staff. To achieve this, it was necessary that the Government Printing Department should be given sufficient notice of the amount and nature of printing work which would be required, so that financial provision could be obtained, and sufficient time allowed, for the documents to be printed.

The design and layout of these items required careful consideration, and was discussed in detail at the census staff meetings. In fact, while the design of certain items e.g. enumerator identity cards, application forms and oath forms was decided at an early date, the design of most of the census documents was only finalised after the completion of the pilot marine census and the second pilot land census.

However, for various operational reasons, it was not always possible to keep the Government Printer informed in advance of documents which required to be printed. There were many occasions when only very short notice was given, and the great flexibility shown by the Government Printer in always delivering the printed documents on time was one of the major factors in the success of the census operation.

In the 1971 Population and Housing Census, some 1.7 million copies of documents were printed by the Government Printer at a total cost of about $141,400. A full list is given at Appendix 6.2.

Apart from these, 10,000 posters and 500,000 leaflets were printed at a cost of $1,523 and $4,800 respectively, to publicise the Census.

6.6 Printing of UDT forms

The printing of the UDT forms required special arrangements. Because of the requirements of the document reader, the printing of bar-format section and each individual coding box had to be very exact to ensure that all coding marks were read. The forms had therefore to be printed to a very precise standard of measurement. The UDT forms for the pre-test and the pilot censuses were printed locally by the Government Printing Department. However, while it was possible to achieve the standards required for the small quantity of about 40,000 forms used in these pilot censuses, the equipment available would not be able to maintain this standard for the approximately six million forms required for the main Census. It was therefore decided that the forms for the main Census should be printed by a private printing company. International tenders were invited for this job, and the order for the 6,635,000 forms was placed with Messrs. Lamson Paragon Ltd. of Summerhill, Britain at a cost of $303,551.25. The UDT forms for the main Census were printed using the type of paper approved by the International Computers Limited. A sample of about 3,000 advance copies of the printed forms was delivered to ICL (London) to be tested for acceptability, and the whole consignment arrived in Hong Kong in September 1970.

The UDT forms were originally bound in pads of 50, however, in order to minimize the wastage of forms, it was decided after the first pilot land census to bind them in pads of 30 instead, with a strong cardboard backing sheet to protect the forms.

6.7 Storage and handling of UDT forms

Because of the rather fragile nature of the UDT forms, it was necessary to ensure that they were not damaged when being carried around by the enumerators. Plastic folders were considered for holding the UDT forms, but were found to be too small, as each enumerator had to carry about nine pads of forms. With the assistance of the Government Printer, a cardboard box was designed for the first pilot land census. This box was not satisfactory as it was not strong enough to withstand the wear and tear of outdoor work. A further design was therefore produced for the second pilot land census, but this was again found to be unsatisfactory, the handle, in particular, being too weak. In its final

form, the box was made of much stronger materials, its size enlarged and the handle strengthened before an order for 23,262 was placed for use in the main Census. A sketch of the enumerator cardboard box is at Appendix 6.3.

At the Whitfield Barracks field headquarters the UDT forms were packed into enumerator cardboard boxes and stored in 363 specially designed wooden racks. These racks were labelled by census divisions and each box was placed in correct sequence. After enumeration, the forms were returned in enumerator boxes by divisions and replaced in their allotted positions on the racks. A diagram of the rack is shown in Appendix 6.4.

The pads of UDT forms had to be guillotined to remove the binding before the forms could be input into the computer. 15 metal trolleys were specially constructed for moving these forms in their boxes to and from the lorries at the Whitfield Barracks field headquarters, at the Government Printing Department, North Point and at the Document Holding Area at the Government Computer Centre. A diagram of the metal trolley is shown in Appendix 6.5.

At the Document Holding Area during the data processing phase, the UDT forms were transferred from their boxes into file jackets which were placed in specially constructed wooden carriers of size 32' x 15'2" x 1'6". 16 of these carriers were made, in such a way that they could be carried directly into the computer room on two special trolleys. Diagrams of the UDT form carriers and the wooden trolleys are shown in Appendices 6.6 & 6.7.

6.8 Issue of stores

In addition to the printed materials mentioned above, a large quantity of general stores was required for use by the field staff during the enumeration period. Actual quantity of stores issued are shown in the following table:–

Tab. 6.8.1 Stores issued during the Marine and Land Censuses, 1971

Item	Marine Census	Land Census	Total
Erasers	320	8600	8920
Pencils	1770	42970	44740
Glue (bottle)	1390	2570	3960
Strings (roll)	20	860	880
Pencil sharpener	70	2580	2650
Scribbling pad	20	430	450

Other than stores issued to each chief enumerator, field editor and enumerator, reserve stocks were stored at the 91 land field centres and at the land field headquarters for replenishment purposes. In view of the relatively smaller size of the operation, no extra stores were issued to the marine field centres. Instead they were kept in the marine field headquarters on the fifth floor of International Building, from which replenishment could be made to the field centres when supplies ran short.

The transportation of the UDT forms and other stores to the field centres was carried out according to a strict time table. In view of the small number of field centres needed for the Marine Census, it was not too difficult to adhere to this time table. For the Land Census, however, it was of paramount importance that the time table was strictly adhered to and no deviation made without prior approval. Stores were delivered to all district field centres in Hong Kong Island, Kowloon, New Kowloon and the New Territories starting from 9th February 1971 and completed 9 days before the commencement of the enumeration. This operation was summarized as follows:–

Tab. 6.8.2 Transportation of stores to field centres – Land Census, 1971

Area	Date/Day	Time required	Vehicle required
Hong Kong Island	9.2.71 – 12.2.71 (4 days)	9 a.m. – 6 p.m.	13 lorries 2 Station wagons
Kowloon	15.2.71 – 19.2.71 (5 days)	9 a.m. – 6 p.m.	8 lorries –
New Kowloon	1.2.71 – 5.2.71 & 8.2.71 (6 days)	9 a.m. – 6 p.m.	12 lorries 1 Station wagon
New Territories	15.2.71 – 18.2.71 (4 days)	9 a.m. – 6 p.m.	7 lorries –

6.9 Return of stores

After the census operation, the chief enumerators had to pack up all stores in the field centres. Before receiving the stores from the chief enumerators, the district supervisors went through the very tedious job of checking to see that no item of store had been left behind in the field centres. The enumerator record books, chief enumerator summary sheets, chief enumerator record books, disablement forms and transient forms were packed in the chief enumerator satchels, while the unused UDT forms were carefully placed in cardboard cartons. All stores were transported by covered lorries to Whitfield Barracks from 11th to 14th March, 1971. Clerical assistants and labourers under the supervision of district supervisors helped in the loading and unloading.

Tab. 6.9.1 Return of stores – Land Census, 1971

Area	Date/Day	Time Required	Number of covered lorries required
Hong Kong Island	11.3.71 – 12.3.71 (2 days)	8 a.m. – 8 p.m.	8
Kowloon	11.3.71 – 12.3.71 (2 days)	8 a.m. – 8 p.m.	6
New Kowloon	12.3.71 – 14.3.71 (3 days)	8 a.m. – 8 p.m.	11
New Territories	11.3.71 – 14.3.71 (4 days)	8 a.m. – 8 p.m.	11

The enumerators' cardboard boxes containing the personal and household UDT forms were checked against a control list and put in Structure Nos. 58 and 59, where they were arranged on specially numbered racks. The other documents were put in the divisional chief enumerators' satchels which were also placed in the pigeon holes of their division on the racks. Tracer forms were put in special brown boxes and were put away separately until follow up action could be taken. Sundry stores, such as pencils and erasers, were put in Structure No. 28, which was hastily requisitioned, until they were sorted out and stored in No. 44 again.

6.10 Publicity

At an early stage in the planning, it became clear that an intensive campaign was required to publicise the 1971 Population and Housing Census. A detailed publicity programme was therefore drawn up in order to:–

- explain to the public the meaning and importance of a population census
- gain their willing co-operation
- give them an idea of the questions that would be asked
- assure them that the information obtained in the Census would be kept confidential.

6.11 Working party for publicity

In the initial attempt at co-ordinating publicity for the main Census, a working party for publicity was formed comprising representatives of various government departments. This working party met in October 1969, and reviewed the publicity arrangements for the 1961 Census and the 1966 By-Census. It was agreed that news releases, films, leaflets, posters and radio and television should be the means used in the census publicity campaign. It was also decided that four 3-minute colour publicity films and a training film for enumerators should be produced. However in view of the different nature of the assistance required from the various departments, it was decided not to have regular meetings of the working party but rather to approach individual departments separately for discussions on matters which concerned them.

Further discussions were held with the Government Information Services Department and, as a result, a meeting was arranged with the representatives of the radio and television stations to find out

the various ways, in which they could assist in publicising the Census. At this meeting, held on 11th November 1970, a publicity programme was drawn up. It was decided that the main publicity drive should start after the visit of His Holiness the Pope to Hong Kong in December 1970.

6.12 Publicity for pilot censuses

For the three pilot censuses, a modest publicity effort was made with press releases and radio and television interviews. In addition, publicity pamphlets were distributed to residents in the sample blocks through the City District Offices and the New Territories District Offices. On the first day of the operation, scenes of enumerators in action at their place of work and at their field centres were televised. The fact was stressed that these were only pilot or "trial" censuses and that the main Census would take place in March 1971.

After the second pilot land census in March 1970, the impact on the public of the three publicity campaigns was analysed in detail. It was considered that a greater effort should be made for the main Census to reach all sections of the general public irrespective of their degree of literacy. For example, Chinese radio interviews should be put on the air in the mornings when most housewives tuned in while doing their household chores.

For the marine population, the Agriculture & Fisheries Department suggested putting census announcements on the air immediately before and after the weather forecast. Difficulties were anticipated in remote areas in the New Territories where some villagers did not possess a radio or television set. It was therefore decided that supervisors should take the opportunity of informing villagers about the Census in the course of their field work.

6.13 Publicity for main censuses

The publicity campaign for the main censuses started on the 18th December, 1970, with a press conference given by the assistant commissioner of census and the senior census statistician. On the same day, eight radio and television interviews were recorded, four in English and four in Chinese, and these were put on the air the same evening.

A few days later, a film of the enumerators training classes was shown on television, in conjunction with a press release.

Ten days before the start of the Marine Census operation, the radio stations started the publicity drive with announcements to the boat people before and after the weather broadcasts. On the first day of the enumeration on 23rd January 1971, television studios again shot scenes of enumerators in action in the anchorages and showed these the same evening.

On the 13th February 1971, the briefing, preliminary payment and swearing in of some 4,000 enumerators at the Homantin Government Middle School was given wide coverage by the press, radio and television. The orderly manner in which such a big exercise was conducted was impressive. The opportunity was taken by some of the radio people to interview several enumerators for broadcasts that same evening.

Two weeks before the commencement of the Land Census, a poster campaign was started. 10,000 posters were put up in public buildings, government offices, schools, buses, ferries and in other places such as the display windows of the City District Offices. 500,000 leaflets, designed by the Government Information Services, were distributed to the public through schools and City District Offices two weeks before the start of the enumeration.

Ten days before the start of the census operation, the radio stations increased the amount of census publicity. This was done in the form of radio interviews by senior officers of the Census Department.

Publicity films, produced by the Government Information Services, were distributed to cinemas for screening, and these were widely shown. The newly established television unit of Radio Hong Kong made some publicity films. These featured enumerators interviewing several well-known local personalities such as film and football stars; these were very popular. Slides with a jingle as musical background were issued to cinemas and television stations to be flashed on the screen in the evenings when most people would be watching. One television studio even included census sketches in one of the most popular local variety shows. In certain school quiz programmes, questions on the census were asked to stimulate the interest of students. Another method employed in publicising the Census was the use of special postal dies by the Post Office for cancelling stamps.

The publicity campaign reached its climax on 26th February 1971 i.e. the eve of the commencement of the enumeration, with a talk on television by the Commissioner for Census & Statistics, in which he explained to the public the importance of taking a census and at the same time asked for their co-operation. This talk, which was in both English and Chinese, lasted for about three minutes and was screened immediately after the news.

During the enumeration period, progress reports were put on the air every evening. Radio interviews were given by senior members of the department to remind the public that the census was still continuing and to keep them informed of the progress.

6.14 Evaluation of Publicity

The publicity campaign for the 1971 Census, although effective, could have been still better. This was shown by the fact that, during the enumeration period, there were still instances of householders who did not know that a census was being taken, and there were some householders who were unwilling to be enumerated. To be fully successful the public must understand the importance of the census, and realise that it is their duty to take part and to provide information. In this connection, it is necessary that the publicity campaign dissipates any anxiety regarding the purposes of the census, explains the reasons for the various questions on the schedule, and gives some guidance as to the manner in which these questions should be answered.

Public confidence and understanding are essential if accurate results are to be obtained. Therefore, in future censuses, greater priority must be given to the public relations aspect; and publicity should be designed to this end. From the experience of the 1971 Census it appears that an experienced public relations officer is required full-time in charge of this job. He should carry out the publicity according to a carefully planned programme synchronized with the various stages of the census preparatory work. Lectures should be given to students in the higher forms of schools to enlist their interest and to persuade them to volunteer as enumerators. It is also desirable that the campaign should start early in a low key and be gradually intensified until the enumeration is completed. In 1971, the short films made by Radio Hong Kong television had the greatest impact, and it is considered that in future censuses, television rather than the press, radio or leaflets should be the main medium of publicity used.

6.15 Census publication plan

During the planning period, consideration was given to the form in which the results of the 1971 Census should be published. The proposal made in 1969 was for an initial summary volume of some 80 tables, to be published as soon as possible after the Census and, as for the 1961 Census, a simple graphic guide to illustrate the main results. This was to be followed by a series of volumes analysing each census topic in greater detail. It was also decided that the technical procedures of the Census should be the subject of a separate volume, and that revised population projections and life tables should be published as after the 1961 Census and the 1966 By-Census. In January 1970, a Census Circular was sent to all government departments informing them of the proposed census tabulations and publication plan.

In September 1970, a working party composed of members of the Census Division and the Government Printing Department held a series of meetings to discuss the printing of the census summary volume. Three possible methods of printing the tables were considered :–

- magnetic tape from the computer to a Linotran offset printer
- direct photo offset, as in 1961 and 1966, the tables being first typed on IBM electric typewriters
- letter-press

Although the working party recommended IBM typewriting and photo-offset printing for the tables, the decision was finally taken to use traditional typesetting and letter-press printing, chiefly because the Government Printer, who was responsible for the production, considered that this would give a better quality publication, even though the need for table preparation, proof-reading and correction would mean that the printing time for the volume would be several months longer than by photo-offset.

At that time, it was thought that the tables could be compiled almost direct from the computer printouts and that little, if any, checking or re-arrangement would be required. The tables would therefore be produced by the computer and ready for sending to the printer in about November 1971,

so that publication could take place by June 1972. In fact, the computer tabulations of the census results were not completed until April 1972, and because of the various checks and re-arrangements required which are described in Chapter 10, the finalised tables were not ready for printing until August 1972. This meant that the original printing programme was considerably delayed.

In April 1971, just after the data processing of the census results had started, it became apparent that the 80 summary tables would not be available until the whole data processing had been completed and considerable checking and compiling carried out. It was therefore decided to publish an initial report of the Census as early as possible in 20 basic tables giving, in simplified form, the main characteristics of the population. This volume "Hong Kong Population and Housing Census 1971 Basic Table" was published just two months after the completion on the data processing, i.e. in June 1972. "The 1971 Census, A Graphic Guide", a two-colour book of charts and graphs, was published in December 1972.

Once these two basic reports of the Census were in the hands of the public, it was decided that the summary tables volume could be published rather later, and expanded to include analysis of the main census topics. This volume was therefore re-named the "Hong Kong Population and Housing Census 1971 Main Report". This report, containing nine chapters of analysis and 63 full tables, was published in June 1973.

"Hong Kong Population Projections 1971-1991" and "Hong Kong Life Tables 1971-1991" were also published in June 1973. A Chinese version of the Census Main Report was published in early 1974. This present volume, the Technical Report, which required considerable time for research and evaluation of census techniques, was the last census publication.

A special tabulation of census data by street blocks was printed for official use in April 1973. Other specialised census tabulations were and continued to be made available to the government departments concerned and to research organisations and scholars. Additional census studies were also published in separate monographs, and in articles in the Census & Statistics Department Monthly Digest of Statistics.

6.16 Finance

Total expenditure on the census operation during the period April 1969 to March 1972 was as follows:–

Tab. 6.16.1 Expenditure on the 1971 Census

Subhead/Item	Actual expenditure (HK$)
Personal emoluments (including permanent staff)	3,205,520
Fuel, light and power	10,429
Incidental expenses	9,888
Publicity	34,532
Subsistence allowances	25,646
Rent	1,047,232
Printing of U D T forms	303,551
Other printing & stationery	180,524
Miscellaneous stores & equipment	75,307
Transport	124,410
Training of and honoraria for enumerators and chief enumerators	5,333,885
Total	$10,350,924

Note : This total does not include expenses incurred in the data processing of the census results and the printing of the census reports.

The average cost was therefore HK$2.62 for each person enumerated. It can be seen that the largest proportion of the expenditure was incurred on the training and payment of honoraria to the temporary field staff. The total cost could therefore be considerably reduced if the householder method of self-enumeration is adopted in future censuses.

CHAPTER 7

CENSUS ENUMERATION

7.1 Introduction

The 1971 Population and Housing Census consisted of two separate and distinct operations, the Marine Census and the Land Census. The two censuses were undertaken at different time, covering different segments of the total population, i.e. boat people and land dwellers.

7.2 Marine Census

The Marine Census covered persons sleeping on board trawlers, ferry boats, launches, pleasure craft, river steamers, junks, hulks, lighters, crane barges, dredgers and other craft of a similar nature. Persons on ocean-going vessels, government craft, Macau ferries and hydrofoils were excluded from this operation, and were enumerated in the Land Census under the category of special classes.

Census Moment — The enumeration period for the Marine Census was from 23rd to 26th January 1971, Chinese New Year being on the 27th January when all fishing vessels would be in port. Census Moment was fixed at 2 a.m. on the first day, 23rd January 1971.

Staff — The regular field staff for this operation consisted of eight marine district supervisors under the control of an assistant area superintendent. 65 chief enumerators, 125 field editors and 690 enumerators were deployed around the anchorages as follows:–

Tab. 7.2.1. Distribution of field staff by marine census districts

District	Supervisors	Chief enumerators	Field editors	Enumerators
Yau Ma Tei	1	10	19	106
Victoria	1	3	6	30
		6	11	55
Shau Kei Wan	1	1	3	15
		7	15	80
Aberdeen, Lamma, Tai Lam	1	7	12	54
		7	15	80
Deep Bay, North Lantao, Ma Wan, Tsuen Wan	1	9	17	95
West Lantao, Cheung Chau	1	1	2	14
		4	7	46
Junk Bay, Port Shelter	1	5	9	54
Tolo, Mirs Bay	1	5	9	61
Total	8	65	125	690

In addition to the above, five land district supervisors were posted to assist in this operation.

Stores and equipment — 10 launches were loaned from the Marine Department, and 172 mechanised or non-mechanised sampans were hired to ferry enumerators to the anchorages to do enumeration work. 13 government vehicles were deployed during the enumeration period while six vehicles were used during the transcription period.

The stores and equipment for this operation were packed at the stores centre in Whitfield Barracks and transported to the 12 field centres between 11th and 14th January 1971, nine days before the commencement of the enumeration.

Each chief enumerator was issued with one satchel containing a plan of his division, summary sheets, daily record sheets, spare copies of the training manual, five erasers and three checking strips. In addition, five spare pads of schedules, five pads of household UDT forms and 10 pads of personal UDT forms were packed separately in a census cardboard box.

Field editors were issued with three pencils and one checking strip, which were stored in the chief enumerator's satchel.

Each enumerator was issued with a satchel containing one pad of schedules, two pencils, erasers, two bottles of glue and census labels.

In addition, each enumerator was issued with a census cardboard box containing two pads of living quarter/household UDT forms, seven pads of personal UDT forms and one checking strip.

Since this operation was not on a very large scale, no extra stores were issued to the field centres, but reserve stores were brought to the Marine Area Headquarters on the fifth floor of International Building from which replenishment could be made to the field centres when supplies ran short.

Method of enumeration — Before the enumeration began, the harbours and anchorages had been divided into various sections by using the fairways and fire lanes as boundaries as described in Chapter 4. These sections were not of uniform size; the bigger sections had to have a larger number of enumerators and vice-versa. Each section became a census division and was the responsibility of a chief enumerator assisted by a team of enumerators. He was responsible for enumerating all the vessels in his division, together with any entering it during the enumeration period.

Because of the nature of this operation, it was important that the chief enumerators should have a clear idea of the places where they would be working, and also of the problems they would be likely to encounter. Before the commencement of enumeration, all chief enumerators were therefore taken by their district supervisors on a familiarisation visit to the anchorages for which they would be responsible, and thoroughly briefed on the manner in which the operation should be conducted. These visits took place on the 16th and 17th January 1971.

The actual enumeration took place from 23rd to 26th January 1971. Unlike the Land Census, the Census Moment for the Marine Census was fixed on the first day of the enumeration period. The Marine Census enumeration was therefore carried out by the "single visit" method instead of the "two visit" method employed in the Land Census, and it was consequently necessary to complete the enumeration of all persons living on board at one visit. Information was collected about everyone who spent "census night" on board any vessel in the waters of Hong Kong, or on board any vessel which was on the high seas, but entered Hong Kong waters on or before the last day of the enumeration period.

Every morning during the enumeration period, each chief enumerator, accompanied by his team of enumerators, went by sampan through his division. As the sampan went along a line of moored vessels, the chief enumerator assigned an enumerator to each. At the same time, he wrote down the licence number of the vessel and the name of the enumerator assigned to it on a pad known as the listing pad. This pad served as a control sheet for the chief enumerator as well as a complete list of the vessels moored in his division.

When he had placed each of his enumerators on board a boat, the chief enumerator toured up and down to supervise the enumerators during their interviews, and to give immediate advice and help to them if required. After the enumeration of a boat, each enumerator was collected by the chief enumerator and sent to another boat to start a fresh enumeration. This procedure was repeated over and over again, until work finished at about 5 p.m.

Launches with large distinctive green census flags were stationed at the entrance of every harbour. In-coming vessels were hailed by the enumerator on board the launch, informed of the operation of the census, and asked to co-operate after they had unloaded. At the same time, another enumerator wrote down the licence number of the vessel concerned and later gave it to the district supervisor so that he could check against the records of the other teams to ensure that the vessel had not been missed or double counted. Launches were also used to do the enumeration in outlying islands and remote areas.

Once on board the boat, the enumerator first checked whether it had already been enumerated. If not, he filled in the particulars of the vessel first, then enumerated the household and the persons sleeping on board during Census Night. When personal particulars of an absent member of the household could not be obtained from the other members present, he would fix a convenient time for a re-visit and report to his chief enumerator to make the necessary arrangements. If the absent persons could

not be contacted during normal enumeration hours, i.e. from 9 a.m. to 5 p.m. each day, re-visits were arranged in the early morning. Night re-visits were not usually made, as it was very difficult to locate a particular vessel in a harbour during darkness, and searching for a boat at night might have been dangerous. At the completion of each enumeration, the enumerator rejoined his chief enumerator for another assignment.

Once a boat had been enumerated, red census labels with diagonal white stripes and a big black letter "C" were affixed prominently to it, one at the bow on the right-hand side and one at the stern on the left-hand side, adjacent to the licence number. These were put on regardless of whether the enumeration had been completed on this first visit. For big fishing junks, more labels were affixed so that they could be seen at a distance. Enumerators impressed on the person in charge of the vessel the need to keep the census labels there for at least four days to ensure that no double enumeration occurred. A specimen of the census label is at Appendix 7.1.

Starting from the second day of the enumeration period, each chief enumerator, accompanied by his team of enumerators, again swept the area which he had covered the day before, to locate any vessels which had been missed, or any new-comers which had arrived during the night before.

Problems — Due to a sudden drop in temperature, and the fact that it was drizzling most of the time during the enumeration period, the enumerators went to work in their raincoats and umbrellas; when they returned to the field centres, most of them were soaking wet. Many enumerators, especially those working in the New Territories waters, suffered from seasickness. Nearly one-tenth of the enumerators in the Cheung Chau district could not stand the bad weather and the progress of enumeration there was therefore retarded to a certain extent; fortunately, reserve enumerators were available.

Many of the vessels were not moored in rows but jammed and clustered in a group. It was therefore very difficult for the enumerators to locate a particular vessel for re-visits. Time was wasted in circling around to identify the vessel. Extra effort and time were also required in enumerating the crew members of cargo vessels while they were loading or unloading goods. During the day-time they were too busy doing their work, and could often not be contacted in the evenings.

As the enumeration period was four days before Chinese New Year, many fishermen had gone ashore to buy provisions to celebrate the New Year holidays, leaving a watch-dog on board alone. It was very dangerous for an enumerator to climb on to such vessels without knowing this. A female enumerator was bitten by a dog in Castle Peak Bay; she was immediately accompanied ashore for medical treatment and anti-rabies injections.

There were a number of difficulties in the Lau Fau Shan and Sha Tau Kok areas. The fisherfolk there refused to answer some of the census questions, particularly the question on household income. They were under the impression that the information would be passed on to the Inland Revenue Department. Two supervisors were specially assigned to these anchorages to tackle the situation and explain that all census data was confidential. Due to their excellent liaison work, the enumeration was finally completed successfully.

The crew members of the cargo boats from China moored along Victoria waterfront initially claimed that they were not Hong Kong residents and should not be enumerated. Application was made to their controlling company and enumeration was completed by the latter's office staff.

Apart from these incidents, the operation was conducted smoothly. Perhaps because of the effectiveness of the publicity campaign, the cooperation from the boat people was generally good. There were, however, a few cases where the masters of one or two vessels refused to answer questions from enumerators; however, after visits by supervisors, they all readily agreed to cooperate.

Transcription of data — At about 5.30 p.m. each day, the enumerators returned to the field centres to prepare their daily reports, and to transfer the information from their schedules on to the UDT forms. The completed UDT forms were then handed to the field editors for checking. The field editors also checked the chief enumerators' listing pads against the enumerators' record books to ensure that the enumerators had fulfilled their assignments. On the second day of the operation, i.e. 24th January the field editors started checking the UDT forms against the schedules. If there was any doubt about the information recorded or if any of the forms were incomplete, these were referred back to the enumerator concerned for clarification.

The chief enumerators had to ensure that all their enumerators had reported back to them before they informed the district supervisors. District supervisors had to ensure that all enumerators had reported back from the anchorages before closing down the field centres. They were also required to

maintain contact with Census Headquarters and to report the daily totals of vessels and population enumerated. All enumeration work had to be completed on or before 26th January, as the Marine Census Order covered the period from 23rd to 26th January 1971 only. This was accomplished. The enumerators were given a holiday for the Chinese New Year period 27th–29th January. Transcription of data at the field centres was resumed on the 30th and was completed on the 2nd February 1971.

Helicopter flights were made on 26th January 1971 to photograph boats in all the anchorages for cross checking purposes. Two helicopter teams were formed and four flights were made.

7.3 Land Census

The Land Census covered persons living in all permanent domestic structures, including resettlement estates, low cost housing estates, other types of aided housing, apartments, tenements and village-type houses, as well as in temporary squatter huts. The Census also enumerated persons living in non-domestic structures such as factories, shops and institutions.

Census Moment — The Land Census enumeration period was from 27th February to 9th March 1971. Census Moment was fixed at 2 a.m. on the last day, 9th March 1971.

Staff — The regular field staff for this operation consisted of one area superintendent, four assistant area superintendents and 32 district supervisors. By 21st February 1971 the number of census field staff required to carry out the Land Census was finally fixed as follows:–

Tab. 7.3.1 Distribution of field staff by land census area

Area	District supervisors	Chief enumerators	Field editors	Enumerators
Hong Kong Island	8	233	478	4,725
Kowloon	5	151	320	3,130
New Kowloon	9	315	643	6,378
New Territories	9	163	321	3,238
Special Classes	1	14	26	243
Total	32	876	1,788	17,714

In addition, the assistant area superintendent and eight district supervisors from the Marine Census were drafted in to assist.

To accommodate this large enumeration force, 91 field centres were set up throughout the territory and 913 classrooms were used as described in Chapter 6. The enumeration staff were told to report to their field centres on the morning of 27th February 1971.

For the enumeration period, each assistant area superintendent and district supervisor was allotted one car for visits to potentially difficult areas and for transporting stores and equipment.

Stores and equipment — The stores and equipment for this operation had been packed at the stores centre in Whitfield Barracks and transported to the field centres from 1st to 19th February 1971. Each chief enumerator was issued with one satchel containing a plan of his division, summary sheets, daily record sheets, tracer forms, ten erasers and three checking strips. In addition, three pads of spare living quarter/household UDT forms and twenty pads of personal UDT forms were packed separately in a census cardboard box. Field editors were issued with three pencils and one checking strip, which were stored in the chief enumerator's satchels. On arrival at his field centre, each enumerator was issued with the special census cardboard box containing: one enumerator block plan and block detail list, two pads of living quarter/household UDT forms, seven pads of personal UDT forms, two pencils, and one checking strip. Enumerators who had been assigned to a block in a resettlement estate were issued with nine pads of personal UDT forms, while enumerators assigned to a squatter block were also issued with census labels and glue to mark the huts enumerated. Additional UDT forms and other stores were also issued to each district supervisor as a reserve.

Method of enumeration — The block plan given to each enumerator showed the boundaries of the block which he had to enumerate on a first visit during the enumeration period. He had to collect

all the information about the population in this block. Then, on Census Day, i.e. 9th March 1971, he had to make a quick round of all the households he had visited earlier, for the purpose of checking whether there had been any changes in the information which he had recorded. This two-visit method is the U.N. recommended way of carrying out a "de facto" census by the canvasser method; the main object is to maintain simultaneity in the enumeration results.

In addition to recording the details of each living quarter, household and person on the UDT forms, the enumerators were required to complete certain details in a record book. In particular, they had to note the age, sex and type of disablement of any person in a household reported as disabled. They also had to list in their record books all premises which were occupied by manufacturing establishments. This list was used as the frame for a Census of Manufacturing Establishments held in August 1971.

All enumerators had to report to their field centres on the morning of 27th February 1971 where they were given a final briefing by their chief enumerators before commencing work. Their working hours were, in theory, from 11 a.m. to 11 p.m.; in practice, however, they were not required to work such long hours, although occasionally late visits were necessary. All enumerators had to return daily to the field centres to report to their chief enumerators, to code their UDT forms and to prepare their daily reports. All district supervisors had to maintain daily communication both with their field centres and with their area headquarters. Field centres were not allowed to close until every enumerator had reported in.

In area where the chief enumerators were not familiar with the conditions under which they would be working, especially in divisions with unusual characteristics, district supervisors took them out on familiarization visits. These visits proved to be very useful, and the chief enumerators in turn took their enumerators on similar visits, to ensure that there was no crossing of block boundaries, no double enumeration and that no building was omitted.

Enumerators were first thoroughly briefed on what they should do and about the condition of the different types of dwellings in their blocks. Identified by their census cardboard boxes and their identity cards, the enumerators started calling on households on the 27th February. For the first couple of days, they found the work rather tough and confusing. Since all the enumerators were secondary school students, many of them had no experience of the living conditions of the mass of the population. From time to time they encountered certain difficulties such as households who could not be contacted in their homes, non-cooperative householders who refused to admit the enumerators to their premises; and persons who refused to answer some of the census questions. However, they soon got used to the procedure and from then on they carried out their work very well.

The problem of minority linguistic groups was met by the formation of a linguistic flying squad. 10 enumerators, fluent in French, Portuguese, Japanese, Urdu, Hakka and Chiu Chau were split into two groups and were assigned to the assistant area superintendents of Hong Kong Island and Kowloon for deployment as and when the need arose.

Slightly different methods were required in enumerating the different types of housing found in Hong Kong, i.e. private apartments and tenements, resettlement estates, squatter areas, and rural villages. Each type presented its own particular problems.

7.4 Tenements and apartments

In the older residential districts of Hong Kong Island and Kowloon, a large number of the buildings were pre- or post-war tenements. There are buildings of four to seven stories of residential accommodation over ground-floor shops, with a single flight of dark and narrow stairs. The upper floors were originally built as one unit, but are generally partitioned off into a number of rooms or cubicles. The occupants usually share a single kitchen and toilet on each floor.

The more modern buildings were 10-15 storied blocks of self-contained flats served by lifts. In these buildings, one family generally occupied a whole flat, though they sometimes rented out rooms to lodgers. Some flats were used for commercial purposes, household trades such as tailoring, or even as workshops with power-driven machinery.

Non-contact — In dwellings where several households shared a living quarter, the main problem was to find all the households at home. This problem was most common in tenement buildings which provided sleeping accommodation for single men in double-decked bunks. For the purpose of the census, these men were enumerated as single person households. These lodgers usually got up early to

go to work and returned to sleep in the late hours of the night; since they were usually working as casual workers, they could not be contacted through their employers. The enumerators had to re-visit these premises again and again or make appointments with the principal tenants or neighbouring households; and to keep the appointments, the enumerators sometimes had to call back as late as midnight. Particular difficulties were experienced amongst persons, who, for one reason or another, wished to conceal their identity e.g. perhaps because they had not got work permits, and at the same time worked late hours. When eventually contacted by enumerators late at night, they sometimes claimed that they had already been enumerated elsewhere. In these circumstances, establishing the truth was a difficult matter.

Non-cooperation — Cases of non-cooperative householders, who refused to admit the enumerators, and persons refusing to answer the census questions were most common in families where both husband and wife were working. While they were out at work, their homes were left in the care of old people, servants or young children who did not know what a population census was. Such households required several visits from the enumerators, and often from the chief enumerators to explain, before the enumeration could be completed. Other difficult persons encountered were those who were dissatisfied with their living conditions, or had some sort of grievance against the Government. They refused to meet the enumerators by appointment, or refused to answer questions put to them during the enumeration. In such cases, reports had to be made to the chief enumerators and the district supervisors. If they were unsuccessful in tackling these problems, the assistant area superintendent had to be informed. In a very few cases, police assistance had to be obtained before the enumeration could be achieved. For example, one family in a flat in Kowloon refused to be enumerated, because they resented government interference. The enumerator made more than ten visits to this family but still failed to enumerate them. Eventually the district supervisor accompanied by a policeman visited the family and enumeration was completed on 8th March 1971.

The above remarks illustrate some of the difficulties which were faced in the enumeration. However, it would be emphasised that non-cooperation was very much the exception and that the very large majority of the population answered the questions willingly.

Condemned buildings — Some difficulty was experienced in the enumeration of persons living in buildings which had been condemned by the Building Authority. Most of these were pre-war tenements with spacious interiors, but showing signs of dilapidation. While some were still fully occupied, in others only two or three persons were found. The residents of these latter buildings had already found alternative accommodation and had been enumerated there. The people found in the condemned buildings were merely in token occupation until the demolition, in order to qualify for compensation and resettlement.

Roof-top huts — On the roof-tops of many pre-war buildings, wooden huts had been erected without permission. While these could not be seen from the outside of the premises, the majority had in fact been listed in the pre-census geographical work. The enumerators had been told whenever they enumerated pre-war buildings, to go up to the roof-tops, in order to ensure that no persons living in these structures were left out of the census.

Composite buildings — In the central districts of Hong Kong and Kowloon there were many buildings containing commercial as well as residential premises. One, in the Tsim Sha Tsui district, was divided into five blocks housing a shopping centre, import & export firms, restaurants, guest houses, tailor shops and residential flats. The tenants in this building were very cosmopolitan and spoke a number of foreign languages. Nine enumerators were deployed for this particular building, and although they were briefed beforehand by the chief enumerator on the problems they would encounter, they still found the first few days rather difficult and confusing. They were told by business houses that nobody slept in their premises at night, but this statement had to be verified before the premises could be recorded as vacant. The number of residents in the guest houses varied from day to day; in addition to transients, local residents were also staying in these guest houses, and had to be fully enumerated. Night-club entertainers residing in the building were difficult to contact, and the enumerators had to make quite a number of re-visits. However, random spot checks conducted by the district supervisor and chief enumerator showed that the enumerators had in the end achieved a very satisfactory enumeration.

7.5 Resettlement estates

Over one-third of Hong Kong's population were living in public and aided housing at the time of the Census. However, the main difficulties in enumeration occurred in the resettlement estates.

Each estate contained a number of multi-storey buildings known as resettlement blocks, identified by serial numbers painted prominently on the outside. These blocks were 6, 7, 8 or 16-storeyed; each floor was divided into a number of units or rooms and each unit had a room number painted outside.

One difficulty encountered in the enumeration of these estates was that many residents were late in returning home after their day's work, and it was necessary for the enumerators to call on them at night. The passages, verandahs and corridors in the resettlement blocks were in many cases inadequately lighted, so that it was necessary for the enumerators to use a torch to read their forms, papers and records, and in some places, even to find their way. Since no torches were supplied to the enumerators, they had to use their own torches when necessary.

Difficulties in enumeration also occurred in the many cases where a household occupied more than one unit which were not contiguous; for example, a household might occupy one unit on the first and another on the fifth floor of a resettlement block. For operation convenience, it was decided that these units had to be enumerated as one living quarter although they did not fully comply with the census definition (see Chapter 3). Appropriate cross references were entered in the respective enumerator record books in respect of the units so treated.

7.6 Squatter huts

The 1971 Land Census showed that the squatter population was approximately 8% of the total population of Hong Kong. These were people who lived in stone or wooden huts, most of which were built before 1964. Since that date, the Resettlement Department had carried out patrols in squatter areas to prevent the building of new huts.

In preparation for the enumeration of squatters, district supervisors carried out the difficult task of plotting all these structures on to the relevant survey map sheets. At the same time, each hut was given a number. As these squatter huts did not have systematic official house numbers, to identify individual huts, the enumerators had to rely on the squatter control numbers painted on huts by the Resettlement Department. In some cases, squatter hut dwellers had invented their own house numbers and these were used as alternatives for those huts without squatter control numbers. In making out maps of squatter areas, footpaths, foot-bridges, shrubs, boulders and even graves were used as landmarks for identifying and locating the occupied huts to be enumerated. As in the Marine Census, the enumerators in squatter areas were supplied with census labels to be stuck on to each hut after it had been enumerated. An example of the census label is at Appendix 7.1.

Prior to the start of enumeration, the enumerators who were assigned to the enumeration of squatter areas had special briefings and familiarisation visits led by the district supervisors. The purpose of these visits was:–

- to remind the enumerators not to reveal any personal details discovered during the enumeration (e.g. illegal extensions to huts)
- to enable them to study thoroughly the block plans and detail list and make sure of their block boundaries, the location of each structure within the block, and any dialect problems within the squatter area
- to demonstrate the use of census labels to be stuck on to structures enumerated
- to remind enumerators to bring along their own torches when they came across areas of ill-lit huts.

The enumeration of squatters on the whole went quite smoothly. The enumerators found that the squatter people were most friendly, most of them kept their doors open at all times, and there was no problem in getting into the huts for enumeration. Children in the squatter areas were also particularly helpful to the enumerators; they were always ready to show them round the difficult paths and sometimes were able to assist them in avoiding fierce dogs.

Not many late-night visits to squatter areas were necessary, as most of the enumeration work could be done before 9 o'clock in the evening. To record the details of some night workers, intelligent enumerators even carried out visits to the night workers' place of work in order to complete their enumeration task.

7.7 Villages in the New Territories

In the New Territories, there were 1,205 official villages distributed by census areas as follow:–

Tsuen Wan	–	74
Yuen Long	–	323
Tai Po	–	462
Islands	–	179
Sai Kung	–	167
Total	–	1,205

Although every enumerator was given a block map, it was not always easy for him to find the village even with the help of the map. The chief enumerators, normally local school masters, therefore conducted familiarisation tours for their enumerators before the enumeration started.

The best time to make enumeration visits to villages was from 8 a.m. to 6 p.m. Because of the lack of street lighting and the many fierce dogs in the villages, it was considered inadvisable to enumerate villages after dark.

Because of the limited number of official cars available, transport difficulties arose from time to time during the census operation. Chief enumerators who had private cars were persuaded to use them to take the enumerators to the villages, and many enumerators used their own bicycles.

From experience during the pilot land censuses, it was known that certain villages might be non-cooperative. The local rural committees, village representatives and elders of these villages were therefore contacted through the New Territories district offices and asked for their assistance prior to the enumeration. However, certain villages were still non-cooperative. District supervisors, accompanied by the members of the local rural committee, visited the representatives of these villages and, in most cases, after detailed explanation, enumeration was carried out. In one instance, however, a whole group of villages refused to allow the enumerators to enter. A meeting was held between the three village representatives, three officers of the New Territories Administration and the assistant area superintendent concerned. After an hour-long persuasion and explanation, the village representatives eventually agreed to let the enumerators start work. Only a few households in each village did not cooperate in the first instance. However, when the enumerators, chief enumerators and district supervisors went back again, in company with the village representatives concerned, these problem households were successfully enumerated.

7.8 Special classes

For the purpose of the census, the special classes were divided into two sections:–

- Hospitals, clinics and maternity homes, armed forces barracks and married quarters, police force barracks and quarters, fire services barracks and quarters, prisons and training centres and their quarters.
- Institutions, such as orphanages, homes for the aged and blind, seamen's homes, religious houses, staff quarters of big factories, hotels, hostels and boarding houses, ocean-going vessels and warships, consular personnel and street sleepers.

For the enumeration of the first group, the organisations concerned nominated their own staff to serve as chief enumerators, field editors and enumerators. A total of 14 chief enumerators, 26 field editors and 243 enumerators were specially trained by the Census Division and, during the enumeration period, worked directly under the control and supervision of the district supervisors.

Armed forces personnel living in Ministry of Defence (U.K.) barracks, camps or closed areas were enumerated by services personnel on the basis of special schedules (see 7.9 Forms and schedules), the details on which were later transcribed on to the personal UDT forms, and standard codes inserted for the other questions not included in the schedule, i.e. activity status, industry, number of hours worked per week, place of work, mode of transport and time of arrival at place of work. For armed forces married quarters, ordinary personal and living quarter/household UDT forms, printed in English, were used.

Apart from transients, ocean-going vessels and street-sleepers the enumeration of the second group of special classes was carried out by the ordinary enumerators in the usual manner. For those institutions containing more than 20 persons, no living quarter/household UDT forms were used, only a personal UDT form was completed for each person. On the whole, there were no problems. Difficulties did occur in enumerating the workmen living in the staff quarters of a textile factory, who refused to be enumerated in spite of numerous visits by the enumerator and his chief enumerator. This case was reported to the district supervisor and the assistant area superintendent. After a very long and detailed explanation to the workers, the enumeration was eventually carried out on Census Day.

Transients — This being a "de facto" census, everyone in Hong Kong on Census Day had to be counted, whether he was a local resident or a transient. Some visitors and tourists were only staying for a short period, and detailed information concerning them would not be relevant to the local demographic, social and economic situation. Hence, persons who were in Hong Kong on the 9th March 1971 but had been there for less than 20 days were enumerated as transients. They were generally found in hotels, guest houses and on board ocean-going vessels, and were only asked questions concerning their name, age, sex and country of origin.

Prior to the actual enumeration of guests and residents in hotels and boarding houses, the Census Division consulted the Hong Kong Hotels Association and was furnished with a list of all hotels in Hong Kong. The district supervisors were instructed to call on the managements of all the hotels in their respective districts and make special arrangements for the enumeration of hotels with 150 rooms or more. Local residents in these hotels were enumerated in full in the usual manner, while guests staying for a period of less than 20 days were enumerated as transients. There were no problems in the enumeration of transients, as the small amount of information concerning them could usually be copied from the hotel register.

Ocean-going vessels — The passengers, officers and crew members of any vessel which happened to be in the waters of Hong Kong at 2 a.m. on the 9th March 1971 were also enumerated. A list of the names and address of shipowners, charterers and agents in Hong Kong was obtained through the Marine Department. A circular letter was then issued by the Census Division to all these establishments inviting them to co-operate in the Census. Special arrangements were made and a sufficient supply of transient schedules with instructions on how to complete them were delivered to the masters of vessels through their agents prior to the vessel's arrival in Hong Kong. Since crew members and passengers who were local residents were very small in number, they were enumerated as transients. The masters or responsible officers of these vessels filled and completed these schedules which were returned to the Census Division through the ships' agents. At Census Moment there were 82 vessels in Hong Kong and all were enumerated without difficulty.

Consular staff — The enumeration of foreign consuls and their families was carried out either by the ordinary enumerators or by the consular staff themselves. If they chose to do their own enumeration, they were given special schedules, printed in English, to record the information about the living quarters, households and the persons in the households. All the consular families were enumerated as ordinary domestic households.

Street-sleepers — As in previous censuses, there were difficulties in the enumeration of street-sleepers. These unfortunates, mostly single persons, did not have any fixed dwelling; they slept at different places on pavements, under staircases and in the rear lanes of buildings. Since the population census aimed at complete coverage, policemen on beat duty at night during the month of February were requested to furnish information on where street sleepers were to be found. From midnight on the 8th March to 3 a.m. on the 9th, teams consisting of the district supervisor, a chief enumerator and two or three enumerators, accompanied by beat policemen, searched the streets and areas concerned and enumerated the street-sleepers found on pavements, in doorways, on staircase landings and even in open lorries. The work was carried out without any incident and those who slept in the streets were very co-operative over enumeration.

7.9 Forms and schedules

Schedule for the Marine Census — Because of the danger of the UDT forms being damaged by water, the enumerators in the Marine Census used a schedule to record, in plain language, the information about the vessel, the household and the persons on board each vessel. The schedule was printed in Chinese only. One schedule was used for each household, and the particulars of each person were recorded on one line. A specimen is at Appendix 7.2.

UDT forms for the Marine Census — The information on the schedules was transcribed on to UDT forms. A UDT form C was used for each vessel and the household or households living on board, while a UDT form D was used for each person. These were all printed in Chinese. Specimens of UDT Forms C and D are at Appendices 7.3 & 7.4.

UDT forms for the Land Census — A UDT form A was used for each living quarter and the household or households occupying it, and a UDT form B for each person. Both forms were printed in Chinese, with a small number in English for the armed forces families who did their own enumeration. Answers to the various census questions were first recorded in longhand on the left-hand margin and later coded on the bar-format section. Specimens of the Chinese UDT forms A and B are at Appendices 7.5 & 7.7 and the English ones at Appendices 7.6 & 7.8.

Tracer forms — Tracer form A was used for recording the original and the new addresses of a household or person who had moved out of a living quarter; tracer form B for recording the present address and the previous address of a household or person who had moved into a new living quarter. Specimens of these tracer forms are at Appendices 7.9 & 7.10.

Enumerator record book (land) — This was designed to enable enumerators to keep an accurate record of all the buildings or structures which they had visited, and the number of persons they had enumerated. The exact address of each building was entered in the record book as the enumerator proceeded with his work, so that he would not miss any building within his block. On each page of the record book were columns for recording the name and address of the building, the floor or flat number of the living quarter, which were numbered serially as they were listed, and the number of persons by sex in each household. In addition, there was a special column for recording the particulars, age, sex and type of disablement, of any mentally or physically handicapped member of a household; and another special column for indicating whether a recorded unit of living quarters was used for manufacturing purposes during the enumeration period. A specimen page of this Record Book is at Appendix 7.11.

Enumerator record book (marine) — was designed in the same format and for the same purpose as that for the Land Census. The only difference was the substitution of vessel for living quarter and the omission of the special column for the listing of manufacturing establishments. A specimen page of this record book is at Appendix 7.12.

Enumerator's daily record sheet — This form was filled in by each enumerator at the end of each day during the enumeration period, and submitted to his chief enumerator for entering in the latter's daily record sheet. The purpose of this was to supply information on the daily progress of the enumeration, the number of living quarters, households, males and females enumerated in one day. Specimen of the land and marine enumerators daily record sheets are at Appendices 7.13 & 7.14.

Chief enumerator's daily record sheet — This form was filled in by each chief enumerator from the information contained in the enumerators' daily record sheets submitted to him every day during the enumeration. It served as a summary of the daily progress of the enumeration in his census division. Specimen of the land and marine chief enumerator's daily record sheets are at Appendices 7.15 & 7.16.

Chief enumerator's summary sheet — This summary sheet was compiled by the chief enumerator at the end of the enumeration and was handed to his district supervisor, when he handed in all the schedules and UDT forms for his division. It contained a summary of the total number of living quarters, households and persons enumerated by sex and the number of UDT forms used. Specimens of the land and marine chief enumerator's summary sheets are at Appendices 7.17 & 7.18.

Chief enumerator's summary of disabled persons — This was prepared by each chief enumerator at the end of the enumeration, from the information recorded in his enumerators' record books concerning disabled persons in households. In this summary form had to be entered, for each disabled person, the address where he was found, the surname of the head of household to which he belonged, his age, sex and type of disablement, such as loss of locomotion (paraplegia or hemiplegia), physical loss of limbs (upper or lower limb), loss of senses/speech (dumb, deaf or blind) or mental defects. A specimen of this form is at Appendix 7.19.

Schedule for armed forces in barracks — This schedule was used for armed forces personnel living in Ministry of Defence (U.K.) barracks, camps or closed areas. The schedule was in English and contained the following questions: name, rank, sex, age, place of birth, place of origin, marital status, age at first marriage, number of children born, number of children living, usual language, ability to

speak English and educational attainment. The information on the schedules was later transcribed on to UDT forms B with standard codes inserted for the other questions not included in the schedule, i.e. activity status, industry, number of hours worked per week, place of work, mode of transport and time of arrival at place of work. A sample of the schedule is at Appendix 7.20.

Schedule for transients — One schedule was used for each premises where transients were staying and one line for each person. Information recorded consisted only of name, age, sex and country of origin. A copy of the schedule is at Appendix 7.21.

Schedule for consular staff — This schedule, printed in English, was given to consular staff for recording information about their living quarters, households and the persons in their households, if they chose to do their own enumeration. These schedules were used to avoid issuing special instructions regarding the handling of the UDT forms. When they were collected, the information on them was transcribed by census staff on to the UDT forms. A specimen of the schedule is at Appendix 7.22.

7.10 Coding

Each day during the enumeration period, when they had completed sufficient UDT forms, the enumerators returned to their field centres. They coded their answers in the bar-format section of the UDT forms. In order to ensure that they had made the correct number of marks for each question, a checking strip was used. Checking strips for land and marine censuses are at Appendix 7.23.

Two field editors were allotted to each chief enumerator for each census division. When an enumerator had coded one day's work of UDT forms, he handed over the pad of UDT forms to the field editor and used another pad for the next day's work. The field editors had to check that the bar-format sections of the UDT forms were correctly marked, and that there were no obvious errors or inconsistencies. If these were detected, the forms were referred back to the enumerators concerned for clarification. If any form had to be cancelled, several bold lines and the word 'Cancelled' were written across the page, but the cancelled forms were not removed from the pad. Because of the large amount of checking work they had to do, the field editors were also provided with a checking strip and their manual contained instructions on how to carry out the job accurately and efficiently.

As a further check on the accuracy of the coding, 30 qualified statistical clerks from the Census Division were formed into a mobile team to make spot checks on the work of the field editors. The task of these senior field editors, as they were called, was to visit each census division in turn to inspect the work of the field editors and to advise them on any problems in the coding of the various census questions.

The answers to the questions place of work/study were not coded by the enumerators. Instead, immediately after the field enumeration, a force of 40 transport survey officers from the Traffic & Transport Survey Unit of the Public Works Department were sworn in as census officers. They were accommodated in hut 59 at the Whitfield Barracks field headquarters to do the coding of these questions. 20% of enumerator boxes containing completed UDT forms were selected by random sampling from each census division, and the transport questions on all the personal forms in these sample boxes were coded. The address of place of work/study written by the enumerators on the UDT forms in Chinese characters was converted to a special code of traffic sub-zones and the bar-format section marked accordingly. The forms and boxes were then returned to their correct positions on the racks ready for computer input.

7.11 Final visit

On the morning of the 9th March 1971, enumerators were required to pay a second visit to each of the households in their enumerator block to check whether there had been any changes in the information recorded. If a new household or person had moved in, the enumerators had to complete the UDT forms for them and a tracer form B. Where a household or person had moved out, the enumerators had to cancel the relevant UDT forms and complete a tracer form A. These tracer forms were then collected by the chief enumerators and passed to the district supervisors. The supervisors sorted all tracer forms A into districts and census divisions according to the original address of the household or the person recorded on the forms. Similarly, all tracer forms B were also sorted into districts and census divisions according to the previous address of household or person. The tracer forms A were then passed to the supervisors of the districts concerned for matching with the appropriate tracer forms B.

If a tracer form A could not be matched with a tracer Form B, this showed that the household or person concerned had not been enumerated at the new address. If a tracer form B could not be matched by a tracer form A, the enumerator had not cancelled the record of a household or person who had moved out of his area. In either case, the supervisor took immediate action to amend the relevant records so as to eliminate double counting or omissions.

If a member of a household had spent Census Night in Hong Kong as a visitor away from his usual residence where he had been enumerated, his record was not transferred.

7.12 Conclusion

The control and supervision of the field work in the 1971 Census rested with the district supervisors, the chief enumerators and the field editors. In order to keep the enumerators up to the mark and to ensure complete coverage, the chief enumerators had been told to make surprise check visits to some of the households already visited by each enumerator. They were also responsible for ensuring that the field editors had checked every completed UDT form for errors and omissions.

Since the field operation had to be organised in such a way as to facilitate the subsequent processing of the data by computer, emphasis during the training of the enumeration staff was placed on the proper marking of the UDT forms, and the handling of them with the utmost care throughout the enumeration period. This emphasis was taken rather too literally by many chief enumerators who consequently devoted too much of their attention to the marking of the UDT forms, instead of giving closer supervision to the enumerators in their field work. Due to this lack of sufficient field supervision, some of the enumerators failed to carry out their work properly, and this may be one reason why the rate of under-enumeration in the 1971 Census was slightly higher than in 1961.

The control and supervision exercised by the district supervisors over their field staff during the census enumeration period was, in general, fairly adequate. However, the 40 district supervisors had to supervise 91 field centres scattered throughout the urban and rural census districts. This meant that each supervisor had to visit two or more field centres every day, and check on the work of about 20 to 30 chief enumerators. There were some instances where district supervisors could not cope with such physically exhausting work for a continuous period of 10 days. A conclusion could be that field control work in the future will require a larger team of experienced field supervisors. Furthermore, the organisation, personnel and role of this team must be decided and the team recruited, organised and trained well before the census operation.

CHAPTER 8

EDITING AND IMPUTATION

8.1 Editing and imputation of census data

In spite of the careful training and supervision of the enumerators, it was inevitable that a considerable number of errors would occur in the data collected in the Census. One source of error was in the enumeration when the respondents gave incorrect answers or the enumerators recorded answers incorrectly. Another possible source of error was in the coding, when the long-hand answers written in the left-hand margin of the UDT forms might have been wrongly coded in the bar-format section by the enumerators. Since many of these errors could be detected by inconsistencies between the answers recorded for the different questions, it was possible to devise a series of logical checks to edit the UDT forms and correct obvious inconsistencies. These checks were embodied in the data processing system.

As mentioned in Chapter 7, as part of the enumeration operation, the field editors assigned to each census division were required to check every UDT form completed by the enumerators for errors and inconsistencies. They performed two checks, an accuracy check and a consistency check. In the accuracy check, the field editors examined the UDT forms for wrong codings of answers and incorrect markings in the bar-format section of the forms. In the consistency check, they studied the data in certain groups of related personal and household characteristics and, if the answer to a particular item was obviously wrong, they amended it according to the other items of information about the person or household; for example, a woman reported to be the spouse of the head of the household should also be reported to be married.

The field editors could, however, only correct errors which were easily spotted. It was not possible for them to check each UDT form in greater detail to detect other inconsistencies in the data.

The field editors could also make mistakes themselves. These manual edits were therefore not considered sufficient to ensure completely accurate results. Since a computer was being used for processing the census data, it was possible for more complicated checks to be incorporated in the data processing system, and thus to ensure more uniform correction of the remaining errors. The computer edits comprised :–

- validation of the living quarter/household and personal UDT forms during input
- imputation of the data before tabulation.

8.2 Validation of living quarter/household and personal UDT forms

The reason for validating the household and personal UDT forms during input into the computer was to ensure that every form contained all items of information for a household or person. The bar-format section of the UDT form (see Appendices 7.3 – 7.8) was divided by magenta lines into a number of fields; each field contained a number of boxes and each item of information had to be coded in the appropriate box, in order to be read by the document reader. Some of these fields were divided into sub-fields by dotted magenta line, e.g. sub-fields for tens and units of age, sub-fields for first and second-digit codes for occupation, etc. A validation rule was that every field and sub-field had to have one but only one box marked. The document reader was programmed to reject any UDT form which had no marks or double marks, whether definite or doubtful, in any field or sub-field. If a coding mark in a field or sub-field was too light, the document reader might reject it as unmarked; if an erasure was poorly done, the document reader might reject it as double-marked.

In order to reduce the number of forms rejected because of blank fields or sub-fields, the document reader was, however, allowed to allocate an entry for certain items of information. For example, if, as often happened, the sub-field of "free meals" in the living quarter/household UDT form was left blank, a value equivalent to "no" was allocated for this item. Similarly, if the sub-fields of "cars owned" and "other cars available" were left blank, a value of 'O' was allocated. In the personal form, if the field of "ability to speak English" was unmarked, a value equivalent to "no" was allocated.

For some items of information, a "not applicable" or "unknown" answer was appropriate, for example "age at first marriage". However, if a mark was inserted in the "not applicable" or "unknown"

sub-field of a particular item, then no other marks should appear in the other sub-fields of the same item. To minimise the rejection of UDT forms for this reason, the document reader was programmed to accept certain items e.g. year of birth, age at first marriage with the "not applicable" or "unknown" box marked, as well as the other sub-fields, depending on which mark was the more definite.

Forms which were rejected by the document reader were corrected by inserting a mark in an unmarked field or sub-field, or by erasing a marking, in accordance with the written answer in the left-hand part of the UDT form. When there was no written answer for a particular item, the procedure was to decide an appropriate value on the basis of other related items of information for the same household or person. There were also situations where the entry for the missing characteristic of a household could only be assigned on the basis of the data for another household in the same living quarter. For example, if the tenure of a household was recorded as principal tenant, then the tenure of the other households in the same living quarter should be recorded as sub-tenant.

8.3 Imputation of household and personal data

The input validating process described above ensured that each living quarter, household and personal record had a value for each of the various items of information. However, since the manual editing of the UDT forms by the field editors had not been sufficient to ensure complete consistency between various items, it was necessary to carry out more effective checks in the computer. This computer editing is generally known as imputation of census data.

The imputation was carried out by the high-speed electronic computer, which performed a series of checks according to a set of predetermined rules to decide whether the various items of information for a household or person were consistent with one another. While data edits of such a highly complex nature could not have been done manually, the computer could not read the long-hand answers in the margin of the UDT forms, and also could not perform certain simple human clerical operations. This introduced an element of inflexibility in the computer edits, and the predetermined rules for the imputation of the data had therefore to be written in such a way that exceptional cases were allowed for.

Because of the interdependence of the various items of information for a household or person, it was necessary to assign a prescribed order for checking the consistency of each item. For the personal data, it was decided that age should be the key item to which other characteristics should be related. For example, if the reported age of a person was inconsistent with his educational attainment – e.g. a person reported as 10 years old and a university graduate – the computer was programmed to retain the reported age and impute the educational attainment to an appropriate level for that age, rather than vice-versa. However, since the key item of age could also be reported incorrectly by the respondents or recorded incorrectly by the enumerators, it was necessary first to establish certain rules to ensure that the reported age was right, and if not, to correct it.

8.4 Imputation of age

In the Census, there were two main types of error in age reporting. The first was where the respondent, either unintentionally or intentionally, mis-stated his age. The usual reason for this was digital preference, as some people quote their ages to the nearest ten or five years. Since this error occurred in a systematic way, i.e. a definite proportion of the population under- or over-stated their age, it was not possible to correct individual returns by any logical method at the data processing stage. However, when the whole of the census age data was aggregated, a definite pattern of digital preference emerged, and this was corrected by graduation techniques.

The second type of error was when the enumerator made a mistake in recording a respondent's stated age or in converting an age given in Chinese reckoning to Western reckoning or in coding the age into the bar-format section of the UDT form. Since this type of error tended to occur in a random way, it could be corrected by the application of logical rules.

The rule for imputation of age was designed to establish the "correct" age for a person. Firstly, the following check was applied :–

$$1971 - x \text{ (age last birthday)} - y \text{ (year of birth)}$$

If age and year of birth were consistent with one another and correctly recorded, this check should give the answer 0 when the month of birth of the respondents was *before* Census Day, and 1 when it was *after*. On the other hand, if either age or year of birth were misreported, the check would give a different answer.

In order to establish a pattern in age reporting errors, all possible instances of age misreporting were listed out and checked by this method and the results tabulated. It was found that, whenever the check gave a result other than 0 or 1, the year of birth was more frequently correct than the age. In formulating the rule to establish "correct" age, it was therefore assumed that the year of birth was correctly reported. The rule was formulated as follows:–

- when the month of birth was *before* Census Day:
  correct age = 1971 – y (year of birth)
- when the month of birth was *after* Census Day:
  correct age = 1970 – y (year of birth)

This rule of imputation, however, could not correct misreported age when the check gave a result of 0 or 1 and thus no clue to any inconsistency. As indicated in the post-enumeration check described in Chapter 11, these undetected errors were normally either plus or minus one year from the correct age, and tended to cancel each other out when the age data were grouped.

8.5 Formulation of imputation rules

After checking, the age was used as a check against the other items of personal information in a prescribed order. This procedure was to ensure that the various personal characteristics were consistent with the age as well as among themselves. If the items being checked were not consistent with the age, they were imputed on the basis of majority rule or of specifications laid down in a decision table.

A decision table is a means of expressing the logic of the decisions required in the solution of a problem. This device was used as it was more easily followed by the programmers in writing the computer programs. A decision table is divided into two main sections. The upper section of the table lays down the conditions to be met, and the lower section the action to be taken if particular conditions are met. The left-hand side of the table is called the stub, and the right-hand side the entry. The condition stub describes a condition, i.e. a logical question that is answerable by a "yes" or "no". The condition entry provides for completion of Y (yes) or N (no). The action stub describes an action required and the action entry shows completion of that action. (usually indicated by an 'x'). This may be illustrated diagramatically as follows:–

Tab. 8.5.1 Simple decision table

STUB	ENTRY
IF --------- Condition	Condition 'Y' or 'N'
THEN -------- Action	x (action completed)

A complex decision table includes a row for each condition or action, and columns for the rules or instructions, each of which apply to specific conditions. The lower part of the table shows the various actions to be taken and the manner in which the conditions are acted upon. This may be illustrated as follows:–

Tab. 8.5.2 Complex decision table

STUB	ENTRY			
	Rules			
	1	2	3	4
IF --------				
Conditions				
THEN --------				
Actions				

The decision table skeleton was prepared with the condition stub showing the conditions to be applied to the items of information to be checked against age. The condition entry showed the possible number of ways under which these conditions could be met, i.e. the rules to be used in the imputation. The action stub gave the specification for imputing an inconsistent item under each rule.

Example — A decision table to formulate rules for the imputation of the personal census data of activity status and mode of transport for persons aged 3 – 9. According to the census definition of activity status all persons aged under 10 should be reported as economically inactive, i.e. students (activity status code 6.0) or children not at school or at work (activity status code 6.1). If their activity status was reported as other than these two, it would be necessary for the computer to change it to an imputed value on the basis of some predetermined rules. Also, the mode of transport for any person reported as a student could not be "not applicable". The rules for imputation of these three items of personal information were laid down in the following decision table :–

Tab. 8.5.3 Decision table for age 3-9/activity status/mode of transport

STUB	ENTRY					
	Rules					
	1	2	3	4	5	6
IF ---------						
activity status = student (6.0)	Y	–	N	Y	–	N
activity status = student with part-time work (1.2 or 1.3)	–	Y	N	–	Y	N
mode of transport = not applicable (N.A.)	Y	Y	Y	N	N	N
THEN ---------						
mode of transport : "N.A." change to "none"	x	x				
mode of transport : none or any change to "N.A."						x
activity status 1.2 or 1.3 : change to 6.0		x			x	
any other activity status : change to 6.1			x			x
No action				x		

The action specifications used in these decision tables were worked out on the basis of logical relationships between personal items, and later modified after tests using live data collected in the pilot censuses. For example, it was originally envisaged that the relationship between marital status, age at first marriage and number of children born could be covered by the following two rules. To accord with normal fertility analysis, the age of 15 was set as the lowest limit for marriage :–

A : Marital status = ever married

Age of first marriage = $\geqslant$ 15

Number of children born = $\geqslant$ 0

B : Marital status = never married

Age at first marriage = not applicable

Number of children born = not applicable

However, the live data collected in the pilot census revealed that the logic of the second relationship was inadequate. One woman whose marital status was "never married" was recorded as having given birth to a child.

The following additional relationship was therefore accepted :–

C : Marital status = never married

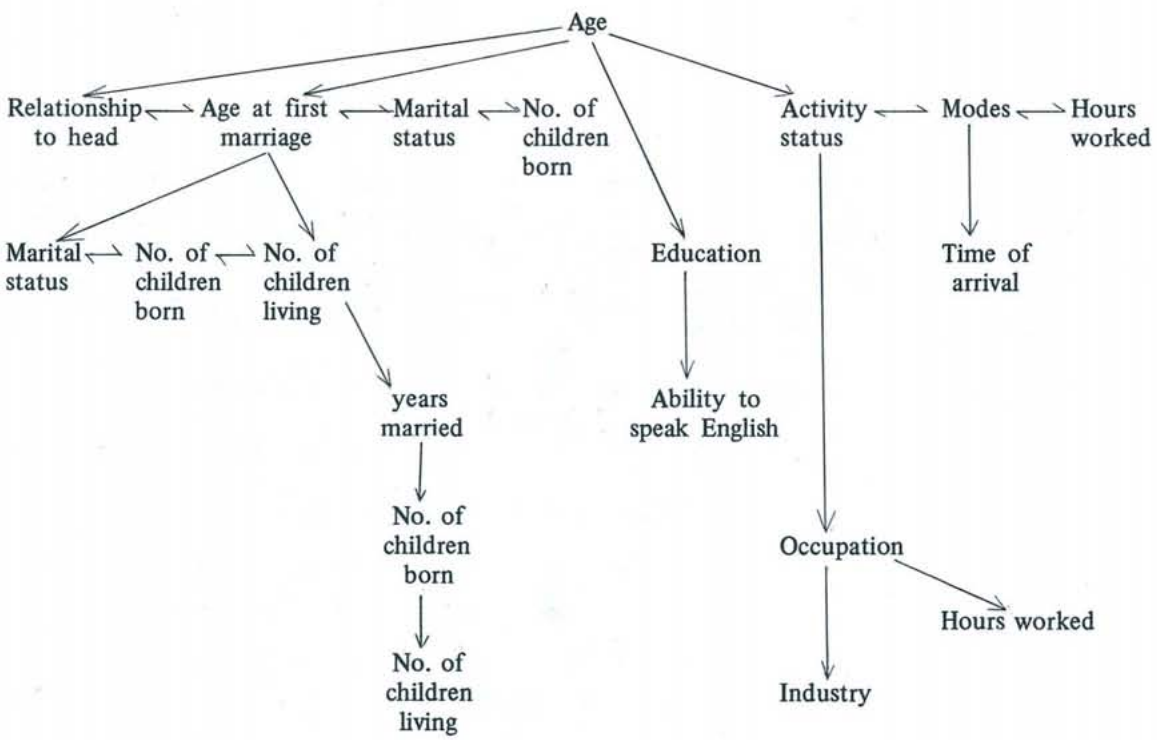
Age at first marriage = not applicable

Number of children born = $\geqslant$ 1

8.6 Imputation of other personal characteristics

During the imputation process, the age, after being checked, was used to validate the other items of information for a person in the following order :–

Tab. 8.6.1 Sequence for imputation of personal characteristics



The age was first checked against relationship to head of household. The three items of marital status, age at first marriage and number of children born were then checked to make sure that they were consistent with one another and also with age. If one item did not conform to the consistent relationship rules, it was imputed to agree with the other two items, i.e. on the basis of majority rule.

Activity status, mode of transport and number of hours worked were then checked against age. If they were not consistent with one another and with the age, they were imputed on the basis of the predetermined rules as laid down in a decision table. Another check was made to validate educational attainment and occupation with age. It was necessary that the occupation be consistent not only with the age and the educational attainment, but also with the correct activity status.

After this sequence of validation checks, there was a further check of occupation and industry. For this, a matrix of all the possible combinations between occupation and industry had to be stored in the core of the computer. These combinations were tested and modified with live data collected in the first and second pilot land censuses. Since analysis of the pilot census data showed that occupation was more likely to be reported correctly than industry, the former was used to validate the latter. If the occupation of a person was not consistent with the industry in which he worked, then an appropriate industry was assigned on the basis of the entry for occupation. For example, a person recorded with the occupation of "stevedore" in the industry "construction" would have his industry classification amended to "services related to transport".

No imputation was made of items requiring specific geographic location, such as place of birth, place of origin, usual language, place of work and place of study.

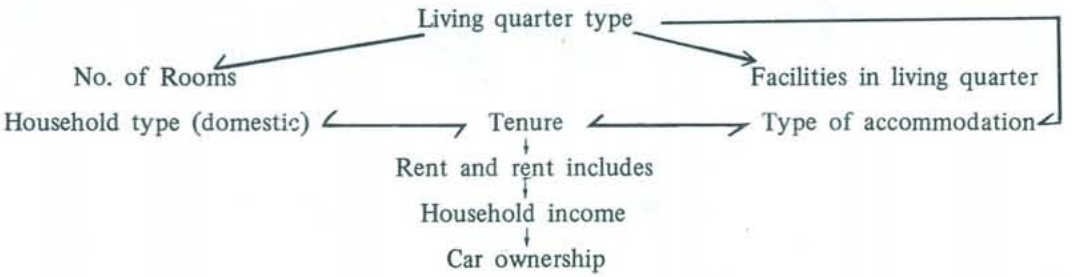
8.7 Imputation of living quarter and household characteristics

The imputation of living quarter and household characteristics was carried out independently from the imputation of the personal characteristics. As with the personal data, it was necessary to decide on one item as the key against which other items should be checked for consistency.

For living quarters, the key item chosen was the type of living quarter, and the other items i.e. number of rooms and living facilities, were checked against it. Any obvious inconsistencies in the data as revealed by this check were amended to provide an acceptable combination of number of rooms and living facilities for each type of living quarter. The relationship between these items was formulated on the basis of factual information available from the relevant government departments and agencies and was tested with live data collected in the first and second pilot land censuses. For example, the original specifications for the imputation of living quarters stated that a living quarter in a tenement block should have kitchen facilities. However, the live data collected in the pilot censuses indicated that this was not so in all cases; it was found that some living quarters in tenement blocks did not have kitchens. The original imputation rules regarding living facilities in different types of living quarter were amended accordingly.

In the imputation of household characteristics, the type of household (i.e. collective or domestic) was taken as the key item for the validation of the other items. If a household was reported as collective, all the other items for that household were assigned the "institution" code. If a household was reported as domestic, then the various items of information for the household were checked in the following order :–

Tab. 8.7.1 Sequence for the imputation of living quarter and household characteristics



Firstly, the type of household, tenure and type of accommodation were classified into the following categories :–

– occupying the whole living quarter

– sharing the living quarter with other households.

If a household fell into either category, the three items of type of domestic household, tenure and type of accommodation had to be consistent with this. If the three items were not consistent, the inconsistent item was imputed to agree with the remaining two on the basis of majority rule. The next step was to check rent against tenure. Household income was then checked against rent on the assumption that rent should not be more than three-eighths of such income. Finally, the number of cars owned by a household was checked against the household income.

A further check in respect of the type of accommodation was made to ensure that this was consistent with the type of living quarter. If not, the inconsistent type of accommodation was assigned a value consistent with the type of living quarter as well as the other data for that household. Hence, in general, the characteristics for a living quarter and for the household or households accommodated in it were all coherent and consistent with one another. However, no check was made on type of accommodation and household rent, thus causing some anomalies in the published census data.

8.8 Tests of the rules for imputation

A preliminary set of imputation rules was developed based on the results of the pre-test in February 1969, and tested with live data in the first pilot land census in September 1969. Errors and inadequacies in the rules were then corrected, and the whole set of rules revised and expanded. The modified set of imputation rules was again tested with live data in the second pilot land census in March 1970, which covered a very much larger sample (about 1%) of the population than the first pilot census. Based on the results, the rules were then further revised and made more flexible to allow for exceptional cases. Finally, in June 1971 a number of small test runs with live data from the main census were carried out for a final check of the imputation logic. A few minor changes were made to improve the rules before they were applied to the imputation run of the main census data.

CHAPTER 9

DATA PROCESSING – METHOD AND APPROACH

9.1 Choice of method

The choice of method for processing census data depends on how any particular system can deal with the various stages of data processing, i.e.

- data input
- data interlinking and sequencing
- imputation
- tabulation

The major consideration in selecting a system is the volume and the number of records involved. Since the 1971 Census included censuses of population and housing, the data covered some 5.6 million records: 4 million personal, 900,000 household and 700,000 living quarter. The system therefore had to include a fast data input device so as not to hold up the subsequent phases of data processing. In order to make useful cross-tabulations of the three types of data collected, the system should include facilities to interlink the records and to perform detailed checking for enumeration or coding errors in the data. Furthermore, the system required an extremely flexible tabulation plan in order to produce the detailed geographical tabulations required by different government departments for planning purposes. In view of these considerations, as mentioned in Chapter 2, the decision was taken early in 1968 to process the census results by computer.

9.2 The government computer

In October 1966, the Hong Kong Government took the decision to purchase a computer. The equipment was installed in March 1968 and was operated by the Organisational Surveys Unit of the Colonial Secretariat. It consisted of:–

- an ICL 1902 central processor with 16K words core storage
- a card reader, 300 cards per minute
- a slow line printer, 120 positions, 600 lines per minute
- 4 magnetic tape units, 20K char./sec.

In October 1968, a universal document transport (UDT) with bar reader was added to the configuration. This had been acquired primarily to deal with the automatic marking of school examination papers. However, this device could also be used as a means for direct input of census schedules into the computer. In view of the large number of records to be processed, it was decided in late 1967 that the UDT should be adopted for data input.

In June 1968, it was decided that this computer configuration should be up-graded by adding a further 16K words to the core storage and three exchangeable disc drives which were required to manipulate census data for tabulation purposes.

However, even with the enhancement, it appeared by mid-1969 that due to increasing examination work, there would be insufficient computer time available for processing the census results within the time set in the Census Plan. A further enhancement was therefore agreed to provide multiprogramming facilities instead of dualprogramming. This would enable one channel of the computer to be reserved exclusively for the long census input run for a period estimated at five to six months.

Also, in mid-1969, it was agreed that the computer processing of the census data should be done using a new census and survey computer language developed by International Computers Limited. This language was called Massive File Analysis System, and was known as FILAN. To use this system for the imputation run and for the tabulation run, which included tables with extensive cross-tabulation, the 32K words core storage was insufficient. Furthermore, the 1902 central processor was slow; one full tabulation run would take as much as 1,800 computer hours and the full tabulation programme

together with the imputation run some 8,000 hours. Moreover, while doing the imputation or tabulation run in FILAN, the whole 1902 computer configuration would have to be engaged. Even if twelve hours a day were assigned to census work, it would take as much as two years to complete all the census runs.

Accordingly, in September 1969, a request was made, and approval given, for further enhancement. This included :–

- the replacement of the 1902 central processor with 32K words core storage by a 1903A central processor with 48K words core storage
- a scientific computing unit
- three additional standard interfaces
- one additional faster line printer (1,350 lines/minute)
- a real time clock and program timer

The fast line printer was necessary so that several hundred pages of census tables could be printed out quickly at the end of each district tabulation run, without occupying the whole configuration and holding up other jobs. This enhancement was installed in September 1970, just in time to test the FILAN programs before the Census was conducted.

To cope with the census data processing in addition to normal jobs, the plan was that the computer would be operated on a three-shift basis for a period of one year. The input run which would occupy several months, required the services of two operators for 12 – 15 hours. In view of the plan to move and input some 60-70,000 UDT forms a day, this run was planned for the night shift starting at 4 p.m., in order not to interfere with other computer operations. The imputation and tabulation runs were also planned for the night shift, because they required the use of the whole computer configuration.

9.3 Census Data Processing Committee

Following the decision to process the census data by the government computer, a Census Data Processing Committee was set up on 15th November 1968, and meetings were held every alternate week, or weekly if necessary, to review progress. This committee was chaired by the Commissioner for Census & Statistics, and its members included senior staff of the Census Division, and the census systems analyst and programmer of the Government Computer Centre; as well as representatives from the computer manufacturer, International Computers Limited (ICL). The main tasks of the Committee were :–

- to formulate the general system approach for data processing of the census results
- to improve certain procedures where problems had been encountered in the pilot censuses, e.g. the movement of documents, form rejection and the marking of rejected forms
- to consider the various techniques employed in processing the data, e.g. the editing and imputation, and the interlinking and sequencing
- to allocate responsibilities for various tasks
- to ensure that the time schedule in the data processing critical path was maintained.

The first few meetings were concerned with the design of the data input system, the design of the UDT forms and the preparation of a critical path diagram for the control of the census data processing operaton. A copy of this diagram is at Appendix 9.1.

After the pilot censuses, in 1969 and 1970, the meetings were directed towards improving the techniques employed in the various stages of data processin Matters discussed included the redesign of the UDT forms, better control of the data input, better data interlinking techniques, and improvements to other aspects of the system. The editing and imputation rules were fully discussed in many meetings and the results of the test imputation runs were also examined.

The meetings in 1971 after the Census were concentrated on the progress of the processing of the census data. When the tabulation stage was reached, it was discovered that the computer time required for each tabulation run was twice the original rough estimate. The meeting then considered all possible solutions to cut down the required computer time, and introduced the "optimised run" which involved the reorganisation of the program logic. Up to April 1972, when the main census

tabulations were completed, the committee had held some 90 meetings. The committee continued in being after this date to discuss further runs of the census tapes to produce various specialised requirements.

9.4 Data processing staff

At the first meeting of the Census Data Processing Committee, an assignment officer from the Government Computer Centre was designated as the systems analyst for the processing of the census results. He was sent by the Hong Kong Government to London University to take an M.Sc. course in computer science, and while in Britain spent some time with ICL discussing the FILAN System. He returned and took up post on 7th October 1969. In May and June 1969, four programmers from the Government Computer Centre were given training by ICL in writing FILAN programs and assigned to census work.

Representatives from ICL were also involved throughout the census operation. The systems manager of ICL (HK) was a major participant in the design of the census UDT forms for optical reading. A systems executive from ICL (HK) was seconded to ICL Headquarters in Britain for six months in early 1969 during which he worked closely with the team of computer specialists developing FILAN. On his return in September 1969, he became a permanent member of the Census Data Processing Committee. The senior programmer of ICL (HK) was also sent to U.K. for 18 months (June 1969 – December 1970) to work on the FILAN system.

9.5 Problems with FILAN

The FILAN language was a newly developed software system, and had not at that time been used elsewhere in processing census results. Since the programmers had no previous knowledge of or experience in using this language, the writing of the census imputation and tabulation programs was very slow. Furthermore, the FILAN compiler for the imputation phase was not available in Hong Kong until March 1970, and that for the tabulation phase until November 1970, causing unexpected delay in the compilation and testing of the programs and their actual live runs. In the testing stage of the programs, it was found that there were faults associated with the system, many of which were solved locally with the advice of the ICL software team in Britain. However, the decision to use a completely new system such as FILAN meant that delays and problems were inevitable. Although it proved impossible to maintain the original timetable, hard work by both computer staff and statisticians enabled the system to be put into working order by September 1971, in time for the imputation and tabulation phases of the census data processing.

9.6 Characteristics of UDT forms

The UDT form used for the Census had a bar-format section in which the data were coded in boxes. The document reader light-scanned the marks on the form and read the information on to magnetic tapes. Because of the sensitivity of the document reader, the forms had to be printed on a special kind of paper (Wiggins Teape, Readaspeed, OCR Bond 84 g.s.m. or other paper of equivalent quality) approved by the document reader manufacturer, ICL. The bar-format section of the form had to be printed with carbon-free ink, in this case magenta, so that no tiny black dots appeared in the reading area, as these might be read as marks. In order to activate the light-scan, all marks made in the bar-format section had to be in lead pencil. If these marks were too light the document reader might fail to read them; however, the enumerators were instructed not to make them too dark, because it would then be difficult to erase a mark completely, and the document reader might read the incomplete erasure as a mark.

The UDT forms were read by the document reader at high speed (a theoretical maximum of 9,000 forms per hour) but to achieve even a reasonable reading speed, the forms had to be completely dry and wrinkle-free. Dog-eared or damaged forms would jam the machine and reduce the overall reading speed considerably. Extensive measures were taken during the census operation to ensure that the UDT forms were given the maximum protection. The forms were bound in pads of 30 backed by smooth cardboard, and the pads were kept in specially designed cardboard boxes throughout the operation. The enumerators were instructed to carry the pads inside the boxes at all times and to handle the forms with the utmost care. After the enumeration, the used pads were kept in their boxes and stored in air-conditioned rooms.

9.7 First draft of UDT forms

The UDT form used in the Census was both a census schedule and a medium by which the data could be input into the computer. The layout of the form, therefore, contained two sections, one for recording in long-hand the answers to the various questions, and the other a bar-format section for coding the answers to be read by the document reader. The bar-format section of the form was divided into a number of fields and sub-fields, and the enumerators were instructed that only one mark could be made in each field or sub-field.

The first draft of the UDT form was designed by the government data processing adviser and was tried out in the pre-test held in February 1969. Three separate UDT forms were used for living quarters, households and persons. The living quarter and household forms had all the census questions arranged in the left-hand margin; however, in order to save space, the personal form had a few questions, i.e. sex, age of infant under one year, place of origin, age at first marriage, number of children still living and ability to speak English, printed within the bar-format coding section. In the pre-test, the enumerators had some difficulty in distinguishing between living quarter and household forms, since they looked almost exactly the same. When administering the personal form, they tended to overlook the questions printed in the bar-format coding section.

9.8 Second draft of UDT forms

It was therefore decided to combine the living quarter and household forms into one. The first draft of the revised living quarter/household form was designed to include only one living quarter and one household. However, since one living quarter in many instances accommodated more than one household, the form was redesigned to include five households in each form in order to save forms and avoid unnecessary cross-referencing. To allow space for recording five households in one form, some of the household questions had to be printed within the bar-format coding section. The headings of these questions were shaded in magenta to ensure that the enumerators would not miss them during the enumeration.

In the personal form, an attempt was made to re-arrange all the questions into the left-hand margin of the form, leaving the bar-format section as far as possible for coding only. However, due to limited space, the questions on sex, age of infant under one year, and ability to speak English had to remain within the bar-format section; these three question headings were also shaded in magenta. The basic change in the layout of the personal form was to keep boxes in one horizontal line instead of in two or three lines as in the draft used in the pre-test.

The revised UDT forms were field tested in the first pilot land census held in September 1969. Even with the headings of the questions within the bar-format section shaded in magenta, the enumerators still tended to miss them. Since the living quarter form had been redesigned to include five households, the questions were spaced very close together and the coding of an answer was therefore sometimes entered in the wrong field.

9.9 Final draft of UDT forms

The living quarter/household form was therefore further improved by including only three households on one form, so that the household questions were allowed more space and the answers could be more easily coded. A column was also added to the left-hand side of the form showing the question numbers, to ensure that no questions were missed. All question headings and numbers were printed in black instead of magenta to attract the enumerators' attention. A "continuation" box was also printed in the top right-hand corner of the form, to be marked when a second form was required for a living quarter accommodating more than three households. The living quarter section of the form was also clearly separated from the household sections by a wide shaded margin. In the household sections an "institution" box was added as an additional sub-field in each household question, so that the form could be used for the enumeration of collective as well as domestic households. A copy of the living quarter/household UDT form is at Appendix 7.6.

Not much change was made in the layout of the personal form. As with the living quarter/household form, a column for question numbers was added, and the numbers and question headings printed in black. The fields for coding the transport questions, i.e. place of work and place of study, which were to be coded later by special coders, were shaded in magenta to discourage the enumerators from marking them. A copy of the personal UDT form is at Appendix 7.8.

After experience in the First Pilot Land Census, a special instruction was printed in the bottom left-hand corner of both forms, warning the enumerators to take care not to fold the form nor to mark the coding boxes with heavy dark pencil marks.

The improved layout of the UDT forms was found satisfactory in field testing in the second pilot land census in March 1970. The two forms were therefore finalised for the main Census with no major alteration. The special instruction at the bottom of the form, however, had to be changed, because the enumerators marked the coding boxes too heavily. In the input run of the second pilot land census, some unwanted marks could not be completely erased, and the forms were rejected by the document reader as double-marked. In the training for the main Census, the enumerators were asked to make the marks dark and clear rather than heavy.

9.10 Reference number

In order to cross-tabulate living quarter and household data with personal data, some means of linking the two types of records was necessary. A section was therefore included at the bottom of each form for the coding of reference numbers. The reference number section in the living quarter/household form was made up of four fields, i.e. tertiary planning unit, street block, enumerator block and living quarter (the serial number taken from the enumerator record book). A field for a household serial number was also included in each household section of the living quarter/household form; (this number was pre-printed in the enumerator record book). The same four fields appeared at the bottom of the personal form together with a fifth field for the household serial number. These reference numbers served to link one type of record with the other, and also enabled tabulations of the census results to be made on a tertiary planning unit or street block basis.

9.11 Data processing for the pre-test

The data processing system was first tried out in the pre-test in February 1969. The small number of UDT forms collected in the test was run through the document reader of the computer and all marks in each form were printed out by a standard package. The print-outs were matched with the original forms and the quality of the marking examined. About 20% of the forms were found to have marks which had not been read by the document reader. Some of these doubtful marks could have been read by changing the light threshold of the document reader, but such an increase in sensitivity would have caused other problems and was not thought desirable. While the pre-test showed that input by UDT forms through the document reader was feasible, it was apparent that much more attention had to be given to the quality of marking. It was also necessary to ensure that the enumerators in the actual Census had adequate experience in using this kind of bar-format document. This did not present a problem, since the same type of form had been in use for some time by students for the government examinations which were marked by computer.

9.12 Data processing for the first pilot land census

One of the aims of the first pilot land census held in September 1969, was to record the types of mistakes made by the enumerators in marking and coding the forms, in order to formulate the imputation rules described in Chapter 8.

Since the census systems analyst had not returned to Hong Kong, it was decided that the systems work for this pilot census should be carried out by ICL. The census statisticians specified the imputation and tabulation requirements, the ICL systems executive designed the data processing system and prepared the programming specifications, and the census programmers wrote the programs.

The system designed by ICL was tape-oriented, consisting of four programs. The first transferred personal data from the UDT forms to magnetic tapes, and the second living quarter and household data. These two programs were written in PLAN. The third program was a software sort/merge package. However, this latter was found to be inadequate because of the complications involved in matching the three types of records. The fourth program was a trial editing and imputation program written in FILAN. The imputation rules and the program logic were to be tested by editing the data manually and comparing the results with those obtained from the computer.

By the first week of August 1969, ICL had completed the systems design; the specifications for the two input programs were ready in early September. The writing of the input programs was completed

and the data input carried out towards the end of October. Nearly 302 of the forms were rejected; and two-thirds of the rejected forms were again due to faint marking by the enumerators. Such a reject rate was unacceptable. Drastic measures therefore had to be taken to cut down this large number of rejects in the main Census.

In June 1969, two senior officers of the Census Department attended a seminar in Weisbaden, West Germany, on the use of computer with special reference to population censuses. On their return, they recommended that the transcription method should be adopted, i.e. specially trained coders employed to transcribe all the data from the census schedules on to the UDT forms before input into the computer. However, although transcription might solve the problem of the high reject rate, it would raise others. Coders would have to be recruited and trained, centres set up to accommodate them, transport arranged to move the census schedules and the UDT forms from field offices to the coding centres, and special arrangements made for security and supervision. Because of these administrative problems, the suggested transcription method was not adopted.

However, it was still necessary to find some means to reduce the rate of rejects to an acceptable level of 5-10%. The decision was therefore taken to double the field editing staff in each census division, so that a 100% check of all UDT forms for faint and doubtful marks and for omissions could be made. The enumerator training programme was also revised to put further emphasis on the correct marking of the UDT forms.

The specifications of the imputation program were not finalised until November 1969, and the writing of the program was not completed until the end of the year. Since the FILAN compiler for the imputation phase was still not available in Hong Kong, special arrangements were made with ICL to have the program compiled and tested in Britain in February 1970. However, the compilation was not successful; errors were found in the syntax and logic of the program. Imputation by computer was therefore not tested in the first pilot land census, although the data was edited manually and the rules improved. However, by working on this program, the census programmers obtained experience in the use of FILAN.

9.13 Data processing for the pilot marine census and the second pilot land census

During the second pilot land census, a flying squad of senior field editors, made up of statistical clerks of the Census Division, was set up to make spot checks on the work of the field editors in each census division. This flying squad was found to be very useful, and it was decided to retain it in the main Census in order to keep the field editors up to the mark and to ensure that the handling and marking of the UDT forms was kept within the computer requirements.

The systems design and program approach for the pilot marine and land censuses held in February and March 1970 respectively were identical, although data processing for the two censuses was carried out separately. At this stage, the four computer phases for the census data processing: input, organisation, imputation and tabulation, were firmly established. The programs for the input and organisation phases were disc-oriented and were written in PLAN. The programs for the other two phases were written in FILAN. The system for these two pilot censuses, and subsequent revisions for the main Census, were designed by the census systems analyst, and the writing of the programs was done by the census programmers.

The input program for personal records was completed in early April 1970, but that for living quarter and household records was delayed because the programmer responsible had been held up. The program was not ready until early August 1970. The input run for the second pilot land census was carried out in April 1970. The result of the run indicated that the reject rate was about 10%, which represented a considerable improvement compared with that in the first pilot land census, and showed that the remedial measures had taken effect. Most of the rejects were still due to faint marks and omissions.

In the organisation phase, a sequence check program had been introduced to organise data in geographical sequence and list structure. The revised version of the imputation program written by two programmers was not ready until the end of November 1970, about four months behind schedule. This delay was partly due to lack of programmers with experience in the use of FILAN, and partly to the non-availability of the FILAN programs compiler, which did not arrive until March 1970. The imputation run of the second pilot land census data was eventually carried out in December 1970. The rate of imputation necessary for personal characteristics was reasonably good, being of the order

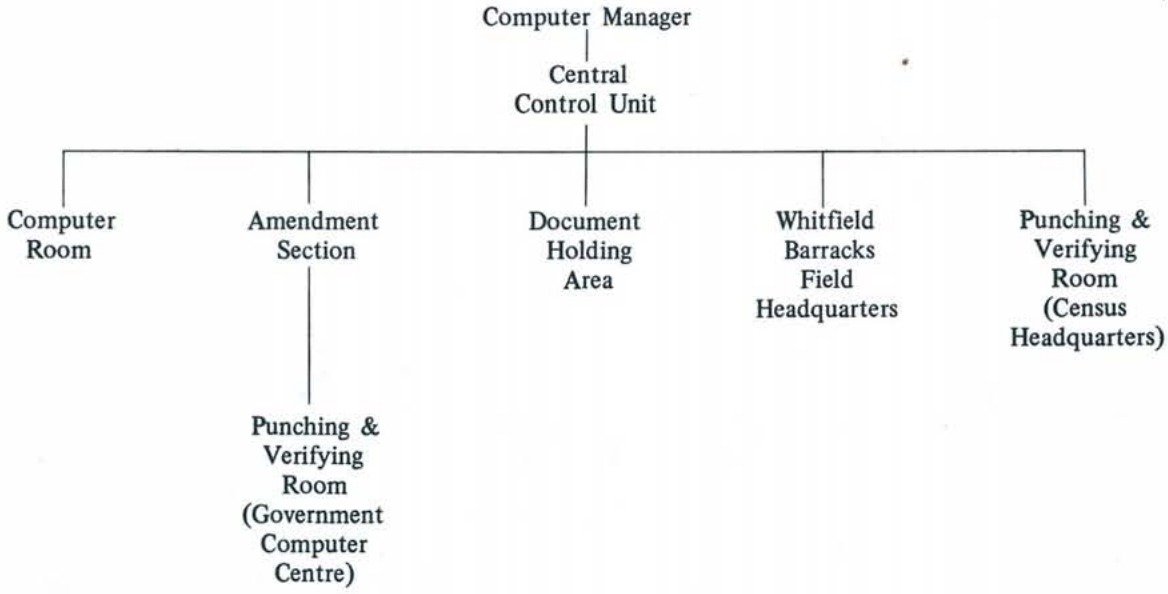
of only 5%. The rate of imputation for certain living quarter and household characteristics was however higher, an average of about 10%. Based on the result of this imputation run, the imputation rules were improved and the program re-written before the main Census. In the trial runs of the revised program, the program instructions were tested by running sets of dummy incorrect data for which model imputations had already been worked out. The imputations made by the program were then checked against the expected answers, and the program logic further revised.

Two programmers started work on the tabulation programs in August 1970, but the time taken to complete this program was again much longer than expected. The major delay was in obtaining the FILAN compiler for the tabulation phase from Britain. This was eventually sent to Hong Kong in November 1970, but the program was not ready for a live run until early March 1971. Tables were then produced using data from the second pilot land census and, based on these results, the programs for the tabulation phase of the main Census were improved and revised.

9.14 The operation and control system

In December 1970, the Census Data Processing Committee agreed that movement of the UDT forms from the census field headquarters at Whitfield Barracks in Kowloon to the Government Computer Centre on Hong Kong Island should be in daily batches of one lorry load comprising 12-15 census divisions totalling some 60-70,000 forms. It was planned that each daily batch would take approximately eight days to pass through all four stages of computer data processing, i.e. input, organisation, imputation and tabulation.

In order to ensure a smooth flow of work, it was necessary to devise a sub-system for controlling the movement of documents and the operations in the Computer Centre during the whole data processing period. The control system was organised as follows :–



9.15 Central control unit

The computer manager maintained overall supervision of the data processing operation and reviewed the progress of work from time to time, to ensure that the actual work flow did not deviate too much from the original schedule. In the event of any serious deviation from the schedule, he had to decide the appropriate action to be taken to clear the backlog.

The Central Control Unit was directly responsible to the computer manager. A statistician from the Census Division and a programmer from the Government Computer Centre worked together to keep day-to-day control of the work flow. Some of the main functions of the Central Control Unit were :–

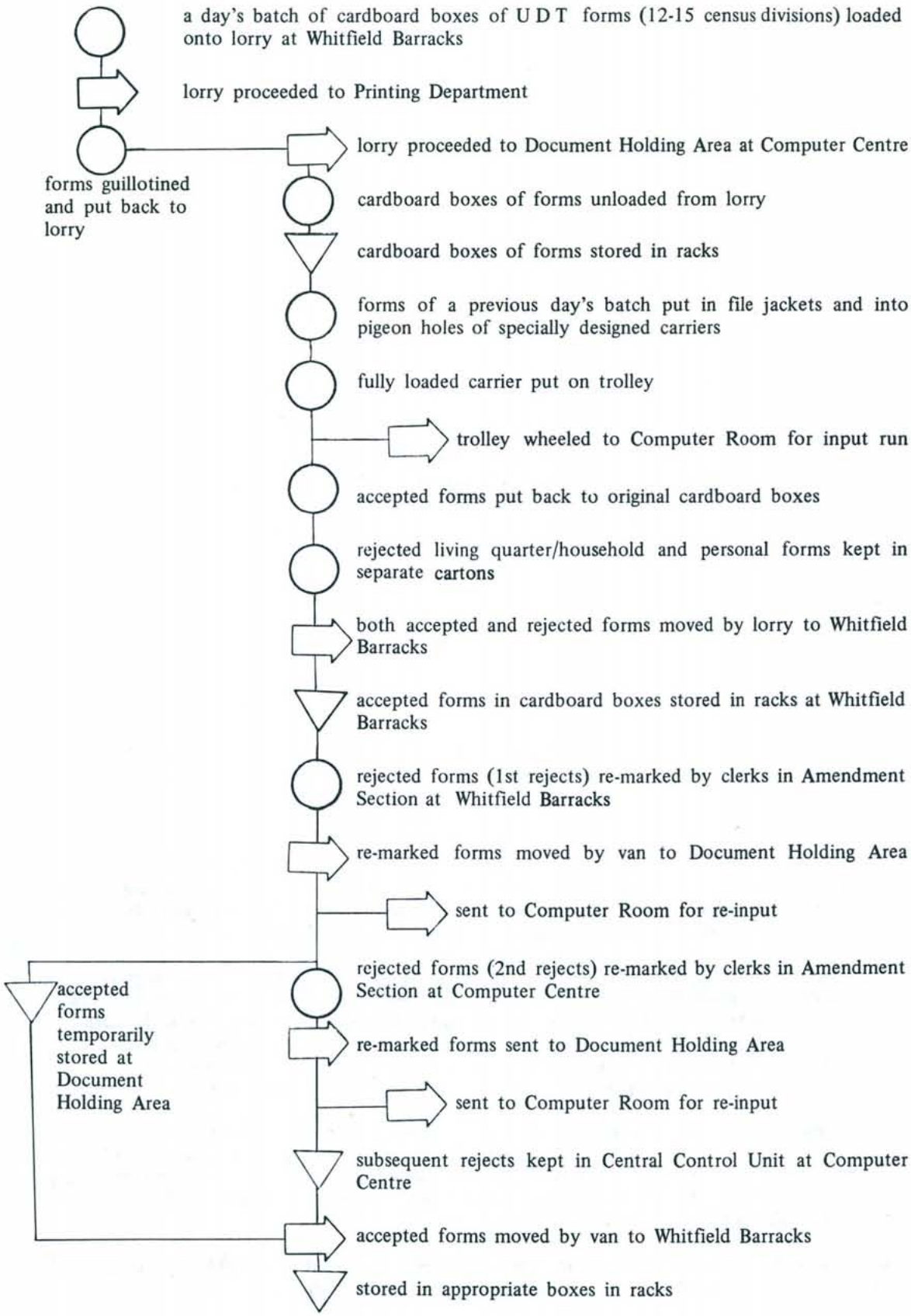
- to prepare an overall schedule of work for both computer and manual procedures
- to prepare a time-table for the movement of each batch of documents from one operational unit to another
- to prepare a time-table for computer runs each day
- to prepare instructions for computer operators and control cards to initiate each computer run
- to prepare a summary sheet for any batch of UDT forms or computer print-outs which was moved from one operational unit to another for action
- to supervise the operations carried out at the Document Holding Area and the Amendment Section
- to serve as a link between the Computer Room and the other operational units so that work in these other units could be kept to the schedule of work in the Computer Room
- to adjust the time schedule for any minor change in the operation
- to report to the computer manager any likely serious deviation from the original schedule and to re-schedule the work as advised by the computer manager.

In order to co-ordinate the work of the various operational units, the Central Control Unit was housed near the Computer Centre, so that it could be kept informed at all times about the progress of batches of forms throughout the different stages of data processing. Two other units were also placed near the Computer Centre, the Document Holding Area to organise the UDT forms for initial input and re-input, and the Amendment Section to prepare amendment cards for amendment and subsequent sequence check runs.

9.16 Work-flow for input phase

The flow chart below shows the movement of forms through the various operational units during the input phase :–

Tab. 9.16.1 Work-flow for Input Phase



Starting from 28th March 1971, a lorry left the Whitfield Barracks field headquarters every morning at 8.30 a.m. with the 250-300 enumerator cardboard boxes for 12-15 census divisions, containing approximately 60-70,000 UDT forms.

Guillotining of forms — The lorry had crossed over the harbour by vehicular ferry and arrived at the Printing Department at North Point, Hong Kong, at about 9.30 a.m. The boxes of UDT forms were transferred to trolleys by census division and wheeled to the guillotine machine. A clerk took one box at a time from the trolley and removed the pads of UDT forms (living quarter/household and personal) which he handed to the guillotine operator, and the box to another clerk. When the UDT pads had been guillotined to remove the binding, the operator handed the forms to the second clerk who put them back into their box. The second clerk had an empty trolley ready to receive the boxes containing the guillotined UDT forms. When the operation had been completed, the whole division of forms was then wheeled back to the lorry. This procedure required four trolleys, two at the guillotine area and two trolleys carrying two divisions of boxes in reserve. When all the forms had been guillotined, at about 11.30 a.m., the lorry then proceeded to the Document Holding Area at the Computer Centre where a permanent parking space was reserved for it, arriving at about 12.30 p.m.

Loading of forms — The Document Holding Area was set up near the Computer Centre and during the input period, eight clerks were posted to it. They were responsible for organising the UDT forms for input in accordance with the time schedule. At all times, three daily batches were kept in reserve in case of hold-ups. Every morning, the staff had to wait for the lorry to arrive and unload a new day's batch of guillotined UDT forms into racks before leaving for lunch.

In the afternoon, the forms of a previous day's batch were taken out of their boxes. The cardboard backing sheets and blank UDT forms were removed from each box. The two different types of completed UDT forms, living quarter/household and personal, in each box were separated and a control sheet inserted at the back of each type. A clerk then checked that the reference number was properly marked on the bottom form above the control sheet. The living quarter/household forms of each enumerator block were then placed in a ***white*** file jacket, while the personal forms were placed in a ***green*** file jacket. The empty boxes were returned to the racks.

Input of forms — The two sets of file jackets were then placed in the pigeon holes of specially designed carriers, a drawing of which is at Appendix 6.6. The forms for each census division were placed on a separate carrier. Each batch of 12-15 census divisions was put into carriers before 4.00 p.m. The actual input of the batch took place between about 4 p.m. and 7 a.m. the next morning. When the input run started at about 4.00 p.m. each day, the carriers were loaded in turn on to a trolley (drawing at Appendix 6.7) which was wheeled into the Computer Room. The carriers awaiting input were temporarily stored in a space near the Computer Room where the trolleys were loaded and unloaded.

The following morning, the clerks in the Document Holding Area replaced the forms which had been input during the night in their appropriate enumerator cardboard boxes, while rejected forms were placed in separate cartons. Both accepted and rejected forms were returned to the Whitfield Barracks field headquarters by lorry in the afternoon of that day. Strict supervision of the Document Holding Area was essential to avoid any mix-up of forms already input with those still to go through the process. On arrival at Whitfield Barracks, the enumerator boxes were replaced in their correct storage racks.

First rejects — An amendment section was set up in the Whitfield Barracks field headquarters for re-marking those UDT forms which had been rejected in the initial input run, i.e. first rejects. 20 clerks were deployed for this task under a statistician. The average number of rejects from each daily batch was about 5-6,000 forms, i.e. 7-8% of the whole batch. These rejected forms had to be re-marked on the same day that they were received. They were then sent back to the Central Control Unit and on to the Document Holding Area to be re-input the following morning to their correct batch.

Second rejects — During the re-input of the first rejects, about 100-200 forms, about 0.2% of the whole batch, were rejected again, i.e. second rejects. These were amended at the Amendment Section in the Computer Centre, manned by two statistical clerks who had to check and re-mark the forms very carefully to avoid having further rejects. The forms were then returned, through the Central Control Unit, to the Document Holding Area for re-input the day after.

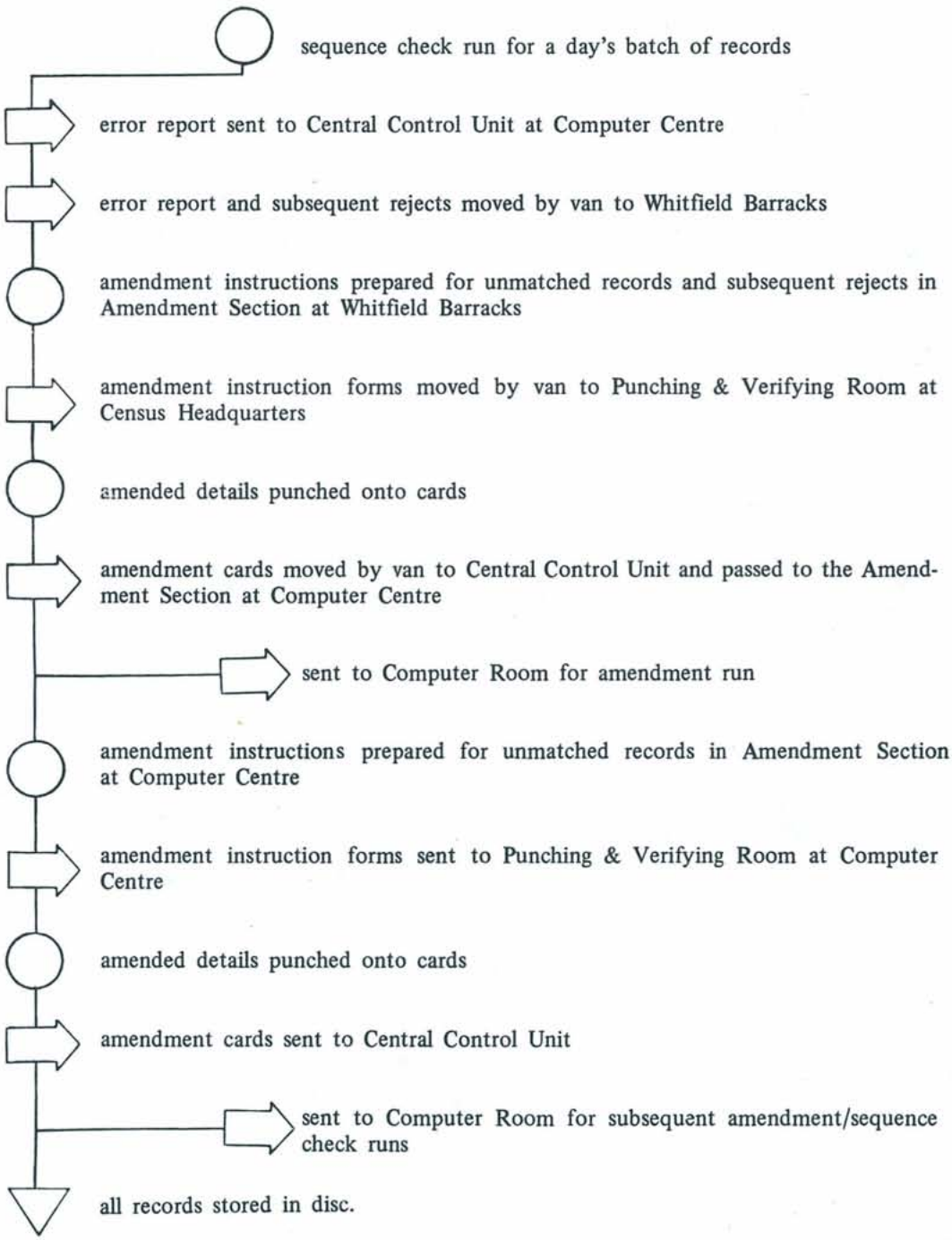
At Whitfield Barracks, another three clerks were assigned to replace the rejected U D T forms which had been finally read by the document reader in their appropriate enumerator boxes.

Subsequent rejects — After the re-input of the second rejects, there were still a few UDT forms of a batch that were not accepted by the document reader, i.e. subsequent rejects. This small number of rejected forms, usually under 10 per batch, was kept in the Central Control Unit and passed back to the Whitfield Barracks field headquarters with the error reports of the first sequence check run of their parent batch.

9.17 Work-flow for organisation phase

The flow chart below shows the sequence of operations involved in the organisation phase :-

Tab. 9.17.1 Work-flow for Organisation Phase



Matching Records — After the input phase, the first operation of the organisation phase was a sequence check. During this check, a number of records were found to be unmatched, e.g. a person without a household or a household without a living quarter. These unmatched records were printed out at the end of the run, and the error reports were sent back to the Whitfield Barracks field headquarters together with the subsequent rejects forms mentioned above. At Whitfield Barracks, 14 clerks were deployed to amend these unmatched records. After checking the computer error reports with the appropriate enumerator record books and, if necessary, the original UDT forms, amendment instructions for each unmatched record were prepared. At the same time, amendment instructions were prepared for the subsequent rejects.

These amendment instructions were then sent to Census Headquarters where the amended details were punched on to cards and verified; these were later taken back to the Central Control Unit at the Computer Centre and passed to the Amendment Section to be prepared for the amendment and the second sequence check run - see Chapter 10.

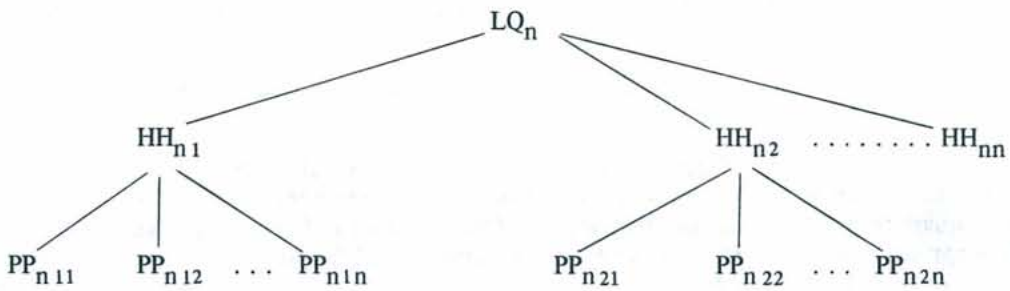
After the amendment run and the second sequence check run, there were still some records unmatched. These were carefully examined by the Amendment Section at the Computer Centre, and further amendment instructions prepared. These amendment cards were punched in the Computer Centre, and after passing through the Central Control Unit, read back into the computer files in the second amendment run - see Chapter 10.

CHAPTER 10

DATA PROCESSING SYSTEM

10.1 Requirements of data processing system

The 1971 Census was basically an integrated operation of two separate censuses, i.e. a housing census and the population census. As a result, three different sets of data, i.e. living quarter, household and personal were collected. For subsequent cross-analysis of the data, it was necessary that the living quarter (LQ), household (HH) and personal (PP) records had to be interlinked and arranged in a list structure as follows :



In this diagram n refers to a particular living quarter, HHn1 is the first household in the living quarter and HHn2 is the second and so on. PPn11 is the first person in the first household etc. The data processing system, therefore, had to be designed in such a way as to accommodate this requirement.

The system design also had to meet the following requirements :–

- to minimise manual searching for unmatched records and amendments to records already input
- to validate and edit all data (with a few exceptions) on each UDT form
- to produce full census tabulations within the minimum time after data input
- to produce the main tabulations by different geographical divisions as required by government departments concerned
- to produce special transport tabulation required by the Traffic & Transport Surveys Unit on a sample basis using a separate set of geographical codes
- to provide overall total for each table.

Because of other commitments on the government computer, the system also had to be so designed that it could be implemented in a multiprogram environment.

10.2 System outline for the main Land Census

The census data processing system consisted of four phases :-

- input phase
- organisation phase
- imputation phase
- tabulation phase

The systems for the marine and land censuses were identical, although some of the questions and hence the computer programs were different.

10.3 Input phase

The UDT forms were sent to the computer for processing in batches of 12-15 census divisions as described in Chapter 9. The daily batch size was about 60,000 forms, including living quarter/household records and the corresponding personal records. The input phase included the work starting from the arrival of a daily batch of forms to the Computer Centre up to the time when all these records were completely input to a disc. For ease of working, a complete disc cartridge was allocated to each daily batch. The input speed was about 5,000 forms per hour, and the reject rate was, on the average, about 8%. There were a number of re-cycles when rejected forms were re-marked and re-input.

The input phase consisted of four programs :-

- **Program CS01** read the data from personal UDT forms to disc; correctly marked forms were written to disc serially, i.e. in the same order that the forms were input.
- **Program CS02** read data from living quarter/household UDT forms to disc; the approach was same as CS01.
- **Programs CS03 and CS04** were similar to CS01 and CS02 but for the input of the marine census UDT forms.

Since the number of census divisions in a census district varied, the unit of operation was the daily batch rather than the census district. The 60,000 or more records in a daily batch filled only about three-quarters of a disc, and one disc was therefore sufficient to hold one day's input with a wide margin. This approach was adopted in order to lessen handling and to simplify control requirements. Each disc was divided into two files :-

– personal records	CSPS	DDDD	nn
– living quarter/household records	CSLH	DDDD	nn

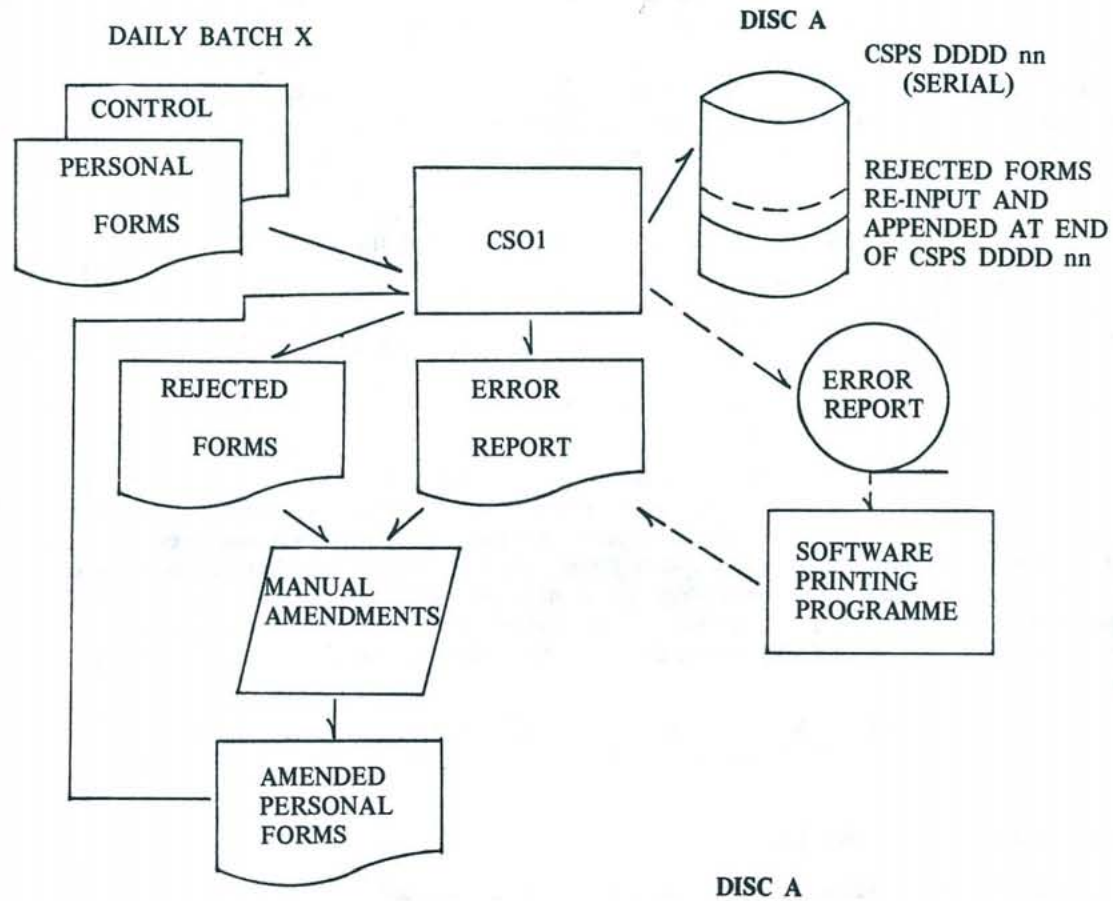
CSPS contained personal records and CSLH living quarters/households records. DDDD was a four-character unique alphabetic code for identifying each census district e.g. MONK for Mongkok; nn was the daily batch number within the census district, e.g. 01, 02 . . . . . 99. Both files were capable of having data added to them. This open-end facility was provided so that rejected records could be appended rather than input again to separate files and subsequently merged, as would have been necessary with a tape-oriented system. It also meant that if it was necessary to break off the running of the program for any reason, it would be started again at any point. This was particularly required because 60-70,000 forms at a reading speed of about 5,000 forms per hour meant a batch time of 12-14 hours.

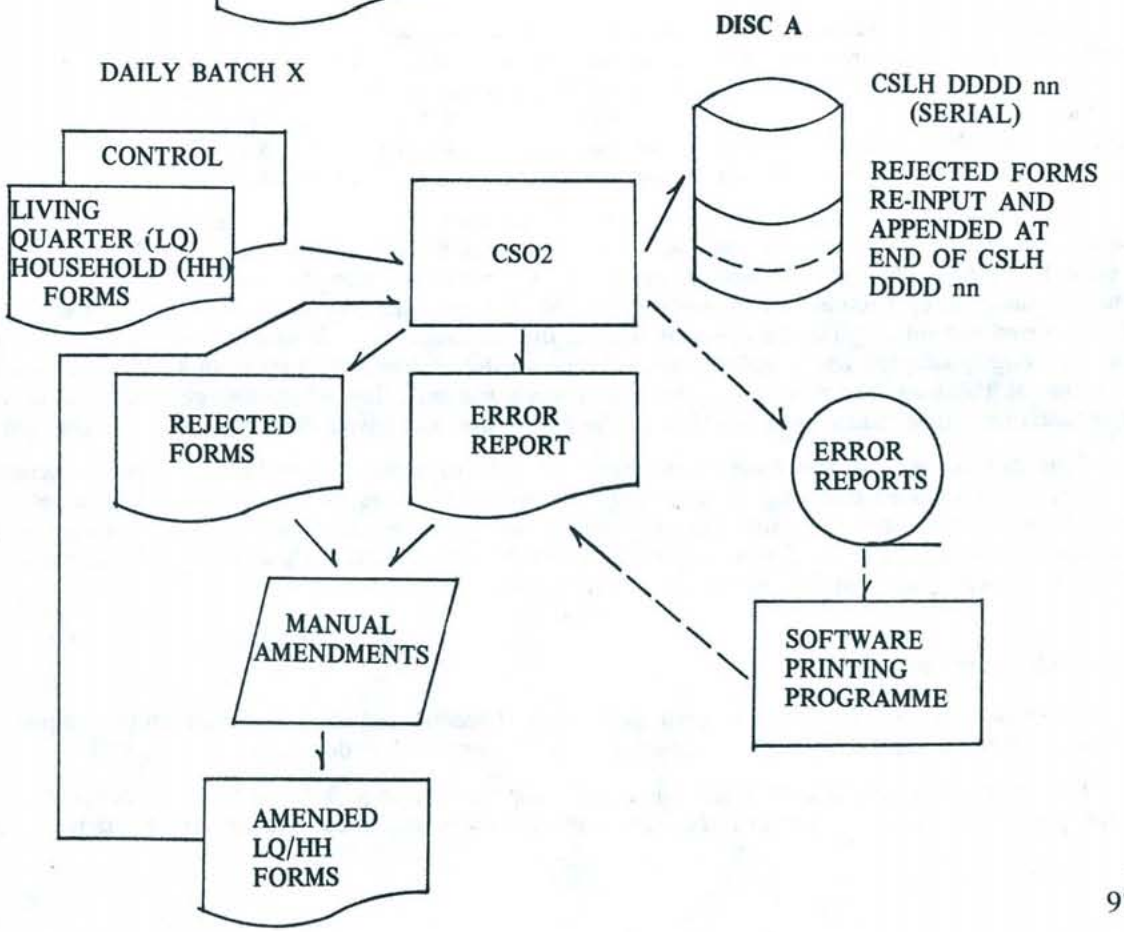
Input procedure – As mentioned in Chapter 9, the UDT forms for each division were arranged in the pigeon holes of carriers on trolleys in enumerator block order,personal forms in green file jackets and living quarter/household forms in white jackets. In the computer room, the operator of the document reader input all personal forms on the first trolley by program CS01, then switched to program CS02 and input all the living quarter/household forms on that trolley and those on the next trolley. He then switched back to CS01 for the personal forms on the second trolley. Forms were fed into the document reader in the same order as they came out of the file jackets.

Another operation in this phase was to ensure that all forms in an enumerator block had the same first seven digits of the reference number, i.e. tertiary planning unit/street block/enumerator block. Since the forms were boxed by enumerator blocks, it was logical to assume that all the forms in the same box would have the same reference number, and that any discrepancy would be the result of an enumerator's error. A blank UDT form was therefore inserted at the beginning of each enumerator block. This blank form had the first field marked completely across the page; this was a signal to the document reader that a new block was being fed in. The document reader was programmed to accept the reference numbers of the first form of the new block, which had been double checked by the field editors, as the control number for the whole block. The computer program then checked the rest of the forms in that block, and, if any discrepancies were found, corrected their reference numbers to those of the control form. The number of forms amended in this way was printed out, so that any block with a large number of changes could be re-checked.

A system flow of the input phase is shown in the following chart :-

Tab. 10.3.1. System Flow Chart for Input Phase





Program CSO1 — This program read personal UDT forms to disc file CSPS **DDDDnn.** The basic function of this program was to convert the information on the bar marks of the forms to digital values on the computer disc. The document reader accepted correctly marked forms and rejected those incorrectly marked.

UDT forms successfully input and those rejected were sorted to different stackers of the document reader. An error report indicating which fields or sub-fields of the rejected forms were incomplete was printed out on the line printer in the same order as the forms were rejected. When the line printer was not available, the error report was written to tape, and subsequently printed by a standard program off-line when the printer was free. This additional facility was important in the multiprogram environment where the on-line printer was not available during the entire input time.

Program CSO1 also applied some simple logical checks, e.g. consistency between year of birth and age, marking the "not applicable" or "unknown" box in addition to another box in a sub-field as described in Chapter 8. The advantage of including this preliminary logical checking in CSO1 was that otherwise much more complicated rules would have been necessary in the imputation phase. Furthermore, at this stage, the forms were still available for re-marking and re-input, and therefore searching was not required as in subsequent runs.

Program CSO2 — This program read living quarter/household UDT forms to disc. The programming technique and approach were similar to CSO1. Each UDT form had space for only three household records in one living quarter, and where there were more, the enumerators had been instructed to mark a continuation box on the living quarter/household form concerned. In some cases this had not been done, and thus caused unnecessary rejects. Another problem was vacant living quarters where the enumerators' instructions required the number of persons in the household to be marked zero; some enumerators had not followed this instruction, and these forms were also rejected by the document reader.

Program CSO2 also applied some simple logical checks e.g. to determine whether a form for a collective household had been consistently marked in the "institution" boxes in all sub-fields.

10.4 Problems of input phase

Physical jam: — Whenever a physical jam occurred, the problem was to decide which form had already been read. The program therefore always kept a record of some main characteristics of the last seven forms read. As soon as a jam occurred, the program printed out these main characteristics, i.e. relationship to head, sex and age, of the last seven forms on the console, so that the operator could compare them with the jammed forms and ascertain which had been read and which had not. The forms could then be re-input in a subsequent reject run of the same batch.

"Drum forms": — The document reader had a double-feed detector. This device had failed frequently during the pilot censuses, but was much improved for the main Census after the attentions of an ICL engineer. When double feed occurred, i.e. two forms got into the drum together, the inner form was held on by suction and transported to the reading head, but the outer form dropped off. This happened too quickly for the operator to stop the machine to check whether the form had been read. The remedy adopted was to re-input those forms which had dropped off the drum in the subsequent reject run of the same batch. Checking for duplications and cancelling where necessary were done in the organisation phase, when omissions due to the inner forms not having been read were also checked.

Cancelled forms: — The enumerators had been told to cross all cancelled forms boldly across the page; it was assumed that this crossing would put marks into more than one sub-field and therefore the form would be rejected by the document reader. In very rare cases, however, this crossing was insufficient, and the cancelled forms were read by the document reader. These wrongly input records had to be detected and cancelled in the organisation phase.

10.5 Organisation phase

This phase included the sorting of each daily batch of records and checking for structural completeness, out-of-range variables etc. and the amendment of the errors thus detected.

The organisation of the data in this phase was complicated by the fact that the reference numbers on the personal form only identified the person in relation to the household and living quarter. The

fact that all personal records in the same household had the same reference numbers caused difficulties in sequencing these records for processing purposes. It was therefore necessary to include in the program a special function to generate reference numbers for personal records.

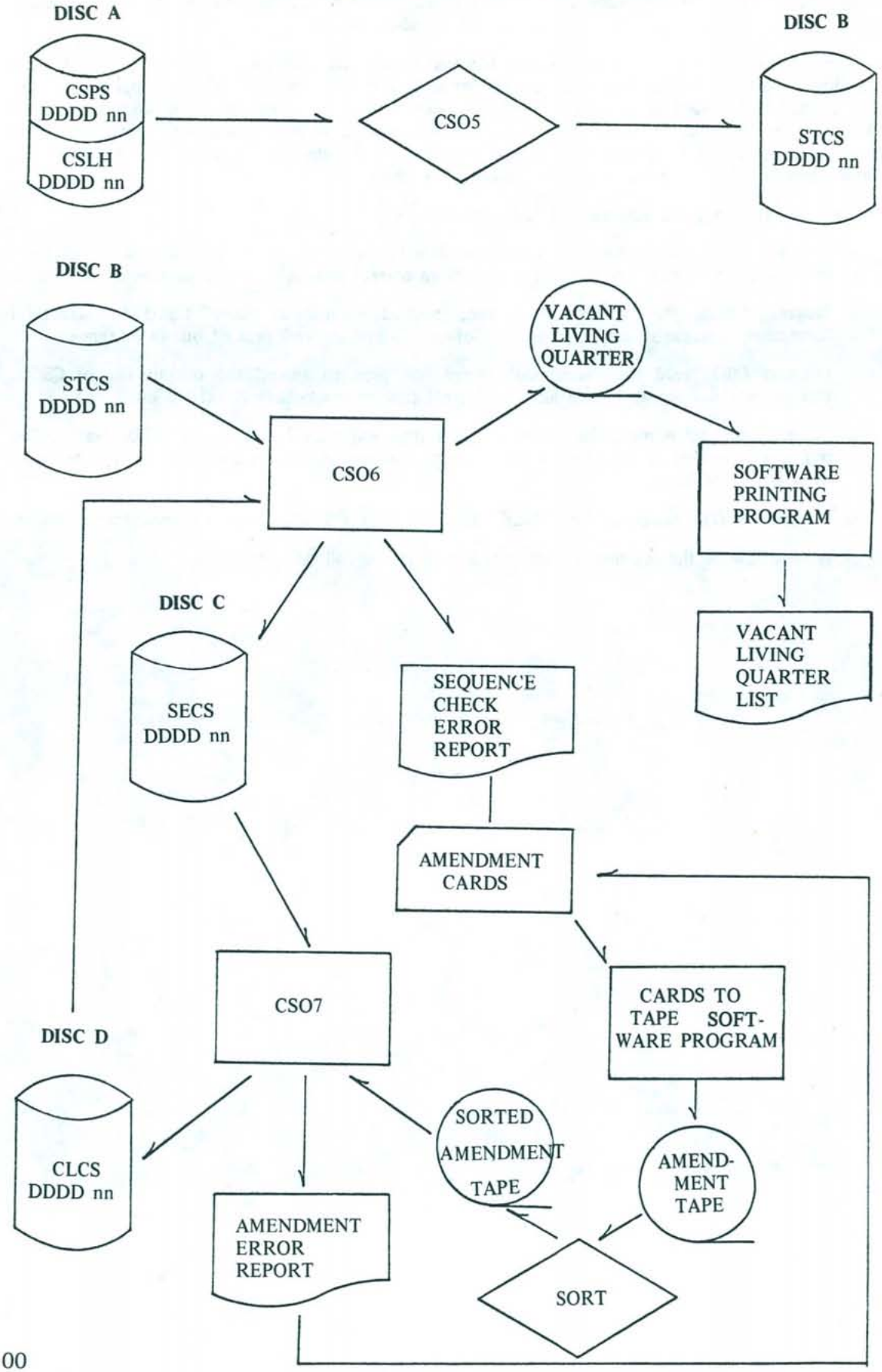
There were also personal records which required special attention, e.g. army personnel, inmates of institutions etc. No living quarter/household forms had been completed for these persons, whose particulars had been coded on personal UDT forms with the living quarter/household reference number marked as zero to indicate special class. Since the computer system required every personal record to have a household and living quarter, "dummy" household and living quarter records had to be created for each group of these persons during the organisation phase.

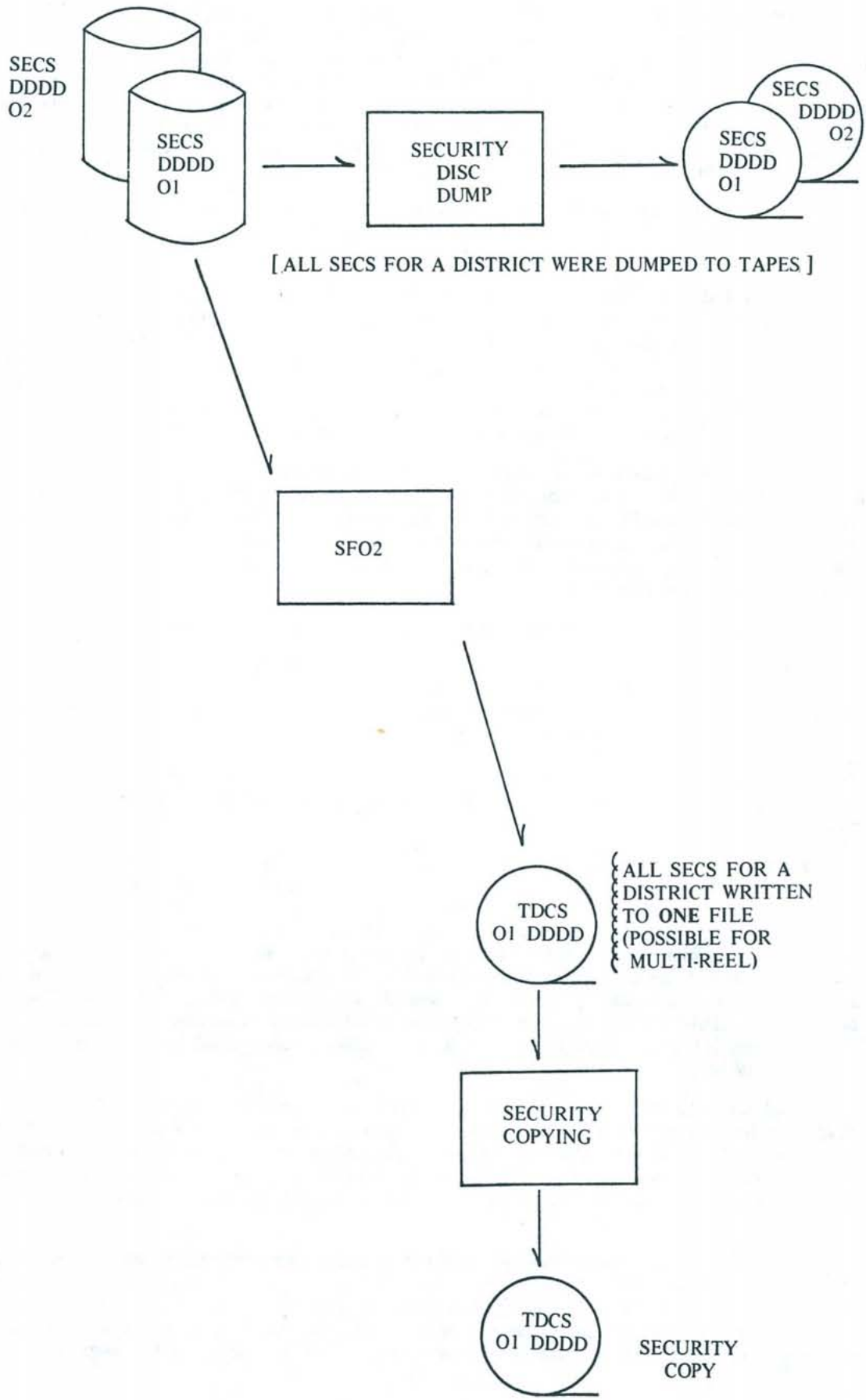
The organisation phase consisted of four programs :–

- **Program CSO5** sorted the living quarter/household records in the CSLH file and the personal records in the CSPS file to produce a new file in correct geographic and data structure sequence.
- **Program CSO6**, the sequence check run, checked the output file of CSO5 for structural correctness, geographic sequence and out-of-range variables, and printed out error reports.
- **Program CSO7** read the amendment records on tape to amend the output file of CSO6; this process was repeated until all amendments had been successfully carried out.
- After all the amendments had been made, a final sequence check run of CSO6 was carried out to ensure that all the records were structurally correct; at this stage a security tape dump of the file was made.
- **Program SFO2** converted the "clean" data file into FILAN format by enumerator blocks.

A system flow of the organisation phase is shown in the following chart :–

Tab. 10.5.1. System Flow Chart for Organisation Phase




SECS
DDDD
O2
SECS
DDDD
O1
SECURITY
DISC
DUMP
SECS
DDDD
O2
SECS
DDDD
O1
[ALL SECS FOR A DISTRICT WERE DUMPED TO TAPES]
SFO2
TDCS
O1 DDDD
ALL SECS FOR A DISTRICT WRITTEN TO ONE FILE (POSSIBLE FOR MULTI-REEL)
SECURITY
COPYING
TDCS
O1 DDDD
SECURITY
COPY

Program CSO5 — The sorting of the two corresponding files of CSLH for living quarter/household and CSPS for personal records, stored on the same disc, was carried out to bring the records into correct data structure. All records within a daily batch were first sorted into geographic sequence: tertiary planning unit/street block/enumerator block. Within each enumerator block, the records were again organised into sequence: each living quarter record with its corresponding household records. Within each household, since personal records did not have unique reference numbers, they were sorted into 'sequence' of head of household, then remaining household members by relationship to head, sex and age. This disc-to-disc sort took about 20 minutes for each daily batch.

The output file was on disc-STCS DDDD nn, where DDDD was the same unique 4-character alphabetical census district code as in the original data file, and nn was the same daily batch number. The disc still contained the data of one batch.

Program CSO6 — This program read the CSO5 output file. Its major function was to check that the records were structurally correct, i.e. in the sequence described above. The program produced an error report which identified the structural breaks. These were often interrelated, e.g. a household record with an incorrect serial number would result in a living quarter record and a number of personal records without a household. A system was worked out for the computer to spot this type of error, and print out the unmatched records. This program also performed a range check of the classification coding of all data, and any item which was out of range was also printed out in the error report.

If, during this process, it was found that a household had no head, the program automatically designated the most appropriate household member as the head. However, the sorting of the personal records of other household members by CSO5 was not entirely effective in some cases, e.g. twins of the same sex. This program therefore generated a unique reference number for each personal record. This unique personal reference number was necessary in order to insert or delete any particular personal record in the subsequent amendment runs.

The output file of CSO6 was on a new disc with a new file name SECS DDDD nn.

The error report printed out by this program was used by the Amendment Section to correct any structural breaks in the data. This was done by matching loose records and re-inserting them in their correct place in the file, and deleting duplicate records wrongly inserted in the input phase. The amended records were transcribed on to a specially designed form and the details then punched on to cards. The amendment cards for each daily batch were sorted by sorter-counter into geographic sequence. They were then read to tape by a standard software package. This tape was then sorted to produce a new tape with the amended records in the same sequence as the output from CSO6. The cards were boxed for further use.

Program CSO7 — This program read the amendments on the tape and used them to amend the output from CSO6, i.e. SECS DDDD nn. The output file of CSO7 was also on disc with the name CLCS DDDD nn. An error report listed those records which had been successfully amended, and those which could not be re-inserted. New amendment cards were then prepared and inserted into the box of the original amendment cards in place of those which had been found incorrect. The new merged set of amendment cards was then put through the same cycle as described above to produce a new amendment tape which was run for a second time against the SECS DDDD nn. The original output CLCS DDDD nn was discarded. If there were further unsuccessful amended records, the process would be repeated until a clean file was produced. Usually, program CSO7 had to be run three times for each daily batch.

Final sequence check — Although the final output from CSO7 i.e. CLCS DDDD nn, was a clean data file, the manual amendments might themselves have created new structural breaks in the data. To guard against this, CLCS DDDD nn was again read by program CSO6 to produce a new SECS DDDD nn. If the error report from this run indicated any further structural breaks or out-of-range variables, the whole process of CSO7 and CSO6 was repeated until the report of CSO6 showed no error.

Program SFO2 — Throughout the organisation phase, each daily batch was dealt with entirely separately. The final SECS DDDD nn produced was therefore a file containing one daily batch of records only. When all the daily batches in one census district had been dealt with, the census programmer instructed the computer operator to dump the disc file to tape by districts as a security measure. Some simple advance tabulations were produced from these tapes by programs written in

COBOL. The disc files were then input through program SFO2. This program converted them into FILAN format by enumerator blocks. The ou'put from this program was now a district data file TDCS O1 DDDD written on tape, normally one tape per district. These district tapes were once again copied to other tapes as a security measure.

The district tapes produced after the conversion run, SFO2, constituted the clean, raw data file before imputation. From this point onward the computer processing was handled entirely by FILAN.

The actual processing time for the whole of the input and organisation phases was about 1,400 hours of computer time, spread over the period from 28th March 1971 to 31st July 1971.

10.6 Imputation phase

This phase was necessary because enumerator errors, overlooked by the field editors, were still present in the data. The work involved editing the organised data in order to remove inconsistencies. The logic of this system is described in detail in Chapter 8.

This phase was a relatively new concept in census data processing. The idea was to attempt to build into the program the common sense of a human editor to go through the records and check for inconsistency between characteristics, and to make amendments based or complementary information available in these records.

The approach, as described in Chapter 8, was to designate a key item which was assumed to be correct and the related characteristics were checked against it and against each other. This approach was adopted because it was relatively easy to establish rules of interrelation between characteristics which could be written into the computer program.

The imputation phase consisted of one main program :–

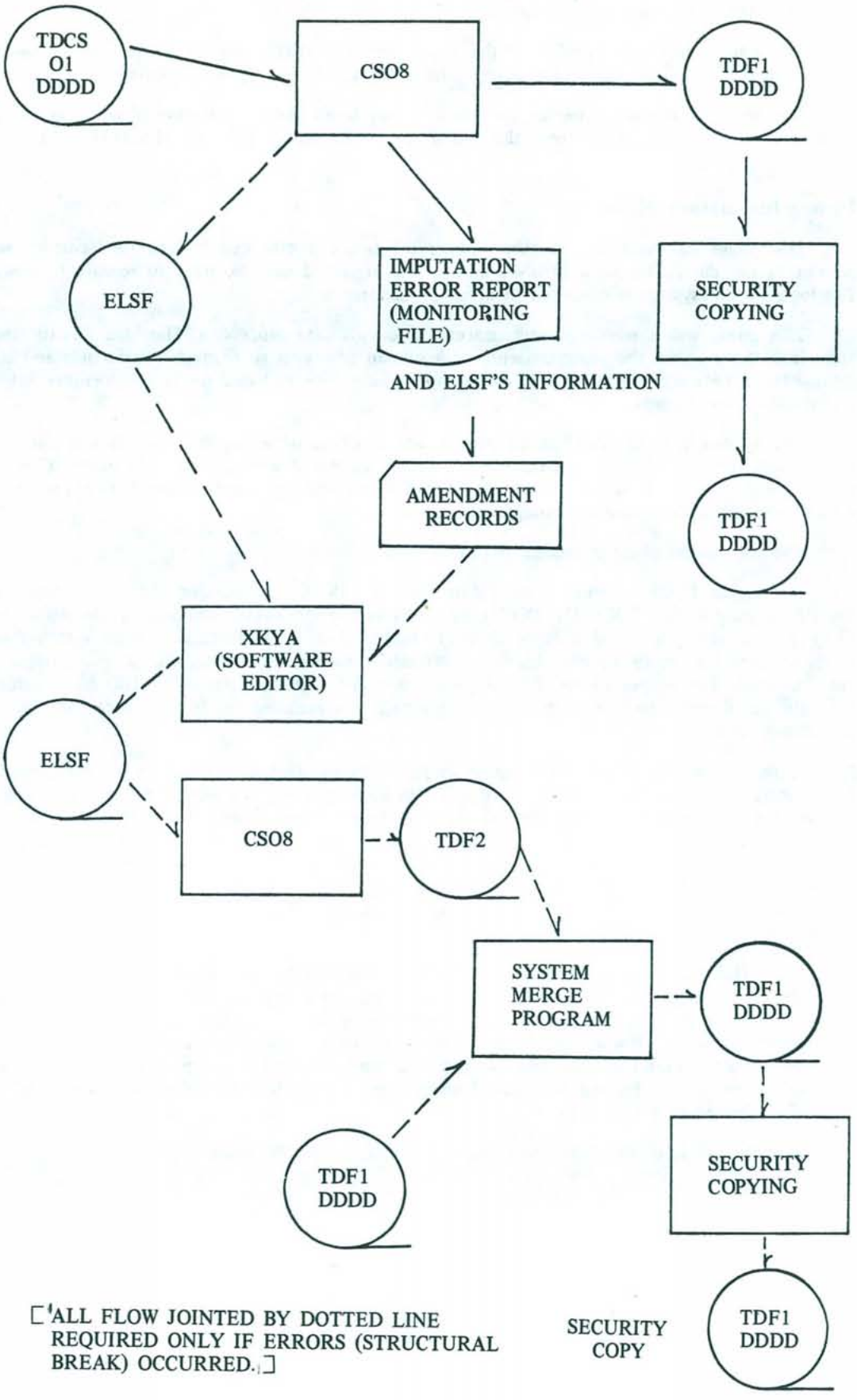
– **Program CSO8** – which used a core size of 34K under extended mode executive. This read the SFO2 output file TDCS O1 DDDD by districts and performed the logical checks described in Chapter 8. It also performed a range check to ensure that the imputed data were within the correct limits required for the tabulations, i.e. the classification coding of the data, such as occupation, industry etc. was valid. The output file of this program was TDF1 DDDD. After every 100 enumerator blocks, the data was dumped to a security tape; the program also included the facility to re-start the run from any dump point.

A facility was built into the program to print out the rate of imputation for each characteristic by enumerator blocks. While a rate of some 5% in each item was considered acceptable, a rate of 10% or over for any item in a block showed that the entire block should be re-examined. The program, therefore, included a facility for deleting a whole enumerator block with unacceptable imputation rates. If this had to be done, the block concerned would be re-created on punch cards and re-input through CSO5, CSO6, CSO7, SFO2 and again through CSO8 and finally merged back to the correct file. However, in the actual census run, the overall rate of imputation of each characteristic was about 3%, and no blocks had to be deleted.

The FILAN software also included an ELSF (Error Line Steering File) which would automatically be activated if structural breaks or unacceptable data were encountered during the imputation run. However, during the live run, this file was opened only once, because one record contained an item of unacceptable data. Although the FILAN system include a software package for re-insertion of records after amendment to the main file, this was not used, since one record alone did not justify the complete amendment procedure. Instead this record was printed out so that the tabulation concerned could be manually adjusted at a later stage.

A system flow of the imputation phase is shown in the following chart :–

Tab. 10.6.1. System Flow Chart for Imputation Phase



['ALL FLOW JOINTED BY DOTTED LINE
REQUIRED ONLY IF ERRORS (STRUCTURAL
BREAK) OCCURRED.']

The district output file of this program TDF1 DDDD was used as input for the tabulation run, the programs for which were also written in FILAN.

The census data for marine districts were input by a different program CSO9. The same approach was used, although a new set of rules had to be formulated because of differences in the record content.

The speed of processing was about seven records per second, and the processing time for each district was on average six hours. The whole of the imputation run for both the land and marine census data took about 200 hours of computer time from 11th September to 30th October, 1971.

10.7 The tabulation phase

The tabulation phase was the final stage of computer processing of the census data. District files were read into the computer by programs and the data were compiled into tables showing the relationship between characteristics cross-tabulated.

The tabulation phase consisted of seven programs:–

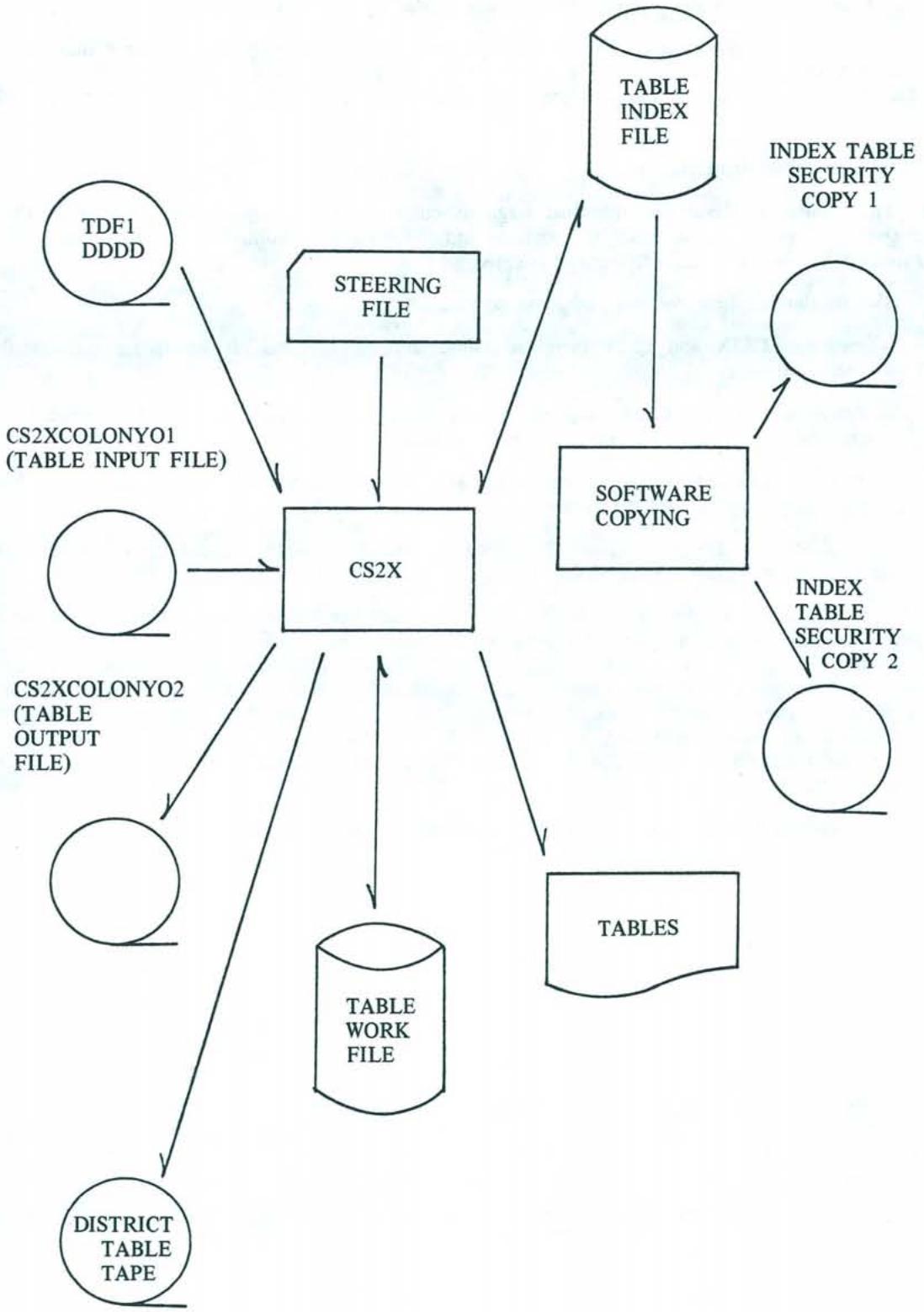
- **Programs CS2X and CS2Y** compiled tables showing personal characteristics cross-tabulated with each other.
- **Programs CS23 and CS24** compiled tables showing living quarter and household characteristics cross-tabulated with each other and with personal data.
- **Programs CS3X, CS3Y and Program CS33** tabulated personal data, living quarter and household data from the Marine Census.

Throughout the tabulation phase the program worked under extended mode executive (i.e. addressing to location greater than 32K).

The programs were written in FILAN. The system had the facility to map tables in core as well as on a disc file (table work file), thus enabling a greater number of tables to be produced in one tabulation run. This was superior to the traditional "summary pass" approach, especially for census tabulation. The only limit to the number of tables produced by each program run was the size of the table work file (one computer disc). Because the facilities in the FILAN system for using more than one disc had not been fully tested, a ceiling of 50 tabulations was imposed on each tabulation run. For the full tabulation plan of 336 tabulations, seven runs were therefore required, four for land tabulations and three for marine.

The system flow of the tabulation phase is shown in the following chart:–

Tab. 10.7.1. System Flow Chart for Tabulation Phase



[FOR ALL TABULATION PROGRAMS (CS2Y, CS23, CS24, ETC.,) THE SAME TDF WAS USED, BUT A SEPARATE TABLE INDEX FILE WAS USED FOR EACH PROGRAM.]

The basic approach of this system was that, in each tabulation run, the program read into the computer the first census district data file (TDF1 DDDD) and the table input file (CS2XCOLONYO1 etc. where O1 was the sequence number of tapes). At the beginning of the program run, the table input file contained dummy table values for all the tables in that run. When the data for the first census district had been processed, the values to be entered to the cells in all the tables for that run were written to a table output file (CS2XCOLONYO2). This file then became the table input file for the second district run. During processing of the data for the second district, further values were added to the cells in the tables and the cumulated values for the two districts were written to a table output file (CS2XCOLONYO3), which again became the table input file for the third district run. This process was continued until all the district data files had been read by the program concerned. The final table output file therefore contained the accumulated district totals forming the colony tables for that run. However, certain tables, which were required by census districts, were printed out at the end of each district run.

Table index file — The essential part of this system was that the program was directly monitored by a table index file. The table index file contained all the necessary control information such as identifiers of file names, table names etc. to ensure that the correct file was processed, and to enable correct entries to be made to the tables. Contributions designated for particular tables were stacked up in the available core of the central processor until the free capacity of the core had been fully utilized. These contributions were then sorted, thus freeing space for further contributions until such time as sorting could free no more space. The consolidated contributions were then transferred to the corresponding tables mapped on the disc table work file, thus freeing the available core space for further contributions. At the end of such district run, the table values in the table work file were written to the table output file and the disc was freed for the next district run. As the table index file was so vital, it was necessary to make two copies of tapes of the table index after each district run for security.

Tape failure — A serious problem in the tabulation phase was tape failure. This meant that the program was unable to read the data in certain sections of a district tape, and it was therefore necessary for the program to identify the exact location in the tape of the enumerator block affected. Unfortunately, because of shortage of computer time, the security copy of the output file (TDF1 DDDD) of the program CSO8 was not made until part of the tabulation run had already been completed. Hence, if due to tape failure a particular enumerator block had to be re-created, it was necessary to re-input the "clean" data of the enumerator block concerned from the SFO2 output file (organisation phase) and edit it again by the program CSO8. A tape containing the "edited" data of this enumerator block was then produced. The tabulation program skipped the "spoiled" section of the original tape, and read the re-created data tape of the enumerator block concerned, and then switched back to the original tape. This arrangement was clumsy, and should as far as possible be avoided in the future.

Tabulation time — The processing time for the first two programs, i.e. CS2X and CS2Y was nearly two-thirds longer than that for the second two, i.e. CS23 and CS24. This was because in tabulating personal characteristic tables, some four million records had to be processed, whereas in tabulating living quarter and household tables, only about one and a half million records were involved. The processing time for each district was variable; for a large census district it could be about 72 computer hours. Since the whole of the computer configuration had to be used during the tabulation phase, if the processing time necessary to complete one district took too long, it was necessary to break up the district run into a number of runs, so that other non-census computer jobs could be fitted into the intervals. Thus, facilities were included in the program to make a dump at every 80 enumerator blocks processed. The table index file, which contained the necessary identifiers, enabled the program to restart from the dump point. At any time during the whole tabulation run, dump tapes for the latest three districts were kept for security.

The total processing time for the tabulation of the land census data was about 1,700 computer hours, and that for the marine census data only about 60 computer hours. This phase lasted from 23rd September 1971 to 11th April 1972.

10.8 Main tabulations

The tabulation phase produced four batches of tabulations, 336 tabulations in some 200,000 printout sheets. 194 tabulations in four program runs were produced for the Land Census :–

– CS2Y – personal characteristics – 48 tabulations

– CS2X – personal employment characteristics – 48 tabulations

– CS23 – household characteristics – 48 tabulations

– CS24 – household, living quarter and farming characteristics – 50 tabulations

142 tabulations in three program runs were produced for the Marine Census :–

– CS3X – personal employment characteristics – 48 tabulations

– CS3Y – personal characteristics – 48 tabulations

– CS33 – household, vessel and fishing characteristics – 46 tabulations.

These 336 tabulations were to form the basis of the 138 main census tables which had been agreed by the Census Data Processing Committee and listed at Appendix 10.1.

10.9 Additional tabulations

Transport tabulations — The tabulation plan for the Census provided for a further run of the census data files to produce tabulations of transport characteristics. These transport tabulations were compiled from a sample of 20% of the personal records, tabulated by traffic sub-zones. These geographic units were entirely different from tertiary planning units or census districts. Although the destination-end (i.e. place of work/study) of the commuters selected in the sample had been specially coded in traffic sub-zones on the UDT form, their home-end (i.e. where they lived and were enumerated) was only coded in the usual geographical reference of tertiary planning unit and street block. Since most of the transport tabulations required cross-tabulation between home-end and destination-end, this difference in geographical classification caused a major difficulty in this tabulation run.

During this run, the computer had to be programmed to convert the tertiary planning unit and street block codes of the sample records to traffic sub-zone codes. To do this conversion, a binary search sub-routine was used. This method was more efficient than the linear search approach, because it saved computer time, programming efforts and core requirements which would otherwise have exceeded the maximum core size available; this would have required an additional pass of the census data tapes.

Further runs of the census data tapes were carried out at a later date to produce the following tabulations :–

– **tertiary planning unit tabulations,** showing living quarter and household characteristics, together with selected personal characteristics

– **street block tabulations,** summarizing the basic data of the population in this small geographic unit

– **public housing estate tabulations,** showing household and personal characteristics by type of public housing

– **poverty tabulations,** showing household and personal characteristics of households with low per capita incomes.

10.10 Evaluation of tabulation plan

An important aspect of the census operation is that the information collected should be tabulated and made available to potential users as soon as possible. The information collected in the 1971 Census was processed by the Hong Kong government computer. The equipment and methods used on this occasion permitted simultaneous tabulation of a much wider complexity and volume of data than was possible during any preceding census. However, because of the operational limitation of the FILAN system, a ceiling of 50 tabulations was imposed on each tabulation run. It was therefore necessary to have more than one tabulation run in order to produce all the standard census tabulations in the full tabulation plan. Four tabulation runs were scheduled: tabulations on personal characteristics were produced in the first run; tabulations on household and economic characteristics in the second and third runs; and tabulations on living quarter characteristics in the fourth run. The time for all four

tabulation runs was some six months from 23rd September 1971 to 11th April 1972, and the summary tabulations containing the basic characteristics of the population for the initial report of the Census were not available until the end of the third run after five months. With the time required for table checking and compilation and printing, this report was not published until June 1972. In view of the public demand for advance reports on the findings of the 1971 Census, this arrangement was not satisfactory.

Furthermore, it was decided only after the completion of the full tabulation phase to produce the street block tabulations in another run of the census data tapes. This was carried out at a much later date, and as a result, these useful summary tabulations containing the basic data of the population in small geographical units were not available until March 1973.

One lesson for the future therefore, is that in drawing up the tabulation plan, top priority should be given to producing summary tabulations containing the basic characteristics of the population, which could be made available to the public at the earliest date possible.

10.11 Checking of printouts

The printout sheets produced by the computer showed cross-tabulated data relating to a specified geographical unit, generally a census district. Each tabulation, some of which included up to 700 printout sheets, gave the distribution of a certain characteristic cross-tabulated by one or more other characteristics. A specimen printout is at Appendix 10.2.

In April 1971, a special unit was set up in the Census Division to carry out a systematic check of all tabulation printout sheets to make any necessary adjustments, and to compile the checked figures into tables for publication. The work was carried out by a team of trained statistical clerks under the supervision of an assistant statistician.

At the peak period, the staff strength totalled 11 but was reduced to five in May 1972.

In may 1971, a trial run of program CS2Y and CS2X of the tabulation phase was made of the data for one complete census district (Ha Tsuen in the New Territories). The resulting tabulations were sent to the checking unit to test the consistency of the computer results and the checking methods to be employed on the full census data. In the course of the checking, some minor inconsistencies were discovered, and the tabulation program was amended accordingly.

The first batch of tables was delivered to the Census Division in August 1971. A procedure was worked out to enable the large number of printouts to be checked systematically. A series of control totals by districts and by characteristics were worked out, and the checking of the printouts was carried out by the use of electric and manual calculators and abacuses.

The procedure was as follows:–

- **stage 1 : arithmetic check** – the items and sub-totals in each printout were added up, line by line and column by column, to check the arithmetical accuracy of the computer figures;
- **stage 2 : broad data check** – the values of the same characteristic shown in different table printouts were listed and compared to produce one set of "control figures" for each characteristic;
- **stage 3 : interrelated data check** – the values of different characteristics relating to the same subject, either in the same printout or in separate printouts, were listed and compared to serve as a subsidiary check to stage 2;
- **stage 4 : code interpretation check** – each printout was gone through line by line to detect any omission, duplication or misinterpretation of the code items or code series, as listed in the enumerators instruction manual.

The arithmetic check failed to reveal any arithmetical errors, but on occasion the figures in certain portions of a printout were found to be too faint and needed re-writing by hand to make them legible. In the broad data check, the figures relating to a given characteristic in one table were occasionally found to disagree with those for the same characteristic in other tables. In the interrelated data check, the figures given for certain characteristics within a table were illogical or inconsistent in relation to other characteristics, and had to be corrected.

10.12 Compilation of tables

It had been agreed in the publication plan that of the 138 main census tables produced only 50 would initially be compiled and published. As mentioned in Chapter 6, a decision was taken in April 1971, that 20 basic tables showing the main characteristics of the population should be published initially, and a further 63 more detailed tables in the Census Main Report. Since some of the printout tabulations required for this first publication were only available in census district form, it was necessary to compile the required summary tables manually. Some other tables had to be simplified from the more extensive cross-tabulations in the printouts.

In preparing the 63 tables for the Census Main Report, consideration had to be given to the layout requirements of the printer. Some tables originally designed with detailed cross-tabulation by districts or by sub-groups had therefore to be reduced in size and aggregated to broader groupings or classifications. This required a good deal of labour by the compilation staff. The 63 tables were completed in their final form in July 1972.

10.13 Permanent storage of census records

According to the census legislation, the UDT forms containing the personal and household identification had to be destroyed within a year after the Census. However, these individual identifications were not input into the computer, and the data written in magnetic tapes or discs could therefore be kept permanently. It was decided by the Census Data Processing Committee that the census data tapes should be retained on a permanent basis for future tabulations and analysis. Magnetic tape was preferred to disc pack as the storage medium because :–

- one reel of magnetic tape (2,400 ft.) could contain some 13 million characters (packing density of 556 characters per inch) while one ordinary disc pack could only contain eight million characters;
- one reel of magnetic tape only occupied about one-third of the space required for one disc pack;
- the cost of one reel of magnetic tape (2,400 ft.) was only 1/15th to 1/20th of that of a disc pack;
- it was safer to keep the records in magnetic tapes rather than in disc packs in permanent storage.

Two copies of the "edited" data file, i.e. after imputation, were made. Good quality magnetic tapes were used, which would not deteriorate in storage and were free from coating decomposition. These two files were kept separately in a safe environment which was permanently air-conditioned. Each file contained some 70 to 80 reels of 2,400 ft. magnetic tapes.

It was later decided by the Census Data Processing Committee that additional census files should also be retained permanently. These were :–

- **raw data tapes** : containing the unedited raw data which had undergone the sequence check stage. The data files were in simple ICL standard housekeeping format and would be useful for future tabulations or analysis with raw data rather than "edited" data.
- **district tables tapes** : containing tables by census districts. It was known that the last phase of the FILAN system, i.e. the manipulation phase, would be able to perform arithmetic and logical operations from census tables, and these tapes could be used for such manipulation. Moreover, these tapes could also be used for producing additional table printouts, if required, for any particular census district.

It was recommended that all these files be re-copied once a year, if possible, to ensure that the data contained in the tapes had not been demagnetised or corrupted and that the physical structure of the tapes had not changed.

CHAPTER 11

POST-ENUMERATION CHECK

11.1 Post-enumeration field checks

In accordance with United Nations' recommendations, a post-enumeration sample survey was undertaken to measure the completeness of the enumeration in the 1971 Census and the accuracy of the information recorded. The survey was carried out within a month after the main Census. It was taken in two parts, one for the Marine Census and the other for the Land Census. On both occasions, specially selected chief enumerators were used to do the re-enumeration.

The method was to re-enumerate a sample of enumerator blocks or vessels by asking some questions which had been asked in the main Census, but with reference to the dates of the main Census. This information was recorded on the first part of the schedules used for the post-enumeration check. The answers to these same questions asked of the households in the sample enumerator blocks or vessels in the main Census were later transcribed from the original UDT forms or from the Marine Census schedules on to the second part of the post-enumeration check schedules. The two sets of information were then compared on a one-to-one basis, i.e. household by household and person by person. The differences between the re-enumeration and the census enumeration provided a measure of the extent of errors in coverage and reporting. Copies of the schedules used for the land and marine census post-enumeration survey are at Appendices 11.1 & 11.2.

11.2 Marine post-enumeration field check

The post-enumeration survey for the Marine Census was held on 6th and 7th February 1971, about two weeks after the main Census, in the Yau Ma Tei Typhoon Shelter, Aberdeen and Tai Po Yuen Chau Chai.

Since the boat population was mobile, sophisticated sampling methods could not be used to select the vessels for carrying out the check. In order to simplify the operation, random points were selected in the three chosen harbours and the enumerators were assigned to these points around which they had to enumerate a group of seven or eight boats. Each enumerator was accompanied by a supervisor who indicated to him the location of the random point at which to begin his enumeration. A total of 90 sample vessels were enumerated by this method.

The first question asked of each selected vessel was whether it was in harbour at the time of the Marine Census, i.e. 23rd January 1971, and if so, in which harbour. This would help to find the original marine census schedule containing the information recorded about this vessel in the main Census for matching with the data collected in the post-enumeration survey. The following questions were asked of the household on board:–

- Number of persons on board
- Household income
- Type of craft

For each person on board, the following questions were asked:–

- Name
- Sex
- Date of birth
- Age
- Activity status
- Occupation

All the above questions had their time reference dated back to Marine Census Day, i.e. 23rd January 1971.

11.3 Land post-enumeration field check

Immediately after the Land Census, the sample enumerator blocks for the post-enumeration survey were selected by a one-stage simple random stratified sampling method, with enumerator block as the sampling unit. The number of enumerator blocks sampled in each stratum (i.e. census area) was proportionate to the size of population of the stratum. Altogether 96 blocks were selected for re-enumeration, including two chosen from the special classes.

The post-enumeration survey was carried out from 3rd to 5th April 1971, just four weeks after the main Census. All households in the 96 selected blocks were re-enumerated and asked certain questions with reference to Land Census Day, i.e. 9th March 1971. The first question asked of the household head was whether the household was living in the same address on 9th March 1971. If the answer was 'Yes', the following questions were asked concerning the household :–

- Number of persons in household
- Sub-type of accommodation occupied by household
- Household income

In order to check the accuracy of the question on household income, it was decided to ask the individual income of all working members and then derive the sum for the household income. For each of the persons in the household, the following questions were asked :–

- Name
- Sex
- Date of birth
- Age
- Activity status
- Occupation

All these questions were defined and classified in the same way as in the main Census.

No questions were asked of the household and its members if it was not living at the same address on 9th March 1971.

11.4 Method of processing results

The processing of the post-enumeration survey results was done manually by trained statistical clerks. This involved the transcription of the items of information obtained from the households in the sample enumerator blocks or vessels in the main Census from the original UDT forms on to the respective post-enumeration check schedules. The two sets of information were then compared; any discrepancy between the re-enumeration and the census enumeration constituted an error in coverage or reporting.

The transcription was carried out after the input phase from July to August 1971. Frequency tables showing the number of errors in reporting these items of census information were then compiled by tallying. Tally marks were made on a tally sheet in the form of a table showing the correct and incorrect coding of the required information. From these results, the degree of coverage error and bias in certain items of information collected in the main Census was measured.

11.5 Measurement of coverage errors

Coverage errors are usually termed under-enumeration or over-enumeration. Under-enumeration may result from failure to cover the whole area enumerated, or failure to enumerate all the persons and living quarters within this area. Over-enumeration occurs when persons or living quarters are enumerated in the census more than once. Errors of under-enumeration and over-enumeration are to some extent compensating. It is the net errors in coverage which have a bearing on the total population figure.

One of the main objectives of the post-enumeration checks of the 1971 Census was to establish a quantitative measure of the net errors in coverage. Since the post-enumeration survey was based on a re-enumerative sample randomly selected from the population, it was statistically possible to generalize from the results of the survey about the extent of these errors made in the whole population.

The detailed computations are given below:–

A. Post-enumeration check for the Land Census

The formulae of computation was as follows:–

a. The population was divided into 4 strata, i.e. census areas

b. The sample unit was the enumerator block (EB)

c. The design was one-stage simple random stratified sampling

N_h = total number of EBs in the hth stratum.

n_h = number of sample EBs in the hth stratum.

x_{hi} = number of persons not enumerated or number of gross errors in each characteristic re-enumerated in the post-enumeration survey in the ith EB in the hth stratum.

$\bar{x}_h$ = estimated average number of persons not enumerated or average number of gross errors in the specific characteristics per EB in the hth stratum.

x'_h = estimated total number of persons not enumerated or total number of gross errors in the specific characteristics in the hth stratum.

x' = estimated total number of persons not enumerated or total number of gross errors in the specific characteristics in the Census.

$$\bar{x}_h = \frac{1}{n_h} \sum_{i}^{n_h} x_{hi}$$

$$x'_h = N_h.\bar{x}_h = \frac{N_h}{n_h} \sum_{i}^{n_h} x_{hi}$$

$$x' = \sum_{h}^{L} x'_h$$

where h = 1 to 4, i.e. 4 Census Areas

B. Post-enumeration check for the Marine Census

N = total number of boats enumerated in the Census

n = number of sample boats

x_i = number of persons not enumerated or number of gross errors in each characteristic re-enumerated in the post-enumeration survey in the ith sample boat.

$\bar{x}$ = estimated average number of persons not enumerated or average number of gross errors in the specific characteristic per boat.

x' = estimated total number of persons not enumerated or total number of gross errors in the specific characteristic in the Census.

$$\bar{x} = \frac{1}{n} \sum_{i}^{n} x_i$$

$$x' = N.\bar{x}$$

C. Measurement of coverage errors

(i) Estimation of coverage errors (Land Census):–

Stratum (i.e. census area)	N_h	n_h	$\sum_{i}^{n_h} x_{hi}$	x_h'
Hong Kong Island	4,803	25	61	11,719
Kowloon	3,149	19	51	8,453
New Kowloon	6,249	36	71	12,324
New Territories	3,326	16	31	6,444
Estimated total persons not enumerated				38,940
Rate of under-enumeration (P_1)			=	1.01 %

(ii) Estimation of coverage errors (Marine Census):–

Total number of boats = 10,618

Number of sample boats = 90

$\bar{x} = \frac{21}{90}$

Estimated total persons not enumerated = $10{,}618\ (\frac{21}{90})$

= 2,478

Rate of under-enumeration (P_2) = 3.10%

(iii) Estimated overall rate of under-enumeration #

$$= \frac{\text{estimated total persons not enumerated}}{\text{total population enumerated in Census}} \cdot 100$$

Total population enumerated in the Land Census was 3,868,285 (including transients) and in the Marine Census 79,894.

$$= \frac{3{,}868{,}285(P_1) + 79{,}894(P_2)}{3{,}948{,}179} \cdot 100$$

= 1.05%

Notes : # a weighted average of P_1 and P_2.

It was estimated by this method that the total population count at the 1971 Census Moment was deficient by about 1.05%.

11.6 Measurement of errors in reporting and recording census information

Errors in reporting and recording personal or household information consisted of erroneous entries made on the census UDT forms which affected the classification of the total enumerated population by specific characteristics. For example, if a person aged 32 was incorrectly recorded as 23, in the census tabulation on age of persons he would be omitted from the age group 30 – 34 and improperly included in the age group 20 – 24. Therefore, for any classification of a particular characteristic of the population, the total gross error in reporting and recording would be the sum of the individuals or households improperly omitted and those improperly included, and the net error would be the

difference between them. Only the net errors in reporting and recording personal or household information would affect the distribution of the characteristics of the whole population. The purpose of the post-enumeration checks of the 1971 Census was also to estimate, on the basis of a re-enumerative sample, the number of such errors in the data for certain personal and household characteristics so as to indicate how far reliance could be placed on them.

The estimation of errors in reporting and recording census information is given as follows:–

Tab. 11.6.1 Estimation of rate of error in reporting census information

(a) Land Census:–

Stratum (i.e. census area)	N_h	n_h	Sex $\bar{x}_h$	Sex $N_h.\bar{x}_h$	Age $\bar{x}_h$	Age $N_h.\bar{x}_h$	Activity status $\bar{x}_h$	Activity status $N_h.\bar{x}_h$
Hong Kong Island	4,803	25	7/25	1,345	844/25	162,149	371/25	71,277
Kowloon	3,149	19	11/19	1,823	685/19	113,532	413/19	68,451
New Kowloon	6,249	36	17/36	2,951	730/36	126,713	349/36	60,579
New Territories	3,326	16	11/16	2,287	430/16	89,388	161/16	33,469
Estimated gross errors	–	–		8,406	–	491,782	–	233,776
Rate of error (P_1)*...	–	–		.22%(1)	–	12.75%(1)	–	6.06%(1)

Stratum (i.e. census area)	Occupation $\bar{x}_h$	Occupation $N_h.\bar{x}_h$	Sub-type of accommodation $\bar{x}_h$	Sub-type of accommodation $N_h.\bar{x}_h$	Monthly income $\bar{x}_h$	Monthly income $N_h.\bar{x}_h$
Hong Kong Island	487/25	93,562	79/25	15,177	64/25	12,296
Kowloon	371/19	61,490	71/19	11,767	82/19	13,591
New Kowloon	457/36	79,326	76/36	13,192	93/36	16,143
New Territories	153/16	31,806	37/16	7,691	36/16	7,484
Estimated gross errors	–	266,184	–	47,827	–	49,514
Rate of error (P_1)*...	–	6.90%(1)	–	5.60%(2)	–	5.79%(2)

(b) Marine Census:–

N = 10,618

n = 90

Characteristic	$\bar{x}$	Estimated gross errors (i.e. N.$\bar{x}$)	Rate of error (P2)*
Sex	3/90	354	.44% (1)
Age	65/90	7,669	9.60% (1)
Activity status	53/90	6,253	7.83% (1)
Occupation	56/90	6,607	8.27% (1)
Type of craft	7/90	826	7.78% (3)
Monthly income	11/90	1,298	12.09% (2)

(c) Estimated overall rate of error # :–

Sex	=	.22%
Age	=	12.69%
Activity status	=	6.10%
Occupation	=	6.93%
Sub-type of accommodation	=	5.60%
Type of craft	=	7.78%
Monthly income	=	5.87%

Note : * Rate of error = $\frac{\text{estimated gross errors}}{\text{total population of specific characteristic}}$ 100

(1) Total persons enumerated in the Land Census was 3,856,736 (excluding transients) and in the Marine Census 79,894.

(2) Total households enumerated in the Land Census was 855,093 and in the Marine Census 10,738.

(3) Total number of boats was 10,618.

A weighted average of P_1 and P_2.

11.7 Errors in reporting sex

It was found in the post-enumeration survey that 21 males were incorrectly recorded in the main Census as "female" and 28 females as "male". Based on the results of the survey the rate of gross error in reporting and recording this specific personal information shown in Tab. 11.6.1 above is estimated to be 0.22%. However, when considering the data over the entire sample, the bulk of the errors balance out, leaving a net figure of 7. Therefore, it is estimated that only 0.03%, i.e. = 7/49 x 0.22 of the total enumerated population was reported of the wrong sex. The measurement of bias in each sex is shown in the following table :–

Tab. 11.7.1. Estimates of bias for sex

Sex	1971 Census (per cent)	Bias (per cent)
Male	50.82	+ 0.03
Female	49.18	– 0.03

11.8 Errors in reporting age

It can be seen in the following table that 66% of the age-reporting errors made by the enumerators produced a bias of the order of ± 1 year in the reported age. In all census areas except Marine, the enumerators tended to report higher ages in the main Census.

Tab. 11.8.1 Errors in age reporting by census areas

Census area		Reported less in main Census				Reported more in main Census				Total No. of errors
		1 year	2 years	3 years	4+ years	1 year	2 years	3 years	4+ years	
Hong Kong Island		211	63	31	32	317	126	32	32	844
Kowloon		164	51	21	27	263	88	27	44	685
New Kowloon		177	56	15	18	324	89	17	34	730
New Territories		119	21	5	12	191	49	14	19	430
Marine		24	9	–	6	18	3	3	2	65
All area	No.	695	200	72	95	1,113	355	93	131	2,754
	%	25	7	3	3	41	13	3	5	100

The more detailed breakdown of the age-reporting errors from the data collected in the post-enumeration survey is presented at Annex A. This shows that the errors were more frequent in the younger ages under 25 and spread more evenly in the older ages. A summary of the errors by sex and age quinquennia is given in Tab. 11.8.2 below. It can be seen that there was no obvious sex differential in the errors made and no concentration of the errors in any particular age group.

Tab. 11.8.2 Errors in age reporting by age quinquennia and sex

Age group	Male		Female		Total	
	No.	%	No.	%	No.	%
0 – 4	101	3.7	99	3.6	200	7.3
5 – 9	119	4.3	123	4.5	242	8.8
10 – 14	143	5.2	135	4.9	278	10.1
15 – 19	137	5.0	103	3.7	240	8.7
20 – 24	109	4.0	121	4.4	230	8.4
25 – 29	89	3.0	91	3.3	180	6.3
30 – 34	94	3.4	102	3.7	196	7.1
35 – 39	112	4.1	108	3.9	220	8.0
40 – 44	115	4.2	106	3.9	221	8.1
45 – 49	84	3.1	100	3.6	184	6.7
50 – 54	94	3.4	78	2.8	172	6.2
55 – 59	70	2.5	80	2.9	150	5.4
60 – 64	52	1.9	49	1.8	101	3.7
65 – 69	20	0.7	32	1.2	52	1.9
70 – 74	20	0.7	32	1.2	52	1.9
75 – 79	7	0.3	15	0.5	22	0.8
80 and over	4	0.2	10	0.4	14	0.6
Total	1,370	49.7	1,384	50.3	2,754	100.0

The rate of gross error in reporting age in the main Census as shown in Tab. 11.6.1 above is estimated to be 12.69%. However, when the age data were arranged in quinquennial age groups, many of the errors balance out within the age groups and produce a nil effect on the age distribution. Only those errors which overlap the lower or upper limits of an age group would affect the age distribution and this is shown in the tables at Annex B. For each age group, the net error as indicated in the tables is the difference between the number of individuals improperly included and the number improperly excluded. The net error in the distribution of the original age data in quinquennial groupings for the same population sampled in the post-enumeration survey is summarized in the following table :–

Tab. 11.8.3. Net errors by age quinquennia and sex

Age group	Male				Female				Total			
	Net error (–)		Net error (+)		Net error (–)		Net error (+)		Net error (–)		Net error (+)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0 – 4	20	40.8	–	–	16	27.1	–	–	36	42.9	–	–
5 – 9	–	–	14	28.6	–	–	10	16.9	–	–	24	28.6
10 – 14	1	2.0	–	–	2	3.4	—	–	3	3.5	–	–
15 – 19	–	–	–	–	–	–	—	–	–	–	–	–
20 – 24	–	–	5	10.2	4	6.8	—	–	–	–	1	1.2

Age group	Male				Female				Total			
	Net error (–)		Net error (+)		Net error (–)		Net error (+)		Net error (–)		Net error (+)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
25 – 29	12	24.5	–	–	–	–	3	5.1	9	10.7	–	–
30 – 34	–	–	3	6.1	15	25.4	–	–	12	14.3	–	–
35 – 39	–	–	3	6.1	–	–	15	25.4	–	–	18	21.4
40 – 44	4	8.2	–	–	–	–	6	10.2	–	–	2	2.4
45 – 49	–	–	10	20.4	–	–	5	8.5	–	–	15	17.9
50 – 54	3	6.1	–	–	–	–	3	5.1	–	–	–	–
55 – 59	–	–	2	4.1	16	27.1	–	–	14	16.7	–	–
60 – 64	5	10.2	–	–	–	–	8	13.5	–	–	3	3.6
65 – 69	–	–	10	20.4	–	–	6	10.2	–	–	16	19.0
70 – 74	2	4.1	–	–	4	6.8	–	–	6	7.1	–	–
75 – 79	2	4.1	–	–	2	3.4	–	–	4	4.8	–	–
80 and over	–	–	2	4.1	–	–	3	5.1	–	–	5	5.9
Total	49	100.0	49	100.0	59	100.0	59	100.0	84	100.0	84	100.0

In the case of the male age distribution, the net errors concentrated heavily in the age group 0 – 4 and less heavily in the age groups 5 – 9, 25 – 29, 45 – 49 and 65 – 69. As regards the female age distribution, the net errors were more significant in the age groups 0 – 4, 5 – 9, 30 – 34, 35 – 39 and 55 – 59. When considering the age distribution of males and females together, some of these errors balanced out, leaving a figure of 84. Therefore, it is estimated that only 0.39%, i.e. 84/2,754 x 12.69 of the total male and female population was reported in the wrong quinquennial age group. The measurement of bias in each age group is shown in the following table :–

Tab. 11.8.4. Estimates of bias for age

Age group	% distribution in census	Bias (%)
0 – 4	9.56	– 0.17
5 – 9	12.91	+ 0.11
10 – 14	13.30	– 0.01
15 – 19	10.87	–
20 – 24	8.54	+ 0.01
25 – 29	4.92	– 0.04
30 – 34	5.40	– 0.06
35 – 39	6.23	+ 0.08
40 – 44	6.49	+ 0.01
45 – 49	5.55	+ 0.07
50 – 54	4.96	–
55 – 59	3.83	– 0.06
60 – 64	2.94	+ 0.01
65 – 69	1.87	+ 0.08
70 – 74	1.35	– 0.03
75 – 79	0.72	– 0.02
80 and over	0.58	+ 0.02

11.9 Errors in reporting activity status

It was found in the post-enumeration survey that the errors in reporting and recording this personal information in the main Census were of the following categories:–

- the activity status of economically active persons being reported in the wrong classification within the "economically active" division
- the activity status of economically inactive persons being reported in the wrong classification within the "economically inactive" division
- economically active persons being misreported as economically inactive or vice versa.

The breakdown of the errors by these categories and the classifications of activity status is presented in the table below:–

Tab. 11.9.1. Errors in activity status reporting

Activity status classificaton* (sub-group)	"Economically Active"				"Economically Inactive"				Total No. of errors	
	Mis-reported in other sub-group		Mis-reported as "Economically Inactive"		Mis-reported in other sub-group		Mis-reported as "Economically Active"			
	No.	%	No.	%	No.	%	No.	%	No.	%
0.0	83	6.16	5	0.37	–	–	–	–	88	6.53
0.1	58	4.31	2	0.15	–	–	–	–	60	4.46
1.0	13	0.97	26	1.93	–	–	–	–	39	2.90
1.1	1	0.07	3	0.22	–	–	–	–	4	0.29
1.2	3	0.22	1	0.07	–	–	–	–	4	0.29
1.3	1	0.07	1	0.07	–	–	–	–	2	0.14
1.4	3	0.22	1	0.07	–	–	–	–	4	0.29
2.0	2	0.15	1	0.07	–	–	–	–	3	0.22
2.1	222	16.48	39	2.90	–	–	–	–	261	19.38
2.2	120	8.91	15	1.11	–	–	–	–	135	10.02
2.3	86	6.39	8	0.60	–	–	–	–	94	6.99
2.4	78	5.79	7	0.52	–	–	–	–	85	6.31
2.5	46	3.42	6	0.45	–	–	–	–	52	3.87
2.6	28	2.08	3	0.22	–	–	–	–	31	2.30
2.7	3	0.22	–	–	–	–	–	–	3	0.22
2.8	23	1.71	24	1.78	–	–	–	–	47	3.49
3.0	8	0.60	13	0.97	–	–	–	–	21	1.57
3.1	15	1.11	12	0.89	–	–	–	–	27	2.00
4.0	–	–	–	–	2	0.15	1	0.07	3	0.22
4.1	–	–	–	–	2	0.15	2	0.15	4	0.30
4.2	–	–	–	–	13	0.97	2	0.15	15	1.12
4.3	–	–	–	–	3	0.22	2	0.15	5	0.37
5.0	–	–	–	–	52	3.86	109	8.09	161	11.95
5.1	–	–	–	–	37	2.75	27	2.00	64	4.75
6.0	–	–	–	–	38	2.82	40	2.97	78	5.79
6.1	–	–	–	–	45	3.34	3	0.22	48	3.56
6.2	–	–	–	–	7	0.52	2	0.15	9	0.67
6.3	–	–	–	–	–	–	–	–	–	–
Total	793	58.88	167	12.39	199	14.78	188	13.95	1,347	100.00

* For the description of classification see Appendix 3.14

It can be seen that about 60% of the errors fell in the first category above and another 26% in the third. In the main Census the enumerators tended to make more mistakes in reporting accurately the activity status of economically active persons, because the classifications of this item of information were particularly difficult. There were relatively more errors in the classifications 2.1, 2.2 and 5.0, i.e. permanent in-workers (monthly and daily rates) and home-makers without part-time employment. The larger number of errors in the classification 5.0 was mainly due to the enumerators misreporting dependent home-makers as economically active persons. The rate of the gross error in reporting and recording this information is estimated to be 6.10% as shown in Tab. 11.6.1 above. Based on the breakdown of the errors in the three categories it is estimated that 0.76%, i.e. 167/1,347 x 6.10 of the population was misreported as "economically inactive" and 0.85%, i.e. 188/1,347 x 6.10 as "economically active". Hence, the size of the economically active population would be biased upward by 0.09%, i.e. 0.85 – 0.76.

In addition, it was considered necessary to examine how these errors would affect the reliability of the distribution of this specific characteristic of the population. The following table gives the net error exhibited in the distribution of activity status reported in the main Census for the same population sampled in the post-enumeration survey. It can be seen that most of the errors occurred in the classifications 2.1, 2.2, 2.3, 2.4, 5.1 and 6.0 i.e. permanent in-workers (monthly, daily and piece rates), casual in-workers (daily rate) and retired persons and students without part-time employment.

Tab. 11.9.2. Net errors by activity status sub-groups

Activity status classification* (sub-group)	Number lost in sub-group X	Number gained in sub-group X from other sub-group	Net error (–)		Net error (+)	
			No.	%	No.	%
0.0	88	84	4	2.1	–	–
0.1	60	50	10	5.3	–	–
1.0	39	40	–	–	1	0.5
1.1	4	1	3	1.6	–	–
1.2	4	7	–	–	3	1.6
1.3	2	3	–	–	1	0.5
1.4	4	1	3	1.6	–	–
2.0	3	12	–	–	9	4.7
2.1	261	299	–	–	38	20.0
2.2	135	176	–	–	41	21.6
2.3	94	124	–	–	30	15.8
2.4	85	27	58	30.5	–	–
2.5	52	45	7	3.7	–	–
2.6	31	11	20	10.5	–	–
2.7	3	6	–	–	3	1.6
2.8	47	25	22	11.6	–	–
3.0	21	43	–	–	22	11.6
3.1	27	27	–	–	–	–
4.0	3	2	1	0.5	–	–
4.1	4	1	3	1.6	–	–
4.2	15	9	6	3.1	–	–
4.3	5	10	–	–	5	2.6
5.0	161	164	–	–	3	1.6
5.1	64	30	34	17.9	–	–
6.0	78	111	–	–	33	17.4
6.1	48	30	18	9.5	–	–
6.2	9	8	1	0.5	–	–
6.3	–	1	–	–	1	0.5
Total	1,347	1,347	190	100.0	190	100.0

* For the description of classification see Appendix 3.14.

Based on these results it is estimated that 0.86%, i.e. 190/1,347 x 6.10 of the enumerated population was classified in the wrong classification of activity status. The measurement of bias in each classification of activity status is given in the following table :–

Tab. 11.9.3. Estimates of bias for activity status

Activity status classification* (sub-group)	% distribution in census	Bias (%)
0.0	3.32	– 0.02
0.1	1.03	– 0.05
1.0	1.21	+ 0.01
1.1	0.04	– 0.01
1.2	0.07	+ 0.01
1.3	0.20	+ 0.01
1.4	0.07	– 0.01
2.0	0.15	+ 0.04
2.1	21.66	+ 0.17
2.2	5.71	+ 0.19
2.3	2.76	+ 0.14
2.4	1.55	– 0.26
2.5	0.87	– 0.03
2.6	0.54	– 0.09
2.7	0.12	+ 0.01
2.8	0.90	– 0.10
3.0	0.61	+ 0.10
3.1	1.22	–
4.0	0.08	– 0.01
4.1	0.24	– 0.01
4.2	0.21	– 0.03
4.3	0.09	+ 0.02
5.0	14.73	+ 0.01
5.1	2.02	– 0.15
6.0	30.91	+ 0.15
6.1	8.88	– 0.08
6.2	0.54	– 0.01
6.3	0.27	+ #

* For the description of classification see Appendix 3.14.

\# Percentage less than 0.005

11.10 Errors in reporting occupation

It was found in the post-enumeration survey that the errors in reporting and recording information on occupation in the main Census were in the following categories :–

- the occupation of a person being reported in the wrong major group of classification
- the occupation of a person being reported within the correct major group, but in the wrong sub-group.

The breakdown of the errors by these categories and the classifications of occupation is given in the following table :–

Tab. 11.10.1 Errors in occupation reporting

Occupation classification* (major group)	Misreported by major group		Misreported within major group		Total No. of errors	
	No.	%	No.	%	No.	%
0	214	17.80	4	1.24	218	14.3
1	50	4.16	–	–	50	3.3
2	1	0.08	–	–	1	0.1
3	150	12.48	13	4.04	163	10.7
4	50	4.16	–	–	50	3.3
5	160	13.31	43	13.36	203	13.3
6	257	21.38	114	35.40	371	24.3
7	121	10.07	31	9.63	152	10.0
8	106	8.82	93	28.88	199	13.0
9	12	1.00	–	–	12	0.8
X	43	3.58	4	1.24	47	3.1
Y	38	3.16	20	6.21	58	3.8
Total	1,202	100.00	322	100.00	1,524	100.0

* For the description of classification see Appendix 3.16.

It can be seen that about 79% of the errors fell in the second category and that most of them occurred in the major groups 0, 3, 5, 6, 7 and 8, i.e. armed forces and occupation unclassifiable, workers in services, clerical and sales workers, production-process workers and labourers, and administrative and managerial workers. The larger number of errors in the major groups 6 and 8 was also due to the enumerators' reporting occupations in the wrong sub-groups within these two major groups.

Based on the results of the survey the rate of the gross error is estimated to be 6.93% as shown in Tab. 11.6.1 above. However, when the data is arranged in major groups, those errors which occurred within the correct major groups can be eliminated. The net errors by occupation major groups are given in the table below:–

Tab. 11.10.2. Net errors by occupation major groups

Occupation classification* (major group) i	Number lost in major group i	Number gained in major group i from other major groups	Net error (–)		Net error (+)	
			No.	%	No.	%
0	214	248	–	–	34	25.4
1	50	52	–	–	2	1.5
2	1	11	–	–	10	7.5
3	150	130	20	14.9	–	–
4	50	66	–	–	16	11.9
5	160	123	37	27.6	–	–
6	257	202	55	41.1	–	–
7	121	162	–	–	41	30.6
8	106	84	22	16.4	–	–
9	12	13	–	–	1	0.7
X	43	53	–	–	10	7.5
Y	38	58	–	–	20	14.9
Total	1,202	1,202	134	100.0	134	100.0

* For the description of classifications see Appendix 3.16.

It can be seen that the errors occurred more heavily in the major groups 0, 5, 6 and 7, and not so heavily in the major groups 3, 4, 8 and Y. Based on this inter-group analysis it is estimated that only 0.61%, i.e. 134/1,524 x 6.93 of the enumerated population was classified in the wrong major group of occupation. The measurement of bias in each major group of occupation is shown in the table below:–

Tab. 11.10.3. Estimates of bias for occupation

Occupation classification* (major group)	% distribution in census	Bias (%)
0	60.21	+ 0.15
1	1.34	+ 0.01
2	0.13	+ 0.05
3	6.19	– 0.09
4	2.46	+ 0.07
5	6.70	– 0.17
6	13.38	– 0.25
7	5.61	+ 0.19
8	1.84	– 0.10
9	0.08	+ #
X	1.03	+ 0.05
Y	1.03	+ 0.09

* For the description of classification see Appendix 3.16

\# Percentage less than 0.005

11.11 Errors in reporting sub-type of accommodation

It can be seen in the following table that most of the errors in reporting and recording this item of household information in the main Census fell in the sub-types 0.1, 0.5, 0.6 and 1.5, i.e. whole house occupied by one household, one or more rooms occupied by one household or shared by two or more households, and working premises occupied by domestic households. It is conceivable that the larger number of errors in these sub-types was mainly due to the enumerators' confusion of the different concepts and their misunderstanding of the definitions. It was found in the post-enumeration survey that, in most cases, they misreported "self-contained flat occupied by one household", "one or more rooms shared by two or more households" as "one or more rooms occupied by one household", and "working premises occupied during the census period" as "institution". The rate of the gross error in reporting this specific household information in the main Census is estimated to be 5.60% as shown in Tab. 11.6.1 above.

Tab. 11.11.1. Errors in sub-type of accommodation reporting

Sub-type of accommodation classification*	Misreported in other sub-type in main Census	
	No.	%
0.0	5	1.9
0.1	37	14.1
0.2	18	6.8
0.3	23	8.7
0.4	2	0.7
0.5	77	29.3
0.6	31	11.8
0.7	16	6.1
0.8	–	–
0.9	–	–
1.0	–	–
1.1	6	2.3
1.2	–	–
1.3	–	–
1.4	–	–
1.5	28	10.6
1.6	–	–
1.7	–	–
1.8	–	–
1.9	2	0.8
2.0	–	–
2.1	10	3.8
2.2	2	0.8
2.3	1	0.4
2.4	–	–
2.5	4	1.5
2.6	1	0.4
Total	263	100.0

* For the description of classification see Appendix 3.5.

The net errors were distributed unevenly. The table below shows that the net errors were more concentrated in the sub-types 0.3, 0.5 and 1.5 and less so in the sub-types 0.0, 0.2, 0.6 and 0.7 :-

Tab. 11.11.2. Net errors by sub-type of accommodation

Sub-type of accommodation classification* X	Number lost in sub-type X	Number gained in sub-type X from other sub-types	Net error (–)		Net error (+)	
			No.	%	No.	%
0.0	5	16	–	–	11	12.1
0.1	37	35	2	2.2	–	–
0.2	18	34	–	–	16	17.6
0.3	23	60	–	–	37	40.6
0.4	2	7	–	–	5	5.5
0.5	77	54	23	25.3	–	–
0.6	31	15	16	17.6	–	–
0.7	16	1	15	16.5	–	–
0.8	–	4	–	–	4	4.4
0.9	–	–	–	–	–	–
1.0	–	–	–	–	–	–
1.1	6	1	5	5.5	–	–
1.2	–	–	–	–	–	–
1.3	–	–	–	–	–	–
1.4	–	–	–	–	–	–
1.5	28	3	25	27.4	–	–
1.6	–	–	–	–	–	–
1.7	–	1	–	–	1	1.1
1.8	–	1	–	–	1	1.1
1.9	2	–	2	2.2	–	–
2.0	–	1	–	–	1	1.1
2.1	10	16	–	–	6	6.6
2.2	2	–	2	2.2	–	–
2.3	1	–	1	1.1	–	–
2.4	–	–	–	–	–	–
2.5	4	10	–	–	6	6.6
2.6	1	4	–	–	3	3.3
Total	263	263	91	100.0	91	100.0

* For the description of classification see Appendix 3.5

Based on these results it is estimated that 1.94%, i.e. 91/263 x 5.6 of the total households were reported as occupying the wrong sub-type of accommodation. The measurement of bias in each sub-type is shown in the following table :-

Tab. 11.11.3. Estimates of bias for sub-type of accommodation

Sub-type of accommodation classification*	% distribution in census	Bias (%)
0.0	0.99	+ 0.23
0.1	6.34	– 0.04
0.2	1.61	+ 0.34
0.3	36.82	+ 0.79
0.4	1.52	+ 0.11
0.5	35.87	– 0.49
0.6	5.80	– 0.34
0.7	1.60	– 0.32
0.8	0.05	+ 0.09
0.9	0.05	–
1.0	0.01	–
1.1	0.77	– 0.11
1.2	0.10	–
1.3	0.06	–
1.4	0.04	–
1.5	0.90	– 0.54
1.6	0.07	–
1.7	0.39	+ 0.02
1.8	0.19	+ 0.02
1.9	0.29	– 0.04
2.0	#	+ 0.02
2.1	2.52	+ 0.13
2.2	0.63	– 0.04
2.3	0.06	– 0.02
2.4	#	–
2.5	3.14	+ 0.13
2.6	0.18	+ 0.06

For the description of classification see Appendix 3.5.

, Percentage less than 0.005

11.12 Errors in reporting type of craft

Based on the results of the post-enumeration survey the rate of the gross error in reporting this item of information in the main Census is estimated in Tab. 11.6.1 to be 7.78%. The following table gives the net errors exhibited in the distribution of the data of type of craft reported in the main Census for the same vessels sampled in the post-enumeration survey :-

Tab. 11.12.1. Net errors by type of craft

Type of craft classification* X	Number lost in type X	Number gained in type X from other types	Net error (–)		Net error (+)	
			No.	%	No.	%
1	4	2	2	67	–	–
2	–	1	–	–	1	33
3	1	–	1	33	–	–
4	–	–	–	–	–	–
6	–	1	–	–	1	33
7	2	3	–	–	1	34
Total	7	7	3	100	3	100

* For the description of classification see Appendix 3.18.

Therefore, it is estimated that 3.33%, i.e. $\frac{3}{7}$ x 7.78 of the total enumerated vessels were classified in the wrong type. The measurement of bias in each type of craft is shown in the table below :-

Tab. 11.12.2. Estimates of bias for type of craft

Type of craft classification*	% distribution in census	Bias %
1	26.73	– 2.23
2	3.03	+ 1.10
3	16.17	– 1.10
4	1.03	–
6	1.52	+ 1.10
7	51.52	+ 1.13

* For the description of classification see Appendix 3.18.

11.13 Errors in reporting monthly household income

In order to check the accuracy of the household income data reported in the main Census, it was decided in the post-enumeration survey to ask the income of each working member of the household and then aggregate these to form the household income. It was believed that the household income data obtained in this manner in the post-enumeration survey would be more reliable. A comparison with the original data collected in the main Census would reveal mis-statements of income made by the respondents or errors made by the enumerators in recording this information. The following table shows under – and over – reporting of household income in the main Census by census area :-

Tab. 11.13.1. Errors in household income reporting by censes area

Census Area		Reported lower in main Census: 1 bracket lower	2 brackets lower	3+ brackets lower	Reported higher in main Census: 1 bracket higher	2 brackets higher	3+ brackets higher	Total No. of errors
Hong Kong Island		19	9	7	18	8	3	64
Kowloon		27	11	6	29	7	2	82
New Kowloon		35	16	7	25	10	–	93
New Territories		13	5	1	12	4	1	36
Marine		4	1	1	2	2	1	11
All areas	No.	98	42	22	86	31	7	286
	%	34	15	8	30	11	2	100

It can be seen that just over half (57%) of the errors found in the post-enumeration survey were under - reporting of income. This tendency was true for all areas enumerated, especially for New Kowloon. It is believed that quite a number of households in public housing estates understated their incomes in the main Census.

The following table shows under – and over – reporting of household income in the main Census by income brackets :-

Tab. 11.13.2. Errors in household income reporting by income brackets

Income brackets (HK$)	Household income understated in main Census: No.	%	Household income overstated in main Census: No.	%	Total No. of errors: No.	%
under 200	–	–	6	4.8	6	2.1
200 – 399	3	1.8	24	19.4	27	9.5
400 – 599	20	12.3	27	21.8	47	16.4
600 – 799	32	19.8	19	15.3	51	17.8
800 – 999	28	17.3	7	5.6	35	12.2
1,000 – 1,199	21	13.0	12	9.7	33	11.5
1,200 – 1,499	18	11.1	8	6.5	26	9.1
1,500 – 1,999	17	10.5	7	5.6	24	8.4
2,000 – 2,499	10	6.2	6	4.8	16	5.6
2,500 – 4,499	6	3.7	8	6.5	14	4.9
4,500 & over	7	4.3	–	–	7	2.5
Total	162	100.0	124	100.0	286	100.0

It can be seen that the errors in reporting this information clustered around the low and medium income brackets. The tendency of households to overstate their incomes in the main Census was higher for the income brackets $200 – 399 and $400 – 599, while the tendency to understate their income was higher for the income brackets $600 – 799, $800 – 999 and $1,000 – 1,199.

Based on the results of the post-enumeration survey it is estimated that the rate of error was 5.87% (see Tab. 11.6.1 above) and that 2.52%, i.e. 124/286 x 5.87 of the enumerated households had overstated their income while 3.35%, i.e. 162/286 x 5.87 had understated their income. In order to find out how this would affect the general tenor of the income data collected in the main Census, it is necessary to construct two Lorenz curves, one with the post-enumeration data and the other with the data originally reported in the main Census for the same households sampled in the survey, and compare them. The two Lorenz curves indicated the same pattern of concentration of income in the population as shown in Tab. 11.13.3 below :–

Tab. 11.13.3. Comparison of Lorenz Curves with post-enumeration data and original census data of household income

Income brackets	No. of households		Cumulative % of income		
	Post-enumeration data	Original census data	Post-enumeration data (1)	Original census data (2)	Difference (1) – (2)
< $ 200	154	152	0.27	0.27	0
$ 200– 399	423	430	2.51	2.55	– 0.04
400– 599	927	936	10.68	10.83	– 0.15
600– 799	726	731	19.65	19.88	– 0.23
800– 999	440	439	26.63	26.87	– 0.24
1,000–1,199	392	393	34.24	34.52	– 0.28
1,200–1,499	260	251	40.44	40.52	– 0.08
1,500–1,999	264	257	48.59	48.48	+ 0.11
2,000–2,499	200	197	56.53	56.33	+ 0.20
2,500–4,499	273	271	73.40	73.12	+ 0.28
4,500 & over	274	276	100.00	100.00	
Total	4,333	4,333			

Income brackets	Cumulative % of households		
	Post-enumeration data (1)	Original census data (2)	Difference (1) – (2)
< $ 200	3.55	3.51	+ 0.04
$ 200– 399	13.32	13.43	– 0.11
400– 599	34.71	35.03	– 0.32
600– 799	51.47	51.90	– 0.43
800– 999	61.62	62.04	– 0.58
1,000–1,199	70.67	71.11	– 0.44
1,200–1,499	76.67	76.90	– 0.23
1,500–1,999	82.76	82.83	– 0.07
2,000–2,499	87.38	87.38	0
2,500–4,499	93.68	93.63	+ 0.05
4,500 & over	100.00	100.00	

Note : Number of households excluding institutions.

It can be seen that the two Lorenz curves were almost identical – the differences were very minor as shown in the "Difference" columns. The Gini Coefficient* which gives a comprehensive measure of the extent of the area of inequality between the line of equal distribution (i.e. the 45° line) and each of the Lorenz curves was 0.48 in both cases, indicating that the two Lorenz curves were practically the same. Even though some mis-statements of household income in the main Census were revealed by the post-enumeration survey, the pattern of concentration of income in the population as a whole was not significantly jeopardized.

The distribution of income data can also be described by the median (or arithmetic mean). The medians and arithmetic means of the distributions of the post-enumeration income data originally reported in the main Census and of the income data obtained from the same households sampled as in the post-enumeration survey are as follows:–

Post-enumeration data	**Original census data**
Median = $ 781.51	Median = $ 776.43
Mean = $1,307.35	Mean = $1,303.42

From these results it is apparent that the distributions of the income data, the main Census and the post-enumeration check, were not significantly different from one another.

* The Gini Coefficient measures the extent of the area of inequality between the line of equal distribution (the 45° line) and the Lorenz curve. It varies from 0 where the Lorenz curve coincides with the 45° line (i.e. in the case of income distribution when every household has equal income) and any number approaching 1 where the Lorenz curve nearly touches the vertical and horizontal axes of the graph (i.e. when only a very small percent of households have the largest share of the aggregate income).

11.14 Conclusion

Since the determination of under-enumeration is one of the prime objectives of the post-enumeration field check, it is considered that the one-stage sample used for this purpose in 1971 was not large enough to give a statistically significant quantitative measure of the census enumeration in this respect. The size of the sample was approximately one-half per cent of the total enumerator blocks (i.e. 96 out of 17,714 enumerator blocks). With such a small sample, it is possible, by chance alone, that the proportion of under-enumerated blocks in the sample was not the same as in the main Census, and the rate of under-enumeration as estimated from this sample would therefore not represent a true picture.

The measurement of other inconsistencies in the census data was not so much affected by the small size of the sample, because errors in reporting or recording information concerning characteristics of living quarters, households and individuals were unlikely to be systematic. Furthermore, since all the enumerators had received the same amount of training, if they misinterpreted some of the questions in the Census, this bias would be reflected in the sample for the post-enumeration survey and could be regarded as typical of the population.

If, in future censuses, information on certain topics is collected by sample, a different method for the post-enumeration survey should be adopted. In order to give an effective evaluation of the completeness of the census results, it is recommended that a two-stage re-enumerative sample survey should be carried out. The first-stage survey should aim primarily at determining the extent of under-enumeration in the census. All chief enumerators should be required to do a re-count of persons in a 10 per cent sample of their enumerator blocks. The re-counting should be done immediately after the census enumeration is completed. A sample of this size will definitely give a more reliable estimate of the level of under-enumeration. After this, the second-stage survey would be designed to check the accuracy of the census data. It would be a re-enumeration of a sub-sample of households from those households in the main sample who had answered the more detailed questions. This re-enumeration should be done by specially selected high quality field staff. The sample should be taken by census areas proportionate to the size of the population in each, and this would satisfy the criterion that the post-enumeration field check should be representative of all population groups.

Annex A : Errors in age reporting by single year of age and sex

Male

Age reported in post-enumeration survey (x)	Age reported in main Census deviated from x							
	−1 year	−2 years	−3 years	−4 or more years	+1 year	+2 years	+3 years	+4 or more years
0	–	–	–	–	3	–	–	–
1	1	–	–	–	15	3	1	–
2	5	–	–	–	12	2	–	2
3	8	1	–	–	11	4	–	1
4	10	2	–	–	16	3	1	–
5	6	–	1	–	11	2	–	–
6	4	–	–	–	8	5	–	1
7	12	1	–	–	11	–	1	–
8	8	1	1	–	10	4	1	–
9	9	3	–	1	15	2	1	–
10	14	–	–	1	9	2	1	–
11	7	2	–	1	20	1	2	–
12	9	2	–	1	17	1	–	1
13	7	–	–	–	15	1	–	1
14	8	1	2	1	10	6	–	–
15	6	1	2	–	16	4	–	1
16	12	2	–	–	16	–	1	–
17	11	3	–	–	13	–	3	–
18	6	–	–	1	13	2	1	1
19	7	2	–	1	9	3	–	–
20	5	1	1	1	9	5	–	1
21	11	1	–	–	8	1	–	1
22	8	3	1	1	11	2	–	–
23	9	–	–	1	10	3	1	–
24	2	2	–	–	5	2	2	1
25	7	1	1	1	5	1	–	–
26	5	1	1	1	9	4	–	1
27	4	1	–	–	9	–	1	1

Female

Age reported in post-enumeration survey (x)	Age reported in main Census deviated from x							
	−1 year	−2 years	−3 years	−4 or more years	+1 year	+2 years	+3 years	+4 or more years
0	–	–	–	–	4	1	–	1
1	–	–	–	–	13	3	–	–
2	7	–	–	–	10	4	–	1
3	4	3	–	–	11	3	–	1
4	8	–	–	–	20	4	–	1
5	9	1	–	–	4	2	–	–
6	4	3	1	–	9	3	–	1
7	10	2	–	–	17	2	–	1
8	13	–	–	–	12	4	1	–
9	10	1	–	–	12	1	–	–
10	6	4	–	–	14	4	–	–
11	8	1	–	1	10	3	1	–
12	7	2	–	–	15	3	1	1
13	9	1	1	2	16	3	–	–
14	9	1	–	–	11	1	–	–
15	6	–	–	–	9	3	–	1
16	5	2	–	–	12	3	–	–
17	9	1	–	–	10	2	–	1
18	4	–	1	1	7	2	–	–
19	7	–	–	–	13	2	1	1
20	7	2	–	–	11	1	–	1
21	7	3	–	–	10	4	1	1
22	6	–	–	–	13	1	1	2
23	5	6	–	–	10	2	2	1
24	6	3	2	–	8	4	–	1
25	3	2	1	–	10	4	2	–
26	2	2	2	–	7	3	–	2
27	4	–	–	–	6	2	2	1

Male

Age reported in post-enumeration survey (x)	Age reported in main Census deviated from x							
	−1 year	−2 years	−3 years	−4 or more years	+1 year	+2 years	+3 years	+4 or more years
28	4	3	–	–	6	4	2	2
29	3	2	–	–	6	1	–	2
30	4	1	–	–	5	6	–	3
31	8	1	–	–	7	1	2	4
32	2	–	–	–	6	3	2	1
33	6	2	1	–	3	4	–	2
34	3	4	–	2	8	1	–	2
35	2	4	2	1	5	6	1	1
36	6	1	1	–	9	4	–	–
37	4	–	1	–	9	4	3	1
38	6	1	1	1	9	4	1	–
39	7	3	–	2	9	2	–	1
40	5	1	1	–	7	2	1	–
41	8	2	1	1	9	2	–	1
42	2	3	–	1	7	5	1	2
43	5	3	–	1	11	4	1	3
44	5	2	2	2	10	1	2	1
45	3	2	1	2	8	4	–	–
46	3	2	–	2	8	2	1	–
47	6	3	1	–	7	1	–	1
48	4	1	–	1	3	3	2	2
49	2	2	–	–	6	–	–	1
50	5	2	–	1	9	3	2	2
51	4	–	1	1	7	3	1	–
52	4	–	3	–	7	5	3	1
53	3	–	1	–	5	2	–	2
54	3	4	–	2	2	3	1	2
55	1	–	1	1	5	2	2	–

Female

Age reported in post-enumeration survey (x)	Age reported in main Census deviated from x							
	−1 year	−2 years	−3 years	−4 or more years	+1 year	+2 years	+3 years	+4 or more years
28	1	2	1	–	8	2	1	1
29	3	1	1	1	8	3	1	2
30	4	3	–	2	7	3	–	3
31	4	1	–	1	9	2	1	3
32	2	1	–	1	4	4	1	3
33	4	–	1	2	6	4	1	2
34	4	1	–	1	7	4	2	4
35	4	1	–	–	9	6	2	1
36	7	–	–	–	4	4	–	2
37	7	3	1	–	7	4	1	1
38	8	2	–	1	6	1	2	2
39	7	–	1	–	8	2	1	3
40	5	3	2	–	4	2	1	1
41	3	2	–	1	9	3	1	1
42	6	3	–	1	5	6	2	3
43	6	3	1	–	7	4	1	1
44	4	3	–	1	8	–	1	2
45	4	2	2	2	6	5	1	1
46	4	1	2	–	5	5	–	1
47	4	2	2	3	5	2	–	1
48	5	2	1	2	7	4	–	–
49	5	2	–	1	8	1	–	2
50	6	2	2	3	5	2	1	1
51	3	3	2	–	8	1	–	–
52	4	3	1	–	6	2	1	–
53	3	2	1	–	3	2	1	–
54	3	–	–	2	4	1	–	–
55	2	1	–	1	5	2	2	–

Male

Age reported in post-enumeration survey (x)	Age reported in main Census deviated from x							
	–1 year	–2 years	–3 years	–4 or more years	+1 year	+2 years	+3 years	+4 or more years
56	7	–	2	1	5	4	–	1
57	3	–	–	1	6	2	1	1
58	1	1	–	4	6	1	–	–
59	2	–	–	1	6	2	–	–
60	3	2	–	1	3	2	–	2
61	2	1	–	–	6	2	1	1
62	2	–	–	1	–	–	1	1
63	3	–	–	1	5	–	–	–
64	2	1	–	1	3	3	1	1
65	–	1	–	–	2	1	–	–
66	1	1	–	–	–	3	–	–
67	2	–	1	–	1	–	–	–
68	1	–	–	–	1	–	–	–
69	–	1	–	–	2	1	–	1
70	3	1	–	1	–	–	–	–
71	3	–	–	–	2	1	–	–
72	–	2	1	–	1	1	–	–
73	–	–	–	–	1	1	–	2
74	–	–	–	–	–	–	–	–
75	2	–	–	–	–	–	–	–
76	2	–	1	–	–	–	–	–
77	–	–	–	–	–	–	–	–
78	–	–	–	–	–	2	–	–
79	–	–	–	–	–	–	–	–
80^{+}	–	–	1	–	3	–	–	–
Total	358	91	34	45	562	171	49	61

Female

Age reported in post-enumeration survey (x)	Age reported in main Census deviated from x							
	–1 year	–2 years	–3 years	–4 or more years	+1 year	+2 years	+3 years	+4 or more years
56	5	3	1	3	4	2	2	2
57	2	2	–	1	5	1	–	1
58	4	1	1	2	5	2	–	1
59	3	–	–	1	9	2	–	2
60	2	2	1	1	4	1	1	–
61	1	–	–	1	6	1	–	–
62	1	–	–	1	5	1	–	–
63	4	–	1	–	2	1	1	1
64	1	–	1	–	2	4	2	–
65	2	1	–	2	2	–	–	1
66	1	1	–	–	1	1	–	–
67	2	–	–	–	1	–	–	–
68	–	1	2	2	3	3	–	1
69	3	–	–	–	1	1	–	–
70	2	3	–	1	5	2	–	–
71	1	–	–	–	3	–	–	–
72	1	1	2	–	1	–	–	1
73	1	–	–	1	1	2	–	–
74	1	–	–	1	1	1	–	–
75	1	1	–	1	2	–	–	–
76	–	–	–	1	–	1	1	–
77	–	1	–	–	–	–	–	1
78	–	1	–	–	1	–	–	–
79	–	1	–	–	2	–	–	–
80^{+}	2	1	–	1	3	3	–	–
Total	337	109	38	50	551	184	44	71

Annex B (I) : Net error in age reporting by age quinquennia (Male)

Net error in age group (e_1)	Error across lower age group limit (X)	Age group (X + 4)	Error across upper age group limit (X + 4)	Net error in age group (e_2)	Total Net error in age group ($e_1 + e_2$)
+ 7	–	0 – 4	27	– 27	– 20
+ 12	7	5 – 9	25	+ 2	+ 14
– 7	19	10 – 14	19	+ 6	– 1
0	12	15 – 19	19	0	–
+ 1	12	20 – 24	15	+ 4	+ 5
– 7	13	25 – 29	20	– 5	– 12
+ 7	6	30 – 34	24	– 4	+ 3
0	13	35 – 39	21	+ 3	+ 3
+ 1	13	40 – 44	26	– 5	– 4
– 1	14	45 – 49	15	+ 11	+ 10
– 2	13	50 – 54	16	– 1	– 3
– 2	11	55 – 59	12	+ 4	+ 2
– 6	9	60 – 64	11	+ 1	– 5
+ 3	3	65 – 69	4	+ 7	+ 10
– 3	6	70 – 74	3	+ 1	– 2
– 3	3	75 – 79	2	+ 1	– 2
	–	80^+		+ 2	+ 2

Annex B (II) : Net error in age reporting by age quinquennia (Female)

Net error in age group (e_1)	Error across lower age group limit (X)	Age group (X + 4)	Error across upper age group limit (X + 4)	Net error in age group (e_2)	Total Net error in age group ($e_1 + e_2$)
+ 14	–	0 – 4	30	– 30	– 16
0	14	5 – 9	20	+ 10	+ 10
– 5	14	10 – 14	17	+ 3	– 2
+ 3	9	15 – 19	20	– 3	–
– 2	12	20 – 24	22	– 2	– 4
+ 4	10	25 – 29	23	– 1	+ 3
– 7	14	30 – 34	31	– 8	– 15
+ 7	7	35 – 39	23	+ 8	+ 15
+ 6	14	40 – 44	23	0	+ 6
– 1	20	45 – 49	17	+ 6	+ 5
– 5	19	50 – 54	9	+ 8	+ 3
– 6	14	55 – 59	19	– 10	– 16
0	8	60 – 64	11	+ 8	+ 8
+ 1	8	65 – 69	6	+ 5	+ 6
– 5	9	70 – 74	5	+ 1	– 4
– 4	4	75 – 79	3	+ 2	– 2
	–	80^+		+ 3	+ 3

CHAPTER 12

RECOMMENDATIONS FOR FUTURE CENSUSES

12.1 Organisation

The 1971 Census of Population and Housing was much more complex than the 1961 Census. In many ways, the census programme was very ambitious; for the first time in the history of census-taking in Hong Kong, a housing census was carried out together with the population census in one integrated operation, while a census of manufacturing establishments was also taken in the same year. Again, for the first time in Hong Kong, an electronic computer was used to process the census results.

The decision to conduct such a technically advanced operation was a bold one, in view of the fact that almost the entire 1961 Census organisation had been disbanded after publication of the results, and only a small planning staff maintained as part of the Colonial Secretariat. The Department of Census & Statistics was formally established only in December 1967; and, as described in Chapter 2, a number of decisions had to be taken immediately on the plan of the 1971 Census. In fact, the Census Division was not formed, and the senior operational staff to conduct the Census were not in place, until the end of 1969, when many of the planning decisions had already been irrevocably taken. One lesson for the future therefore, is that the census team must be established at a very early date, so that continuity can be maintained through all phases of planning, execution, publication and evaluation.

In view of the number of inter-related operations and the large number of staff involved, it is considered essential that an experienced and qualified senior officer is made responsible from the beginning for all aspects of the census. These responsibilities include the planning of the census, the census content, the geographic work, the recruitment and training of staff, the field operations and the data processing and publication of the results.

12.2 Method of enumeration

One of the two main procedures for taking a population census is the enumerator method, as used in the 1961 Census and again in 1971. In this method, enumerators are each responsible for a particular block of buildings, and go from one living quarter to another to complete census schedules for all individuals. Because of the large number of questions on the schedule, one enumerator can only deal with a limited number of persons within a normal enumeration period. In the 1971 Census, it was estimated that each enumerator could enumerate about 250 persons in a 10-day period; and, in order to administer the full census schedule to a population of four million, it was necessary to employ over 18,000 enumerators. In order to allow for wastage, it was necessary to recruit and train some 33,000 i.e. nearly twice the number required. It is therefore apparent that the use of the enumerator method gives rise to considerable administrative problems of recruitment and training, and of exercising adequate control over a large field staff. If the same procedure of administrating a full census schedule to each individual is to be employed in future censuses, these problems will be of even greater magnitude, because the number of enumerators required will increase proportionately with the population.

The alternative procedure for taking a population census is the householder method, whereby census schedules are sent by post or delivered by hand to heads of all households, with instructions that they be completed as at the census moment. One reason why this method was not attempted in any of the censuses conducted in Hong Kong after the Second World War was that the population was not considered sufficiently literate. It was thought that many householders might have difficulty in understanding a complicated census schedule, and in completing it without assistance. However, this view should probably now be changed. In recent years, education has become more widespread, and according to the 1971 Census, over 85% of the population in the urban area are now literate in Chinese or English. If this trend continues in the next ten years, there might well be no insurmountable difficulty in adopting, at least in the urban areas, the householder method in future censuses. The feasibility of such an approach should therefore be explored.

While the delivery and collection of census schedules by post may never be feasible in Hong Kong, a modified householder method could be envisaged, whereby the schedules were delivered and

explained to householders by enumerators, and collected, and if necessary completed, by the same enumerators. Using this method, each enumerator would be able to deal with a larger number of persons within a normal enumeration period, and thus a smaller field staff would suffice.

12.3 Use of sample inquiry

For economy, and to achieve better quality in the data collected, a sample inquiry is often organised in conjunction with a complete census to supplement the basic information. It is necessary to carry out a complete census once every 10 years in order to obtain an accurate count of the population, and to ascertain its distribution by geographical areas. It can, however, be wasteful to collect, in a complete census detailed information on the characteristics of the population, particularly if lengthy questioning is necessary. It is therefore recommended that in future censuses, consideration be given to asking the more complex census questions only of a sample of the population, with the census itself limited to a full count of numbers and some basic characteristics.

12.4 Register of buildings and living quarters

Whatever the method of enumeration used, an up-to-date register of buildings and a complete list of living quarters within them is an indispensable tool for controlling the enumeration of the population and ensuring complete coverage. It also reduces considerably the amount of reticulation work necessary during the pre-census period, and facilitates the formation of consistent enumerator blocks; this latter is an essential measure whether the enumerator or householder method is to be adopted in the future. It has therefore been recommended that a register of buildings and a complete list of living quarters by type should be compiled and maintained by the Census & Statistics Department and should be updated annually. This recommendation is already being pursued. The register and list of living quarters would form a powerful framework for control in future censuses and surveys.

12.5 Census topics and codes

The selection of topics for inclusion in a population census requires careful consideration. While the United Nations lays down basic recommended topics, more detailed information about the population is demanded by both government and private organisations for the planning of housing, education, and other social services and for many other purposes. However, not every new topic of current interest is appropriate for inclusion in the census. It is, therefore, essential to carry out detailed consultation with the interested government departments and private organisations concerning their needs for information or various topics, and to decide whether such information can appropriately be collected in the census. Topics considered suitable should then be set in order of priority on the basis of which decision can be taken as to which ones should actually be included. Information on topics of specific but limited interest might more appropriately be collected by special surveys rather than in a population census. Characteristics of the population which are relatively stable and do not require constant updating can sometimes be omitted in by-censuses. In deciding the census schedule, it is also necessary to take into consideration the relationship of questions to one another, so that answers may be cross-checked and more meaningful cross-tabulations produced.

There is an increasingly demand for more detailed classification of the data collected in a population census. This is particularly so for the classification of household composition and income, education and training, industry and occupation. In this connection, it may be necessary for more extensive codes of three or more digits, based on the United Nations International Standard Classifications, to be used in future censuses. It has therefore been recommended that a permanent census section be maintained in the Census & Statistics Department headed by a statistician, and this has been accepted. This section will be responsible for keeping abreast with developments in all aspects of census work, and in particular with the topics recommended by the United Nations specialised agencies and other international organisations.

12.6 Coding procedure

In most countries, the census information is first entered to census schedules by enumerators in the field, and later coded and transcribed on to computer input documents, or coding sheets for card

punching, by specially trained coders. By using this transcription method, more detailed classification of the data collected in the census is possible, and more accurate coding is achieved. Against these advantages must be balanced the dangers of transcription errors, the additional time required for coding, and the additional resources required to recruit and train expert coders. In view of these disadvantages, transcription was not adopted in the 1971 Census, except for the census of the floating population, and the enumerators were required to code the census data on to the UDT forms themselves. Nevertheless, the feasibility of adopting transcription in future censuses should be examined, and this would involve the use of specialised coders for the work. If a permanent team of coders were to be maintained in the Census & Statistics Department, this could be expanded to form a coding team as an integral part of the census organisation.

12.7 Data processing

In the 1971 Census, direct input of census data to the computer by U D T form was used. While a computer will undoubtedly be used for data processing in future censuses, in view of the development of alternative methods of data input, it is for consideration whether this method of input or another will be the most appropriate in the future.

Regarding overall computer requirements for data processing of future census results, new developments in the computer field must be closely studied and appraised. Points to be considered are :–

Hardware :

- input media allowing easier enumeration, more accurate coding and higher density of data
- storage media for recording census data and tabulations in terms of compactness, access time and file protection
- sophisticated visual output devices allowing for density and distribution maps and graphs to facilitate analyses
- remote input-output devices for centralisation of census processing.

Software :

- systems and programs designed to keep in step with the hardware developments to the best use of their performance and capability
- more powerful and flexible editing, tabulation and interrogation techniques
- file protection and recovery techniques.

12.8 Presentation of census results

A census is not complete until the information collected is made available to data users in a form suited to their needs. This calls for a carefully thought-out census tabulation plan, drawn up well before the enumeration to take into consideration specific tables requested by different government departments and their priorities. Although the use of a computer to process the census results permits simultaneous tabulation of a much wider complexity and volume of data than is possible by conventional machines, it is still necessary to decide which tabulations should be produced first, and then to gear the processing system accordingly. In order to get the census results out to the public quickly, it is necessary that top priority should be given to producing summary tabulations containing the basic facts about the population. These basic tabulations should constitute the first tabulation run and be published at the earliest date possible.

Another way in which the census data can be made available quickly for use by government departments and private commercial enterprises for planning purposes is to summarise information concerning the characteristics of living quarters, households and persons on the basis of the smallest town planning unit, i.e. a street block. Such tabulations should be produced before the full tabulation phase and, while not giving district, area or country totals, will summarise all the characteristics of the population resident in each street block in different census districts. Since these tabulations are in fact simple summary tables, the time required for programming and processing by computer is much less than for the other major tabulations, and these tables can be available soon after the input of the census results.

In order to make the census results available to the public early, it is also necessary to have a publication plan drawn up at an early date, and to have it carried out as soon as the data are tabulated. The plan should specify what census reports to be published and when, their contents, the layout of the tables, and the methods of printing the tables. An early decision on these matters would avoid delays in the publication of the census reports.

12.9 Conclusion

A census is a complete operation in itself, consisting of a complex series of small operations all closely inter-related with one another. The main difficulty in planning lies in the need to foresee every smallest detail of these operations and to plan them carefully in advance, so that perfect synchronization and timing can be maintained. A small oversight in planning may result in serious inefficiencies and delays. In this respect, it is important to have continuity of staff; this applies to the necessity both to have a continuing and permanent census section in the Census & Statistics Department, and also to ensure that the additional census organization for a particular census is established as soon as the census is authorised. It is vital that the key posts in this organisation are filled at an early stage, by suitable personnel with previous census experience, so that they can decide on the priorities of work and produce an operational plan for the census staff to follow. It is absolutely necessary to get this operational plan out early and stick to it.

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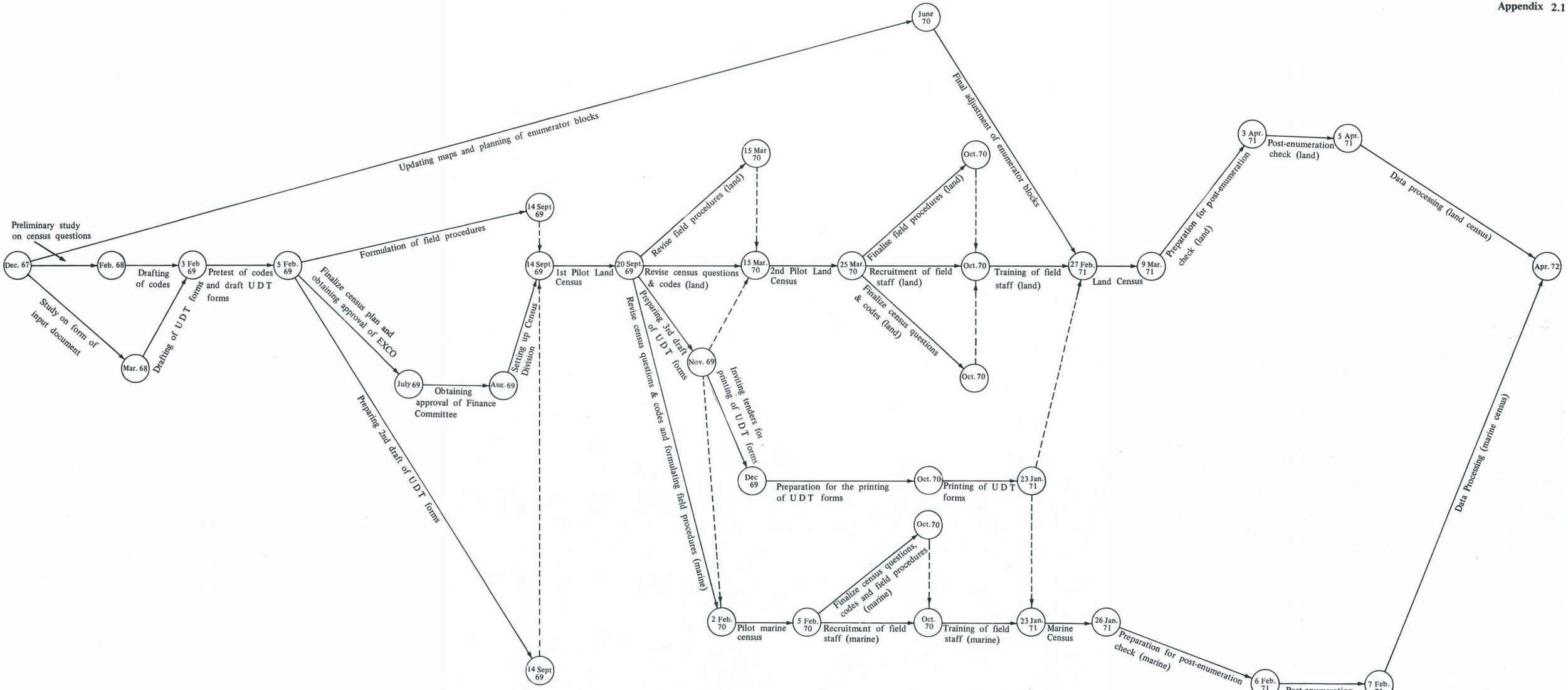
Coverage and scope of the censuses, 1901–1971

Census	Coverage	Scope	Population enumerated		
			Total population including armed forces a/	Civilian population a/	(of which) Transients
1901	Entire Hong Kong b/	Total de facto population including armed forces	297,212	283,975	2,181
1906	Excludes New Territories	Total de facto population including Armed forces	328,638	319,803	3,960
1911	Entire Hong Kong	Total de facto civil population	... ...	456,739	6,641
1921	Entire Hong Kong	Total de facto civil population	... ...	625,166	5,895
1931	Entire Hong Kong	Total de facto population including armed forces	849,751	840,473	5,248
1961	Entire Hong Kong	Total de facto population including armed forces	3,133,131	... ...	3,483
1966	Entire Hong Kong	Total de facto population including armed forces	3,716,400	... ...	... ...
1971	Entire Hong Kong	Total de facto population including armed forces	3,948,179	... ...	11,549

Source: **Census Reports** 1901, 1906, 1911, 1921, 1931, 1961, and 1966

a/ Includes transients.

b/ Data on characteristics of the population relate to the area excluding New Kowloon and New Territories.


Preliminary study on census questions
Updating maps and planning of enumerator blocks
June 70
Final adjustment of enumerator blocks
Dec. 67
Feb. 68
Drafting of codes
3 Feb 69
Pretest of codes and draft U D T forms
5 Feb. 69
Study on form of input document
Mar. 68
Drafting of U D T forms
Formulation of field procedures
14 Sept 69
Finalize census plan and obtaining approval of EXCO
July 69
Obtaining approval of Finance Committee
Aug. 69
Setting up Census Division
Preparing 2nd draft of U D T forms
14 Sept 69
14 Sept 69
1st Pilot Land Census
20 Sept. 69
Revise field procedures (land)
15 Mar 70
Revise census questions & codes (land)
15 Mar. 70
2nd Pilot Land Census
25 Mar 70
Finalise field procedures (land)
Oct. 70
Recruitment of field staff (land)
Oct. 70
Training of field staff (land)
27 Feb. 71
Land Census
9 Mar. 71
Preparation for post-enumeration check (land)
3 Apr. 71
Post-enumeration check (land)
5 Apr. 71
Data processing (land census)
Apr. 72
Finalize census questions & codes (land)
Oct. 70
Preparing 3rd draft of U D T forms
Revise census questions & codes and formulating field procedures (marine)
Nov. 69
Inviting tenders for printing of U D T forms
Dec 69
Preparation for the printing of U D T forms
Oct. 70
Printing of U D T forms
23 Jan. 71
Oct. 70
2 Feb. 70
Pilot marine census
5 Feb. 70
Finalize census questions, codes and field procedures (marine)
Recruitment of field staff (marine)
Oct. 70
Training of field staff (marine)
23 Jan. 71
Marine Census
26 Jan. 71
Preparation for post-enumeration check (marine)
6 Feb. 71
Post-enumeration check (marine)
7 Feb. 71
Data Processing (marine census)

List of Key Personnel

Mr. K.M.A. Barnett	– Commissioner for Census & Statistics	4.12.67 – 31.12.69
Mr. K.W.J. Topley	– Deputy Commissioner for Census & Statistics	4.12.67 – 31.12.69
	– Commissioner for Census & Statistics	1. 1.70 –
Mr. M.C. Morgan	– Assistant Commissioner (Administration)	5. 9.69 – 16. 1.72
Mr. B.V. Williams	– Assistant Commissioner (Administration)	17. 1.72 –
Mr. Benjamin Mok Ni-hung	– Senior Statistician (Social)	1.12.69 –
Mr. Joseph Lee Man-kong	– Statistician (Census)	14. 5.69 –
Miss Lam Chow-lo	– Statistician (Demography)	14. 5.69 –
Mr. O.K. Dallah	– Senior Executive Officer (Census)	26.11.69 – 21.11.71
Mr. R.M. Omar	– Executive Officer	26.11.69 – 30. 5.72
Mr. Chan Chi-wai	– Executive Officer	8. 7.70 – 30. 3.71
Mr. Wong Sau-yan	– Interpreter/Translator	26.11.69 – 30.11.71
Mr. Hui Yip-keng	– Area Superintendent	26.11.69 – 31.10.71
Mr. F.H. Kikabhoy	– Assistant Area Superintendent	2. 1.70 – 31.10.71
Mr. Chin Man	– Assistant Area Superintendent	2. 1.70 – 31.10.71
Mr. Yip Lam-sang	– Assistant Area Superintendent	2. 1.70 – 30. 9.71
Mr. Cheung Tat-pang	– Assistant Area Superintendent	2. 1.70 – 31.10.71
Mr. Ho Chok-nam	– Assistant Area Superintendent	2. 1.70 – 31.10.71
Mr. Ho Hin-chung	– Census & Statistics Supervisor	1.12.67 –
Mr. Yuen Yan-bill	– Census & Statistics Supervisor	1.12.67 –
Mr. Yang Zung-ling	– Census & Statistics Supervisor	20. 2.68 –
Mr. Lau Ping-kin	– Census & Statistics Supervisor	18. 8.69 – 31.10.71
Mr. Yeh Shu-ming	– Census & Statistics Supervisor	1. 9.69 – 31.10.71

Mr. Choi Hoi-ko	– Census & Statistics Supervisor	12. 1.70 – 31.10.71
Mr. Lau Kwok-leung	– Census & Statistics Supervisor	12. 1.70 – 30. 9.71
Mr. Lo Chi-tat	– Census & Statistics Supervisor	19. 1.70 – 31. 8.71
Mr. Wan Yan-wo	– Census & Statistics Supervisor	26. 1.70 – 31.10.71
Mr. Kwok Kwong-lut	– Census & Statistics Supervisor	26. 1.70 – 31.10.71
Mr. Chan To-shing	– Census & Statistics Supervisor	2. 2.70 – 30. 6.71
Mr. Au Man-piu	– Census & Statistics Supervisor	2. 2.70 – 31. 7.71
Mr. Yuen King-kwong	– Census & Statistics Supervisor	2. 2.70 – 30. 9.71
Mr. Poon Ying-chiu	– Census & Statistics Supervisor	2. 2.70 – 30. 9.71
Mr. Yiu Tung-wah	– Census & Statistics Supervisor	2. 2.70 – 30. 9.71
Mr. Chiu Tsun-ki	– Census & Statistics Supervisor	10. 2.70 – 30. 6.71
Mr. Ng Mo-wing	– Census & Statistics Supervisor	23. 2.70 – 30. 6.71
Mr. Cheng Chi-chung	– Census & Statistics Supervisor	23. 2.70 – 15. 8.71
Mr. Lai Hing-yu	– Census & Statistics Supervisor	24. 2.70 – 31.10.71
Mr. Liu Chia-ho	– Census & Statistics Supervisor	24. 2.70 – 31.10.71
Mr. Wong Lok-chow	– Census & Statistics Supervisor	25. 2.70 – 31.10.71
Mr. Wong Pang-ho	– Census & Statistics Supervisor	2. 3.70 – 31. 8.71
Mr. Mak Chi-keung	– Census & Statistics Supervisor	2. 3.70 – 30. 6.71
Mr. Cheung Hung-fai	– Census & Statistics Supervisor	2. 3.70 –
Mr. Foo Wo-huen	– Census & Statistics Supervisor	2. 3.70 – 12. 9.71
Mr. Fung Sik-keung	– Census & Statistics Supervisor	2. 3.70 – 31.10.71
Mr. Ho Hoi-ping	– Census & Statistics Supervisor	2. 3.70 – 30. 9.71
Mr. Ng Tung-kuen	– Census & Statistics Supervisor	6. 3.70 – 24.10.71
Mr. Leung Yik-pui	– Census & Statistics Supervisor	9. 3.70 – 30. 9.71
Mr. Chu Chiu-lam	– Census & Statistics Supervisor	9. 3.70 – 31.10.71
Mr. Tsang Hoi-kuen	– Census & Statistics Supervisor	12. 3.70 – 30. 9.71
Mr. Lee Chi-ming	– Census & Statistics Supervisor	16. 3.70 – 30. 6.71
Mr. Leung Lai-sum	– Census & Statistics Supervisor	16. 3.70 – 31.10.71
Mr. Lee Hon-kiu	– Census & Statistics Supervisor	16. 3.70 – 31. 8.71
Mr. Lam Choi-hee	– Census & Statistics Supervisor	16. 3.70 – 30. 9.71

Mr. Chung Wing-tat	– Census & Statistics Supervisor	16. 3.70 – 31.10.71
Mr. Pau Hon-kuen	– Census & Statistics Supervisor	16. 3.70 – 31.10.71
Mr. Loo Yew-thoe	– Census & Statistics Supervisor	20. 4.70 – 30. 9.71
Mr. Cheung Lung-yui	– Census & Statistics Supervisor	1. 8.70 – 30. 9.71
Mr. Lau Wing	– Census & Statistics Supervisor	1.10.70 – 31.10.71

CENSUS ORDINANCE.

(Chapter 316).

CENSUS ORDER 1969.

In exercise of the powers conferred by section 3 of the Census Ordinance, the Governor in Council has made the following order —

Citation.

1. This order may be cited as the Census Order 1969.

Census order.

2. A pilot census shall be taken at 2 a.m. on the 20th day of September 1969 of the population then dwelling in any part of the Colony other than those dwelling afloat in small craft.

Purposes of census.

3. The purposes of the said census are —

(*a*) to obtain by sample an estimate of the population, except those dwelling afloat in small craft, and

(*b*) to test the organization for the taking of a census under the Census Ordinance.

R. W. PRIMROSE,
Clerk of Councils.

COUNCIL CHAMBER.
15th July 1969.

CENSUS ORDINANCE.

(Chapter 316).

CENSUS ORDER 1970.

In exercise of the powers conferred by section 3 of the Census Ordinance, the Governor in Council has made the following order —

Citation.

1. This order may be cited as the Census Order 1970.

Census order.

2. A pilot marine census shall be taken at 2 a.m. on the 2nd day of February 1970 of the population dwelling afloat in small craft which are, at such time, within the limits of the following places —

(*a*) Aberdeen Harbour;

(*b*) Castle Peak Harbour;

(*c*) Yau Ma Tei Typhoon Shelter.

Purposes of census.

3. The purposes of the said census are —

(*a*) to obtain by sample an estimate of the population dwelling afloat in small craft based upon the places specified in paragraph 2; and

(*b*) to test the organization for the taking of census under the Census Ordinance.

R. W. PRIMROSE,
Clerk of Councils.

COUNCIL CHAMBER,
20th January 1970.

CENSUS ORDINANCE.

(Chapter 316).

CENSUS (NO. 2) ORDER 1970.

In exercise of the powers conferred by section 3 of the Census Ordinance, the Governor in Council has made the following order —

1. This order may be cited as the Census (No. 2) Order 1970. Citation.

2. A pilot census shall be taken at 2 a.m. on the 25th day of March 1970 of the population then dwelling in any part of the Colony other than those dwelling afloat in small craft. Census order.

3. The purposes of the said census are — Purposes of census.

(*a*) to obtain by sample an estimate of the population, except those dwelling afloat in small craft; and

(*b*) to test the organization for the taking of a census under the Census Ordinance.

R. W. PRIMROSE,
Clerk of Councils.

COUNCIL CHAMBER,
24th February 1970.

CENSUS ORDINANCE.

(Chapter 316).

CENSUS (NO. 4) ORDER 1970.

In exercise of the powers conferred by section 3 of the Census Ordinance, the Governor in Council has made the following order —

1. This order may be cited as the Census (No. 4) Order 1970. — Citation.

2. A census shall be taken on the 23rd, 24th, 25th and 26th January 1971 to obtain particulars of all persons dwelling on board any vessel to which Part XII, XIII or XIV of the Merchant Shipping Ordinance applies in any part of the waters of the Colony. — Census to be taken. (Cap. 281.)

3. The purpose of the census is to ascertain the number and descriptions of all persons dwelling on board such vessels at 2 a.m. on the 23rd January 1971. — Purpose of census.

4. All completed forms and returns collected or received by the census officers in connexion with this census and all copies thereof shall be destroyed by fire not later than the 23rd January 1972. — Destruction of forms and returns.

A. P. ASPREY.
Clerk of Councils.

COUNCIL CHAMBER,
22nd December 1970.

CENSUS ORDINANCE.

(Chapter 316).

CENSUS ORDER 1971.

In exercise of the powers conferred by section 3 of the Census Ordinance, the Governor in Council has made the following order—

1. This order may be cited as the Census Order 1971. Citation.

2. A census shall be taken on the 27th and 28th February 1971 and on the 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th and 9th March 1971 to obtain particulars of— Census to be taken.

(*a*) persons dwelling in the Colony, other than persons dwelling on board any vessel to which Part XII, XIII or XIV of the Merchant Shipping Ordinance applies; and (Cap. 281.)

(*b*) living quarters and households in the Colony, other than any living quarter or household on board any such vessel.

3. The purpose of the census is to ascertain the number and descriptions of— Purpose of census.

(*a*) persons dwelling in the Colony at 2 a.m. on the 9th March 1971, other than persons dwelling at that time on board any vessel to which Part XII, XIII or XIV of the Merchant Shipping Ordinance applies; and (Cap. 281.)

(*b*) living quarters and households in the Colony at 2 a.m. on the 9th March 1971, other than any living quarter or household at that time on board any such vessel.

4. All completed forms and returns collected or received by the census officers in connexion with this census and all copies thereof shall be destroyed by fire not later than the 8th March 1972. Destruction of forms and returns.

A. P. ASPREY,
Clerk of Councils.

COUNCIL CHAMBER,
16th February 1971.

CENSUS ORDINANCE.

(Chapter 316).

CENSUS (NO. 2) ORDER 1971.

In exercise of the powers conferred by section 3 of the Census Ordinance, the Governor in Council has made the following order—

Citation.

1. This order may be cited as the Census (No. 2) Order 1971.

Census to be taken.

2. A census shall be taken on the 3rd, 4th and 5th April 1971 to obtain particulars of—

(Cap. 281.)

(*a*) some persons dwelling in the Colony, other than persons dwelling on board any vessel to which Part XII, XIII or XIV of the Merchant Shipping Ordinance applies; and

(*b*) some living quarters and households in the Colony other than any living quarter or household on board any such vessel.

Purpose of the census.

3. The purpose of the census is to test by sample the completeness of the particulars obtained pursuant to the Census Order 1971 and the accuracy of the recording thereof.

Destruction of forms and returns.

4. All completed forms and returns collected or received by the census officers in connexion with this census and all copies thereof shall be destroyed by fire not later than the 5th April 1972.

A. P. ASPREY,
Clerk of Councils.

COUNCIL CHAMBER,
16th February 1971.

Comparative table of census questions for the years 1961, 1966 and 1971

Topics	1961	1966	1971
Geographic characteristics			
* Place where found at time of census	x	x	x
* Place of birth	x	x	x
Place of origin	x	x	x
* Duration of residence	x[a/]	–	–
+ Place of previous residence	–	x[b/]	–
Place of work/study (Derived topics)	–	x	x
* Total population	x	x	x
* Locality	x	x	x
* Urban and rural	x	x	x
Personal characteristics			
* Age [c/]	x	x	x
* Sex	x	x	x
Date of birth [d/]	x	x	x
* Relationship to head of household	x	x	x
* Marital status	x	x	x
+ Age at first marriage	–	–	x
* Children born alive	–	x	x
* Children living	x	x	x
* Literacy	x	–	–
* Educational attainment	x	x	x
* Usual language	x	x	x
Ability to speak English	x	x	x

Ability to speak English or Cantonese	x	–	–
Infirmities	–	–	x
Economic characteristics			
* Type of activity	x	x	x
* Occupation	x	x	x
* Industry	x	x	x
* Status (as employer, employee, etc.)	x	x	x
+ Time worked	–	–	x
Economic status in household	–	x	–
Household characteristics			
Type of household	–	x	x
Household income (Derived topics)	–	x	x
Number of persons	x	x	x
Housing Topics			
Type of accommodation	x	x	x
Tenure of accommodation	x	–	x
Number of rooms	–	–	x
Facilities (bathroom, toilet, kitchen, and water supply)	–	–	x
Rent	–	–	x
Car ownership	–	–	x
Other Topics			
Mode of transport to place of work/study	–	–	x
Time of arrival at place of work/study	–	–	x
Land tenure	x	–	–
Chief secondary crop	x	–	–

Notes: Topics preceded by * are those recommended as basic in the Asian programme for the 1970 population census, and topics with + are other recommended topics.

a/ Duration settled in Hong Kong.

b/ There were two questions in the 1966 By-Census: place of residence at the last census (7th March 1961), and place of residence at the last Chinese New Year (21st January, 1966).

c/ Month of age was also recorded for infants under 1 year of age.

d/ The date of birth was recorded to enable the age to be verified, but was not tabulated. In the 1971 Census, whether the birthday falls before the census day or after the census day was recorded on the UDT form.

CODE L1 TYPE OF LIVING QUARTERS

Domestic Building of durable materials

Major Group 0

0.0	Flats in apartment blocks/composite buildings (*a*)
0.1	Flats in tenement blocks (*b*)
0.2	Self-contained domestic units in Resettlement Housing Blocks (*c*)
0.3	Other domestic units in Resettlement Housing Blocks (*d*)
0.4	Self-contained domestic units in Government Low Cost Housing Blocks (*e*)
0.5	Other domestic units in Government Low Cost Housing Blocks (*f*)
0.6	Self-contained domestic units in Housing Authority/Society Housing Blocks
0.7	Simple stone structures (*g*)
0.8	Houses of one/two storeys (*h*)

Major Group 1 **Non-domestic Building of durable materials**

1.0	Quarters in Government Buildings (*i*)
1.1	Hotels, hostels, etc. (*j*)
1.2	Living quarters in commercial buildings. (*k*)
1.3	Living quarters in manufacturing industrial buildings (*l*)
1.4	Living quarters in institutions and other non-domestic buildings (*m*)

Major Group 2 **Residential structures of non-durable materials**

2.0	Roof-tops (*n*)
2.1	Mobile dwellings for land areas (*o*)
2.2	Marginal housing units (*p*)
2.3	Rustic dwellings (*q*)

Major Group 3 **Not Applicable**

3.0	Premises not used for domestic purposes (*r*)

Notes:

(*a*) By "apartment block" is meant a multi-storey block of flats comprising dwelling units partitioned by floor to ceiling walls into separate living rooms and bedrooms with separate kitchens and bathrooms. Each dwelling unit is usually divided horizontally and often vertically from the next. An apartment flat is sometimes used for other purposes than residential.

A composite building is a block of modern flats built for both commercial and residential uses.

(*b*) By "tenement block" is meant a multi-storey block of flats containing dwelling units each comprising an unpartitioned room usually with a separate kitchen, lavatory and sometimes bathroom. Each dwelling unit is usually divided horizontally and often vertically from the next. In some cases, a tenement floor is used as a store, workshop, etc. other than as a unit of living quarters.

(*c*) These include converted Mark I and II Resettlement Blocks and Mark IV, V and VI Blocks comprising dwelling units each with a *separate toilet.*

(*d*) These include Mark I, II and III Resettlement Blocks comprising dwelling units with *communal toilets* and washing facilities.

(*e*) These Blocks comprise dwelling units each with a *separate toilet.*

(*f*) These Blocks comprise dwelling units with *communal toilets.*

(*g*) These include Resettlement Cottages, village type houses, and detached servants' quarters.

(*h*) These are modern houses (e.g. bungalows and villas) with *full facilities*—bathroom, flush toilet system, internal kitchen, and running water supply.

(*i*) These are living quarters within *Government buildings* such as the staff quarters in the Fire Brigade Building, doctor's quarters and nurse quarters in the grounds of a Government hospital, prison staff quarters, police married and unmarried quarters, and so on.

(*j*) These include hotels, boarding houses, hostels, lodging houses and other profit-making residential institutions.

(*k*) These include the caretaker's quarters in an *office building* and staff quarters in a *commercial building* being principally used as a restaurant, a departmental store, a cinema, etc.

(*l*) These include quarters in a factory building.

(*m*) These include living quarters in charitable and religious institutions such as Old People's Home, Orphanage, Blind Home, Convent, Monastery, etc., and in other non-domestic buildings such as schools, gymnasiums, private hospitals, reformatory and so on.

(*n*) A roof-top structure includes anything of non-permanent or semi-permanent materials built as an addition on the roof of another building.

(*o*) Mobile dwelling units include tent, nissen hut, contractor's matshed, hawker stall and caravan or aircraft.

(*p*) A marginal housing unit is situated either in the urban area or in a layout area of the New Territories. It includes squatter hut and un-boat.

(*q*) A rustic dwelling must be rural. It includes farmer's wooden shack, wooden or thatched shop and un-boat.

(*r*) These include landings or staircases, and working premises in factories and shops, which have no facilities for living and sleeping but are occupied during the Census period. Even if the premises is located in a domestic building, e.g. manufacturing premises in a tenement, it should *not* be classified as a flat in apartment/tenement block, but classified as "not applicable" (code 3.0). However, if there is *space partitioned off for domestic purposes,* the premises should be classified by the type of building or structure in which it is located, as in the case of an ordinary living quarters.

CODE H1 TYPE OF HOUSEHOLD

1. Collective household
2. Domestic household occupying the whole of living quarters
3. Domestic household sharing living quarters with one or more other households
4. Domestic household within an institution (*note*)

Note: Examples of an institution are Old People's Home, Orphanage, Blind Person's Home, sanatorium, hospital, treatment centre, prison, hotel, boarding house, school, hostel, fire station, factory, etc.

CODE H2 TENURE

1. Institution (*a*)
2. Own the premises
3. Sole Tenant (*b*)
4. Main Tenant (*c*)
5. Sub-Tenant (*d*)
6. Co-Tenant (*e*)
7. Residing in the premises rent free (whether with or without permission)

Notes:

(*a*) The question on tenure is only applicable to domestic households. For collective households, the answer to this question is a mark in the "institution" box.

(*b*) A sole tenant is one who rents a whole house or a flat/floor which is occupied by his household without sub-letting.

(*c*) A main tenant is one who rents from a person, who *does not* reside in the same living quarters, a whole house or a flat/floor which is occupied by his household and of which part is sub-let to another household(s).

(*d*) A sub-tenant is one who rents any kind of accommodation unit from a person who also resides in the same living quarters; the person letting the accommodation may be either an owner-occupier or a main tenant.

(*e*) A co-tenant is one who rents part of a house or flat/floor for the exclusive use of his household from a person who *does not* reside in that same living quarters. He must be sharing the living quarters with at least one or more other co-tenants.

CODE H3 SUB-TYPE OF ACCOMMODATION

0.0	Institution (*a*)
0.1	Whole house occupied by one household (*b*)
0.2	Whole house shared by two or more households
0.3	Self-contained flat (*c*) occupied by one household
0.4	Old tenement floor (*d*) occupied by one household
0.5	One or more rooms or cubicles occupied by one household (*e*)
0.6	One or more rooms or cubicles shared by two or more households
0.7	Bedspace occupied by one household
0.8	Bedspace alternately used by two or more households
0.9	Verandah (*f*) occupied by one household
1.0	Verandah shared by two or more households
1.1	Cockloft (*g*) occupied by one household
1.2	Cockloft shared by two or more households
1.3	Basement occupied by one household
1.4	Basement shared by two or more households
1.5	Storeroom, shop, workshop, and other working premises (*h*)
1.6	Corridor, hallway, lobby, landing or staircase (*i*)
1.7	Roof-shack occupied by one household
1.8	Roof-shack shared by two or more households
1.9	Tent, nissen hut, contractor's matshed
2.0	Caravan or aircraft
2.1	Squatter hut (*j*) occupied by one household
2.2	Squatter hut shared by two or more households

2.3 Un-boat (*k*) occupied by one household

2.4 Un-boat shared by two or more households

2.5 Farmer's wooden shack

2.6 Wooden or thatched shop in rural area

Notes:

(*a*) The question on sub-type of accommodation is *only* applicable to domestic households. For collective households, mark 0.0 in the bar format section.

(*b*) The sub-type of accommodation is classified in this category only when the unit of living quarters is of types 0.7, 0.8 and 1.0 (in some instances) of Code L1.

(*c*) A self-contained flat is a complete unit of residence which must satisfy the following conditions:—

(i) it must have its own entrance for the exclusive use of the household(s) occupying the flat.

(ii) it must have an internal kitchen, a toilet and/or a bathroom. Modern tenement flats without permanent partitioned rooms but have kitchen and toilet facilities should be considered as self-contained.

(*d*) An old tenement floor is a complete floor which is not self-contained as defined in (*b*). Apart from an internal kitchen, it has no other living quarters facilities.

(*e*) This is the case when a self-contained flat or tenement floor is shared by more than one household. Each of the households occupies one or more rooms/cubicles. In the case of a dwelling unit of types 0.3 and 0.5 of Code L1 when occupied by one household, the sub-type of accommodation is also classified in this category.

(*f*) A verandah is a space on the exterior of a building which is not completely enclosed. If a space was originally a verandah but has been completely enclosed later it should be classified as a room or cubicle.

(*g*) A cockloft is a raised platform or kind of gallery inside a shop or house usually intended for storage purposes. It is sometimes used as a place of accommodation.

(*h*) This code is for classifying *working premises which have no facilities for living and sleeping* but are occupied during the Census period. However, if there is *space partitioned off for domestic purpose,* this space should be classified in the same way as in the case of the ordinary "sub-type of accommodation".

(*i*) This code is for classifying premises such as landing or staircase, corridor and hallway, which are *occupied* for domestic purposes during the Census period.

(*j*) A squatter hut is any structure in the urban area or in a layout area of the New Territories built of non-permanent or semi-permanent materials.

(*k*) By "un-boat" is meant a boat which no longer floats and cannot be put to sea.

CODE H4 **RENT (per month)**

1.	Institution (*a*)
2.	Rent free
3.	< 50 means less than HK$50
4.	— 99 means HK$50 to HK$99
5.	— 199 means HK$100 to HK$199
6.	— 399 means HK$200 to HK$399
7.	— 599 means HK$400 to HK$599
8.	— 799 means HK$600 to HK$799
9.	— 999 means HK$800 to HK$999
10.	1000 + means HK$1,000 and over
	Services included in rent (*b*):—
11.	Rates
12.	Water
13.	Electricity
14.	Communal cleaning
15.	None

Notes:

(*a*) The question on rent is only applicable to domestic households. For collective households, the answer to this question is a mark in the "institution" box.

(*b*) If none of these services is included in the monthly rent or paid separately, the answer to this part of the question should be "none".

CODE H5 **MONTHLY INCOME**

1. Institution (*a*)
2. < 200 means less than HK$200
3. — 399 means HK$200 to HK$399
4. — 599 means HK$400 to HK$599
5. — 799 means HK$600 to HK$799
6. — 999 means HK$800 to HK$999
7. —1199 means HK$1,000 to HK$1,199
8. —1499 means HK$1,200 to HK$1,499
9. —1999 means HK$1,500 to HK$1,999
10. —2499 means HK$2,000 to HK$2,499
11. —4499 means HK$2,500 to HK$4,499
12. 4500 + means HK$4,500 and over
13. Free food (*b*)

Notes:

(*a*) The question on monthly income is only applicable to domestic households. For collective households, the answer to this question is a mark in the "institution" box.

(*b*) If any members of a domestic household receive free food (lunch/dinner) from their employers, the answer to this part of the question should be "yes".

CODE P1 RELATIONSHIP TO HEAD OF HOUSEHOLD

1. Head of Household.
2. Spouse of the Head of Household i.e. husband, wife or concubine.
3. Child of Head of Household i.e. son or daughter.
4. Other Relative of Head of Household.
5. Domestic servant, including private chauffeurs and gardeners.
6. Other e.g. employee, lodger, guest, etc.

HONG KONG HOUSING AND POPULATION CENSUS
LAND CENSUS, 9th MARCH, 1971

AGE CONVERSION TABLE

1 TO 41

Chinese age as stated by respondent — YEARS →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
CHECK DATA — ERA	REPUBLIC (MAN GWOK)																																								
CHECK DATA — YEAR	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
CHECK DATA — CYCLE	Sun Hoy	Gang Shirt	Gay Yow	Mo San	Ding May	Bing Ng	Yit Jee	Garp Sunn	Guy Maow	Yum Yarn	Sun Chow	Gang Jee	Gay Hoy	Mo Shirt	Ding Yow	Bing San	Yit May	Garp Ng	Guy Jee	Yum Sunn	Sun Maow	Gang Yarn	Gay Chow	Mo Jee	Ding Hoy	Bing Shirt	Yit Yow	Garp San	Guy May	Yum Ng	Sun Jee	Gang Sunn	Gay Maow	Mo Yarn	Ding Chow	Bing Jee	Yit Hoy	Garp Shirt	Guy Yow	Yum San	Sun May
CHECK DATA — ANIMAL	Pig	Dog	Cock	Monkey	Goat	Horse	Snake	Dragon	Hare	Tiger	Ox	Rat	Pig	Dog	Cock	Monkey	Goat	Horse	Snake	Dragon	Hare	Tiger	Ox	Rat	Pig	Dog	Cock	Monkey	Goat	Horse	Snake	Dragon	Hare	Tiger	Ox	Rat	Pig	Dog	Cock	Monkey	Goat
WESTERN AGE →	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
But if born ON or BEFORE this date — First Moon	/	21 Day	/	/	29 Day	/	/	26 Day	/	/	23 Day	/	/	20 Day	/	27 Day	/	/	24 Day	/	/	21 Day	/	29 Day	/	/	25 Day	/	/	23 Day	/	/	19 Day	/	27 Day	/	/	24 Day	/	/	21 Day
But if born ON or BEFORE this date — Second Moon	2 Day	/	11 Day	/	18 Day	7 Day	/	14 Day	4 Day	/	12 Day	1 Day	/	8 Day	/	16 Day	5 Day	/	14 Day	2 Day	/	10 Day	/	17 Day	6 Day	/	15 Day	4 Day	/	12 Day	1 Day	/	8 Day	/	16 Day	5 Day	/	14 Day	3 Day	/	
THEN WESTERN AGE IS 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	

42 AND OVER

Chinese age as stated by respondent — YEARS →	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82
CHECK DATA — ERA	REPUBLIC (MAN GWOK)																			SUEN TOONG			GWONG SOEY																			
CHECK DATA — YEAR	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	3	2	1	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	
CHECK DATA — CYCLE	Gang Ng	Gay Jee	Mo Sunn	Ding Maow	Bing Yarn	Yit Chow	Garp Jee	Guy Hoy	Yum Shirt	Sun Yow	Gang San	Gay May	Mo Ng	Ding Jee	Bing Sunn	Yit Maow	Garp Yarn	Guy Chow	Yum Jee	Sun Hoy	Gang Shirt	Gay Yow	Mo San	Ding May	Bing Ng	Yit Jee	Garp Sunn	Guy Maow	Yum Yarn	Sun Chow	Gang Jee	Gay Hoy	Mo Shirt	Ding Yow	Bing San	Yit May	Garp Ng	Guy Jee	Yum Sunn	Sun Maow		
CHECK DATA — ANIMAL	Horse	Snake	Dragon	Hare	Tiger	Ox	Rat	Pig	Dog	Cock	Monkey	Goat	Horse	Snake	Dragon	Hare	Tiger	Ox	Rat	Pig	Dog	Cock	Monkey	Goat	Horse	Snake	Dragon	Hare	Tiger	Ox	Rat	Pig	Dog	Cock	Monkey	Goat	Horse	Snake	Dragon	Hare	
WESTERN AGE →	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	
But if born ON or BEFORE this date — First Moon	/	28 Day	/	/	25 Day	/	/	22 Day	/	30 Day	19 Day	/	27 Day	/	/	24 Day	/	/	21 Day	/	28 Day	/	/	25 Day	/	/	23 Day	/	30 Day	19 Day	/	28 Day	/	/	26 Day	/	/	21 Day	/	29 Day	
But if born ON or BEFORE this date — Second Moon	10 Day	/	18 Day	6 Day	/	15 Day	5 Day	/	11 Day	/	/	8 Day	/	16 Day	6 Day	/	13 Day	2 Day	/	9 Day	/	18 Day	7 Day	/	15 Day	4 Day	/	11 Day	/	/	9 Day	/	17 Day	7 Day	/	13 Day	3 Day	/	11 Day	/	
THEN WESTERN AGE IS	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	

82 AND OVER SUBTRACT 2 YEARS

INDEX FOR DETERMINING THE WESTERN YEAR AND "BEFORE OR AFTER CENSUS DAY"

Chinese Era	Year	Cycle	Animal	Lunar Month/Day	Western Year	Before/ After Census Day
Toong Jee	10	Sun May	Goat	1/1—1/19	1871	Before
	10	Sun May	Coat	1/20—11/20	1871	After
	10	Sun May	Goat	11/21—12/30	1872	Before
	11	Yum San	Monkey	1/1—2/1	1872	Before
	11	Yum San	Monkey	2/2—12/2	1872	After
	11	Yum San	Monkey	12/3—12/30	1873	Before
	12	Guy Yow	Cock	1/1—2/11	1873	Before
	12	Guy Yow	Cock	2/12—11/12	1873	After
	12	Guy Yow	Cock	11/13—12/30	1874	Before
	13	Garp Shirt	Dog	1/1—1/21	1874	Before
	13	Garp Shirt	Dog	1/22—11/23	1874	After
	13	Garp Shirt	Dog	11/24—12/29	1875	Before
Gwong Soey	1	Yit Hoy	Pig	1/1—2/2	1875	Before
	1	Yit Hoy	Pig	2/3—12/4	1875	After
	1	Yit Hoy	Pig	12/5—12/29	1876	Before
	2	Bing Jee	Rat	1/1—2/14	1876	Before
	2	Bing Jee	Rat	2/15—11/16	1876	After
	2	Bing Jee	Rat	11/17—12/30	1877	Before
	3	Ding Chow	Ox	1/1—1/25	1877	Before
	3	Ding Chow	Ox	1/26—11/27	1877	After
	3	Ding Chow	Ox	11/28—12/30	1878	Before
	4	Mo Yarn	Tiger	1/1—2/6	1878	Before
	4	Mo Yarn	Tiger	2/7—12/8	1878	After
	4	Mo Yarn	Tiger	12/9—12/29	1879	Before
	5	Gay Maow	Hare	1/1—2/17	1879	Before
	5	Gay Maow	Hare	2/18—11/19	1879	After
	5	Gay Maow	Hare	11/20—12/29	1880	Before
	6	Gang Sunn	Dragon	1/1—1/29	1880	Before
	6	Gang Sunn	Dragon	1/30—12/1	1880	After
	6	Gang Sunn	Dragon	12/2—12/30	1881	Before

Chinese Era	Year	Cycle	Animal	Lunar Month/Day	Western Year	Before/ After Census Day
Gwong Soey	7	Sun Jee	Snake	1/1—2/10	1881	Before
	7	Sun Jee	Snake	2/11—11/11	1881	After
	7	Sun Jee	Snake	11/12—12/29	1882	Before
	8	Yum Ng	Horse	1/1—1/20	1882	Before
	8	Yum Ng	Horse	1/21—11/22	1882	After
	8	Yum Ng	Horse	11/23—12/30	1883	Before
	9	Guy May	Goat	1/1—2/1	1883	Before
	9	Guy May	Goat	2/2—12/3	1883	After
	9	Guy May	Goat	12/4—12/30	1884	Before
	10	Garp San	Monkey	1/1—2/12	1884	Before
	10	Garp San	Monkey	2/13—11/15	1884	After
	10	Garp San	Monkey	11/16—12/30	1885	Before
	11	Yit Yow	Cock	1/1—1/23	1885	Before
	11	Yit Yow	Cock	1/24—11/26	1885	After
	11	Yit Yow	Cock	11/27—12/30	1886	Before
	12	Bing Shirt	Dog	1/1—2/4	1886	Before
	12	Bing Shirt	Dog	2/5—12/7	1886	After
	12	Bing Shirt	Dog	12/8—12/30	1887	Before
	13	Ding Hoy	Pig	1/1—2/15	1887	Before
	13	Ding Hoy	Pig	2/16—11/17	1887	After
	13	Ding Hoy	Pig	11/18—12/30	1888	Before
	14	Mo Jee	Rat	1/1—1/27	1888	Before
	14	Mo Jee	Rat	1/28—11/29	1888	After
	14	Mo Jee	Rat	11/30—12/29	1889	Before
	15	Gay Chow	Ox	1/1—2/8	1889	Before
	15	Gay Chow	Ox	2/9—12/10	1889	After
	15	Gay Chow	Ox	12/11—12/30	1890	Before
	16	Gang Yarn	Tiger	1/1—2/19	1890	Before
	16	Gang Yarn	Tiger	2/20—11/20	1890	After
	16	Gang Yarn	Tiger	11/21—12/30	1891	Before
	17	Sun Maow	Hare	1/1—1/29	1891	Before
	17	Sun Maow	Hare	2/1—12/1	1891	After
	17	Sun Maow	Hare	12/2—12/30	1892	Before
	18	Yum Sunn	Dragon	1/1—2/11	1892	Before
	18	Yum Sunn	Dragon	2/12—11/13	1892	After
	18	Yum Sunn	Dragon	11/14—12/30	1893	Before
	19	Guy Jee	Snake	1/1—1/21	1893	Before
	19	Guy Jee	Snake	1/22—11/24	1893	After
	19	Guy Jee	Snake	11/25—12/30	1894	Before
	20	Garp Ng	Horse	1/1—2/3	1894	Before
	20	Garp Ng	Horse	2/4—12/5	1894	After
	20	Garp Ng	Horse	12/6—12/30	1895	Before

Chinese Era	Year	Cycle	Animal	Lunar Month/Day	Western Year	Before/ After Census Day
Gwong Soey	21	Yit May	Goat	1/1—2/13	1895	Before
	21	Yit May	Goat	2/14—11/16	1895	After
	21	Yit May	Goat	11/17—12/29	1896	Before
	22	Bing San	Monkey	1/1—1/26	1896	Before
	22	Bing San	Monkey	1/27—11/27	1896	After
	22	Bing San	Monkey	11/28—12/30	1897	Before
	23	Ding Yow	Cock	1/1—2/7	1897	Before
	23	Ding Yow	Cock	2/8—12/8	1897	After
	23	Ding Yow	Cock	12/9—12/29	1898	Before
	24	Mo Shirt	Dog	1/1—2/17	1898	Before
	24	Mo Shirt	Dog	2/18—11/19	1898	After
	24	Mo Shirt	Dog	11/20—12/29	1899	Before
	25	Gay Hoy	Pig	1/1—1/28	1899	Before
	25	Gay Hoy	Pig	1/29—11/29	1899	After
	25	Gay Hoy	Pig	12/1—12/30	1900	Before
	26	Gang Jee	Rat	1/1—2/9	1900	Before
	26	Gang Jee	Rat	2/10—11/10	1900	After
	26	Gang Jee	Rat	11/11—12/30	1901	Before
	27	Sun Chow	Ox	1/1—1/19	1901	Before
	27	Sun Chow	Ox	1/20—11/21	1901	After
	27	Sun Chow	Ox	11/22—12/29	1902	Before
	28	Yum Yarn	Tiger	1/1—1/30	1902	Before
	28	Yum Yarn	Tiger	2/1—12/2	1902	After
	28	Yum Yarn	Tiger	12/3—12/30	1903	Before
	29	Guy Maow	Hare	1/1—2/11	1903	Before
	29	Guy Maow	Hare	2/12—11/13	1903	After
	29	Guy Maow	Hare	11/14—12/30	1904	Before
	30	Garp Sunn	Dragon	1/1—1/23	1904	Before
	30	Garp Sunn	Dragon	1/24—11/25	1904	After
	30	Garp Sunn	Dragon	11/26—12/29	1905	Before
	31	Yit Jee	Snake	1/1—2/4	1905	Before
	31	Yit Jee	Snake	2/5—12/6	1905	After
	31	Yit Jee	Snake	12/7—12/30	1906	Before
	32	Bing Ng	Horse	1/1—2/15	1906	Before
	32	Bing Ng	Horse	2/16—11/16	1906	After
	32	Bing Ng	Horse	11/17—12/30	1907	Before
	33	Ding May	Goat	1/1—1/25	1907	Before
	33	Ding May	Goat	1/26—11/27	1907	After
	33	Ding May	Goat	11/28—12/29	1908	Before
	34	Mo San	Monkey	1/1—2/7	1908	Before
	34	Mo San	Monkey	2/8—12/9	1908	After
	34	Mo San	Monkey	12/10—12/30	1909	Before

Chinese Era	Year	Cycle	Animal	Lunar Month/Day	Western Year	Before/ After Census Day
Suen Toong	1	Gay Yow	Cock	1/1—2/18	1909	Before
	1	Gay Yow	Cock	2/19—11/19	1909	After
	1	Gay Yow	Cock	11/20—12/30	1910	Before
	2	Gang Shirt	Dog	1/1—1/28	1910	Before
	2	Gang Shirt	Dog	1/29—11/30	1910	After
	2	Gang Shirt	Dog	12/1—12/29	1911	Before
	3	Sun Hoy	Pig	1/1—2/9	1911	Before
	3	Sun Hoy	Pig	2/10—11/12	1911	After
Man Gwok	1	Sun Hoy	Pig	11/13—12/30	1912	Before
	1	Yum Jee	Rat	1/1—1/21	1912	Before
	1	Yum Jee	Rat	1/22—11/23	1912	After
	2	Yum Jee	Rat	11/24—12/30	1913	Before
	2	Guy Chow	Ox	1/1—2/2	1913	Before
	2	Guy Chow	Ox	2/3—12/5	1913	After
	3	Guy Chow	Ox	12/6—12/30	1914	Before
	3	Garp Yarn	Tiger	1/1—2/13	1914	Before
	3	Garp Yarn	Tiger	2/14—11/15	1914	After
	4	Garp Yarn	Tiger	11/16—12/30	1915	Before
	4	Yit Maow	Hare	1/1—1/24	1915	Before
	4	Yit Maow	Hare	1/25—11/25	1915	After
	5	Yit Maow	Hare	11/26—12/29	1916	Before
	5	Bing Sunn	Dragon	1/1—2/6	1916	Before
	5	Bing Sunn	Dragon	2/7—12/7	1916	After
	6	Bing Sunn	Dragon	12/8—12/29	1917	Before
	6	Ding Jee	Snake	1/1—2/16	1917	Before
	6	Ding Jee	Snake	2/17—11/18	1917	After
	7	Ding Jee	Snake	11/19—12/29	1918	Before
	7	Mo Ng	Horse	1/1—1/27	1918	Before
	7	Mo Ng	Horse	1/28—11/29	1918	After
	8	Mo Ng	Horse	11/30—12/30	1919	Before
	8	Gay May	Goat	1/1—2/8	1919	Before
	8	Gay May	Goat	2/9—11/10	1919	After
	9	Gay May	Goat	11/11—12/30	1920	Before
	9	Gang San	Monkey	1/1—1/19	1920	Before
	9	Gang San	Monkey	1/20—11/22	1920	After
	10	Gang San	Monkey	11/23—12/30	1921	Before
	10	Sun Yow	Cock	1/1—1/30	1921	Before
	10	Sun Yow	Cock	2/1—12/3	1921	After
	11	Sun Yow	Cock	12/4—12/30	1922	Before
	11	Yum Shirt	Dog	1/1—2/11	1922	Before
	11	Yum Shirt	Dog	2/12—11/14	1922	After
	12	Yum Shirt	Dog	11/15—12/30	1923	Before

Chinese Era	Year	Cycle	Animal	Lunar Month/Day	Western Year	Before/ After Census Day
Man Gwok	12	Guy Hoy	Pig	1/1—1/22	1923	Before
	12	Guy Hoy	Pig	1/23—11/24	1923	After
	13	Guy Hoy	Pig	11/25—12/30	1924	Before
	13	Garp Jee	Rat	1/1—2/5	1924	Before
	13	Garp Jee	Rat	2/6—12/6	1924	After
	14	Garp Jee	Rat	12/7—12/29	1925	Before
	14	Yit Chow	Ox	1/1—2/15	1925	Before
	14	Yit Chow	Ox	2/16—11/16	1925	After
	15	Yit Chow	Ox	11/17—12/30	1926	Before
	15	Bing Yarn	Tiger	1/1—1/25	1926	Before
	15	Bing Yarn	Tiger	1/26—11/27	1926	After
	16	Bing Yarn	Tiger	11/28—12/29	1927	Before
	16	Ding Maow	Hare	1/1—2/6	1927	Before
	16	Ding Maow	Hare	2/7—12/8	1927	After
	17	Ding Maow	Hare	12/9—12/30	1928	Before
	17	Mo Sunn	Dragon	1/1—2/18	1928	Before
	17	Mo Sunn	Dragon	2/19—11/20	1928	After
	18	Mo Sunn	Dragon	11/21—12/30	1929	Before
	18	Gay Jee	Snake	1/1—1/28	1929	Before
	18	Gay Jee	Snake	1/29—12/1	1929	After
	19	Gay Jee	Snake	12/2—12/30	1930	Before
	19	Gang Ng	Horse	1/1—2/10	1930	Before
	19	Gang Ng	Horse	2/11—11/12	1930	After
	20	Gang Ng	Horse	11/13—12/29	1931	Before
	20	Sun May	Goat	1/1—1/21	1931	Before
	20	Sun May	Goat	1/22—11/23	1931	After
	21	Sun May	Goat	11/24—12/29	1932	Before
	21	Yum San	Monkey	1/1—2/3	1932	Before
	21	Yum San	Monkey	2/4—12/5	1932	After
	22	Yum San	Monkey	12/6—12/30	1933	Before
	22	Guy Yow	Cock	1/1—2/14	1933	Before
	22	Guy Yow	Cock	2/15—11/15	1933	After
	23	Guy Yow	Cock	11/16—12/30	1934	Before
	23	Garp Shirt	Dog	1/1—1/24	1934	Before
	23	Garp Shirt	Dog	1/25—11/25	1934	After
	24	Garp Shirt	Dog	11/26—12/30	1935	Before
	24	Yit Hoy	Pig	1/1—2/5	1935	Before
	24	Yit Hoy	Pig	2/6—12/6	1935	After
	25	Yit Hoy	Pig	12/7—12/29	1936	Before
	25	Bing Jee	Rat	1/1—2/16	1936	Before
	25	Bing Jee	Rat	2/17—11/18	1936	After
	26	Bing Jee	Rat	11/19—12/29	1937	Before

Chinese Era	Year	Cycle	Animal	Lunar Month/Day	Western Year	Before/ After Census Day
Man Gwok	26	Ding Chow	Ox	1/1—1/27	1937	Before
	26	Ding Chow	Ox	1/28—11/29	1937	After
	27	Ding Chow	Ox	11/30—12/29	1938	Before
	27	Mo Yarn	Tiger	1/1—2/8	1938	Before
	27	Mo Yarn	Tiger	2/9—11/10	1938	After
	28	Mo Yarn	Tiger	11/11—12/30	1939	Before
	28	Gay Maow	Hare	1/1—1/19	1939	Before
	28	Gay Maow	Hare	1/20—11/21	1939	After
	29	Gay Maow	Hare	11/22—12/30	1940	Before
	29	Gang Sunn	Dragon	1/1—2/1	1940	Before
	29	Gang Sunn	Dragon	2/2—12/3	1940	After
	30	Gang Sunn	Dragon	12/4—12/29	1941	Before
	30	Sun Jee	Snake	1/1—2/12	1941	Before
	30	Sun Jee	Snake	2/13—11/14	1941	After
	31	Sun Jee	Snake	11/15—12/29	1942	Before
	31	Yum Ng	Horse	1/1—1/23	1942	Before
	31	Yum Ng	Horse	1/24—11/24	1942	After
	32	Yum Ng	Horse	11/25—12/30	1943	Before
	32	Guy May	Goat	1/1—2/4	1943	Before
	32	Guy May	Goat	2/5—12/5	1943	After
	33	Guy May	Goat	12/6—12/29	1944	Before
	33	Garp San	Monkey	1/1—2/15	1944	Before
	33	Garp San	Monkey	2/16—11/17	1944	After
	34	Garp San	Monkey	11/18—12/30	1945	Before
	34	Yit Yow	Cock	1/1—1/25	1945	Before
	34	Yit Yow	Cock	1/26—11/27	1945	After
	35	Yit Yow	Cock	11/28—12/30	1946	Before
	35	Bing Shirt	Dog	1/1—2/6	1946	Before
	35	Bing Shirt	Dog	2/7—12/9	1946	After
	36	Bing Shirt	Dog	12/10—12/30	1947	Before
	36	Ding Hoy	Pig	1/1—2/17	1947	Before
	36	Ding Hoy	Pig	2/18—11/20	1947	After
	37	Ding Hoy	Pig	11/21—12/30	1948	Before
	37	Mo Jee	Rat	1/1—1/29	1948	Before
	37	Mo Jee	Rat	1/30—12/2	1948	After
	38	Mo Jee	Rat	12/3—12/30	1949	Before
	38	Gay Chow	Ox	1/1—2/10	1949	Before
	38	Gay Chow	Ox	2/11—11/12	1949	After
	39	Gay Chow	Ox	11/13—12/30	1950	Before
	39	Gang Yarn	Tiger	1/1—1/21	1950	Before
	39	Gang Yarn	Tiger	1/22—11/23	1950	After
	40	Gang Yarn	Tiger	11/24—12/29	1951	Before

Chinese Era	Year	Cycle	Animal	Lunar Month/Day	Western Year	Before/ After Census Day
Man Gwok	40	Sun Maow	Hare	1/1—2/2	1951	Before
	40	Sun Maow	Hare	2/3—12/4	1951	After
	41	Sun Maow	Hare	12/5—12/30	1952	Before
	41	Yum Sunn	Dragon	1/1—2/14	1952	Before
	41	Yum Sunn	Dragon	2/15—11/15	1952	After
	42	Yum Sunn	Dragon	11/16—12/30	1953	Before
	42	Guy Jee	Snake	1/1—1/24	1953	Before
	42	Guy Jee	Snake	1/25—11/26	1953	After
	43	Guy Jee	Snake	11/27—12/29	1954	Before
	43	Garp Ng	Horse	1/1—2/5	1954	Before
	43	Garp Ng	Horse	2/6—12/7	1954	After
	44	Garp Ng	Horse	12/8—12/30	1955	Before
	44	Yit May	Goat	1/1—2/16	1955	Before
	44	Yit May	Goat	2/17—11/18	1955	After
	45	Yit May	Goat	11/19—12/30	1956	Before
	45	Bing San	Monkey	1/1—1/27	1956	Before
	45	Bing San	Monkey	1/28—11/30	1956	After
	46	Bing San	Monkey	12/1—12/30	1957	Before
	46	Ding Yow	Cock	1/1—2/8	1957	Before
	46	Ding Yow	Cock	2/9—11/11	1957	After
	47	Ding Yow	Cock	11/12—12/29	1958	Before
	47	Mo Shirt	Dog	1/1—1/20	1958	Before
	47	Mo Shirt	Dog	1/21—11/21	1958	After
	48	Mo Shirt	Dog	11/22—12/30	1959	Before
	48	Gay Hoy	Pig	1/1—2/1	1959	Before
	48	Gay Hoy	Pig	2/2—12/2	1959	After
	49	Gay Hoy	Pig	12/3—12/29	1960	Before
	49	Gang Jee	Rat	1/1—2/12	1960	Before
	49	Gang Jee	Rat	2/13—11/14	1960	After
	50	Gang Jee	Rat	11/15—12/29	1961	Before
	50	Sun Chow	Ox	1/1—1/23	1961	Before
	50	Sun Chow	Ox	1/24—11/24	1961	After
	51	Sun Chow	Ox	11/25—12/30	1962	Before
	51	Yum Yarn	Tiger	1/1—2/4	1962	Before
	51	Yum Yarn	Tiger	2/5—12/5	1962	After
	52	Yum Yarn	Tiger	12/6—12/29	1963	Before
	52	Guy Maow	Hare	1/1—2/14	1963	Before
	52	Guy Maow	Hare	2/15—11/16	1963	After
	53	Guy Maow	Hare	11/17—12/29	1964	Before
	53	Garp Sunn	Dargon	1/1—1/26	1964	Before
	53	Garp Sunn	Dargon	1/27—11/28	1964	After
	54	Garp Sunn	Dargon	11/29—12/30	1965	Before

Chinese Era	Year	Cycle	Animal	Lunar Month/Day	Western Year	Before/ After Census Day
Man Gwok	54	Yit Jee	Snake	1/1—2/7	1965	Before
	54	Yit Jee	Snake	2/8—12/9	1965	After
	55	Yit Jee	Snake	12/10—12/29	1966	Before
	55	Bing Ng	Horse	1/1—2/18	1966	Before
	55	Bing Ng	Horse	2/19—11/20	1966	After
	56	Bing Ng	Horse	11/21—12/29	1967	Before
	56	Ding May	Goat	1/1—1/29	1967	Before
	56	Ding May	Goat	1/30—12/1	1967	After
	57	Ding May	Goat	12/2—12/30	1968	Before
	57	Mo San	Monkey	1/1—2/11	1968	Before
	57	Mo San	Monkey	2/12—11/12	1968	After
	58	Mo San	Monkey	11/13—12/30	1969	Before
	58	Gay Yow	Cock	1/1—1/21	1969	Before
	58	Gay Yow	Cock	1/22—11/23	1969	After
	59	Gay Yow	Cock	11/24—12/29	1970	Before
	59	Gang Shirt	Dog	1/1—2/2	1970	Before
	59	Gang Shirt	Dog	2/3—12/4	1970	After
	60	Gang Shirt	Dog	12/5—12/30	1971	Before
	60	Sun Hoy	Pig	1/1—2/13	1971	Before

CODE P2/P3	PLACE OF BIRTH/ORIGIN
1.	Hong Kong, Kowloon and New Territories, including Tan Ka Boat people whose "home port" is in the waters of the Colony or New Territories.
2.	Canton, Macao and places adjoining Hong Kong, Canton or Macao, including the following hsien or localities: Bocca Tigris (Fu Mun), Chek Kai, Chung Shan (*a*), Fa (花) Yuen (*b*), Ladrone Islands (Man Shan), Lema Islands (Tam Kon Shan), Nam Hoi (*c*), Nam Tau, Po On (*d*) (except Hong Kong and New Territories), Pun Yue, Sam Shui, Sham Chun, Shek Lung, Shun Tak, Tai Pang, Tsang Shing, Tsung Fa, Tung Kwun, Wai Yeung (*e*).
3.	Sze Yap, including all localities customarily included in the expression Ng Yap (Five Districts) or Sze Yap (Four Districts), among which are: Hoi Ping, Hok Shan, Kong Mun, San Wui, Toi Shan, Yan Ping.
4.	Chiu Chau, including Swabue, Swatow and the adjoining hsien, including: Ching Hoi, Chiu On, Chiu Yeung, Fung Shun, Hoi Fung, Kit Yeung, Nam O (*f*), Nam Shan (*g*), Po Ning, Wai Loi, Yiu Ping.
5.	Elsewhere in Kwangtung Province.
6.	Shanghai, Taiwan and Central coast provinces, i.e. Chekiang, Fukien and Kiangsu.
7.	Elsewhere in China, including Manchuria, Inner Mongolia, Sinkiang and Tibet.
8.	India and Ceylon.
9.	Pakistan.
10.	Singapore.
11.	Malaysia and Brunei.
12.	Other Asia, including Korea, Vietnam, Laos, Cambodia and Outer Mongolia.
13.	Pacific and Oceania, including Australia and New Zealand.
14.	Britain.
15.	Other Europe, including Malta, Gibraltar and Republic of Cyprus.
16.	U.S.A., including Puerto Rico.
17.	Canada.
18.	British Commonwealth countries in West Indies, and Central and South America, including Falkland Islands and St. Helena (*h*).

19. Mexico and Non-Commonwealth countries in West Indies, and Central and South America.

20. British Commonwealth countries in Africa: Ghana, Nigeria, Sierra Leone, Uganda, Kenya, Tanzania, Malawi, Zambia, Gambia, Botswana, Lesotho, Swaziland, Rhodesia. (Also Mauritius, Seychelles, Br. Indian Ocean Territory).

21. Other Africa.

22. Unknown.

Notes :

(*a*) Originally called Heung Shan.

(*b*) Carefully distinguish from Fa (化) Yuen in Southern Kwangtung.

(*c*) Do not confuse with "Nam Hoi" given as place of origin by the Tan Ka.

(*d*) Originally called San On.

(*e*) Originally called Kwai Shin.

(*f*) Do not confuse with "Nam O" in the New Territories, or "Nam O" on Mirs Bay.

(*g*) Carefully distinguish Nam Shan village in the New Territories and the mountain range Nam Shan in Western China.

(*h*) The British Commonwealth countries include Jamaica, Trinidad and Tobago, Guyana, Barbados, Bahamas, Br. Honduras, Bermuda, Antigua, Dominica, Montserrat, Br. Virgin Islands, St. Christopher /Nevis/ Anguilla, St. Lucia, St. Vincent, Turks and Caicos Islands, and Grenada.

CODE P4 USUAL LANGUAGE

1. ENGLISH.

2. CANTONESE, including the Tan Ka dialect.

3. HAKKA.

4. HOKLO including all the languages of the MIN Group, namely Hoklo proper, Swabue, Swatow, Chiu Chau, Amoy, Kiung Chau and all kindred dialects of Fukien and Taiwan provinces, Hainan and coastal Kwangtung.

5. SZE YAP.

6. ANY OTHER LANGUAGE OF CHINA including WU Group languages, Kuo Yu, Mongol, Manchu, Tibetan and tribal languages.

7. ANY OTHER LANGUAGE, other than English and Chinese.

8. DUMB.

CODE P5 EDUCATIONAL ATTAINMENT

1. No Schooling.
2. Kindergarten.
3. Private Tutor (*a*).
4. Lower Primary (*b*).
5. Upper Primary (*c*).
6. Junior Middle (Chinese) (*d*).
7. Lower Secondary (Anglo-Chinese) (*e*).
8. Senior Middle (Chinese) (*f*).
9. Higher Secondary (Anglo-Chinese) (*g*).
10. Post Secondary, other than university (*h*).
11. University — not graduated (*i*).
12. University graduate with B.A. or higher.

Notes :

(*a*) Including private study.

(*b*) Primary I-IV.

(*c*) Primary V-VI.

(*d*) Junior Middle I-III or Middle I-III in Chinese Schools or pre-vocational or pre-apprenticeship courses.

(*e*) Form I-III in English or Anglo-Chinese Schools or pre-vocational or pre-apprenticeship courses.

(*f*) Senior Middle I-III or Middle IV-VI in Chinese Schools or craft courses or vocational training courses.

(*g*) Form IV-VI in English or Anglo-Chinese Schools.

(*h*) Including Colleges of Education certificate courses, Technical Colleges diploma and certificate courses, and other Post Secondary Colleges diploma courses.

(*i*) Including full-time courses in a University which do not lead to a degree in Hong Kong or elsewhere.

CODE P6 ACTIVITY STATUS

Major Group 0 **Employer or Self-Employed**

0.0	Self-employed (*a*).
0.1	Employer (*b*).

Major Group 1 **Secondary Employment**

1.0	Home-maker (*c*) who also spent 15 hours or more at work during the last 7 days.
1.1	Retired person (*d*) who also spent 15 hours or more at work during the last 7 days.
1.2	Student who also spent 15 - 29 hours at work during the last 7 days.
1.3	Student who also spent 30 hours or more at work during the last 7 days.
1.4	Unpaid member of a religious body who performs religious and non-religious functions (*e*).

Major Group 2 **Main Employment**

2.0	Employed on commission only (*f*).
2.1	Permanent in-worker, monthly rate.
2.2	Permanent in-worker, daily rate.
2.3	Permanent in-worker, piece rate.
2.4	Casual or seasonal in-worker (*g*), daily rate.
2.5	Casual or seasonal in-worker, piece rate.
2.6	Apprentice, trainee or learner (*h*).
2.7	Out-worker (*i*).
2.8	Unpaid family worker (*j*).

Major Group 3 **Unemployed (*k*)**

3.0	With no previous job.
3.1	With previous job.

Major Group 4 **Economically Inactive I**

4.0 Principal tenant (*l*).

4.1 Sufficient capital or income from investments.

4.2 Supported by remittances from overseas.

4.3 Independent, other (*m*).

Major Group 5 **Economically Inactive II**

5.0 Home-maker without other part-time employment.

5.1 Retired person without part-time employment.

Major Group 6 **Economically Inactive III**

6.0 Student without other part-time employment

6.1 Under 10 years of age not at school.

6.2 Of school age (10 - 14) but neither at school nor at work.

6.3 Inmate of penal, mental and charitable institutions.

Notes :

(*a*) A self-employed person is one who works on his own account, neither employed by someone else nor employing others. If he employs even one clerk, then he is an employer; but domestic servants and menial staff do not count in this respect.

(*b*) Employer includes a partner, director or proprietor of a concern employing at least one other person (other than menial staff); but a salaried manager is an employee, **not** an employer.

(*c*) A home-maker is a man or woman who looks after the home while other members of the household are out at work. If female she is also called a housewife.

(*d*) A retired person is one who has previously had paid employment but now by reasons of age or disability no longer does a regular full-time job. It includes a pensioner. Anybody aged 65 and over who is unemployed is also considered a retired person.

(*e*) This group excludes those members of some religious organizations, who work on **salary basis.**

(*f*) "Employed on commission only" means that commission on turnover is the sole or principal means of remuneration. Piecework is not commission and a salaried employee who receives commission or bonus **in addition to** his salary is **not** "employed on commission only". The **free-lance agent** or **broker** is classified as "self-employed" if he works on his own account, neither employed by someone else nor employing others. However, if he is employed, perhaps by more than one employer, he is employed on commission.

(*g*) A seasonal worker is one whose work is dictated by the weather or the time of year. A casual worker is one who offers his services to any employer who wants him for the moment. Both are usually paid by the day, hour or piece.

(*h*) An apprentice, trainee or learner means a person under 25 who is learning a skilled trade. Generally he receives only token remuneration or pocket money. Nobody of 25 years or over should be classified under this heading.

(*i*) An outworker does not mean a person who works out of doors, but an employee who is free to take his work home or anywhere he pleases. A police constable on his beat, a postman on his round, a detective or journalist out on a case, or a commercial artist painting a landscape, are **not** outworkers, because their place of work, though it changes, is designated by the nature of their employment and not left to their free choice.

(*j*) An unpaid family worker includes anyone (related or not) who lives with the family and does work, as part of the family enterprise, (not domestic help) in return for food and lodging. They are still described as unpaid if they receive irregular or occasional payments of pocket money, not being any agreed form of regular salary, wages, commission, bonus or share of profits. But a housewife, or a child who helps its mother with the housework, is **not** an "unpaid family worker" unless the household is running a lodging house etc. when housework is part of the family enterprise.

(*k*) To be "unemployed" a person must be at least 15 years old and not yet 65, have no work and not be of independent means. A person who is 10 - 14 is still of school age and if neither at work nor at school is classified separately (i.e. 6.2). A person who is 65 or over and is no longer working is "retired" (i.e. 5.1). A person who has work, but during the reference period of seven days spent less than 15 hours at his work should be classified as "currently unemployed" – but for this purpose paid sick leave or paid holiday counts as "work". This rule, however, does not apply to farmers or fishermen. A farmer is classified as "unemployed"only if he has no land to farm and is not employed by someone to take part in farming operations during the reference period. And a fisherman is classified as "unemployed" if he has no fishing tackle to fish with and is not employed by someone to engage in fishing operations during the reference period.

(*l*) By "principal tenant" is meant a person whose sole or chief means of livelihood is owning or renting a house or flat (or part of a house) and sub-letting it to others.

(*m*) This code should be used sparingly and only in the last resort, e.g. where the person is clearly of independent means but is of unsound mind or too infirm to answer questions, and the information required cannot be elicited from another member of the household. It also includes beggars and people who stay in Hong Kong for a period less than 6 months, and do not work.

Code P7 INDUSTRY

Major Group 0 **Not Applicable, and Industrial Activity not Classified and Mining and Quarrying**

0.0 N.A.: all those who are economically inactive.

0.1 Persons seeking work who have not previously been employed–jobseekers.

0.2 Persons whose industrial activity cannot be classified elsewhere.

0.3 Metal mining, e.g. lead, iron, wolfram.

0.4 Stone quarrying.

0.5 Non-metal mining, e.g. felspar, graphite, kaolin, and quartz.

0.6 Mining, quarrying and related work not elsewhere classified, e.g. winning of sand and clay, ore processing.

Major Group 1 **Manufacturing (Textiles)**

1.0 Manufacture of textiles (spinning of yarn)–cotton.

1.1 Manufacture of textiles (spinning of yarn)–others.

1.2 Manufacture of textiles (weaving of fabrics)–cotton.

1.3 Manufacture of textiles (weaving of fabrics)–others.

1.4 Manufacture of textiles (knitting of fabrics)–cotton.

1.5 Manufacture of textiles (knitting of fabrics)–wool.

1.6 Manufacture of textiles (knitting of fabrics)–others.

1.7 Manufacture of textiles (bleaching, dyeing and finishing).

1.8 Manufacture of garments and wearing apparel other than knitwear, e.g. garments and shirts, leather clothing, raincoats, fur apparel, neck-wear, gloves, hats, umbrellas, wrist watch bands (leather and nylon), apparel belts (leather and plastic).

1.9 Manufacture of knitwear from yarn (but not from knitted fabrics).

1.X Manufacture of made-up textile goods except garments and wearing apparel, e.g. curtains, draperies, sheets, pillow cases, napkins, table-cloths, blankets, bedspreads, pillows, laundry bags, slip covers, textile bags, canvas products, trimmings of fabric,

embroideries, banners, flags and pennants. Stitching, pleating and tucking for the trade is included.

1.Y Manufacture of rope, twine, cordage, string, nets, matting, carpets, artificial leather, laminated cloth, cotton waste, and textiles not elsewhere classified.

Major Group 2 Manufacturing (Chemicals, Metal or Plastic Products)

2.0 Manufacture of chemicals and chemical products, e.g. acids, alkalis, salts, dyes, explosives and fireworks, fertilizers, wood oil (but not edible oils), pharmaceutics (but not herbal medicines), soaps, tooth-paste, camphor, perfumes and cosmetics, industrial alcohol, paints, inks, matches, candles, joss sticks, petroleum refining, asphalt, fuel briquettes.

2.1 Manufacture of non-metallic mineral products, e.g. glass, pottery, bricks, tiles, cement, gypsum, plaster, asbestos, pipes, and other non-metallic mineral products.

2.2 Non-ferrous metal basic industries, e.g. brass foundries, brass sheets, brass products.

2.3 Manufacture of enamelware.

2.4 Manufacture of photographic and optical goods including optical instruments for scientific and medical use.

2.5 Iron and steel basic industries, e.g. iron foundries, lead smelting, rolling mills and steel ropes.

2.6 Manufacture of metal products (except machinery), e.g. hardware, aluminium ware, torches, locks, safes, bolts and nuts, nails, wire, hair pins, needles, badges, metal toys, type founding, cutlery, vacuum flasks, tin cans, kerosene stoves, pressure stoves and lanterns, lamps, blacksmithing, electro-plating and welding.

2.7 Manufacture of watches and clocks including cases and parts.

2.8 Manufacture of plastic articles: Toys.

2.9 Manufacture of plastic articles: Flowers and foliage.

2.X Manufacture of other plastic articles, e.g. plastic furniture, plastic footwear, plastic kitchenware and tableware, plastic containers.

Major Group 3 Manufacturing (Others)

3.0 Food manufacture, e.g. abattoirs, animal by-products, pasteurizing and homogenizing, canned food, preserved meats and fruits, edible oils and oil-cake, fish salting, rice milling, starch and flour, noodles, soy and sauce, bakery products and sugar confectionery, honey, sugar refining, flavourings, herbal medicines.

3.1 Manufacture of beverages, including beer, wines, spirits and soft drinks.

3.2 Tobacco industries.

3.3 Manufacture of wood and cork products, wooden and cane containers and small cane ware, except the manufacture of furniture but including sawmills, planing and other wood mills.

3.4 Manufacture of furniture and fixtures (either of wood or metal) including mattresses and bedsprings, and window and door screens and shades.

3.5 Manufacture of paper and paper products, e.g. paper and paper board, paper lanterns, fibre board, cases and containers, cardboard boxes.

3.6 Printing, publishing and allied industries, e.g. printing, lithographing and publishing newspapers, periodicals, books and maps; the manufacture of envelopes and stationery; bookbinding and related services for the printing trades such as typesetting, engraving and etching steel and copper plates, making woodcuts, photo-engraving, electro-typing and stereotyping.

3.7 Manufacture of leather (including tanning and hide processing) and leather products except footwear.

3.8 Manufacture of rubber products (including rubber footwear), the reclaiming of rubber from used-tyres and miscellaneous waste rubber scrap; and rebuilding and retreading tyres.

3.9 Manufacture of footwear, leggings and gaiters except rubber and plastic footwear.

3.X Manufacture of hair products and wigs.

3.Y Manufacturing industries unspecified or not elsewhere classified, e.g. the manufacture of jewellery and related articles, musical instruments, sporting and athletic goods.

Major Group 4 Construction and Engineering

4.0 Building construction and civil engineering, e.g. construction, alteration or repair of all buildings, bridges, roads, piers and reservoirs; land reclamation; the driving of tunnels and digging of wells.

4.1 Plumbing, electrical wiring, and air-conditioning installation and repair.

4.2 Manufacture of machinery and parts (including machinery repair), except machinery specified below.

4.3 Manufacture of electrical machinery, apparatus, appliances and supplies other than electronics.

4.4 Manufacture of electronics and parts, e.g. transistors; radios, television and communication equipments.

4.5 Motor vehicle repairing.

4.6 Aircraft engineering.

4.7 Ship-building and repairing including ship-breaking.

4.8 Manufacturing and repair of bicycles, tricycles, rickshaws and non-powered transport and agricultural machinery.

4.9 Manufacture of equipment for power-driven transport, including bodies for buses and trams.

Major Group 5 Public Utilities

5.0 Electric light and power.

5.1 Gas manufacture and distribution.

5.2 Water supply.

Major Group 6 Commerce

6.0 Retail trade only.

6.1 Retail & wholesale trade, except import and export.

6.2 Wholesale trade only.

6.3 Import and export trade.

6.4 Bank and other financial institutions such as trust companies, investment companies, and money changers.

6.5 Insurance.

6.6 Real estate.

6.7 Chinese general brokers and other commercial agents, except import and export.

Major Group 7 Transport, Storage and Communication

7.0 Railway.

7.1 Tramway and buses (except manufacture and repair of equipment).

7.2 Air transport.

7.3 Taxis and public hired cars.

7.4 Non-power driven transport, e.g. rickshaws bicycles and tricycles.

7.5 Ocean and water transport, including ferries, motor boats, passenger sampans and cargo junks, but not fishing craft.

7.6 Lorries and freight land transport, and land transport not elsewhere classified, e.g. chauffeurs.

7.7 Services incidental to transport, e.g. car parks, piers, docks, pilotage, light-houses, stevedoring, salvage, forwarding, packing and crating, travel agencies, ship-brokers, weighers and measurers.

7.8 Storage and warehouses.

7.9 Communications, e.g. posts, telegraphs, telephones, radio communication (but not broadcasting, television or rediffusion).

Major Group 8 Services

8.0 Government services and armed forces (regulatory and administrative).

8.1 Education services (governmental and private).

8.2 Medical, dental and other health services (governmental and private).

8.3 Religious organizations, welfare institutions (governmental and private), and civic, social and fraternal associations.

8.4 Firms of lawyers, accountants, auditors, architects, surveyors, advertising agents, and other organizations providing professional advice and business.

8.5 Trade and industrial organizations, chambers of commerce, trade unions, and other business and trade service.

8.6 Personal services, e.g. domestic service, hairdressing, laundry, shoe shining, sing-song girls.

8.7 Sanitary services, such as garbage and sewage disposal; the operation of drainage system; window and office cleaning, exterminating, fumigating and disinfecting, and white ant eradication.

8.8 Cinemas (including production and distribution of motion pictures), theatres, radio and television, and other recreation including all kinds of sports and exercises.

8.9 Hotels, restaurants and clubs.

8.X Photographic studio and photographers.

8.Y Services not elsewhere classified, e.g. repair of footwear, watch and clock repair, electrical repair shops.

Major Group 9 Agriculture, Forestry and Hunting

9.0 Farming, principal crop unspecified, or not mentioned below.

9.1 Farming, principal crop rice.

9.2 Farming, principal crop vegetables.

9.3 Farming, principal crop flowers.

9.4 Farming, principally orchardmen and fruit growers.

9.5 Farming, principally cattle keepers.

9.6 Farming, principally pig keepers.

9.7 Farming, principally poultry keepers.

9.8 Forestry, including growing of tea, bamboo and fodder grasses.

9.9 Hunting and trapping.

Major Group X Fishing

X.0 Beam trawling (*a*).

X.1 Single-boat stern trawling (*b*).

X.2 Pair trawling, deep sea (*c*).

X.3 Pair trawling, inshore (*d*).

X.4 Long lining, golden thread, large (*e*).

X.5 Long lining, golden thread, small (*f*).

X.6 Long lining, other than golden thread (*g*).

X.7 Hand lining (*h*).

X.8 Purse seining (*i*).

X.9 Gill netting (*j*).

X.X Pond fish culture and oyster culture.

X.Y Stake-netting and other fishing not elsewhere specified.

Notes:

(*a*) Fishing with trawl nets kept open by beams, mainly for shrimps and prawns; the vessel so used is called a "Ha Tor" (蝦拖), or "Ha Teng" (蝦艇); a characteristic of the vessels is the two outriggers on the sides.

(*b*) One vessel fishing with a trawl net kept open by a pair of divertors; the vessel is called a "Dan Tor" (單拖); a characteristic is the two gallows on the sides at the stern of the vessel.

(*c*) Two vessels fishing as a pair with a trawl net normally in waters deeper than 40 fathoms and for more than four days a trip; each vessel is called a "Tor Shuen" (拖船).

(*d*) Two vessels fishing as a pair with a trawl net normally in waters less than 40 fathoms deep, or for less than four days a trip.

(*e*) Fishing with long lines and baited hooks (釣網) mainly for golden thread (紅衫) from a vessel called "Hung Sam Diu Teng" (紅衫釣艇) which carries one or more sampans (舢舨).

(*f*) Fishing with long lines and baited hooks mainly for golden thread from a vessel which does not carry any sampan.

(*g*) Fishing with long lines and baited hooks mainly for fishes other than golden thread, such as conger pike (門鱔), garoupa (石班) and shark (鯊魚); the vessel may, or may not, carry any sampan.

(*h*) Fishing with lines and baited hooks constantly attended by the fishermen (手釣); the vessel is called a "Ta Yu Teng (他魚艇).

(*i*) Fishing with a seine net (罟仔網).

(*j*) Fishing with gill nets (刺網).

Code P8 OCCUPATION

Major Group 0 **Armed Forces and Occupations Unclassifiable or Not Applicable,**

0.0	Officers of the Royal Navy, Army (including Gurkha Brigade) and R.A.F.
0.1	Warrant Officers of the Royal Navy, Army (including Gurkha Brigade) and R.A.F.
0.2	Petty Officers and N.C.Os. of the Royal Navy, Army (including Gurkha Brigade) and R.A.F.
0.3	Other ranks of the Royal Navy, Army (including Gurkha Brigade) and R.A.F.
0.4	Members of the armed forces of any other country regardless of rank.
0.5	Economically inactive.
0.6	Job-seekers.
0.7	Occupation unidentifiable or inadequately described.

Major Group 1 **Farmers, Trappers, Fisherfolk and Related Workers**

1.0	Farm hands, poultry hatchery workers, farm equipment operators and nursery workers (farm), gardeners (public parks).
1.1	Fishermen, divers, fish hatchers, oyster culturists.
1.2	Trappers.
1.3	Unskilled labourers and manual workers in agriculture, forestry and fisheries.

Major Group 2 **Miners, Quarrymen and Related Workers**

2.0	Miners and quarrymen, including machine operators and related workers.
2.1	Mineral treaters.
2.2	Well drillers and related workers.
2.3	Workers in salt pans.
2.4	Mining and quarrying foremen.
2.5	Miners, quarrymen and related workers not elsewhere classified.

Major Group 3 **Workers in Service, Sport and Recreation Occupations**

3.0 Police, Fire Brigade and other disciplined protective services: inspectorate.

3.1 Police, Fire Brigade and other disciplined protective services: lower ranks.

3.2 Minor supervisory staff in Government Services, e.g. field assistant, fisheries supervisors class III, foremen (mechanical), tree inspectors, handicraft instructors, meter readers, head attendants, master ship-wrights, overseers.

3.3 Amahs, maids, nursemaids, cooks, cook boys, gardeners (private), chauffeurs, house-keepers (private), waiters, attendants, bartenders, caretakers, janitors, window cleaners, charwomen, house coolies, hall porters, lift operators, telephone operators, and other domestic and office servants.

3.4 Hotel-keepers and staff (other than those included in 3.3) of clubs, guest-houses, hostels and similar institutions, e.g. wardens, house-keepers and stewards, concierges.

3.5 Barbers, hairdressers, make-up men (stage and studio), bath attendants, manicurists, beauticians and related workers.

3.6 Launderers, washing-machine operators, dry-cleaning-machine operators and pressers.

3.7 Photographers and related camera operators (but not news and T.V. photographers or cinematographers).

3.8 Embalmers and undertakers.

3.9 Service, sport and recreation workers not elsewhere classified, e.g. air-hostesses, mannequins, tourist guides, wardrobe mistresses (stage and studio), croupiers, referees, umpires.

Major Group 4 **Workers in Transport and Communication Occupations**

4.0 Seamen (foreign-going ships)–deck, engine room and catering department officers and ratings, e.g. boatswains, quartermasters, able seamen, engine fitters, firemen, oilers, greasers, writers, pursers, stewards, cooks, laundrymen (*a*).

4.1 Seamen (local craft, i.e. ferries, tugs, launches, mechanical junks)– coxswains, engineers, deck and engine room ratings (*b*).

4.2 Lighter crews.

4.3 Drivers and conductors (road transport).

4.4 Drivers, firemen, conductors and brakemen (railway).

4.5 Inspectors, supervisors, traffic controllers and despatchers, e.g. station masters (railway), regulators (road transport), aircraft traffic controllers, transport service inspectors, aircraft despatchers, railway despatchers and signalmen.

4.6 Telephone, telegraph and related telecommunication operators, e.g. telephone switch-board operators, telegraphers, teleprinter operators, radio and T.V. broadcasting station operators.

4.7 Postmasters.

4.8 Postmen and messengers.

4.9 Stevedores and wharf labourers.

4.X Workers in transport and communication occupations not elsewhere classified, e.g. lighthouse operators.

Major Group 5 Clerical and Sales Workers

5.0 Book-keepers, cashiers, tellers and shroffs.

5.1 Stenographers, typists, and office machine operators such as verbatim reporters, bookkeeping machine operators, calculating-machine operators, card-punching machine operators, punch-card sorting machine operators, punch-card tabulating machine operators.

5.2 Clerks, clerical assistants, proof-readers, and workers in other clerical and related occupations.

5.3 Insurance and real-estate salesmen, salesmen of mutual funds and securities, auctioneers and advertising agents.

5.4 Canvassers, demonstrators, commercial travellers and manufacturers' agents.

5.5 Newsboys, street hawkers, petrol-service-station attendants, salesmen (wholesale and retail), shop assistants and related workers not elsewhere classified.

Major Group 6/7 Craftsmen, Production-Process Workers and Labourers Not Elsewhere Classified

6.0 Foremen and inspectors (including maintenance overlookers, testing and training overlookers, shift-in-charge and section leaders) in any industrial process.

6.1 Fibre preparers; spinners and winders; weavers, loom fixers and preparers; knitters and knitting-machine setters; bleachers, dyers and finishers; and other textile fabric and related product workers.

6.2 Tailors, cutters, furriers, sewers and embroiderers, and other apparel and related product workers.

6.3 Leather cutters, lasters and sewers (except gloves and garments), shoe-makers and shoe repairers, and other leather product workers.

6.4 Furnacemen (except glass making) annealers and temperers, rolling-mill operators, blacksmiths, moulders, drawers and extruders, and other metal making and treating workers.

6.5 Precision-instrument makers, watch and clock makers and repairmen, jewellers, gold-smiths and silversmiths and related workers.

6.6 Toolmakers, fitter-machinists, machine-tool setters and operators, plumbers (*c*), welders, platers and other metal workers.

6.7 Electricians, radio and T.V. mechanics, telephone installers and repairmen, linemen and other electric, radio, T.V. or electronic workers.

6.8 Carpenters, joiners, cabinetmakers, coopers, sawers and related wood-workers.

6.9 Painters and paperhangers.

6.X Bricklayers, stonemasons, tilers, cement finishers, plasterers, glaziers, plumbers (*d*), roofers, scaffolders, and other construction workers.

7.0 **Compositors and typesetters, pressmen, stereotypers and electrotypers, engravers, photo-engravers, bookbinders, and other printing workers.**

7.1 Potters, furnacemen and kilnmen, glass and clay formers, grinders and finishers, and other glass and ceramics workers.

7.2 Millers, bakers, confectionery makers, brewmaster, dairy workers, butchers, fish salters and curers, and other food and beverage workers.

7.3 Chemical and related process workers.

7.4 Tobacco preparers and tobacco-products makers.

7.5 Craftsmen and production-process workers not elsewhere classified, e.g. basketry weavers, tyre retreaders, plastic-product workers, tanners and leather curriers, paper-product workers, photograph dark-room workers, hatmakers and milliners.

7.6 Packers, labellers and related workers.

7.7 Stationary-engine and excavating and lifting equipment operators and related workers.

7.8 Longshoremen and related freight handlers.

7.9 Unskilled labourers and manual workers not elsewhere classified.

Major Group 8 Administrative, Executive and Managerial Workers

8.0 Directors, managers and working proprietors in wholesale or retail trade.

8.1 Directors, managers and working proprietors in banking, finance, insurance and real estate.

8.2 Directors, managers and working proprietors in import and export.

8.3 Directors, managers and working proprietors in transport, storage and communication.

8.4 Directors, managers and working proprietors in service industries.

8.5 Directors, managers and working proprietors in industries not elsewhere classified (*e*).

8.6 Master farmers (*f*).

8.7 Master fishermen (*g*).

Major Group 9 Senior Officials in Government Service

9.0 Senior members of Hong Kong Civil Service unless classified professionally elsewhere (*h*).

9.1 Foreign and Commonwealth diplomats, consuls, commissioners, trade commissioners and their non-local staff.

Major Group X Artists, Draughtsmen and Technicians

X.0 Draughtsmen, cartographers or technical assistants to architects, engineers or surveyors; clerks of works and inspectors of works.

X.1 Nurses and midwives, sub-professional medical workers including Chinese doctors,

herbalists, physiotherapists, masseurs, optometrists, pharmacists, X-ray operators, and other technical assistants to physicians, surgeons or dentists.

X.2 Technicians not elsewhere classified, e.g. computer programmers and operators.

X.3 Junior technicians in Government service, e.g. installation mechanics, instrument mechanics, layout and planning officers, linotype operators, lithographers, monotype operators, photographers, printing designers, radio mechanics.

X.4 Artists (including teachers of art, music, dancing and physical training), designers, writers (including editors and reporters), composers, actors, musicians and dancers, radio and T.V. announcers and related workers (including cinematographers and news and T.V. photographers).

X.5 Athletic coaches, professional jockeys or trainers.

X.6 If not professionally qualified:—Librarians, school teachers and social welfare workers.

Major Group Y **Professional Staff and Qualified Technologists**

Y.0 Architects, engineers (except marine and flight) and surveyors.

Y.1 Agronomists, biologists, chemists, geologists, physicists, veterinarians, and other physical and related scientists.

Y.2 Dentists, physicians and surgeons.

Y.3 Marine superintendents, marine engineer superintendents, chief engineers (ship), engineer officers (ship), deck officers (ship), flight engineers (aircraft), pilots and navigation officers (aircraft), captains and chief officers (ship and aircraft), radio and radar operators (ship and aircraft).

Y.4 QUALIFIED teachers in primary schools and kindergartens.

Y.5 QUALIFIED teachers in secondary schools.

Y.6 Lecturers, readers, professors, other teaching and research workers in universities and post-secondary colleges.

Y.7 Clergy and members of religious orders (excluding those performing non-religious functions such as nursing, teaching, social work and other lay-workers).

Y.8 Judges, jurists, barristers, lawyers, solicitors, notaries.

Y.9 QUALIFIED accountants and auditors.

Y.X Other professional staff and qualified technologists, e.g. actuaries, statisticians, economists, system analysts (computer), QUALIFIED librarians and social welfare workers.

Notes:

(*a*) All these officers on board foreign-going ships should be classified as seamen even if their occupation are writers, pursers, stewards, cooks and laundrymen.

(*b*) Excluding fishermen on board the mechanical fishing junks.

(*c*) These are makers of plumbs or sounding leads.

(*d*) These are fitters and repairers of pipes.

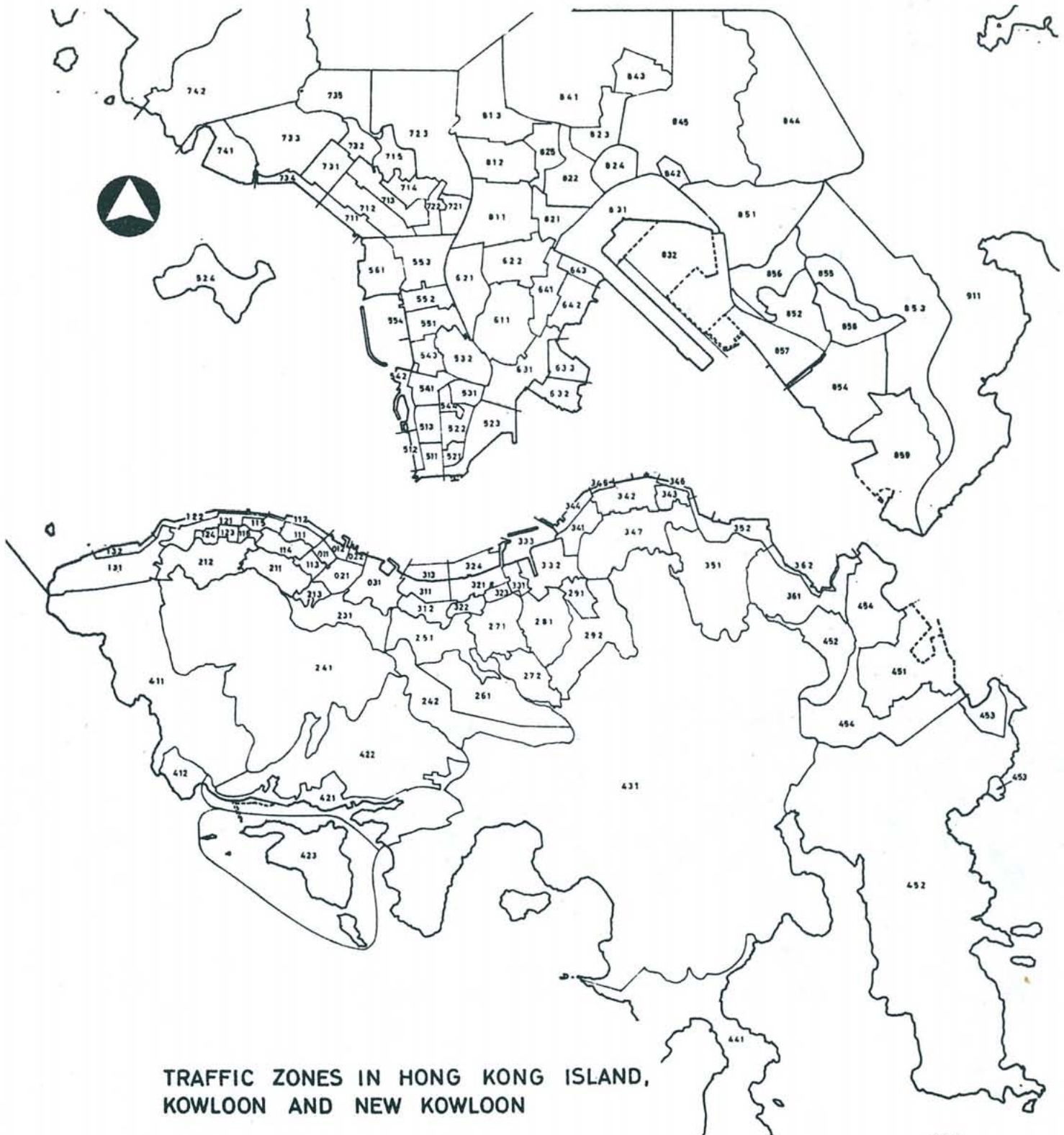
(*e*) Including mining and quarrying; manufacturing; construction and engineering; electricity, gas, water and sanitary services.

(*f*) Including heads of farming enterprises, i.e. owners and tenants of farms or managers, and not hired hands.

(*g*) Including masters or skippers of fishing craft.

(*h*) Including heads, deputy and assistant heads of Hong Kong Government departments; members of the administrative and executive grades of the Hong Kong Government; and senior supervisory staff not elsewhere specified; gazetted officers in police and other disciplined services.

Map showing geographical codes for traffic zones.



TRAFFIC ZONES IN HONG KONG ISLAND, KOWLOON AND NEW KOWLOON

CODE C1 **TYPE OF CRAFT**

1. Stationary boat or house boat (licence number prefix 3)
2. Passenger sampan (licence number prefix 1)
3. Cargo boat, lighter or trading boat (licence number prefix 2 or 5)
4. Ferry, launch, tug or pleasure craft (name of vessel only)
5. Ocean-going or coastal vessel or warship (*a*)
6. Miscellaneous non-fishing boats (licence number prefix 4)
7. Fishing vessel (licence number prefix 6 or 7. Prefix M6 or M7 for mechanized (*b*)

Notes:

(*a*) Excluded from the Marine Census but will be enumerated at another operation during the period of the Land Census.

(*b*) A fishing vessel is a water-borne construction primarily built for fishing, which is at present used as such. It may, however, be temporarily under repair or modification, etc.

CODE C2 ENGINE HORSEPOWER

1. Under 11 h.p.
2. 11 - 48 h.p.
3. 49 - 114 h.p.
4. 115 - 152 h.p.
5. 153 - 200 h.p.
6. over 200 h.p.
7. non-mechanized
8. not applicable (*note*)

Note: The question on engine horsepower is to be asked of fishing vessels only. For other craft, the answer to this question is "not applicable".

CODE H3 ALTERNATIVE ACCOMMODATION

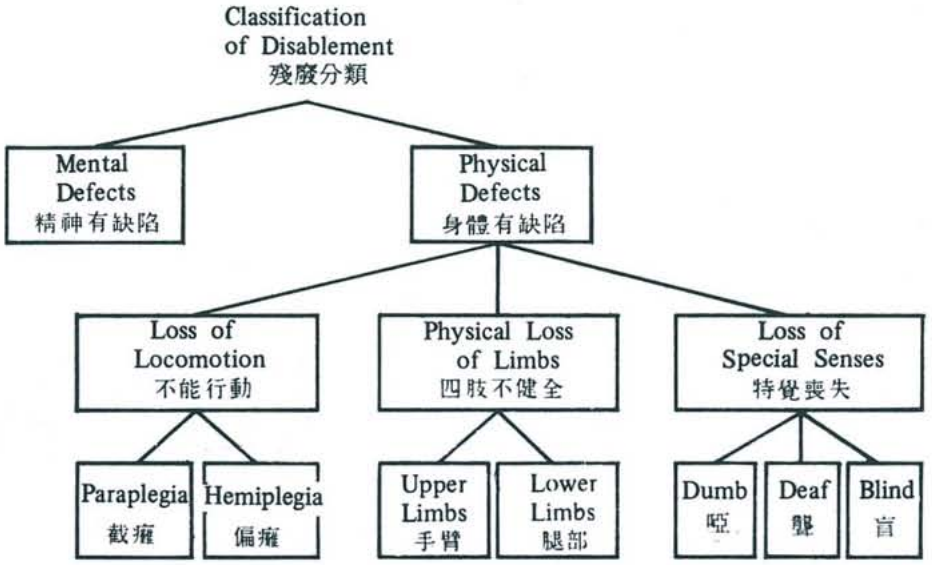
1. Flats in apartment/tenement blocks (*a*)
2. Village type houses
3. Shacks
4. House boats
5. Others
6. No alternative accommodation
7. Not applicable (*b*)

Notes:

(*a*) These include sub-units of accommodation, such as rooms/cubicles or bed spaces within the flat itself.

(*b*) This question on alternative accommodation is to be asked of heads of domestic households who are fishermen. For others, the answer to this question is a tick in the "not applicable" box.

CHART FOR CLASSIFYING TYPES OF DISABLEMENT



Explanatory notes :

Loss of Locomotion

Paraplegia – Paralysis of half of the body, usually referring to paralysis of the lower half, including the legs.

Hemiplegia – Paralysis of one side of the body, characteristic sign is that patient is unable to move the arm and the leg, usually on the same side of the body.

Under the above two conditions, patient himself will not be able to walk or stand up without the help of personal assistance or equipment.

Physical Loss

Upper Limb – amputation of the upper limb at the level above the wrist joint or below the wrist joint.

Lower Limb – amputation of the lower limb at the level above or below the knee joint.

Loss of Special Senses

1. Dumb
2. Deaf
3. Blind

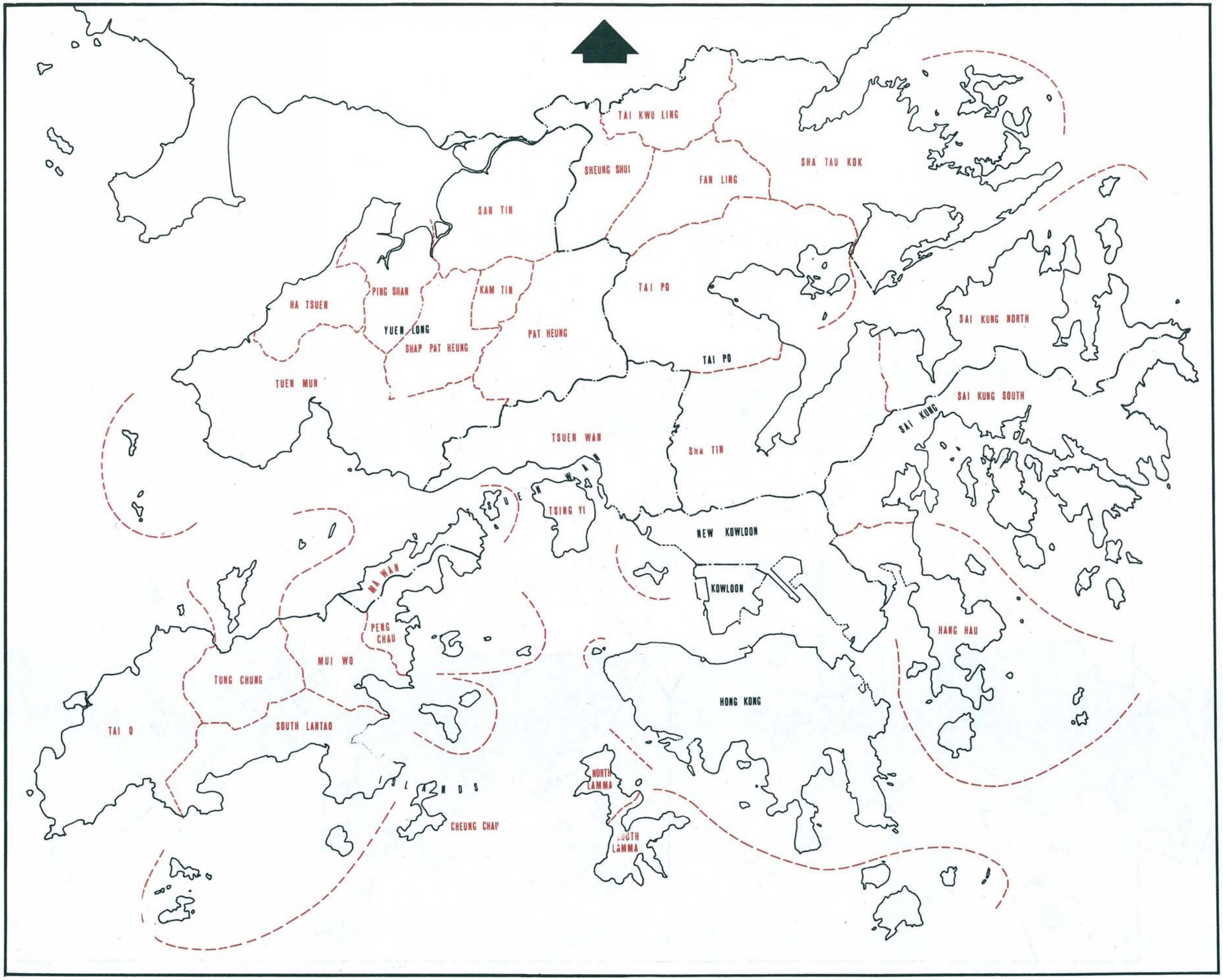
Only complete loss of hearing, sight or total inability to speak will be included in the enumeration. Partial loss of sight, hearing or ability to speak legibly will not be counted.

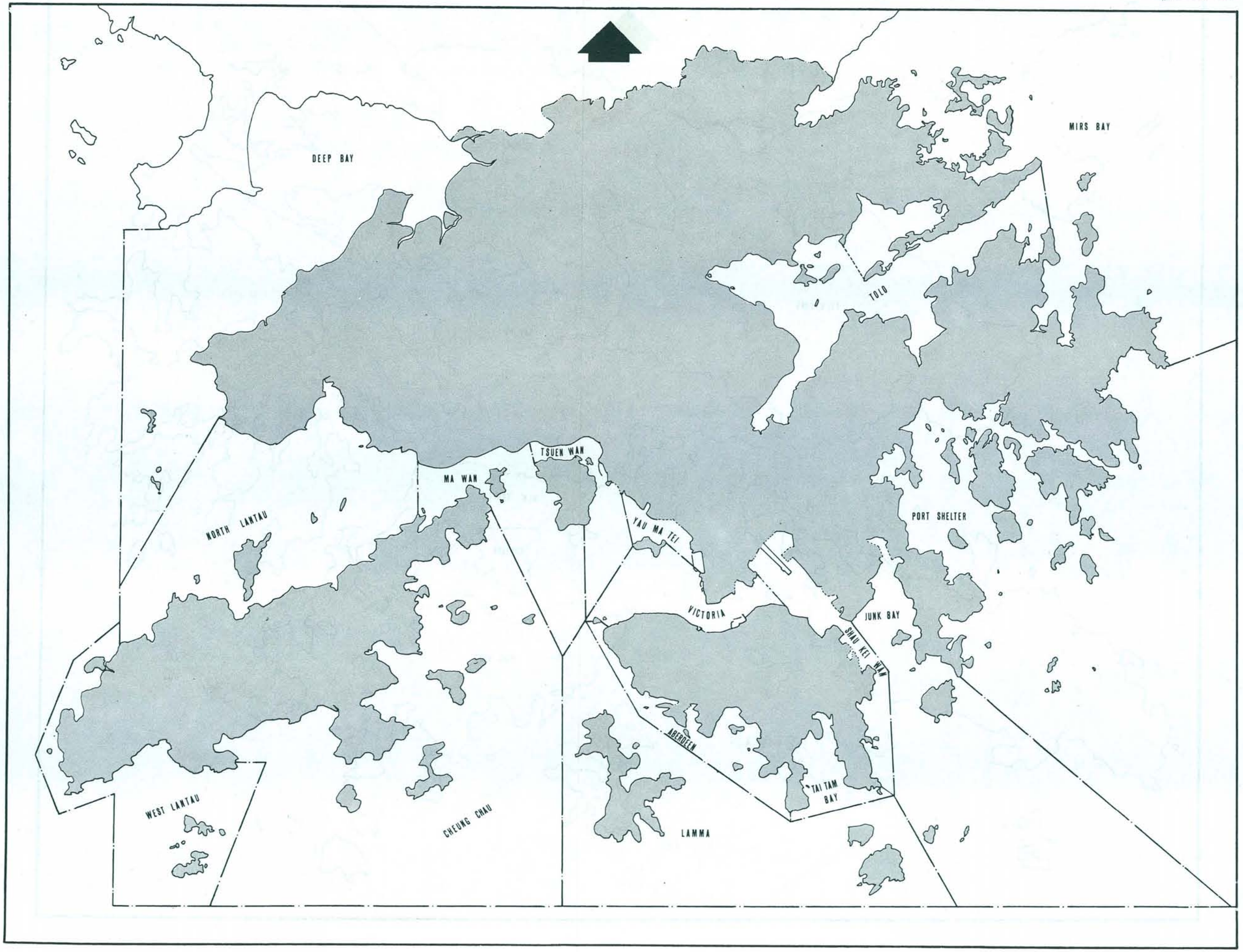
Mental Defects

The aim is to count those persons who are obviously mentally defective either acquired as a result of mental illness or congenital such as mongoloids.

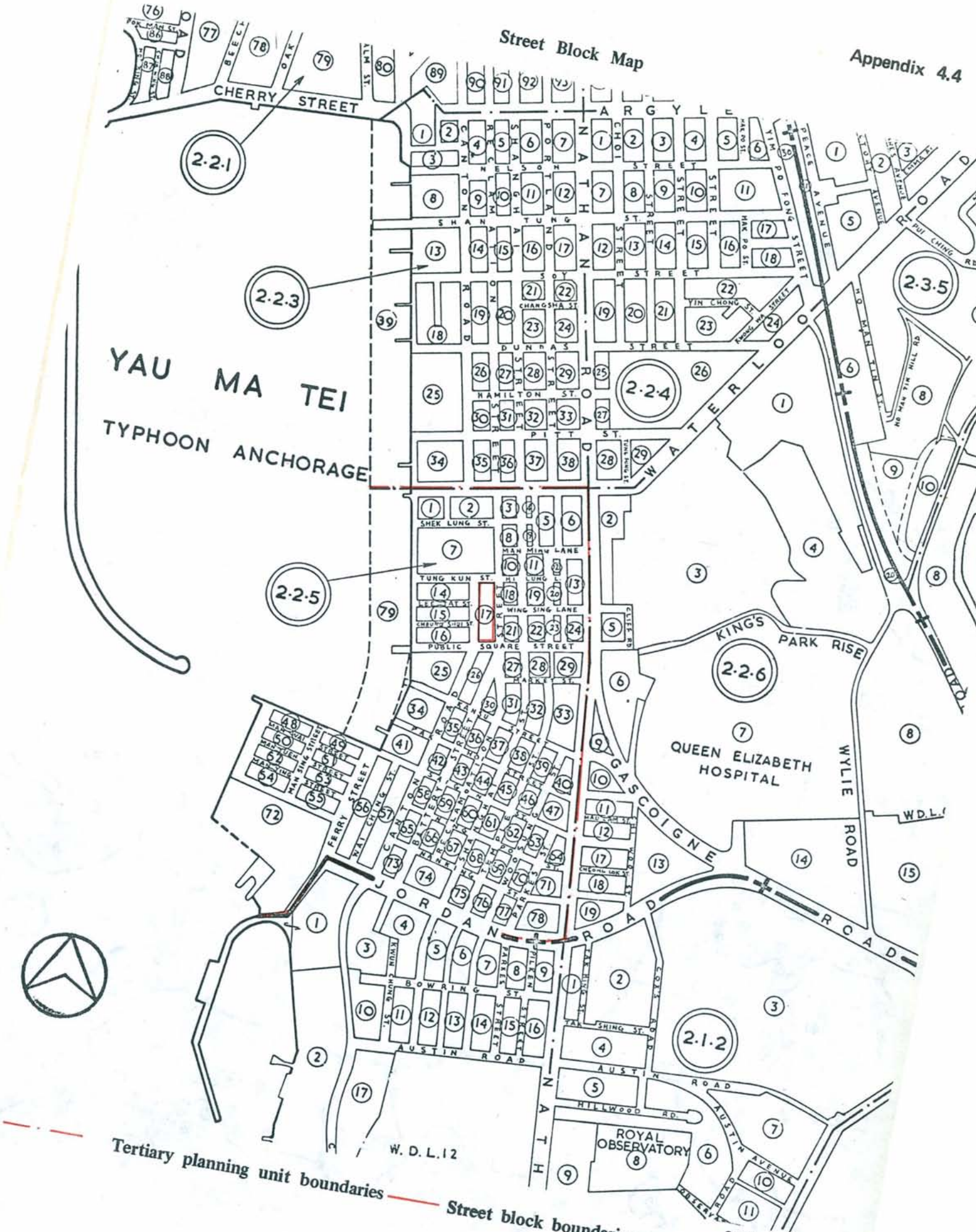
Land Census district map
(Hong Kong Island, Kowloon & New Kowloon)




TAI KWU LING
SHEUNG SHUI
FAN LING
SHA TAU KOK
SAN TIN
PING SHAN
KAM TIN
TAI PO
HA TSUEN
YUEN LONG
SHAP PAT HEUNG
PAT HEUNG
SAI KUNG NORTH
TUEN MUN
TAI PO
SAI KUNG SOUTH
SAI KUNG
TSUEN WAN
SHA TIN
TSING YI
NEW KOWLOON
KOWLOON
MA WAN
PENG CHAU
MUI WO
HANG HAU
TUNG CHUNG
SOUTH LANTAO
TAI O
HONG KONG
NORTH LAMMA
CHEUNG CHAU

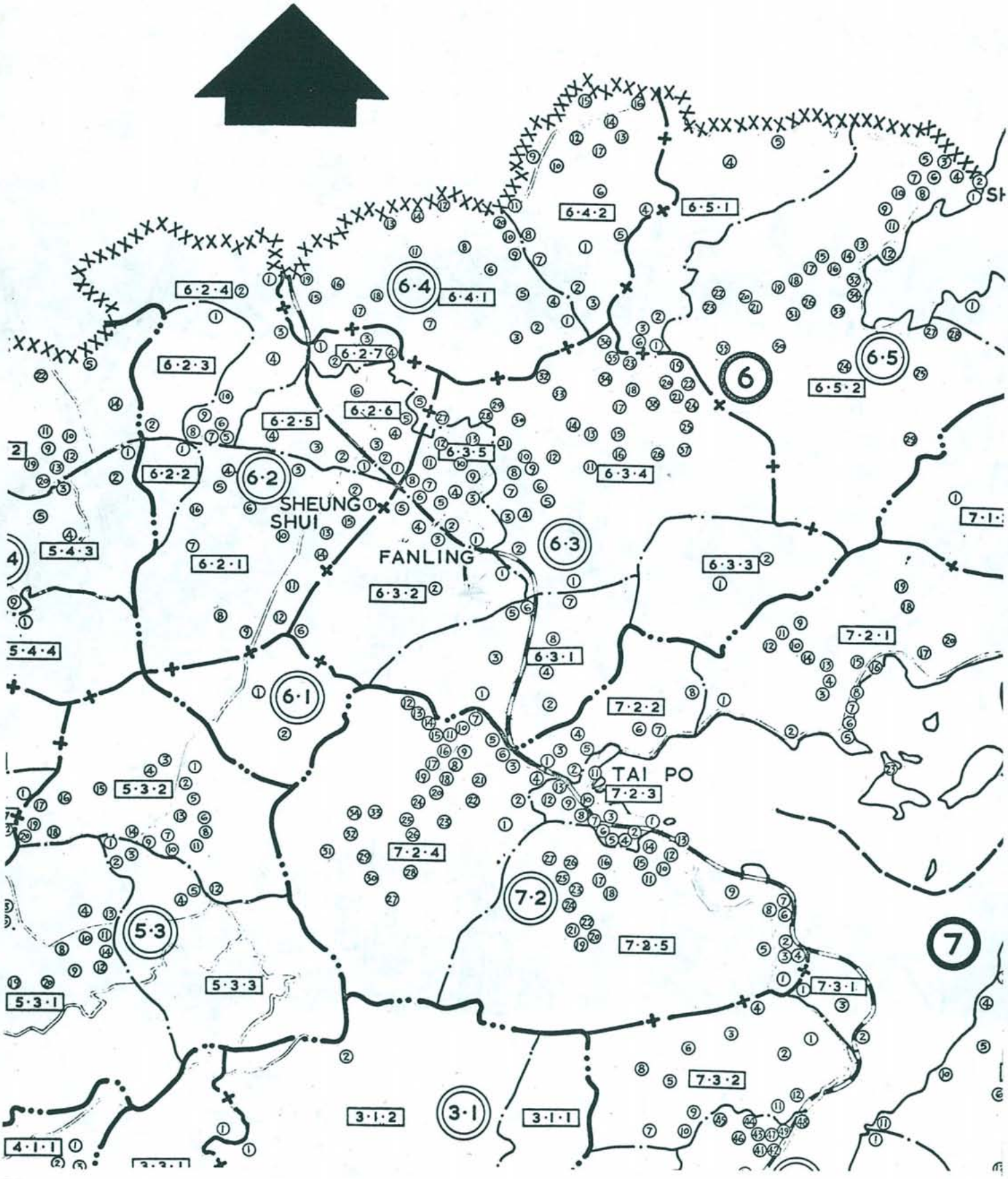

DEEP BAY
MIRS BAY
TOLO
TSUEN WAN
MA WAN
NORTH LANTAU
YAU MA TEI
PORT SHELTER
VICTORIA
JUNK BAY
SHAU KEI WAN
ABERDEEN
TAI TAM BAY
WEST LANTAU
CHEUNG CHAU
LAMMA

Street Block Map



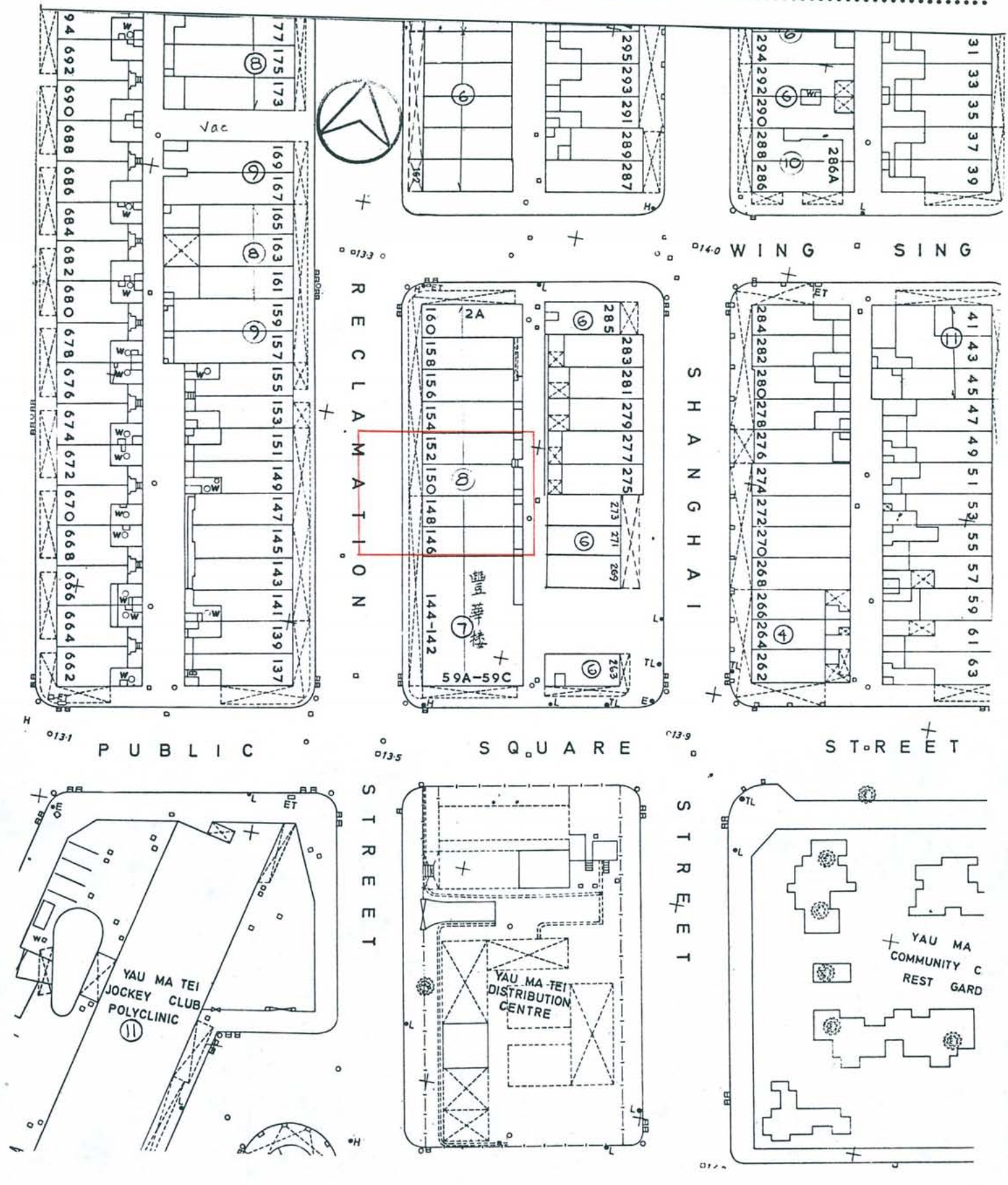
Tertiary planning unit boundaries —— Street block boundaries

VILLAGE CLUSTER MAP



ENUMERATOR URBAN BLOCK MAP

Area: KOWLOON ..... District: Q YAU MA TEI ..... Block No.: 225/21/02 (Q-27-14)



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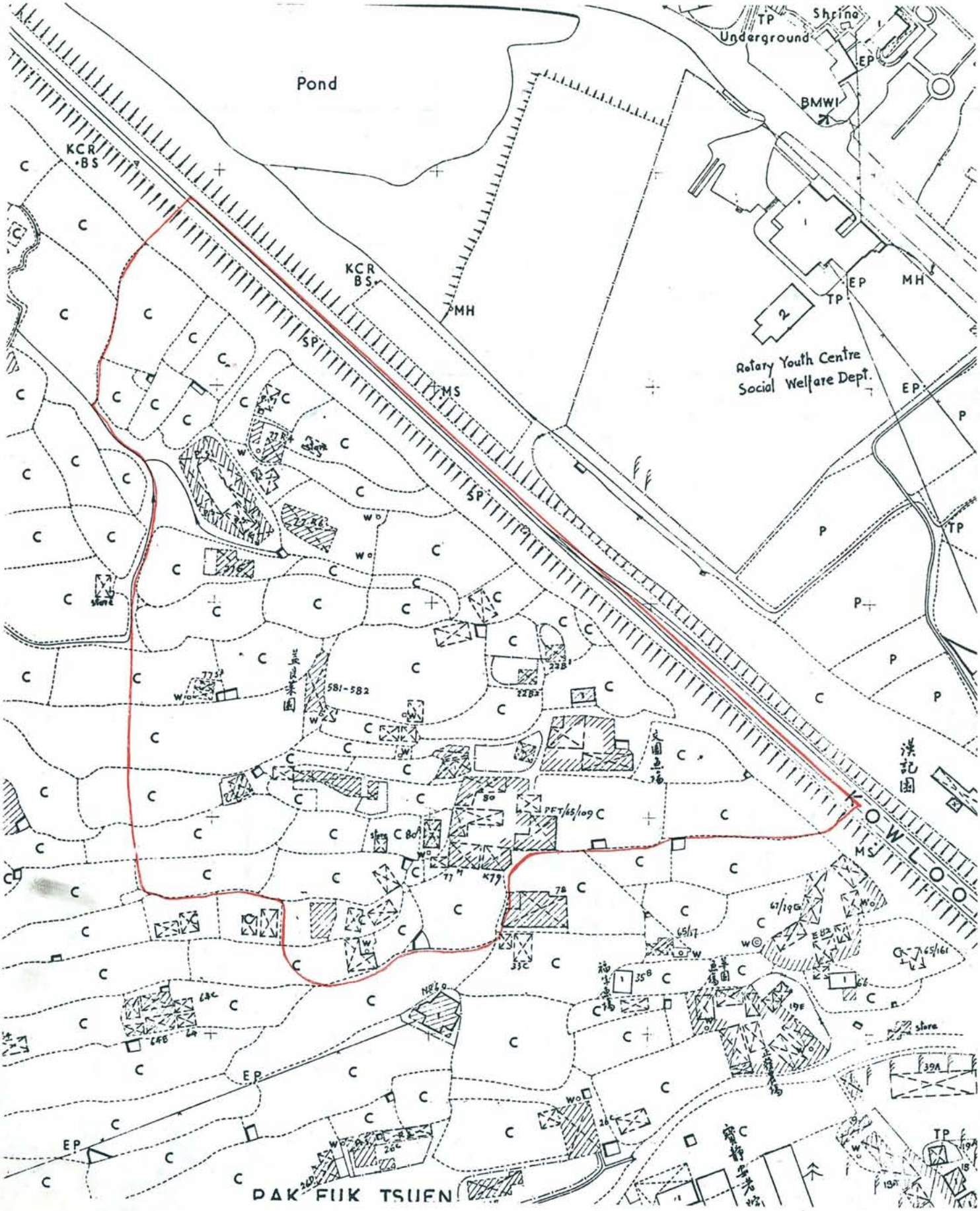
URBAN BLOCK DETAIL

1. Area	2. District	3. Enumerator's Block No.	4. Survey Sheet No. 179-SE-9
KOWLOON	Q YAU MA TEI	225/21/02 (Q-27-14)	5. T.P. Tertiary Unit No. 2.2.5
			6. T.P. Street Block No. 21

7. Name of Street	8. House No. and Name of Building	9. No. of floors	10. No. of flats per floor	Remarks
Reclamation St.	146	8	1	
	148	8	1	
	150	8	1	
	152	8	1	

ENUMERATOR RURAL BLOCK MAP

Area: N.T. TAI PO ..... District: 64 FANLING ..... Block No.: 632/04/06 (64-2-9) .....



D.C.S. 10B 2400182
20,000-5/70-B84362

RURAL BLOCK DETAIL

1. Area	2. District	3. Enumerator's Block No.	4. Name of Village	5. Survey Sheet No
N.T. TAI PO	G4 FANLING	632/04/06 (G4-2-9)	Pak Fuk Tsuen 百福村	76-NE-D
				6. T. P. Tertiary Unit No. 6.3.2

7. Village Boundary :—

North :— junction of cultivation to K.C.R.

South :— No.78(wooden hut) & Wah Yuen Fish Farm 華園魚坊

East :— K.C.R.

West :— cultivation and No.62 of Pak Fuk Tsuen

8. Approach of Village :— go along unsurfaced track in front of Po Ching Home for the Aged near Fanling Railway Station. Use footpath in front of Wah Yuen Fish Farm and begin with house no. PFT/109

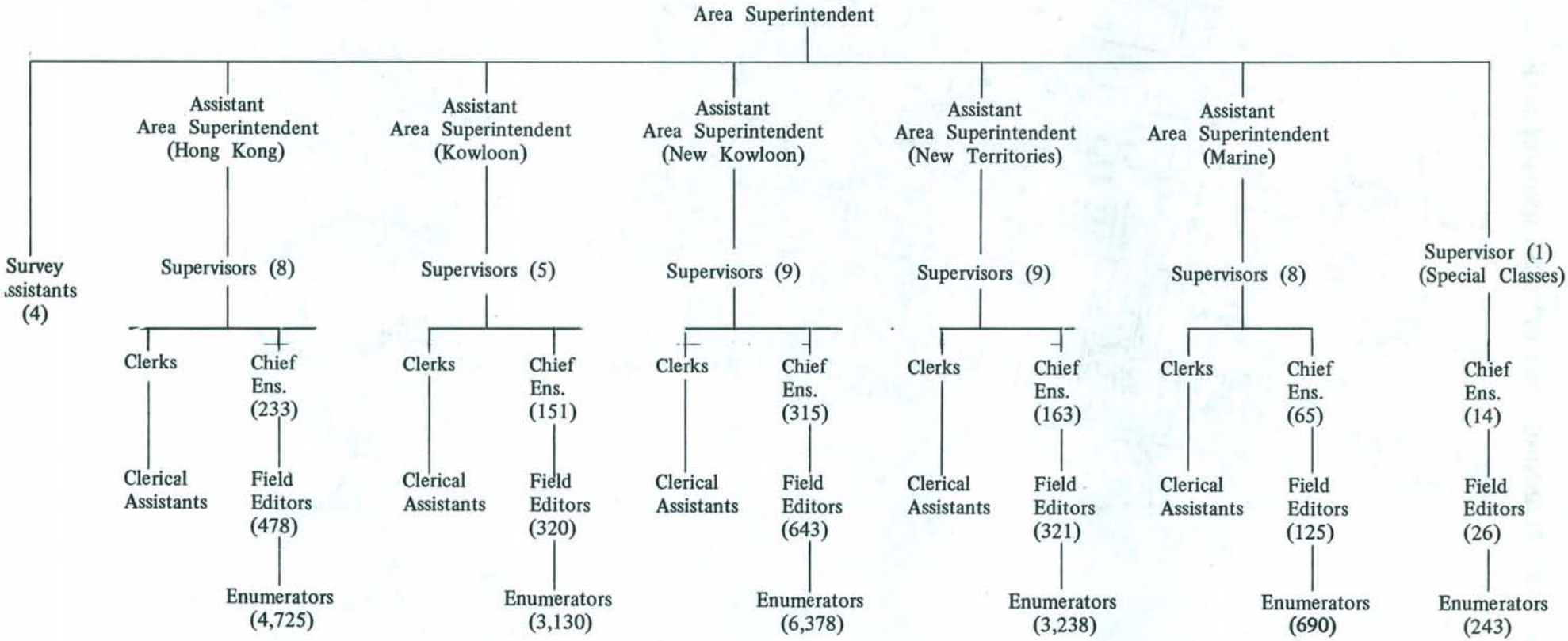
9. Street Name &/or House No.	10. No. of Storeys	Street Name &/or House No.	No. of Storeys	Street Name &/or House No.	No. of Storeys	Remarks
PFT/109	1	22B1	1			
K79	1	22B2	1			
77-M	1	X	1			
19-1 (PFT/65/147)	1	77L7, 77 & Factory	1			
79	1	77R4	1			
80	1	X	1			
X	1	77R	1			
76 (文園漁坊)	1	77R6	1			
X	1	77 (益良茶園)	1			
76L	1	77S	1			
K80A	1					
K81	1					
K83	1					
D.D.51 Lot1555	1					
X	1					
58F-3	1					
74-E	1					
58F1	1					
58F	1					
77S4	1					
77S3	1					

TERTIARY PLANNING UNIT/CENSUS DIVISION MAP

Appendix 4.10



Field force organisation chart



Teaching brief for training of enumerator
SESSION NO. 1

LECTURE NO. 1: General Introduction *(Time: 50 min.)*

HANDOUT:
(1) Instructions for Enumerators
(2) Enumerator Daily Record Sheet

COVERAGE:
Chapters One and Two
Appendix VIII

OUTLINE OF LECTURE:
(*a*) Introduction about Census
(*b*) Duties of an Enumerator
(*c*) How to locate an Enumerator Block
(*d*) How to proceed with enumeration
(*e*) How to approach the respondent
(*f*) How to complete the Enumerator Daily Record Sheet

Break (*10 min.*)

LECTURE NO. 2: **(i)** Method of Recording Census Information *(Time: 60 min.)*
(ii) Enumeration of Living Quarters

HANDOUT:
(1) Instructions for Enumerators
(2) Enumerator Record Book
(3) U D T Form A and Form B

TEACHING AIDS:
(1) Enlarged U D T Form A and Form B
(2) Enlarged Enumerator Record Book (one page)

COVERAGE:
Chapters Three and Four
Appendix I (Code L1)
Appendix III (Instruction A—Questions 2 to 5 and 13 to 16)
(Instruction B—Questions 27 to 31)

OUTLINE OF LECTURE:
(*a*) How to fill in the Enumerator Record Book—with reference to the examples given on the enlarged page
(*b*) What is a U D T form
(*c*) The 11 points to *remember* in completing the U D T forms
(*d*) What is meant by "Living Quarters"
(*e*) The classification of the type of living quarters—with reference to the notes of Code L1 (Appendix I)
(*f*) The Census definitions of—"Room"
"Bathroom"
"Kitchen"
"Toilet"
"Water Supply"
(*g*) How the Serial Numbers of Living Quarters and Household are transcribed from the Enumerator Record Book on to U D T Form A (Questions 5 and 16) and Form B (Questions 30-31)
(*h*) How the *other* Reference Numbers are inserted on U D T Form A (Questions 13-15) and Form B (Questions 27-29)
(*i*) How to complete U D T Form A (Questions 2-4)—with reference to Instruction A of Appendix III
(*j*) What to do when a unit of living quarters is occupied by a collective household having 20 persons or more

SESSION NO. 2

LECTURE NO. 3: Enumeration of Households *(Time: 50 min.)*

HANDOUT:
(1) Instructions for Enumerators
(2) Enumerator Record Book
(3) U D T Form A

TEACHING AIDS: Enlarged U D T Form A

COVERAGE:
Chapter Five
Appendix I (Codes H1-H5)
Appendix III (Instruction A—Questions 6 to 12)
Appendix IX (Chinese description of different types of disablement)

OUTLINE OF LECTURE:
(*a*) Types of disablement—with reference to Appendix IX
(*b*) How to list a disabled member of a household in the Enumerator Record Book
(*c*) The Census definition of "Household"
(*d*) Difference between a domestic household and a collective household —illustrate with examples
(*e*) Sub-categories of domestic household—illustrate with examples
(*f*) What is meant by "Sub-type of Accommodation"—illustrate with examples
(*g*) The classification of the sub-type of accommodation—with reference to the notes of Code H3 (Appendix I)
(*h*) The meaning of—"Number of Persons"
"Tenure"
"Monthly Income"
"Rent"
"Car Ownership"
(*i*) How to complete U D T Form A (Questions 6-12)—with reference to Instruction A of Appendix III
(*j*) What to do when a collective household has 20 persons or more

Break (*10 min.*)

Exercise I and Recapitulation (*20 min.*)

LECTURE NO. 4: Enumeration of Persons (Age and Date of Birth) *(Time: 40 min.)*

HANDOUT:
(1) Instructions for Enumerators
(2) U D T Form B

TEACHING AIDS: Enlarged U D T Form B

COVERAGE:
Chapter Six (Age and Date of Birth)
Appendix III (Instruction B—Questions 6 to 9)
Appendices IV to VI

OUTLINE OF LECTURE:

(*a*) The concept of age in Census

(*b*) Age is calculated either by Western reckoning or by Chinese reckoning—illustrate with examples

(*c*) How to record age given in Western reckoning

(*d*) Age given in Chinese reckoning:—

(i) How to use the Age Conversion Table (Appendix IV) to obtain the corresponding Western age

(ii) How to record the answer

(*e*) How to record Date of Birth (month and year) given in Western reckoning

(*f*) Date of Birth (month and year) given in Chinese reckoning:—

(i) How to use the Index (Appendix V) to determine the corresponding Western year and "*before* or *after* Census Day"

(ii) How to record the answer

(*g*) How to record the age of infant under one year

(*h*) How to record Japanese age

(*i*) How to complete U D T Form B (Questions 6-9)—with reference to Instruction B of Appendix III

SESSION NO. 3

Exercise II and Recapitulation (*20 min.*)

LECTURE NO. 5: Enumeration of Persons (other Personal Characteristics) (*Time: 40 min.*)

HANDOUT:
(1) Instructions for Enumerators
(2) U D T Form B

TEACHING AIDS: Enlarged U D T Form B

COVERAGE:
Chapter Six (other Personal Characteristics)
Appendix II (Codes P1-P5)
Appendix III (Instruction B—Questions 4 and 5 and 10 to 18)

OUTLINE OF LECTURE:
(*a*) The meaning of—"Relationship to Head of Household"
"Sex"
"Place of Birth/Origin"
"Conjugal Status"
"Age at First Marriage"
"Number of Children Born/Living"
"Usual Language"
"Ability to Speak English"
"Educational Attainment"
(*b*) The classification of place of birth/origin—with reference to Codes P2 and P3 (Appendix II)
(*c*) Stress the need of *coding* the answers to Place of Birth/Origin correctly
(*d*) How to complete U D T Form B (Questions 4-5 and 10-18)—with reference to Instruction B of Appendix III

Break (*10 min.*)

LECTURE NO. 6: Enumeration of Persons (Activity Status and Industry) (*Time: 50 min.*)

HANDOUT:
(1) Instructions for Enumerators
(2) U D T Form B

TEACHING AIDS: Enlarged U D T Form B

COVERAGE:
Chapter Six (Activity Status and Industry)
Appendix II (Codes P6-P7)
Appendix III (Instruction B—Questions 19 and 20)

OUTLINE OF LECTURE:
(*a*) The meaning of "Activity Status"—illustrate with examples
(*b*) The classification of the type of activity status—with reference to the notes of Code P6 (Appendix II)
(*c*) How to obtain this information from persons over age 10
(*d*) The meaning of "Industry"—illustrate with examples
(*e*) The classification of industry—with reference to Code P7 (Appendix II)
(*f*) Stress the need of *coding* the answers to Activity Status and Industry correctly
(*g*) How to complete U D T Form B (Questions 19 and 20)—with reference to Instruction B of Appendix III

SESSION NO. 4

LECTURE NO. 7: **(i)** Enumeration of Persons *(Time: 60 min.)*

(Occupation, Number of Hours Worked per week, School or Place of Study, Place of Work, Mode of Transport and Time of Arrival at Work/Study)

(ii) Enumeration of Transients

HANDOUT:

(1) Instructions for Enumerators
(2) U D T Form B
(3) Census Schedule for Transients

TEACHING AIDS: Enlarged U D T Form B

COVERAGE: Chapter Six (Occupation, Number of Hours Worked per Week, School or Place of Study, Place of Work, Mode of Transport and Time of Arrival at Work/Study)
Chapter Seven
Appendix II (Code P8)
Appendix III (Instruction B—Questions 21 to 26)

OUTLINE OF LECTURE:

(*a*) The meaning of "Occupation"—illustrate with examples
(*b*) The classification of occupation—with reference to Code P8 (Appendix II)
(*c*) Difference among Activity Status, Industry and Occupation
(*d*) Stress the need of *coding* the answer to Occupation correctly
(*e*) How the other questions are applied to different categories of people—i.e. persons employed or unemployed or economically inactive, workers with no fixed place of work, farmers, fishermen and students
(*f*) How to complete U D T Form B (Questions 21-26)—with reference to Instruction B of Appendix III
(*g*) Who are transients and how to enumerate them

Break (*10 min.*)

LECTURE NO. 8: **(i)** Listing of Manufacturing Establishments *(Time: 30 min.)*
(ii) Final Visit on Census Day

HANDOUT:

(1) Instructions for Enumerators
(2) Enumerator Record Book
(3) Tracer Form A and Form B

COVERAGE: Chapters Eight and Nine

OUTLINE OF LECTURE:

(*a*) Definition of "Manufacturing Establishment"
(*b*) How to list manufacturing establishments in the Enumerator Record Book
(*c*) Final visit to each household on Census Day
(*d*) How to complete Tracer Form A and Form B

Exercise III and Recapitulation (*20 min.*)

SESSION NO. 5

Final review	(*30 min.*)
Test	(*1½ hours*)

Training Programme for Chief Enumerators

Session No.	Lecture No.		Subject
1	1	(i)	General Introduction
		(ii)	Duties of a Chief Enumerator and an Enumerator
	2	(i)	Enumeration Procedure
		(ii)	Method of Recording Census Information I
2	3		Method of Recording Census Information II
	4		Enumeration of Living Quarters
3	5		Enumeration of Households
	6		Enumeration of Persons I (Age and Date of Birth)
4	7		Enumeration of Persons – Continued
	8		Enumeration of Persons II (other Personal Characteristics)
5	9		Enumeration of Persons III (Activity Status)
	10		Enumeration of Persons IV (Industry and Occupation)
6	11		Enumeration of Persons V (Number of Hours Worked per Week, Place of Study/Work, Mode of Transport and Time of Arrival at Work/Study)
	12	(i)	Enumeration of Transients
		(ii)	Listing of Manufacturing Establishments
		(iii)	Final Visit on Census Day
7			Test

Training Programme for Field Editors

Session No.	Lecture No.		Subject
1	1	(i)	Introduction
		(ii)	Method of recording Census Information
	2	(i)	Accuracy check of Reference Numbers
		(ii)	Living Quarters/Household questions
		(iii)	Accuracy check of coding of the answers to Type of Living Quarters and Sub-type of Accommodation
2	3		Consistency check of household data
	4	(i)	Personal question I (Age and Date of Birth)
		(ii)	Consistency check of Age
3	5	(i)	Personal question II (other Personal Characteristics)
		(ii)	Accuracy check of coding of the answers to Place of Birth/Origin
	6	(i)	Personal questions III (Activity Status and Industry)
		(ii)	Accuracy check of coding of the answers to Activity Status and Industry
4	7	(i)	Personal Questions IV (Occupation, Number of Hours Worked per Week, Place of Study/Work, Mode of Transport and Time of Arrival at Work/Study)
		(ii)	Accuracy check of coding of the answer to Occupation
	8		Consistency check of the answers to Activity Status, Industry, Occupaton and Number of Hours Worked per Week
5			Final Review
			Test

Training Programme for Enumerators

Session No.	Lecture No.		Subject
1	1		General Introduction
	2	(i)	Method of Recording Census Information
		(ii)	Enumeration of Living Quarters
2	3		Enumeration of Households Exercise I
	4		Enumeration of Persons (Age and Date of Birth) Exercise II
3	5		Enumeration of Persons (Other Personal Characteristics)
	6		Enumeration of Persons (Activity Status and Industry)
4	7	(i)	Enumeration of Persons (Occupation, Number of Hours Worked per Week, School or Place of Study, Place of Work, Mode of Transport and Time of Arrival at Work/Study)
		(ii)	Enumeration of Transients
	8	(i)	Listing of Manufacturing Establishments
		(ii)	Final Visit on Census Day Exercise III
5			Final Review
			Test

CENSUS ORDINANCE, 1960

CENSUS (AMENDMENT) REGULATIONS, 1970

Form 1.

CENSUS OFFICER'S DECLARATION

I, ...,

do solemnly and sincerely declare that I will carry out my duty as a census officer to the best of my ability and will faithfully record on any census schedule completed by me on behalf of any person all particulars reported to me by such person and will deliver such schedule to my superior officer and will not otherwise disclose to any person, whether in Her Majesty's service or not, any information of which I have become aware in the course of my duty as a census officer.

Taken before me:

Signature ..... (*Signed*) .....

Deputy Commissioner of Census.

Date .....

Form 2.

我（姓名）.....，

清心宣誓：願爲香港戶口統計，忠誠服務，對於市民個人事項，居所及行業機構情況，絕對保守秘密，倘有洩漏，甘受法律嚴重處分，此誓。

簽署.....（簽署）.....

政府統計處
副處長

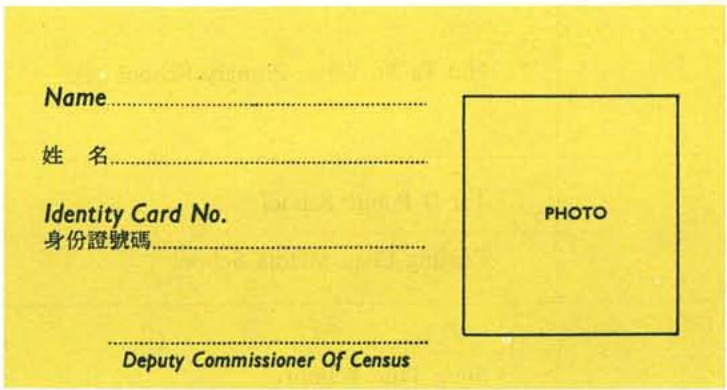
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Census Officer Certificate of Identity

Side 1



Side 2



List of field centres

Marine census field centres

District	Field Centres
Yau Ma Tei	Yaumatei Catholic Primary School
Victoria	Queen's College
	Jordan Road Govt. Primary School
Shau Kei Wan	St. Matthew's Lutheran School
	Shaukeiwan Govt. Primary School
Aberdeen, Lamma, Tai Lam	Aberdeen Govt. Primary School
	Island Road Govt. Primary School
Deep Bay, North Lantao, Ma Wan, Tsuen Wan	Hoi Pa St. Govt. Primary School
West Lantao, Cheung Chau	Tai O Public School
	Cheung Chau Middle School
Junk Bay, Port Shelter	Sung Tsun School
Tolo, Mirs Bay	Wong Siu Chi Middle School

Land census field centres

Hong Kong

District	Field Centres
Central and Sheung Wan	Hollywood Road Government Primary School (District Centre) Sir Ellis Kadoorie (Western) Government Primary School
West	Hill Road Government Primary School (District Centre) Kennedy Town Police Primary School
Wanchai	Hennessy Road Government Primary School (District Centre) Lui Kee Government Primary School
Peak and Tai Hang	Buddhist Wong Cheuk Un Primary School; Buddhist Wong Fung Ling College (District Centre) Wanchai Kaifong Welfare Association Primary School
North Point	Fortress Hill Government Primary School (District Centre) St. Michael's Primary School
Shaukeiwan	Shaukeiwan Government Primary School (District Centre) Chai Wan Government Primary School
Pokfulam and Aberdeen	Kwong Yuet Tong Lo Pang Primary School Island Road Government Primary School (District Centre) Apleichau Kaifong Primary School
Mid-Level and Island South	Yu To Sang Memorial Primary School (District Centre) St. Teresa Primary School

Kowloon

District	Field Centres
Tsimshatsui	Canton Road Government Primary School (District Centre) Tak Sun Anglo-Chinese School All Saints Middle School
Yaumatei	Methodist School (District Centre) Yaumatei Kaifong Welfare Adv. Association School Tung Wah Hospital No. 3 Primary School
Mongkok	Kei Wing Primary School (District Centre) Ming Kei College
Hung Hom	Hung Hom Govt. Primary School Kowloon Docks Memorial Primary School (District Centre) Tin Kwong Road Police Primary School
Homantin	Farm Road Govt. Primary School Perth Street Government Primary School (District Centre)

New Kowloon

District	Field Centres
Cheung Sha Wan	Cheung Sha Wan Police Primary School (District Centre) Ka Ling School of the Precious Blood St. Clement's Primary School Hoi Ping Chamber of Commerce Primary School (District Centre)
Shek Kip Mei	So Uk North Govt. Primary School Shek Kip Mei Govt. Primary School (District Centre) Sam Shui Natives Association Primary School
Kowloon Tong	Alliance Primary School (District Centre)

District	Field Centres
Kai Tak	Lo Fu Ngam Govt. Primary School Bishop Walsh Primary School San Po Kong Govt. Primary School Ching San Primary School (District Centre) Kai Tak Govt. Primary School (District Centre) Yeuk Wing Primary School (District Centre) Yat Sau Primary School Wong Tai Sin Govt. Primary School
Ngau Tau Kok	Kei Hin Primary School Kei Faat Primary School (District Centre) Kwun Tong Govt. Primary School Five Districts Business Welfare Association Seeto Ho School Bishop Paschang Memorial School
Lei Yue Mun	Lun Kei Primary School San Wui Commercial Society No. 3 Primary School (District Centre) St. Antonius Primary School Hoi Bun School Ming Yuen Middle School

New Territories

District	Field Centres
Kwai Chung	Chuen Yuen College Chuen Yuen Second School Chu Oi Primary School Kei Yam School
Tsuen Wan	Tsuen Wan Govt. Secondary School (District Centre) Chiu Chow Public School
Tsing Yi	Tsing Yi Public School
Ma Wan	Fong Yuen School

District	Field Centres
Tuen Mun	Ho Fuk Tong College
	Nei Ming Institute
Ha Tsuen	Yau Kung Primary School
Ping Shan	Tat Tak Primary School
Shap Pat Heung	Yuen Long Heung Yee Kuk Secondary School (District Centre)
Shap Pat Heung	Yuen Long Government Primary School
Kam Tin	Mung Yeung Public School
San Tin	Chuk Hing Public School (San Tin) (District Centre)
Pat Heung	Pat Heung Tung Yick Public School (Pat Heung)
Sheung Shui	Fung Kai Middle School (District Centre)
Ta Kwu Ling	Ping Yeung Public School
Sha Tau Kok	Shataukok Govt. Primary School
Fanling	Kwan Ti Public School
Tai Po	Wong Shui Chi Sec. School (District Centre)
Sai Kung, North	Shap Sze Heung Koon Hang School
Sha Tin	Sha Tin Public School
Tai O	Tai O Public School
Tung Chung	Tung Chung Public School
Mui Wo	Mui Wo Public School
South Lantao	Pui O Public School
Peng Chau	Chi Yan School
Cheung Chau	Cheung Chau Fisheries Joint Association
North Lamma	North Lamma Public School
South Lamma	Lo So Shing School
Sai Kung South	Sung Tsun Mid-School
Hang Hau	South China Union College

List of printed census documents

Marine Census

Date	Item	Quantity	Cost
22.5.70	Marine Census Training Manual	4,500 Chinese	$ 8,435
		1,500 English	3,872
22.5.70	Marine Census Household Schedule	52,700	4,244
15.6.70	Enumerator Daily Record Sheet	6,400	218
15.6.70	Enumerator Record Book	4,000	940
15.6.70	Chief Enumerator Daily Record Sheet	400	460
15.6.70	Chief Enumerator Summary Sheet	450	245
29.6.70	Checking Strip for UDT Form C & D	3,000	408
29.6.70	Disablement Form	400	104
29.6.70	UDT Form C for Training	6,000	284
29.6.70	UDT Form D for Training	13,000	420
10.7.70	Form for Post Enumeration Check	300	130
17.7.70	Labels	80,000	646
23.7.70	Instructions for Field Editors (English and Chinese)	500	623
27.7.70	Field Editors Exercise Book	500	419
27.7.70	Enumerators Exercise Book	2,000	855
11.8.70	Test Papers for Enumerators	2,000	191
17.8.70	Enlarged UDT Form C (Teaching Aid)	120	610
17.8.70	Enlarged UDT Form D (Teaching Aid)	120	560

Land Census

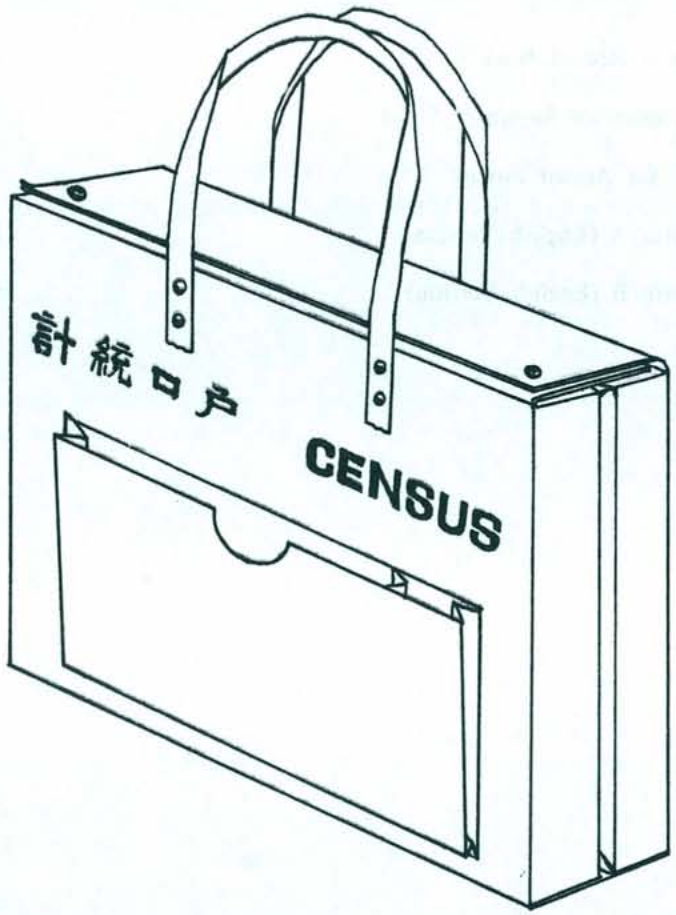
Date	Item	Quantity	Cost
22.5.70	Census Officers Identity Cards	72,000	$ 1,043
25.5.70	Application Forms	70,000	3,860
27.5.70	Oath Form	35,000	490
27.5.70	Enumerators Detail Sheet	15,000	1,143
9.6.70	Training Manual (Chinese)	53,000	31,966
9.6.70	Training Manual (English)	5,000	7,907
15.6.70	Schedule for Transients	52,000	619
15.6.70	Enumerator Daily Record Sheet	250,000	1,345
15.6.70	Enumerator Record Book	26,000	6,806
15.6.70	Page 5 of Enumerator Record Book (Training)	50,000	1,438
15.6.70	Chief Enumerator Daily Record Sheet	3,700	1,777
15.6.70	Chief Enumerator Summary Sheet	3,700	539
25.6.70	Checking Strip for U D T Forms A & B	50,000	1,078
29.6.70	Tracer Form A	240,000	2,510
29.6.70	Tracer Form B	240,000	2,603
29.6.70	Disablement Form	3,500	174
3.7.70	UDT Form A for Training	92,000	1,990
3.7.70	UDT Form B for Training	218,000	4,166
3.7.70	Training Manual for Field Editors (English and Chinese)	4,300	1,575
10.7.70	Cardboard Box	23,262	27,811
10.7.70	UDT Form A1 for Field Editors Training	3,500	202
10.7.70	UDT Form B1 for Field Editors Training	3,500	274
10.7.70	UDT Form B2 for Field Editors Training	3,500	202
10.7.70	UDT Form B3 for Field Editors Training	3,500	202
10.7.70	UDT Form B4 for Field Editors Training	3,500	201
10.7.70	Form for Post Enumeration Check	12,000	454
27.7.70	Field Editors Exercise Book	3,000	1,043
27.7.70	Enumerators Exercise Book	42,000	5,509
10.8.70	Chief Enumerators Exercise Book	2,500	767

11.8.70	Test Paper for Enumerators	39,000	$ 1,056
17.8.70	Enlarged UDT Form A (Teaching Aid)	1,200	790
17.8.70	Enlarged UDT Form B (Teaching Aid)	1,200	730
17.8.70	Enlarged Page of Enumerator Record Book (Teaching Aid)	1,200	710
18.8.70	Teaching Briefs for Enumerators	1,500	1,076

Special Classes

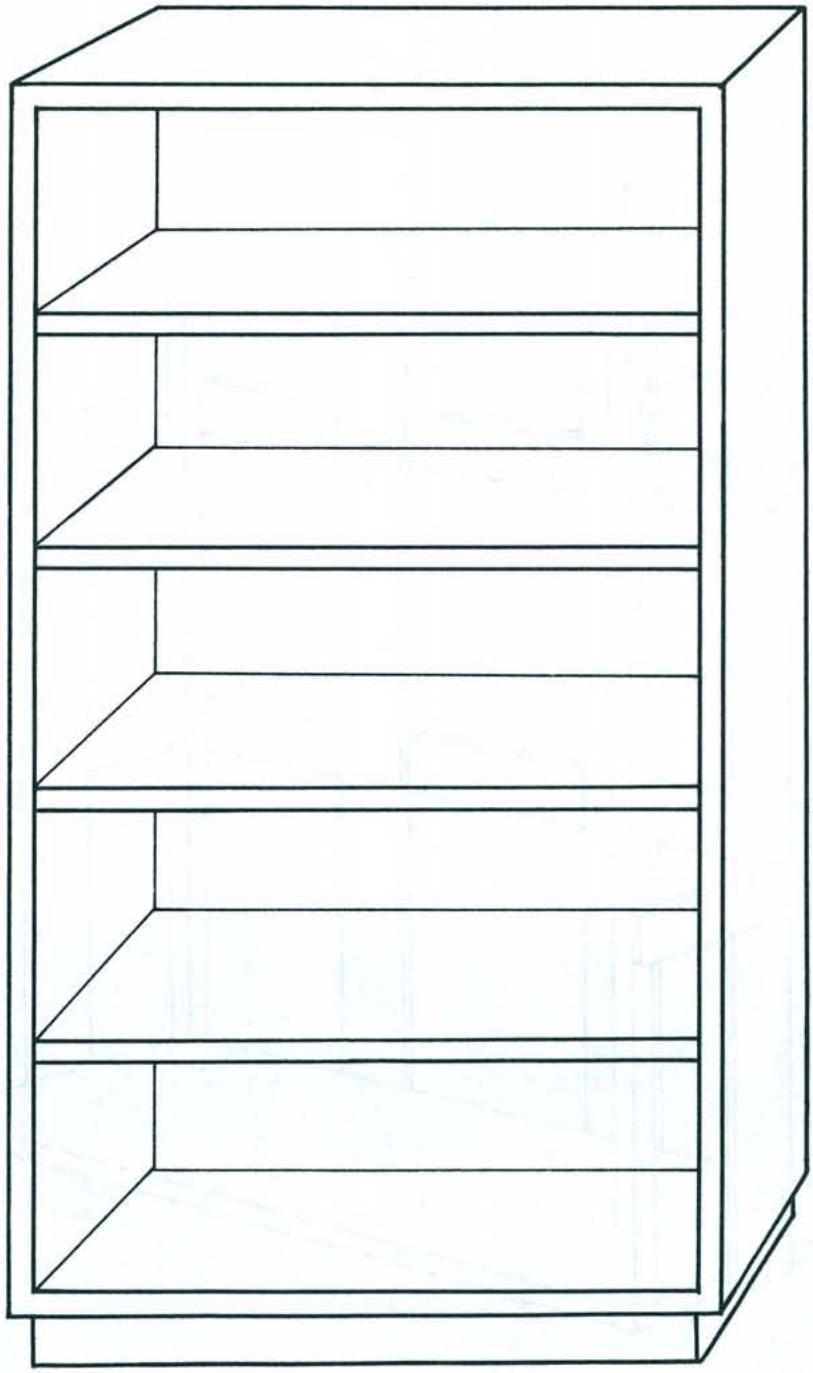
29.6.70	Enumerator Record Book	650	457
29.6.70	Chief Enumerator Summary Sheet	200	246
29.6.70	Schedule for Armed Forces	800	157
3.7.70	UDT Form A (English Version)	15,000	806
3.7.70	UDT Form B (English Version)	50,000	1,892

Enumerator cardboard box



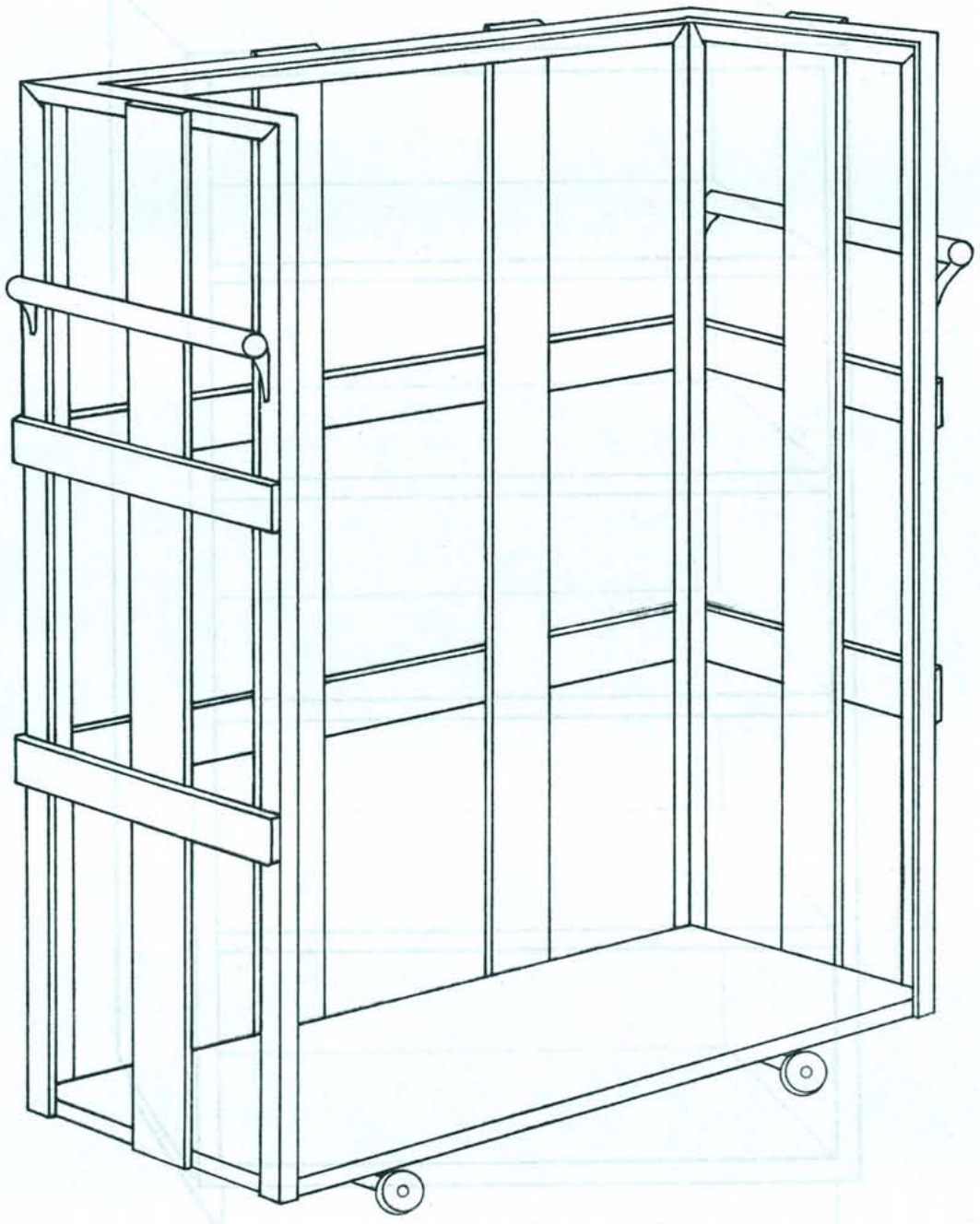
Each enumerator cardboard box 12" wide x 3" deep x 9½" high.

Wooden rack



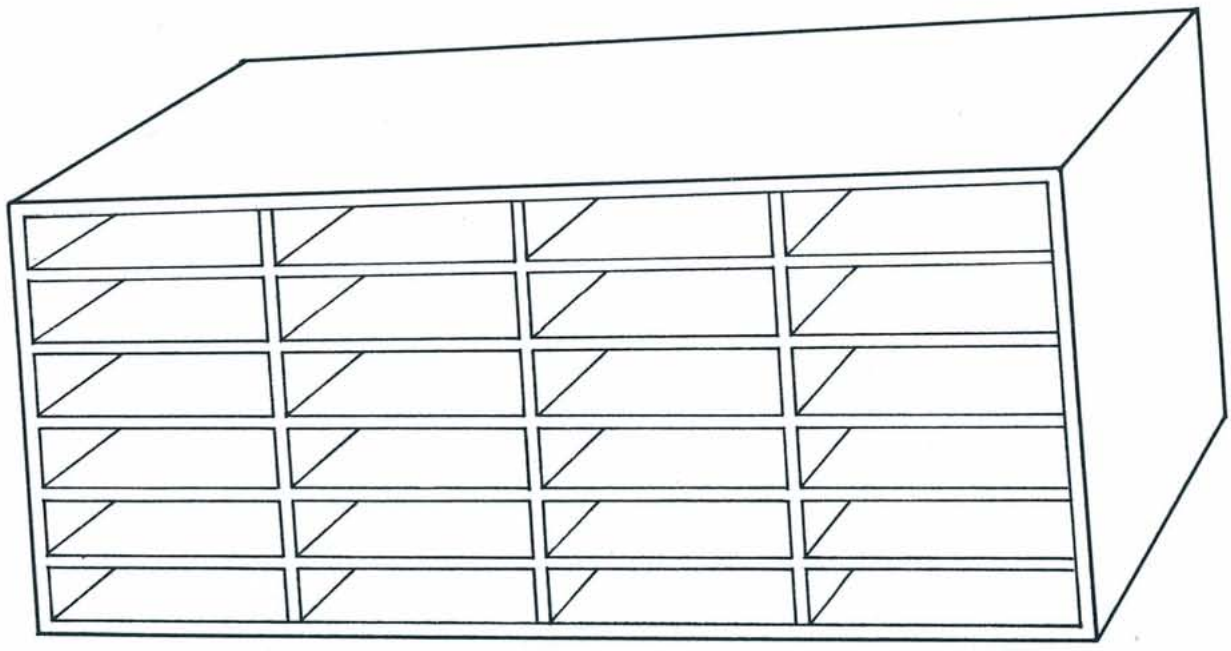
Each rack 42" wide x 12" deep x 99" high with 5 equal compartments (each compartment with a clear height of not less than 18"), rigidly constructed of ¾" plywood throughout, plain, without polishing.

Metal trolley



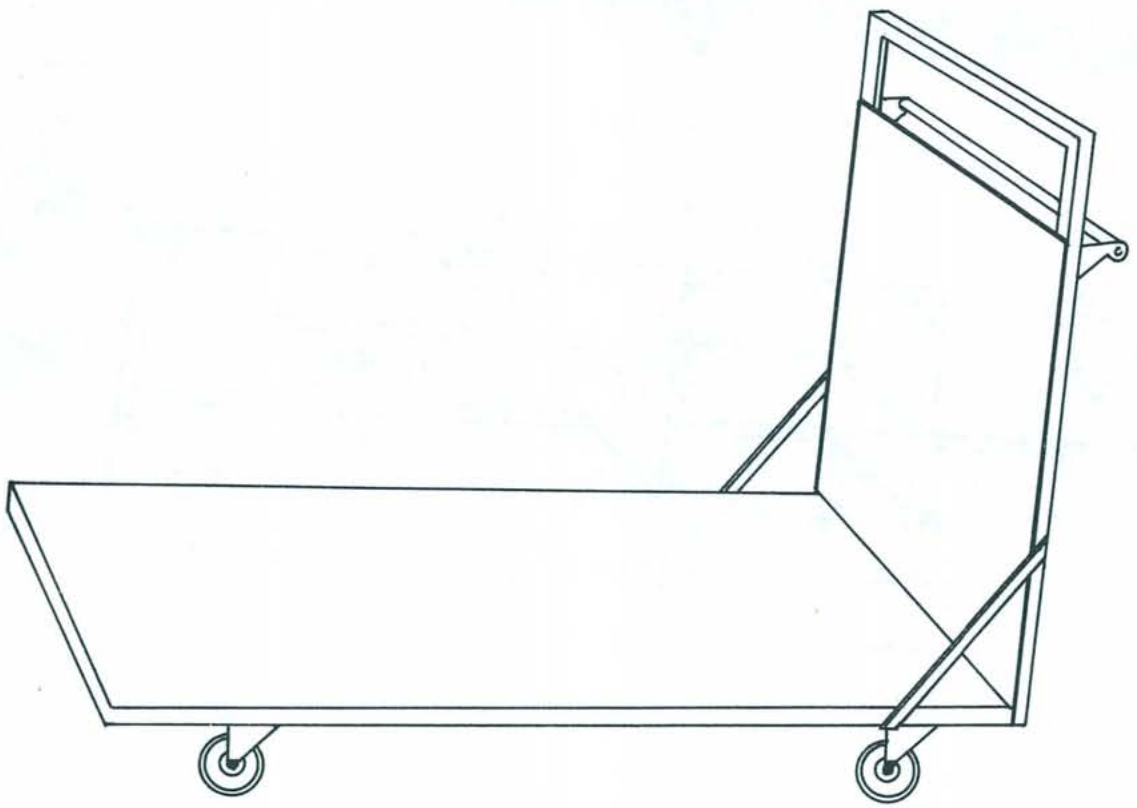
Each metal trolley 30" wide x 12" deep x 48" high supported by 4 wheels 3" in diameter.

UDT form carrier



Each UDT form carrier 40" wide x 14" deep x 18" high.

Wooden trolley



Census labels

Land



Marine



SCHEDULE FOR MARINE CENSUS

Nº 24679

機　密

一九七一年一月二十三日

香港水上戶口統計

請將適用之號碼加圈	
船艇類型（分類表C1）	漁船機器馬力（分類表C2）
1. 住家艇	1. 11匹以下
2. 客艇	2. 11至48匹
3. 貨艇及街渡	3. 49至114匹
4. 輪渡，汽艇，拖輪或遊艇	4. 115至152匹
5. 遠洋及行駛海岸線的輪船或戰艦	5. 153至200匹
6. 其他非捕魚船艇	6. 200匹以上
7. 捕魚船艇	7. 非機動漁船
	8. 不適用

人數：.....

請於適用之小格內加✓號														
住戶類型（分類表H1）	團體住戶 ☐	單住戶 ☐	複住戶 ☐	團內戶 ☐	居住條件（分類表H2）	團體住戶 ☐	業主 ☐	租賃 ☐	免租 ☐					
其他住所（分類表H3）	唐樓／洋樓內住所 ☐	鄉村型石屋 ☐	木寮 ☐	住家艇 ☐	其他 ☐	無 ☐	不適用 ☐							
每月入息（分類表H4）	團體住戶	＜200 ☐	200－399 ☐	400－599 ☐	600－799 ☐	800－999 ☐	1000－1199 ☐	1200－1499 ☐	1500－1999 ☐	2000－2499 ☐	2500－4499 ☐	4500＋ ☐	免費膳食 有 ☐	無 ☐

續 ☐

姓名	身份證號碼	與戶主關係 分類表P1	性別	年齡	出生月日	出生年份	出生地點 分類表P2	籍貫 分類表P3	婚姻狀況	初婚年齡	子女人數 出生	子女人數 尚存	語言 習用 分類表P4	語言 能否說英語能／否	教育程度 分類表P5	經濟活動身份 分類表P6	行業 分類表P7	職業 分類表P8	每週工作時間	學校地點	工作地點	交通方法	抵達時間

備　註：

統計員簽署.....

審核員簽署.....

C.F.-1 (2400161)

Living Quarter/Household UDT form for marine census



切勿摺皺此表格
■ 填格須色深而明顯

表格填妥(簽名).....

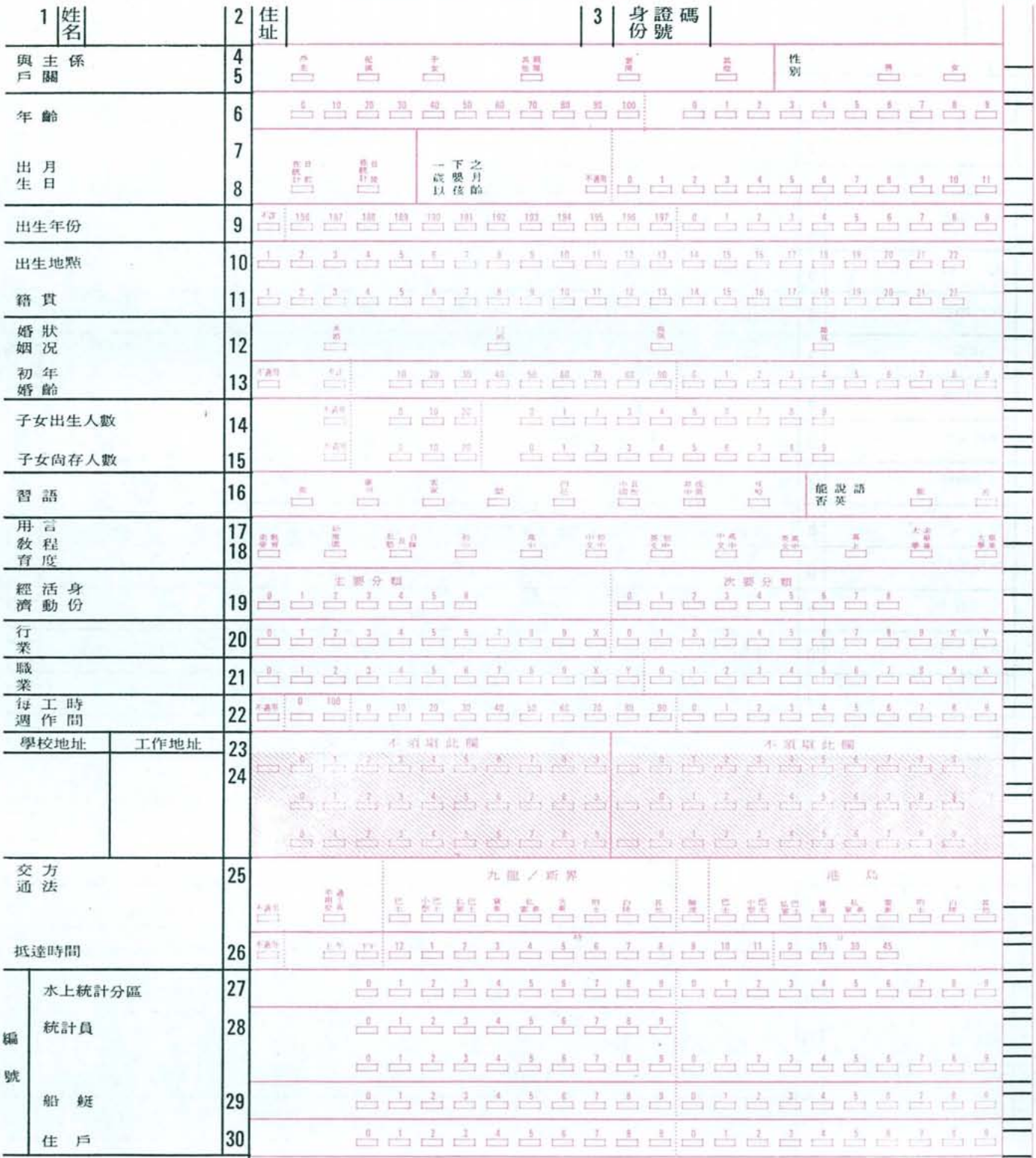
表格查閱(簽名).....

FORM C

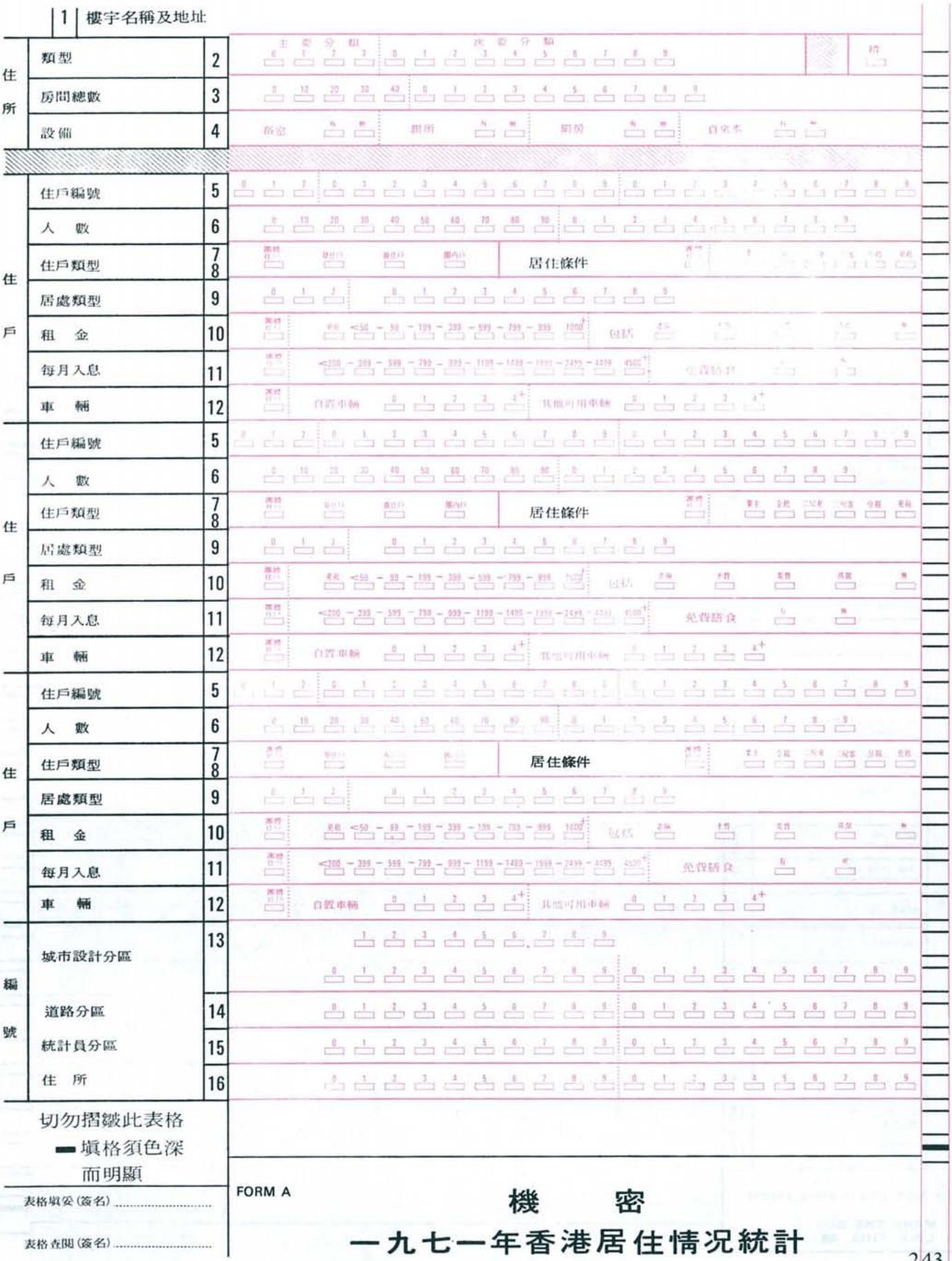
機　　密

一九七一年香港水上居住情況統計

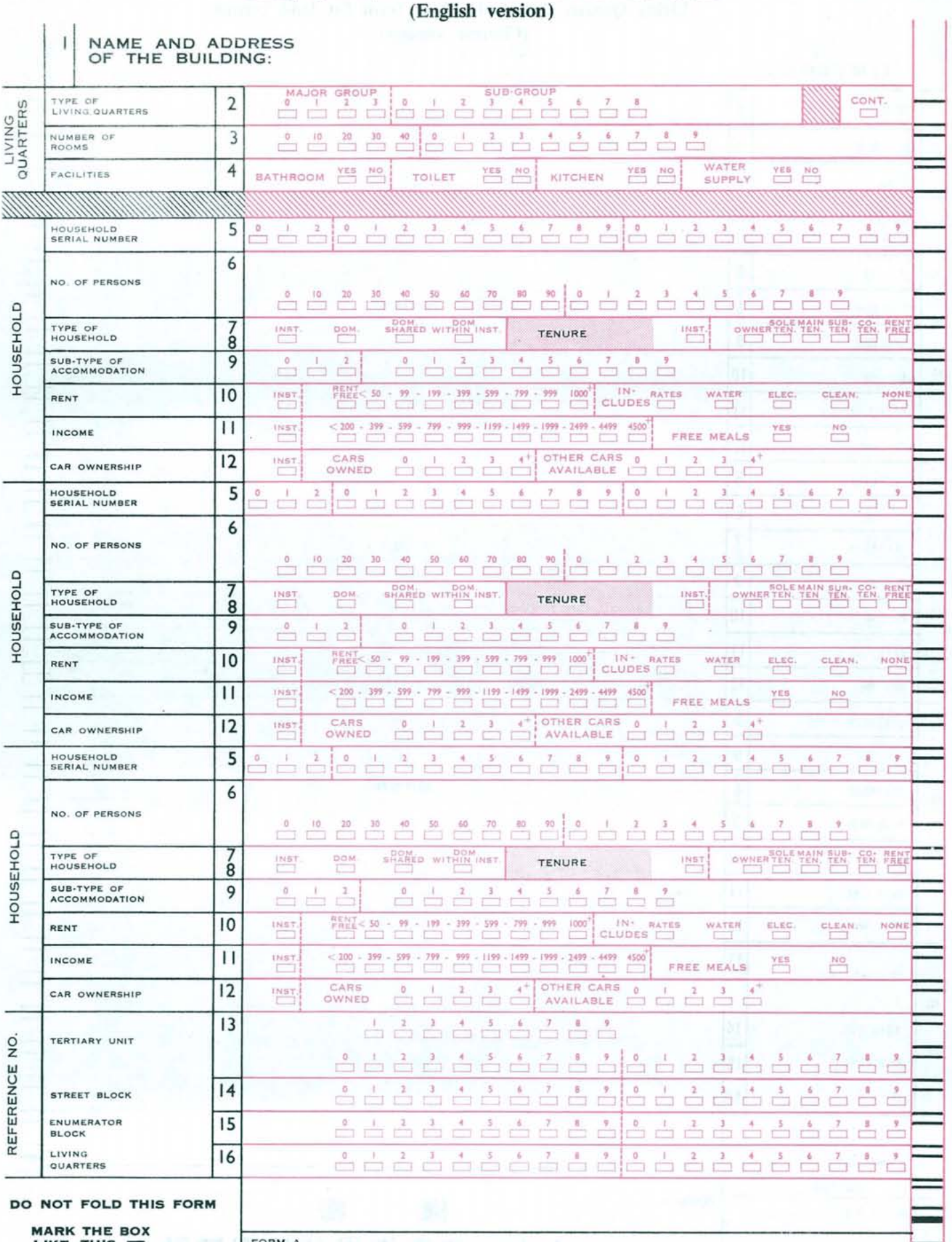
Personal UDT form for marine census



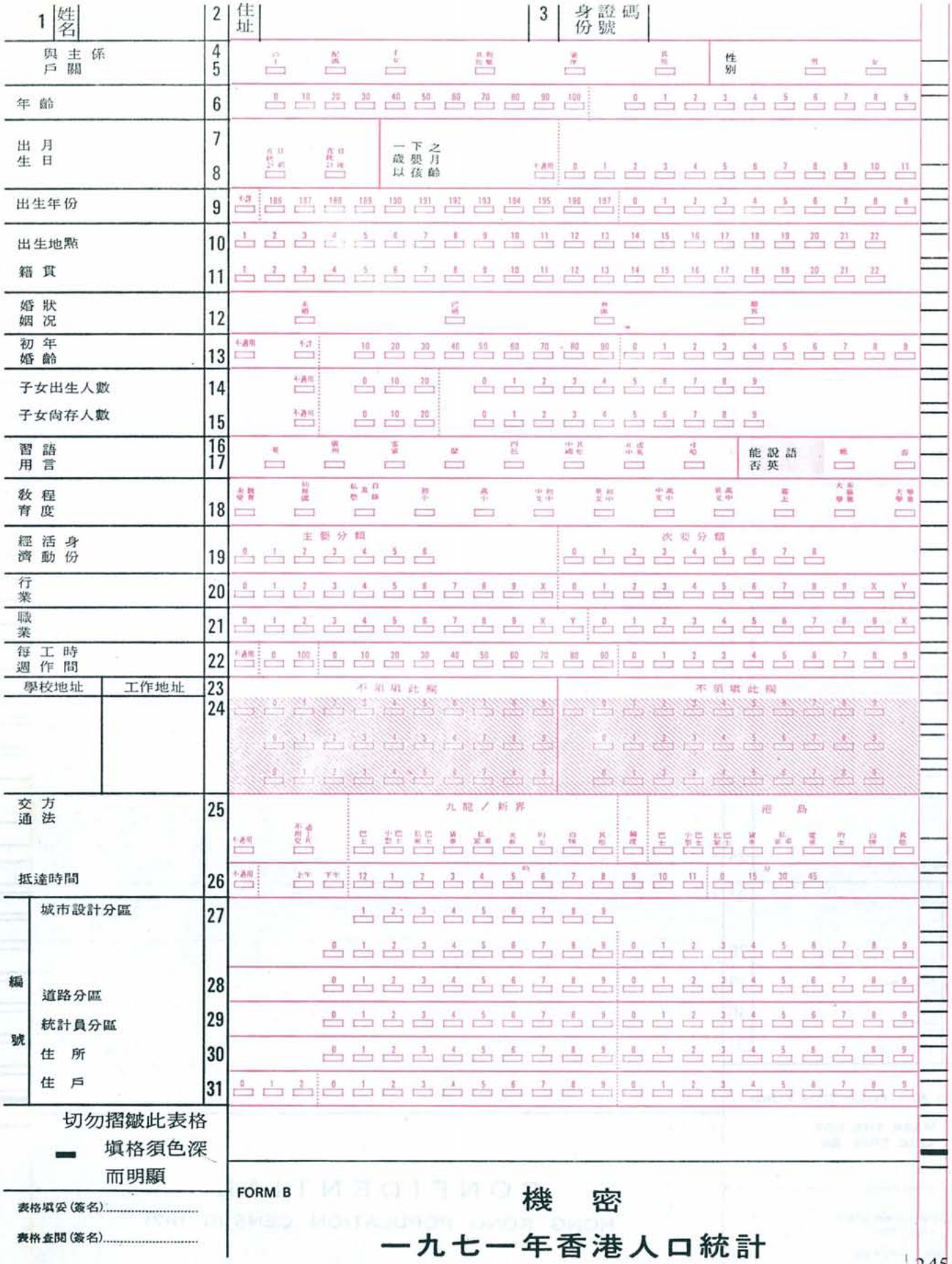
Living Quarter/Household UDT form for land census (Chinese version)



Living Quarter/Household UDT form for land census (English version)



Personal UDT form for land census
(Chinese version)



切勿摺皺此表格

填格須色深而明顯

表格填妥(簽名).....

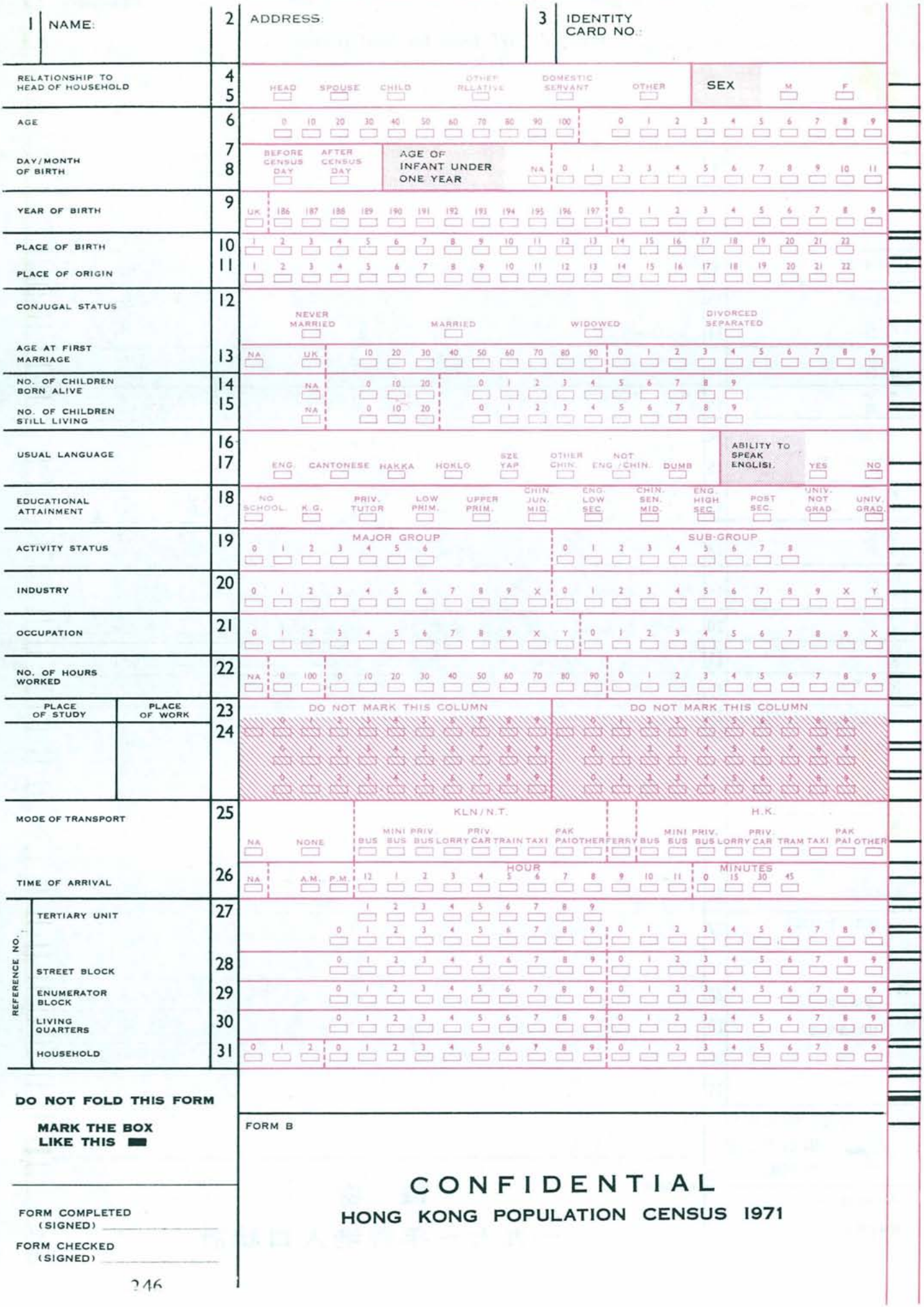
表格查閱(簽名).....

FORM B

機密

一九七一年香港人口統計

Personal UDT form for land census (English version)



HONG KONG LAND CENSUS 1971
一九七一年香港陸上戶口統計

TRACER FORM A
遷出紀錄表

1. **Completed by Enumerator**
此部份由統計員填寫

District .....
統計分區

Division .....
統計地段

Block No. .....
統計分段

Cancellation of household (or person) changed usual residence:
被註銷之住戶（或遷出者）

*Name of Head of Household/Person .....
戶主／遷出者之姓名

Household Serial No. .....
住戶編號

Original Address .....
原　　址

New Address .....
新　　址

* (delete as appropriate)
將不適用者刪去

2. **Completed by Chief Enumerator**
此部份由組長填寫

Enumerator's Record Book amended ☐
統計員紀錄册業已更正

U.D.T. Forms amended and cancelled ☐
U.D.T. 表格業已更正及註銷

Signature .....　　*Date* .....
簽署　　日期

3. *District Supervisor's signature* .....
分區監察員簽署

Date .....
日期

4. **Completed by staff in Headquarters**
此部份由總部職員填寫

The new address is in:
新址位於

District .....
統計分區

Division .....
統計地段

Block No. .....
統計分段

HONG KONG LAND CENSUS 1971
一九七一年香港陸上戶口統計

TRACER FORM B
遷入紀錄表

1. **Completed by Enumerator**
此部份由統計員填寫

District .....
統計分區

Division .....
統計地段

Block No. .....
統計分段

Enumeration of household (or person) at new place of residence:
遷入住戶（或遷入者）之統計

*Name of Head of Household/Person .....
戶主／遷入者之姓名

Household Serial No. .....
住戶編號

Original Address .....
原　　址

* (delete as appropriate)
將不適用者刪去

2. **Completed by Chief Enumerator**
此部份由組長填寫

Entry made in Enumerator's Record Book ☐
統計員紀錄册填妥

U.D.T. Forms completed ☐
U.D.T. 表格填妥

Signature .....　　*Date* .....
簽署　　日期

3. *District Supervisor's signature* .....
分區監察員簽署

Date .....
日期

4. **Completed by staff in Headquarters**
此部份由總部職員填寫

The original address is in:
原址位於

District .....
統計分區

Division .....
統計地段

Block No. .....
統計分段

Specimen page of enumerator record book (land)

Name and/or Address of Building 樓宇名稱及地址	Living Quarters 住所			Household 住戶		No. of Persons in each Household 戶內人數			Handicapped Persons 身體不健全者	Remarks 備註
	Serial No. 住所編號	Floor No./ Flat No. 樓/座	Premises mfg. Goods 工場	Serial No. 住戶編號	Surname of Head 戶主姓氏	Male 男	Female 女	Total 共		
	01			001						
				002						
				003						
				004						
				005						
				006						
				007						
				008						
				009						
				010						
				011						
				012						
				013						
				014						
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				018						
				019						
				020						
				021						
				022						
				023						
				024						
				025						
				026						
				027						
				028						
				029						
				030						
			Carried forward: 轉次頁							

RECORD OF COLLECTIVE HOUSEHOLDS EACH HAVING 20 PERSONS OR MORE
二 十 人 或 以 上 之 團 體 住 戶 紀 錄

Location of Living Quarters 住所地點	Premises mfg. Goods 工場	No. of Persons 人數		
		Male 男	Female 女	Total 共
1.				
2.				
3.				
4.				
5.				
6.				
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18.				
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20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				
	Total: 總數			

Specimen page of enumerator record book (marine)

Licence No. of Craft 艇牌號碼	Serial No. of Boat on U.D.T. Form U.D.T. 表格上之船艇編號	Surname of Head of Household 戶主姓氏	Serial No. of Household on U.D.T. Form U.D.T. 表格上之住戶編號	Schedule No. 戶口表編號	No. of Persons in Each Household 戶內人數			Handicapped Persons 身體不健全者	Remarks 備註
					Male 男	Female 女	Total 共		
	01		01						
			02						
			03						
			04						
			05						
			06						
			07						
			08						
			09						
			10						
			11						
			12						
			13						
			14						
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			20						
			21						
			22						
			23						
			24						
			25						
			26						
			27						
			28						
			29						
			30						
			Carried forward: 轉次頁						

HONG KONG LAND CENSUS—9TH MARCH, 1971
一九七一年三月九日香港陸上戶口統計

ENUMERATOR'S DAILY RECORD SHEET
統計員每日工作紀錄表

Division No. .....
統計地段

Block No.: .....
統計員該管分段

From: .....
呈遞人 *(Enumerator* 統計員*)*

**Date:* ..... *1971.*
日期

To: .....
受件人 *(Field Editor* 審核員*)*

No. of Living Quarters 住所總數	Households 住戶總數			Persons 人口總數		
	Domestic 家庭住戶	Collective Households more than 20 persons 超過廿人之團體住戶	Total 共	Male 男	Female 女	Total 共

*Date on which the reported No. of persons and Living Quarters were enumerated, and **not** the date when you send in this record sheet.
此日期乃指下列住所及人數被訪問之日期，而非呈交此表格之日期。

一九七一年一月二十三日香港水上戶口統計

ENUMERATOR'S DAILY RECORD SHEET (MARINE)

統計員每日工作紀錄表

水上統計分段編號：.....　　*日　期：..... 1971.

地　點：.....

統計員編號：.....

呈遞人：.....　　受件人：.....

（統計員名稱）　　（審核員名稱）

船艇數目								住戶總數	人口總數		
住家艇	客艇	貨艇及街渡	輪船，汽艇，拖輪或遊艇	遠洋輪船或戰艦	其他非捕魚船艇	捕魚船艇	共計		男	女	共

*註：此日期乃指下列船艇及人數被訪問之日期，而非呈交此表格之日期。

CHIEF ENUMERATOR'S DAILY RECORD SHEET (LAND)

DATE: 8th March, 1971.
日 期

Line No. 行數	ENUMERATOR 統計員		ENUMERATION 統計						
	Block No. 分段編號	Name 姓名	No. of Living Quarters 住所總數	Households 住戶總數			Persons 人口總數		
				Domestic 家庭住戶	Collective Households more than 20 persons 超過廿人之團體住戶	Total 共	Male 男	Female 女	Total 共
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
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19									
20									
21									
22									
23									
24									
25									
TOTAL ENUMERATION 總計									
TOTAL BROUGHT FORWARD (Last sheet) 接前頁									
TOTAL CARRIED FORWARD (Next sheet) 轉次頁									

CHIEF ENUMERATOR'S DAILY RECORD SHEET (MARINE)

DATE: 26th January, 1971.
日 期

Line No. 行數	ENUMERATOR 統計員		ENUMERATION 統 計				
	Name 姓 名	No. 註册編號	No. of Craft 船艇總數	No. of Households 住戶總數	No. of Persons 人口總數		
					Male 男	Female 女	Total 共
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
TOTAL ENUMERATION 總 計							
TOTAL BROUGHT FORWARD 接前頁 (Last sheet)							
TOTAL CARRIED FORWARD 轉次頁 (Next sheet)							

CHIEF ENUMERATOR'S SUMMARY SHEET (LAND)

Line No. 本表行數	ENUMERATOR 統計員			BLOCK ENUMERATION 該管分段之統計					STORES 統計表格					
									U.D.T. Form A 住所表格			U.D.T. Form B 人口表格		
	Name 姓名	No. 註冊編號	Block No. 分段編號	No. of Living Qtrs. 住所總數	No. of Households 住戶總數	No. of Persons 人口總數 Male 男	Female 女	Total 共	Received (Pads) 領用(本)	Used (Pads) 用去(本)	Returned (Pads) 繳回(本)	Received (Pads) 領用(本)	Used (Pads) 用去(本)	Returned (Pads) 繳回(本)
1														
2														
3														
4														
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26														
27														
28														
29														
30														
			Total : 共計											

注　意

1. 此簡明表應在訪問工作完畢後填妥，連同統計員之紀錄册，戶口表格及U.D.T.表格送交分區監察員。
2. 每行所列數字應從組長之每日紀錄表中就該統計員每日所呈報之數字累積而來。

REMARKS 備　註

CHIEF ENUMERATOR'S SUMMARY SHEET (MARINE)

Line No. 本表行數	ENUMERATOR 統計員		ENUMERATION 統計					STORES 統計表格								
								Schedule 戶口表格			U.D.T. Form C 住戶表格			U.D.T. Form D 人口表格		
	Name 姓名	No. 註冊編號	No. of Craft 船艇總數	No. of Households 住戶總數	No. of Persons 人口總數			Received (Sheets) 領用(張)	Used (Sheets) 用去(張)	Returned (Sheets) 繳回(張)	Received (Pads) 領用(本)	Used (Pads) 用去(本)	Returned (Pads) 繳回(本)	Received (Pads) 領用(本)	Used (Pads) 用去(本)	Returned (Pads) 繳回(本)
					Male 男	Female 女	Total 共									
1																
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3																
4																
5																
6																
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27																
28																
29																
30																
		Total: 共計														

注　意

1. 此簡明表應在訪問工作完畢後填妥，連同統計員之紀錄册及U.D.T.表格送交分區監察員。
2. 每行所列數字應從組長之每日紀錄表中就該統計員每日所呈報之數字累積而來。

REMARKS 備　註

Appendix 7.19

HONG KONG LAND CENSUS, 9TH MARCH, 1971
一九七一年三月九日香港陸上戶口統計

CHIEF ENUMERATOR'S SUMMARY OF PHYSICALLY DISABLED PERSONS
統計組長簡明表——身體缺陷者之統計

Census Area: .....
統計區

Census District: .....
統計分區

Census Division: .....
統計地段

Chief Enumerator's Name: .....
統計組長姓名

Signature: .....
簽署

Enumerator No. 統計員編號	Name and/or Address of Building 樓宇名稱及地址	Surname of Head of Household 戶主姓氏	Physically Disabled Person 缺陷者		Disablement 缺陷分類							
					Loss of Locomotion 不能行動		Physical Loss of Limbs 四肢有缺陷		Loss of Senses/Speech 特覺喪失			Mental Defects 精神不健全
			Age 年齡	Sex 性別	Paraplegia 癱	Hemiplegia 半身不遂	Upper Limb 手臂	Lower Limb 腿	Dumb 啞	Deaf 聾	Blind 盲	

No. of Persons: Male .....

Female .....

Total .....

SCHEDULE FOR ARMED FORCES IN BARRACKS
HONG KONG LAND CENSUS: 9th MARCH 1971

Address: .....

.....

THIS FORM SHOULD BE USED ONLY FOR ARMED FORCES PERSONNEL LIVING IN MINISTRY OF DEFENCE (UK) BARRACK, CAMP OR ENCLOSED AREAS. IT SHOULD NOT BE USED FOR DEPENDANTS OR SERVICES-SPONSORED CIVILIANS.

N° 369

Name	Rank	Sex	Age	Place of Birth	Place of Origin	Marital Status	Age at First Marriage	No. of Children		Usual Language	Ability to Speak English	Educational Attainment
								Born	Living			
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												

Enumerator's Signature: .....

HONG KONG LAND CENSUS—9TH MARCH, 1971
一九七一年三月九日香港陸上戶口統計
SCHEDULE FOR TRANSIENTS*
旅　客　表　格

ADDRESS: .....
地　址
.....

NO. OF PERSONS: MALE .....
人　數　　男
FEMALE .....
女
TOTAL .....
共

NAME 姓名	AGE 年齡	SEX 性別	COUNTRY OF ORIGIN 國　　籍
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

* This form should be used only for transients, i.e. those who stay in Hong Kong for less than 20 days.
此表格祇適用於在港停留不超過二十天之人士。

ENUMERATOR'S NAME (NO.): .....
統計員姓名（編號）
SIGNATURE: .....
簽　署

CONFIDENTIAL

SCHEDULE FOR CONSULAR STAFF

Appendix 7.22

LIVING QUARTERS
Type of living quarters ☐ Flats in Apartment Blocks ☐ Houses of one/two storeys
No. of rooms : _____ (Note: It includes kitchens and living rooms but excludes store rooms)

HOUSEHOLD (Ring the appropriate answer)														
No. of Persons		Tenure	Owner	Sole Ten.	Main Ten.	Sub-Ten.	Co-Ten.	Rent free						
Rent	Rent free	<50	–99	–199	–399	–599	–799	–999	1000+	In-cludes	Rates	Water	Elec.	Clean.	None
Monthly household income		<50	–99	–199	–399	–599	–799	–999	–1199	–1499	–1999	–2499	–4499	4500+	
Car owner-ship in H.K.	Cars owned	0	1	2	3	4+	Other cars available solely for your use	0	1	2	3	4+			

Name of Building _____

Address _____

Prepared by _____

Date _____

1 Name	2 Relation-ship to head of household Head Spouse Child Other Relative Others	3 Sex M or F	4 Age (last birth-day) (Infant under 1 year state No. of months)	5 Date of Birth Day/ Month/ Year	6 Place of Birth (State country only if not born in China)	7 Conjugal Status Never married Married Widowed Divorced/ separated	8 Age at first marri-age	9 No. of Children		10 Ability to speak English Yes/ No	11 Education No schooling Kindergarten Primary Secondary University not graduated University graduated	12 Occupation	13 No. of hours worked past 7 days	14 Place of study if still attending	15 Place of work	16 Mode of transport to place of study/ work, e.g. private car, taxi, ferry etc. (After the mode, specify H=Hong Kong Island K=Kowloon NT=New Territories	17 Time of arrival to place of study or work
								born alive	still alive								

Column 1, 3, 4 and 5 are only required for transients.

A transient is a person visiting Hong Kong for less than 20 days.

Remarks :

CHECKING STRIPS

LAND

Side 1

電眼閱讀表格查核表條 A 款		1
住所	塡 兩 格	2
	塡 兩 格	3
	塡 四 格	4
住戶	塡 三 格	5
	塡 兩 格	6
	塡一格 / 塡「團體住戶」或一格	7 8
	塡 兩 格	9
	塡「團戶」或兩格或兩格以上	10
	塡「團體住戶」或兩格	11
	塡「團體住戶」或兩格	12
住戶	塡 三 格	5
	塡 兩 格	6
	塡一格 / 塡「團體住戶」或一格	7 8
	塡 兩 格	9
	塡「團戶」或兩格或兩格以上	10
	塡「團體住戶」或兩格	11
	塡「團體住戶」或兩格	12
住戶	塡 三 格	5
	塡 兩 格	6
	塡一格 / 塡「團體住戶」或一格	7 8
	塡 兩 格	9
	塡「團戶」或兩格或兩格以上	10
	塡「團體住戶」或兩格	11
	塡「團體住戶」或兩格	12
編號	塡 三 格	13
	塡 兩 格	14
	塡 兩 格	15
	塡 兩 格	16

查核索引
- 塡一格
- 塡兩格
- 塡三格
- 塡四格
- 特別指示

Side 2

電眼閱讀表格查核表條 B 款		1 2 3
塡 一 格	塡一格	4 5
塡 兩 格		6
塡 一 格	塡 一 格	7 8
塡「不詳」或兩格		9
塡 一 格		10
塡 一 格		11
塡 一 格		12
塡「不適用」或「不詳」或兩格		13
塡「不適用」或兩格		14
塡「不適用」或兩格		15
塡 一 格	塡一格	16 17
塡 一 格		18
塡 兩 格		19
塡 兩 格		20
塡 兩 格		21
塡「不適用」或三格		22
不 須 塡 塗		23 24
塡「不適用」或「不用交通工具」或塡任何格數		25
塡「不適用」或三格		26
塡 三 格		27
塡 兩 格		28
塡 兩 格		29
塡 兩 格		30
塡 三 格		31

查核索引
- 塡一格
- 塡兩格
- 塡三格
- 特別指示

MARINE

Side 1

電眼閱讀表格查核表條 C 款		1
船艇	塡 一 格	2
	塡 一 格	3
住戶	塡 兩 格	4
	塡 兩 格	5
	塡 一 格	6
	塡 一 格	7
	塡 一 格	8
	塡「團體住戶」或兩格	9
住戶	塡 兩 格	4
	塡 兩 格	5
	塡 一 格	6
	塡 一 格	7
	塡 一 格	8
	塡「團體住戶」或兩格	9
編號	塡 兩 格	10
	塡 三 格	11
	塡 兩 格	12

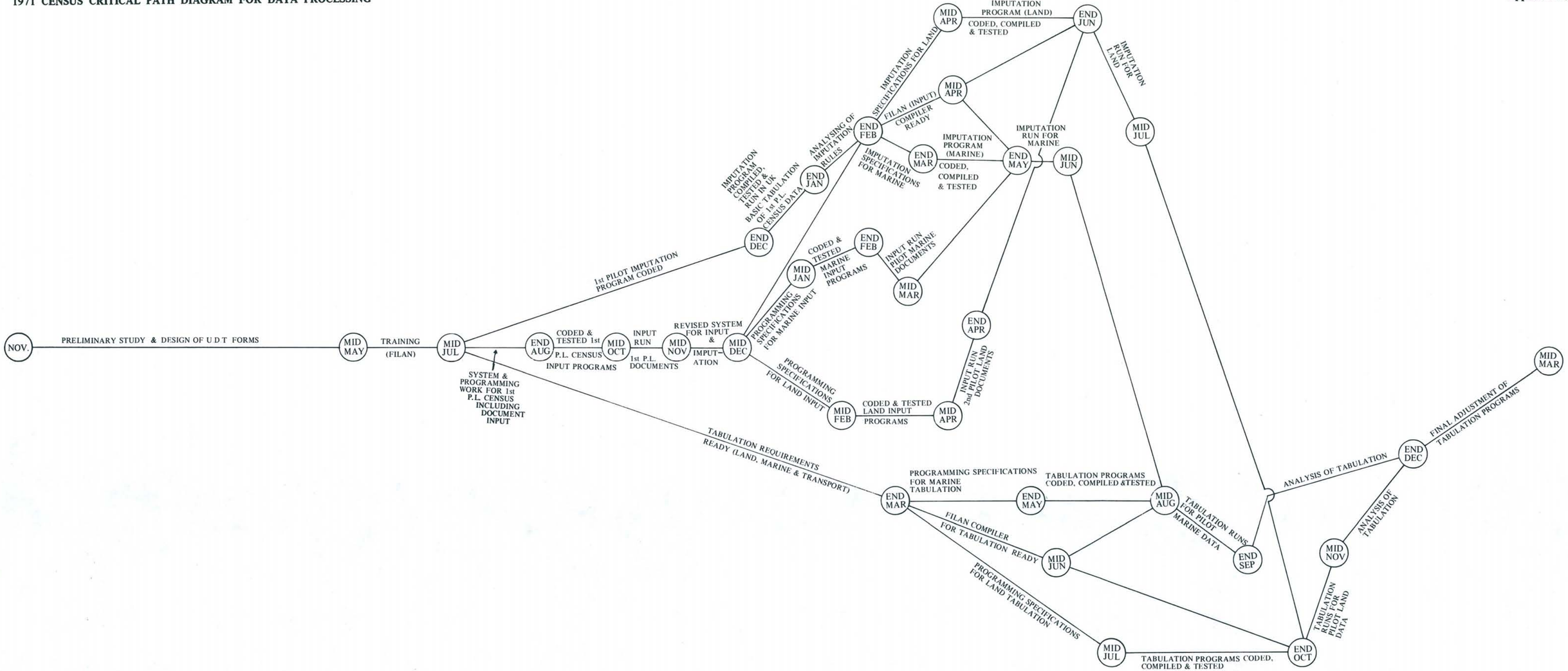
查核索引
- 塡一格
- 塡兩格
- 塡三格
- 特別指示

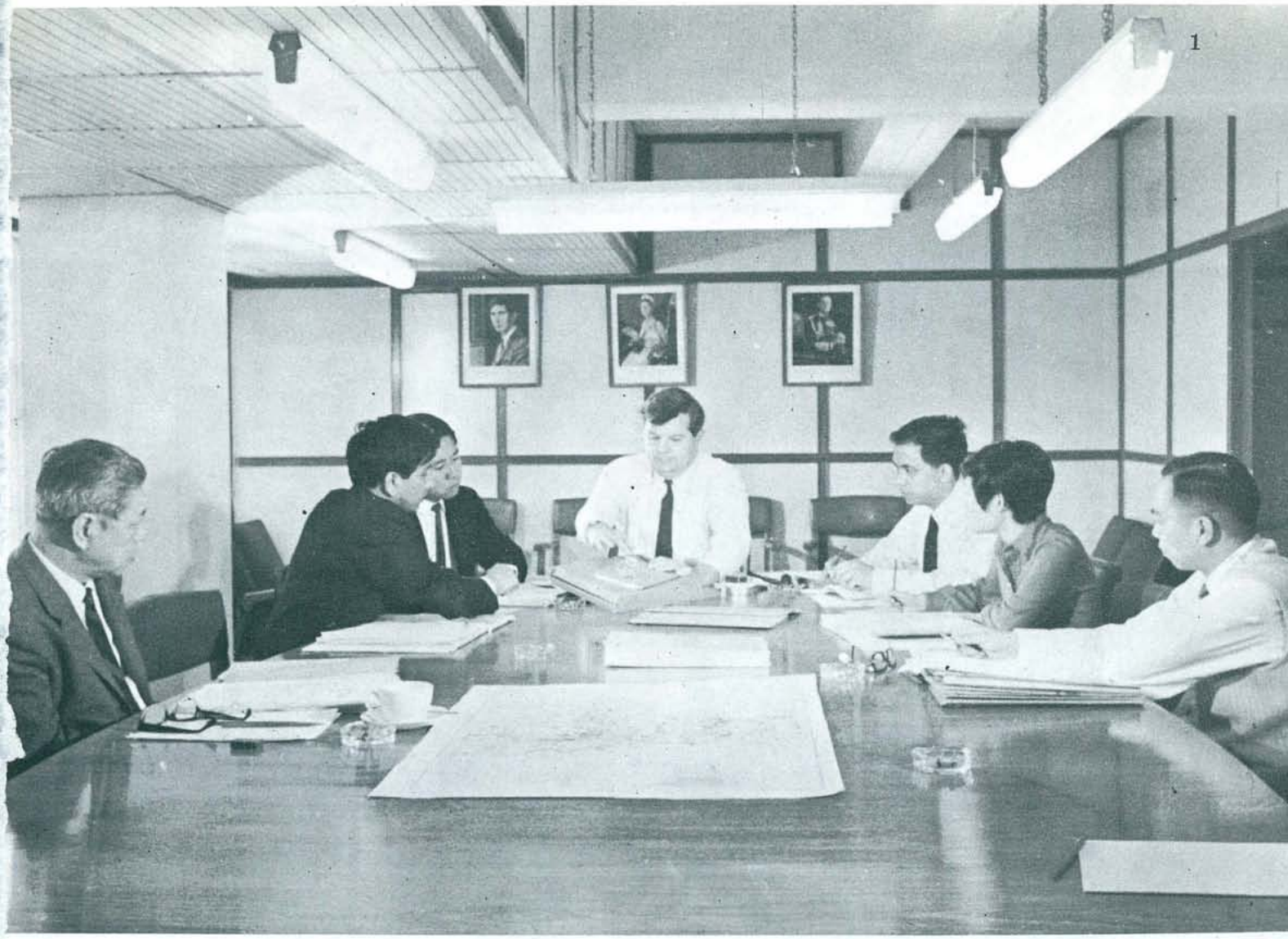
Side 2

電眼閱讀表格查核表條 D 款		1 2 3
塡 一 格	塡一格	4 5
塡 兩 格		6
塡 一 格	塡 一 格	7 8
塡「不詳」或兩格		9
塡 一 格		10
塡 一 格		11
塡 一 格		12
塡「不適用」或「不詳」或兩格		13
塡「不適用」或兩格		14
塡「不適用」或兩格		15
塡 一 格	塡一格	16 17
塡 一 格		18
塡 兩 格		19
塡 兩 格		20
塡 兩 格		21
塡「不適用」或三格		22
不 須 塡 塗		23 24
塡「不適用」或「不用交通工具」或塡任何格數		25
塡「不適用」或三格		26
塡 兩 格		27
塡 三 格		28
塡 兩 格		29
塡 兩 格		30

查核索引
- 塡一格
- 塡兩格
- 塡三格
- 特別指示

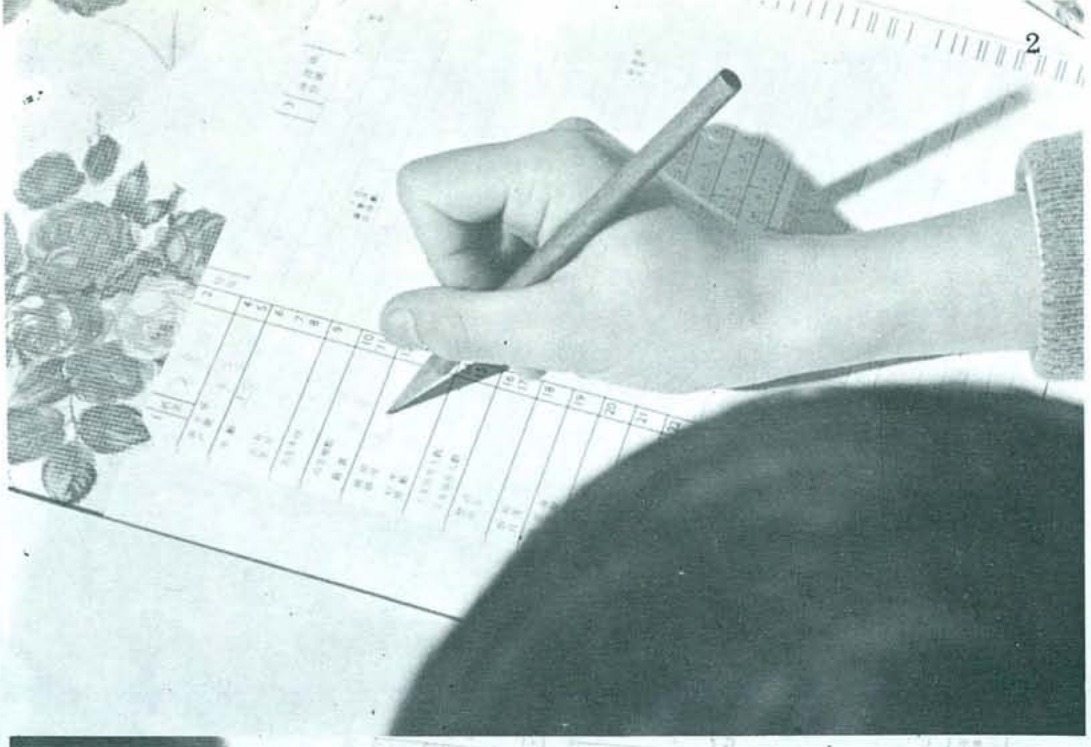
1971 CENSUS CRITICAL PATH DIAGRAM FOR DATA PROCESSING





1. The Census planning team: (from left)

Mr. Hui Yip-keng,
Mr. O.K. Dallah,
Mr. Benjamin Mok Nai-hung,
Mr. William Wong.
Mr. R.M. Omar,
Mr. M.C. Morgan,
Miss Lam Chow-lo and



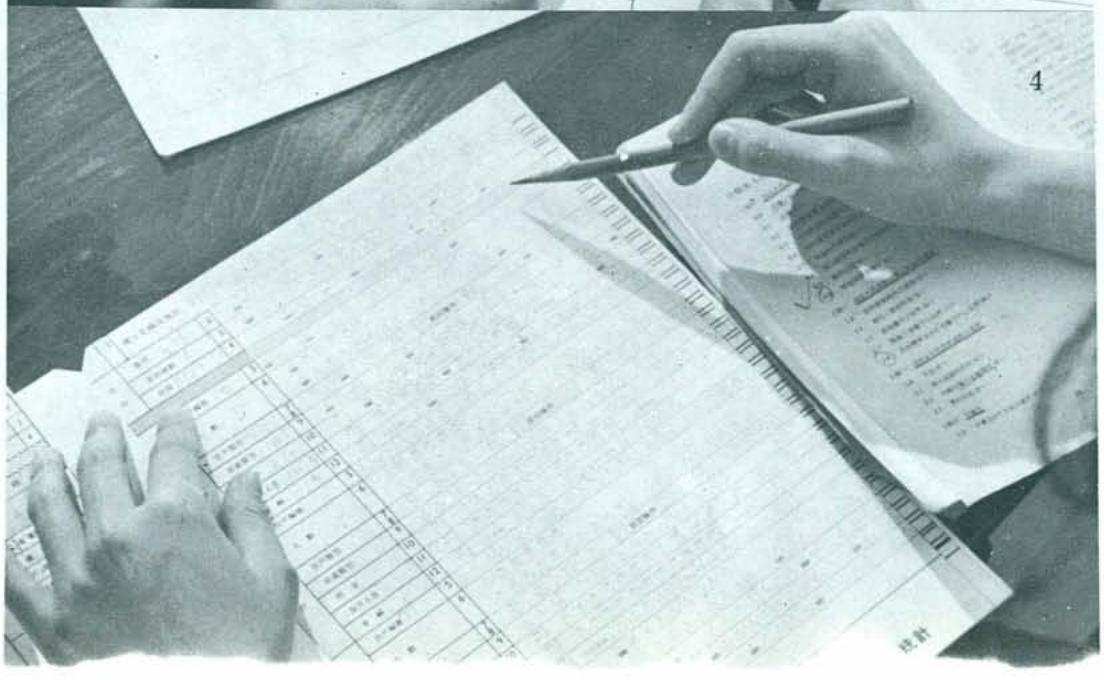
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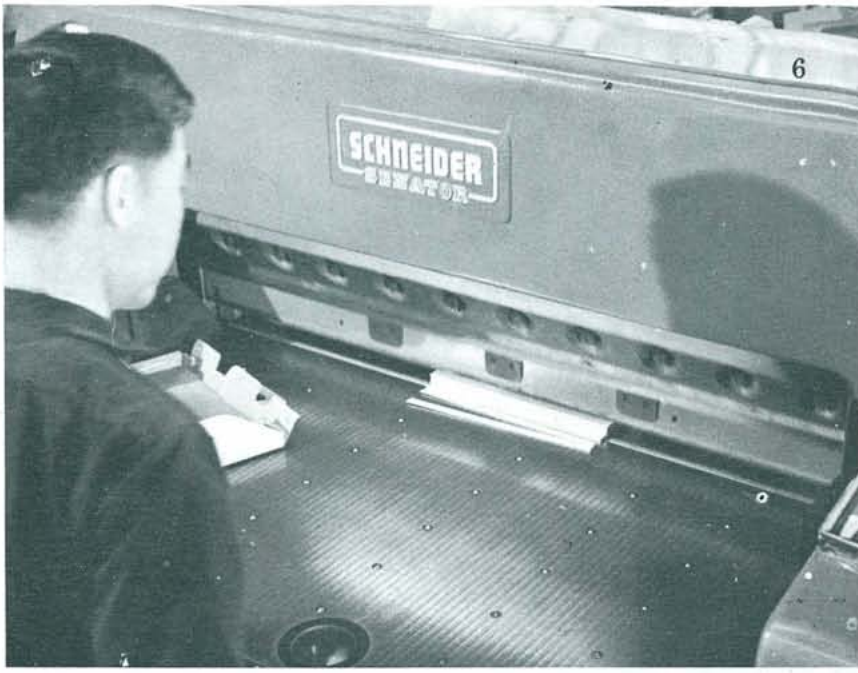
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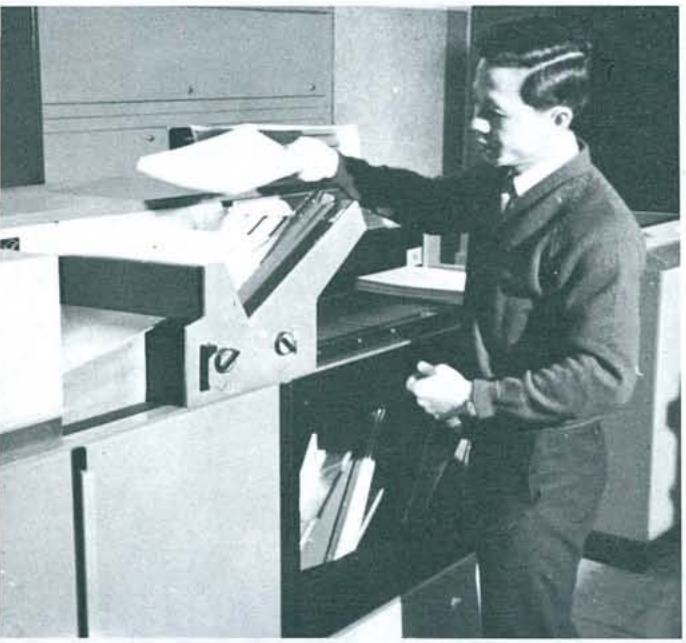


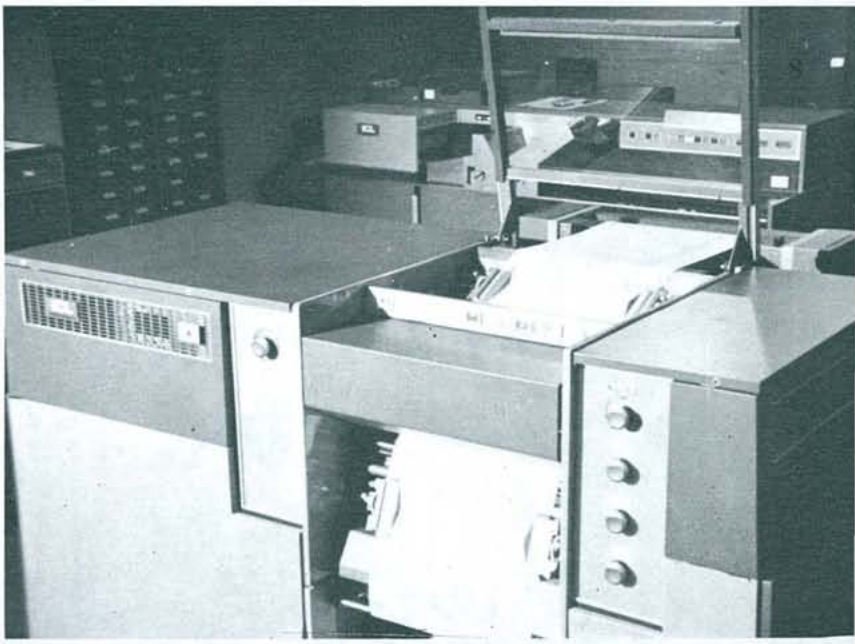


4









2. Enumerator filling in UDT form in long hand.

3. Enumerator coding the answers in the boxes of the UDT forms.

4. Field editor checking UDT form, using checking strip and coding manual.

5 & 6. UDT forms being guillotined at the Government Printing Department.

7. UDT form being input through the document reader at the Government Computer Centre.

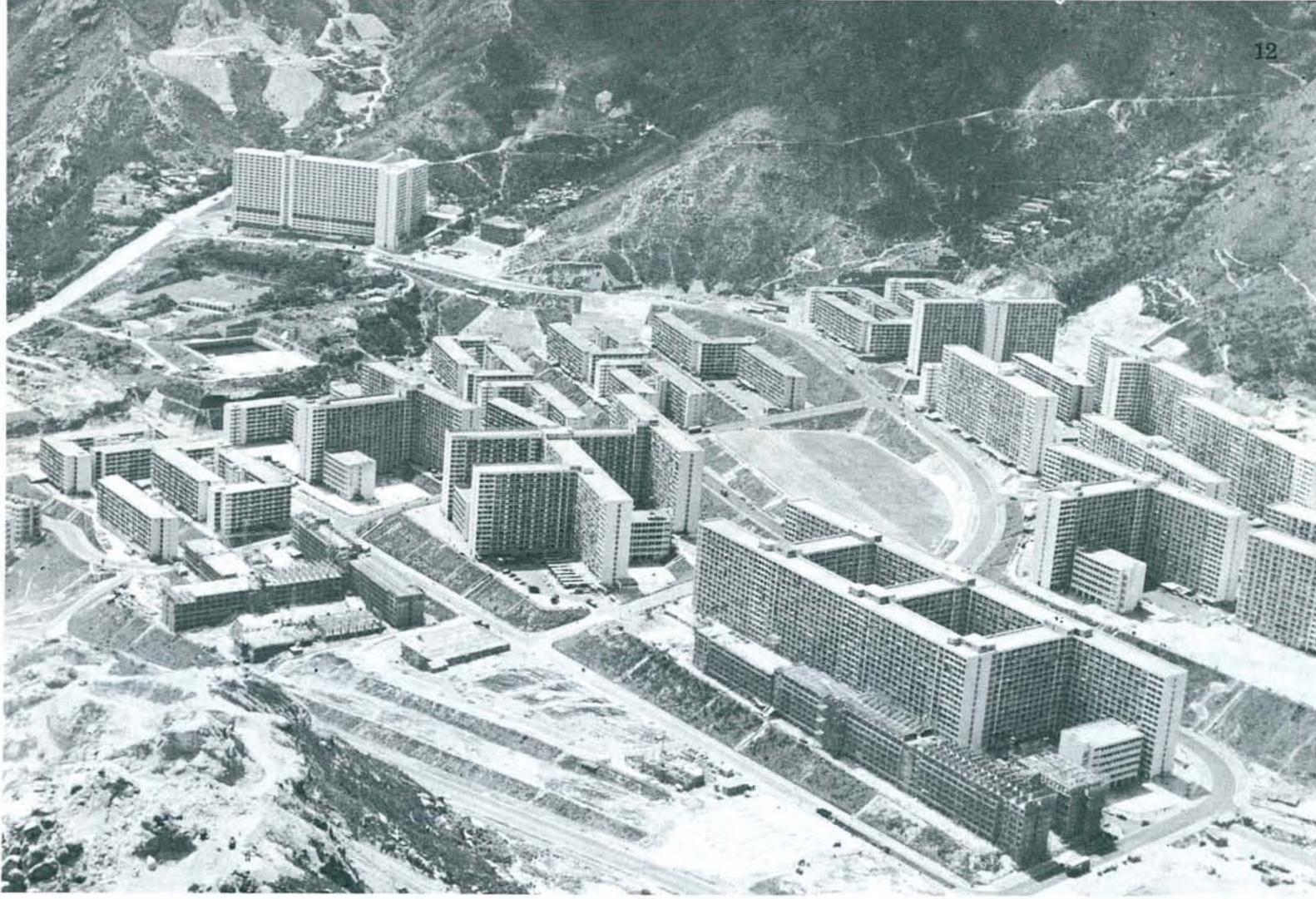
8. Line-printer printing out census tabulation at the Government Computer Centre.

9. Checking of census tabulation printouts.











10. Hong Kong Island and the Kowloon Peninsula from the Peak

11. Multi-storey private residential and commercial buildings in Kowloon

12 & 13 Multi-storey public housing in New Kowloon



14. Aberdeen harbour from the south.







15. Enumerators taking the census oath at the end of their training
16. Enumerator receiving his equipment from the chief enumerator at field centre
17. Enumerator interviewing a household during the Land Census





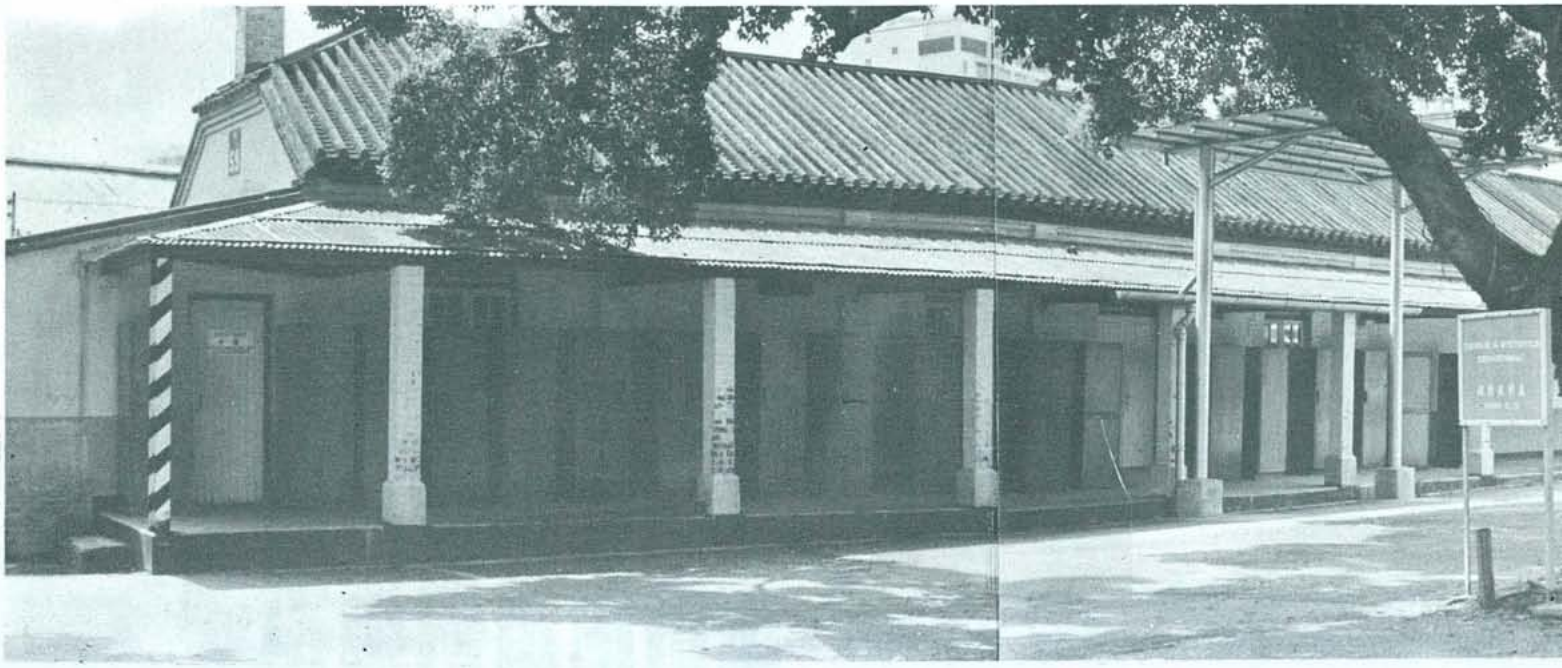


18. Enumerator interviewing a household in rural area during the Land Census

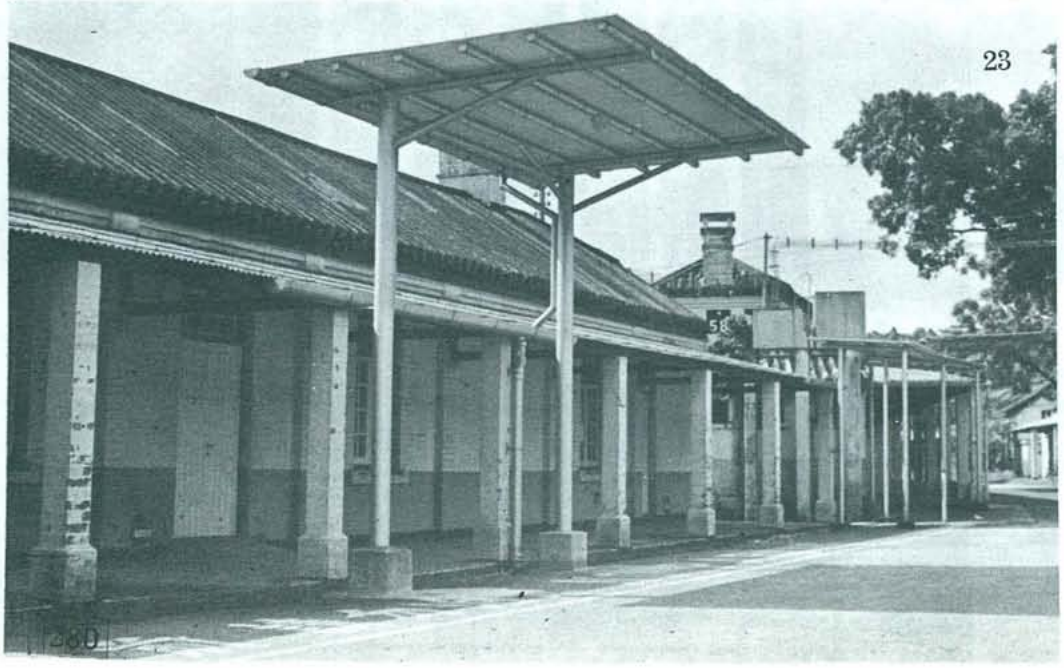
19. Enumerator interviewing a household on a boat during the Marine Census

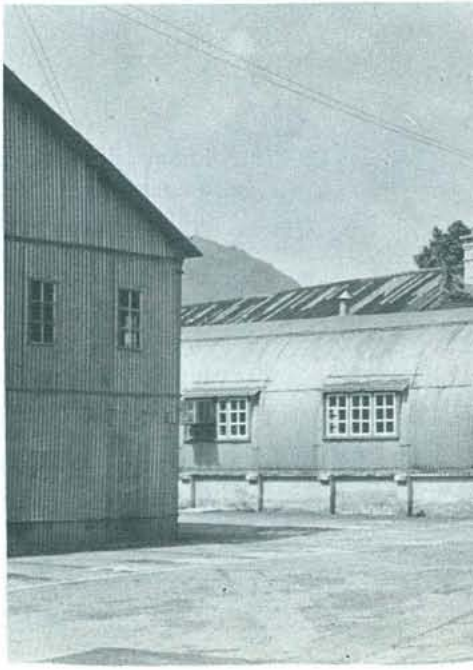
20. International Building in the Central District of Hong Kong – Census Division Headquarters on the fifth floor

21-25 Census field headquarters at Whitfield Barracks, Kowloon

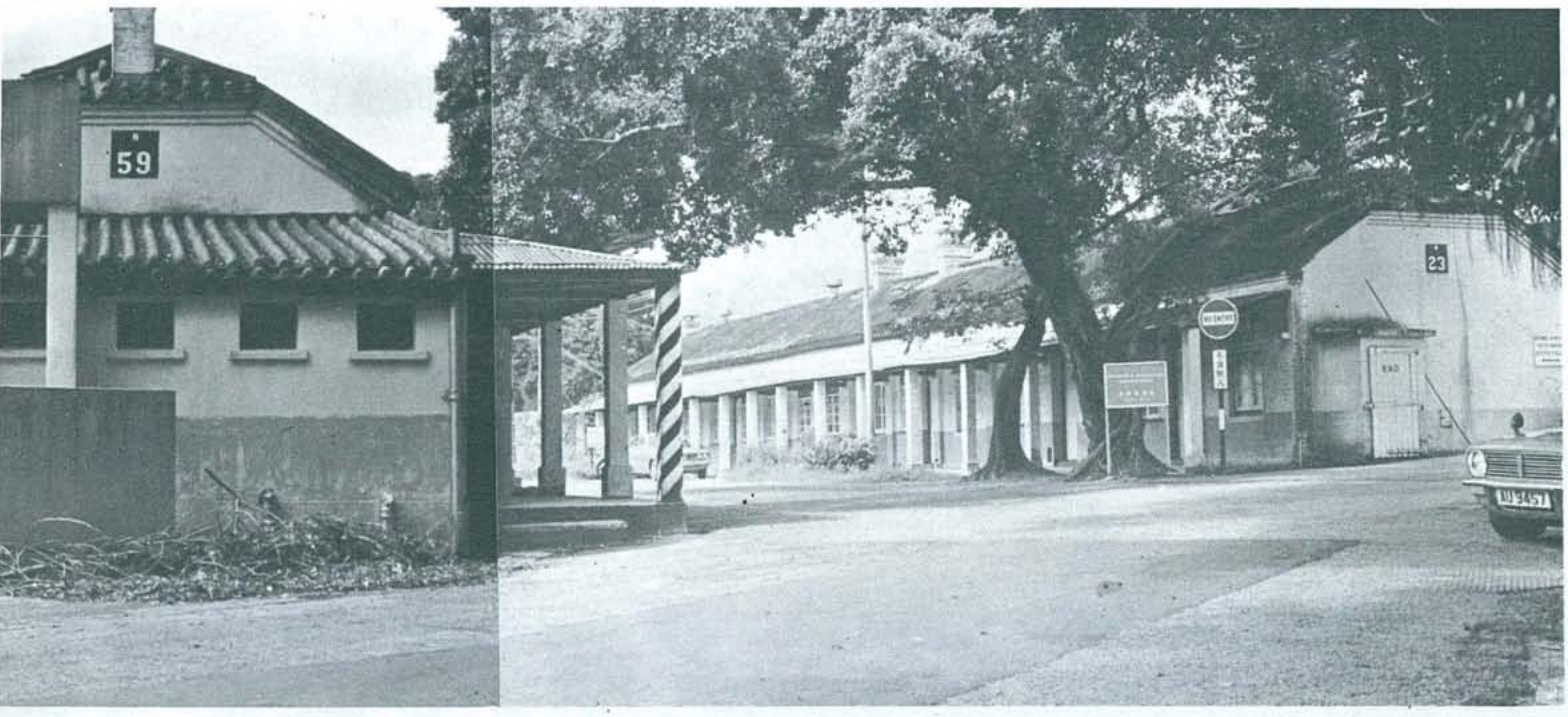









N
23
KWD


59
23
NO ENTRY




23
NO ENTRY
KWD



26

His excellency the governor, Sir David Trench and Census Commissioner Mr. K.W.J. Topley inspecting storage racks at the Whitfield Barracks. The enumerators' cardboard boxes containing UDT forms are arranged by census division.

List of census tabulations for the 1971 population census

(A) Population and Density

1. Whole population X sex X area compared with previous censuses (1921, 1931, 1961, 1966, 1971)
2. Sex-Ratio (Males per 1,000 females) by area, compared with previous censuses.
3. Sex-Ratio by districts compared with 1961.
4. Whole population X sex X quinquennial age groups (up to 75+) compared with previous censuses.
5. Whole population X sex X quinquennial age groups (up to 85+) X districts with area sub-totals.
6. Whole population X sex X individual year of age (0–11 months, 1–108, 109+) X place of birth.
7. Density of population (Land Census only) X districts compared with 1961.
8. Whole population X sex X individual years of age X tertiary units.

(B) Personal Characteristics

101. Persons X Relationship to Head of Household X sex X age (Quinq. up to 65+) X districts.
102. Conjugal status X sex X quinquennial age groups (up to 65+) X area.
103. Conjugal status X educational attainment X sex X age broad groups X district
104. Ever married persons X age (single years 10–50+) at first marriage X place o origin X sex.
105. Ever married persons X age (Quinq. 10–50+) at first marriage X education. attainment X sex X area.
106. Econ. active ever married persons X sex X age (Quinq. 10–50+) at first marriag : X occupation. (M.G.)
107. Population aged 10+ X usual language X sex X ability to speak English X districts.

Same set of tabulations for **Ever Married Men**

108. Ever married women (married, widowed and divorced) X no. of children born X age quinquennia (up to 65+) X districts.
109. Ever married women X no. of children born X place of origin X age quinquen nia
110. Ever married women X no. of children born X no. of children living X age quinq. (up to 65+) X place of origin.

Same set of tabulations for **Ever Married Men**

111. Ever married women X no. of children born X activity status X age quinquennia (up to 65+)

112. Ever married women X educational attainment X no. of children born X age quinq. (up to 65+)

113. Econ. active ever married women X occupation (M.G.) X no. of children born X age quinq. (up to 65+)

114. Ever married working women X no. of hours worked X No. of children born X age quinq. (up to 65+)

115. Ever married women X no. of children born X place of origin X area.

116. Ever married women X no. of children living X place of origin X area.

117. Econ. active ever married Men X no. of children born X place of origin X occupation (M.G.)

118. Ever married persons X age at first marriage X time married (<1, 1, 2, 3, 4, 5–9, 10–14, 15–19, 20–24, 25–29, 30+yrs. ago) X sex.

119. Usual language X place of birth X sex X districts.

120. Usual language X place of origin X sex X age broad groups X districts.

121. Place of origin X place of birth X sex X districts.

122. Educational attainment X sex X quinquennial age groups (up to 65+) X districts.

123. Educational attainment X usual language X sex X area.

124. Persons attending school X education level X sex X single years of age (1 to 30+) X districts.

125. Persons attending school X education level X usual language X sex X age quinquennia (1 to 30+)

126. Persons attending school X education level X place of origin X sex X age quinquennia (1 to 30+)

127. Children not at school X working/not working X sex X age (single years 5 to 16) X districts.

128. Children not at school X working/not working X sex X age (single years 5 to 16) X place of origin X area.

129. Persons attending school X education level X sex X single years of age (1 to 30+) X T.U.

130 Children not at school X sex X age (single years 5 to 16) X T.U

131. No. of mothers X head (F) or spouse (F) X age of mother at birth of child X year of birth of child.

132. No. of mothers X spouse (F) or head (F) x no. of children born X occupation of head (M) or spouse (M).

(C) Personal Employment

201. Economically active population X activity status X sex X age quinq. (up to 65+)

202. Economically inactive population X activity status X conjugal status X sex X age quinq. (up to 65+).

203. Economically active population X activity status X educational attainment X sex X age broad groups.

204. Economically inactive population X activity status X educational attainment X sex X age quinq. (up to 65+).

205. Economically active population X educational attainment X occupation (M.G.) X sex X age broad groups X area (major groups).

206. Economically active population X educational attainment X industry (major groups) X sex X age broad groups X area.

207. Economically active population X activity status X industry (major groups) X occupation (sub-groups) X sex.

208. Working population X activity status X industry (sub-groups) X sex X area.

209. Working population X activity status X occupation (sub-groups) X sex X districts.

Working population to include Unemployed persons who had previous employment

210. Working population X industry (major groups) X sex X age broad groups X place of birth X area.

211. Working population X occupation (major groups) X sex X age broad groups X place of birth X area.

212. Working population X educational attainment X occupation (sub-groups) X sex X districts.

213. Working population X usual language X occupation (sub-groups) X sex X area.

214. Working population X no. of hours worked X industry (sub-groups) X sex X age broad groups.

215. Working population X no. of hours worked X occupation (sub-groups) X sex X age broad groups.

216. Unemployed persons (including job-seekers and with previous job) X sex X age quinq. (up to 65+) X district.

217. Unemployed persons (excluding job-seekers) X last occupation X sex X age quinq. (up to 65+) X area.

218. Unemployed persons (excluding job-seekers) X last industry X sex X age quinq. (up to 65+) X area.

219. Unemployed persons (excluding job-seekers) X last industry (sub-groups) X last occupation (sub-groups) X sex.

220. Unemployed persons (including job-seekers and with previous job) X educational attainment X sex X age quinq. (up to 65+) X area.

221. Unemployed persons (including job-seekers and with previous job) X usual language X sex X age quinq. (up to 65+) X area.

222. Population X activity status X sex X area X age quinq. (up to 65+).

223. Econ. active population X conjugal status X sex X age quinq. (up to 85+).

224. Econ. active population X activity status (M.G.) X conjugal status X sex X age broad groups.

225. Working population X sex X quinquennial age groups X ability to speak English X occupation.

226. Working population X industry (sub-groups) X occupation (sub-groups) X sex X age (quinq.)

227. Outworkers X industry (sub-groups) X sex X age (individual years up to 19, quinq. years 20+).

(D) Household Characteristics (Land)

1. No. of Households X Type of Household X Household Size X Sub-type of Accommodation X Districts.
2. No. of Domestic Households X Type of Household X Household Size X rent X Districts.
3. No. of Domestic Households X Household Size X Household Income X Rent X Districts.
4. No. of Domestic Households X Household Size X Sub-type of Accommodation X Household Income X Districts.
5. No. of Domestic Households X Sub-type of Accommodation X Rent X Districts.
6. No. of Domestic Households X Sub-type of Accommodation X Household Income X Rent X Districts.
7. No. of Domestic Households X Sub-type of Accommodation X Tenure X Rent X Districts.
8. No. of Domestic Households X Sub-type of Accommodation X Rent X Services.
9. No. of Domestic Households X Sub-type of Accommodation X Household Income X whether free meals provided.
10. No. of Domestic Households X Car Ownership X Household income X Districts.
11. No. of Domestic Households X Car Ownership X Other Cars Available X Districts.

(D) Household Characteristics (Marine)

12. No. of Households X Type of Household X Household Size X Alternative Accommodation X Districts.
13. No. of Domestic Households X Household Size X Household Income X Districts.
14. No. of Domestic Households X Alternative Accommodation X Household Income X Districts.
15. No. of Domestic Households X Household Income X Tenure X Districts.
16. No. of Domestic Households X Household Income X Whether free meals provided X Districts.

(E) Living Quarters Characteristics (Land)

1. No. of Living Quarters X Type of Living Quarters X No. of Rooms X Districts.

2. No. of Living Quarters X Type of Living Quarters X availability of Bathroom, Toilet, Kitchen, water supply X Districts.

(F) Household X Personal Characteristics (Land)

1. No. of Domestic Households X Household Size X Place of Origin of Head X Area.
2. No. of Domestic Households X Household Size X Educational Attainment of Head X Area.
3. No. of Domestic Households X Household Size X Type of Accommodation X Occupation (major groups) of Head X Area.
4. No. of Domestic Households X Household Size X Type of Accommodation X Activity Status of Head.
5. No. of Domestic Households X Type of Accommodation X Rent X Activity Status of Head X Area.
6. No. of Domestic Households X Type of Accommodation X Tenure X Activity Status of Head X Area.
7. Econ. Active Persons X Occupation (major groups) X Type of Accommodation X Rent X Area.
8. Econ. Active Persons X Occupation (major groups) X Type of Accommodation X Districts.
9. Heads of Domestic Household X Sex X Occupation X Household Income X Districts.
10. Heads of Domestic Household X Sex X Industry X Household Income X Districts.
11. No. of Domestic Households X Household Income X Activity Status of Head X Sex X Area.
12. Heads of Domestic HH X sex X occupation X HH income X T.U.
13. No. of domestic HH X HH income X activity status of Head X sex X T.U.

(F) Household X Personal Characteristics (Marine)

14. No. of Domestic Households X Household Size X Place of Origin of Head.
15. No. of Domestic Households X Household Size X Educational Attainment of Head.
16. Heads of Domestic Household X Sex X Occupation X Household Income X Districts.
17. Heads of Domestic Household X Sex X Industry X Household Income X Districts.
18. No. of Domestic Households X Household Income X Activity Status of Head X Sex.

(G) Living Quarters X Household Characteristics (Land)

1. No. of Domestic Households X Type of Households X Type of Living Quarters X availability of Bathroom, Toilet and Kitchen X Districts.
2. Living Quarters X Type of Living Quarters X Total persons in Living Quarters X Districts.
3. Living Quarters X Type of Living Quarters X No. of Households in Living Quarters X Districts.
4. No. of Living Quarters X Average Persons per Room (by dividing Total persons in Living Quarters by Total No. of Rooms in Living Quarters) X Districts.

(G) Living Quarters X Household Characteristics (Marine)

5. No. of Domestic Households X Type of Households X Type of Craft X Districts.
6. No. of Households X Household Size X Type of Craft X Districts.

(H) Living Quarters X Personal Characteristics (Land)

1. No. of Households X Place of Origin of Household Head X Type of Living Quarters X Districts.
2. Ever Married Women (age quinq. 65+) X No. of Children Born (0 to 10+) X Type of Living Quarters.
3. No. of Persons X Educational Attainment X Type of Living Quarters X Districts.
4. No. of Persons X Occupation (sub-groups) X Type of Living Quarters X Districts.

(H) Living Quarters X Personal Characteristics (Marine)

5. No. of Household X Place of Origin of Household Head X Type of Craft X Districts.
6. No. of Fishing Vessels X Engine Horsepower X Method of Fishing (Industry) of Household Head X Districts.
7. No. of Fishing Households X Method of Fishing (Industry) of Household Head X Educational Attainments X Districts.
8. Working population aboard X Type of Craft X Occupation X Districts.

(I) Agriculture & Fisheries

1. All farmers, foresters and hunters X age X sex X areas (N.T. in districts)
2. All farmers, foresters and hunters X sex X educational attainment X areas (N.T. in districts).
3. All farmers, foresters and hunters (Heads of HH only) X size of HH X description of farming X areas (N.T. in districts).
4. All farmers, foresters and hunters X description of farming, etc. X age X areas (N.T. in districts).
5. All farmers, foresters and hunters (heads of HH only) X activity status X size of HH X areas (N.T. in districts).
6. All farmers, foresters and hunters (Heads of HH only) X activity status X tenure of house occupied X areas (N.T. in districts)
7. All farmers, foresters and hunters X description of farming, etc. X activity status X education attainment (whole colony).
8. All fisherfolk X sex X age X districts.
9. All fisherfolk (Heads of HH only) X size of HH X description of fishing X districts
10. All fisherfolk X description of fishing X age X districts.
11. All fisherfolk (Head of HH only) X activity status X size of HH X districts.

12. All fisherfolk (Heads of HH only) X description of fishing X activity status X size of HH (whole colony).

13. All fisherfolk X activity status X educational attainment X age.

14. Heads of HH X description of fishing X activity status X educational attainment (whole colony).

15. All farmers, foresters and hunters, X description of farming X place of birth X areas (N.T. in districts).

16. All farmers, foresters and hunters X description of farming X place of origin X areas (N.T. in districts).

17. Type of L.Q. X type of farming (Head of HH) X areas (N.T. in districts).

18. Income of HH X type of farming (Head of HH) X areas (N.T. in districts).

19. All farmers, foresters and hunters X activity status X educational attainment X areas (N.T. in districts).

TABLE TABB12BC0529 PAGE 1 STRIP 1 SHEET 1 06/11/73 04/09/51

HEADACT 1

NOPPWK 0

	0	1	2	3	4	5: 999	SUM	0	1	2	3	4	5: 999
INCOME													
1													
HEADSEX													
0	0	52	12	4	1	3	72	36	9	1	1	0	0
1	0	39	5	2	1	1	48	47	18	4	2	0	0
SUM	0	91	17	6	2	4	120	83	27	5	3	0	0
2													
HEADSEX													
0	0	189	34	5	2	0	230	6	7	4	1	0	0
1	1	113	6	2	0	0	122	18	7	0	0	0	0
SUM	1	302	40	7	2	0	352	24	14	4	1	0	0
3													
HEADSEX													
0	1	333	90	26	5	2	457	19	5	7	2	1	0
1	0	246	17	3	2	3	271	32	20	8	3	0	0
SUM	1	579	107	29	7	5	728	51	25	15	5	1	0
4													
HEADSEX													
0	0	189	121	46	16	8	380	10	12	6	2	0	1
1	0	46	22	2	1	1	72	16	25	8	3	0	1
SUM	0	235	143	48	17	9	452	26	37	14	5	0	2
5													
HEADSEX													
0	0	120	122	34	11	8	295	18	13	9	4	0	2
1	0	18	23	1	3	3	48	13	15	11	4	1	0
SUM	0	138	145	35	14	11	343	31	28	20	8	1	2

CENSUS DISTRICT	
TERTIARY UNIT	
STREET BLOCK	
ENUMERATOR'S BLOCK	

HONG KONG CENSUS 1971

POST-ENUMERATION CHECK (LAND)

Sheet No. .....

Address: .....

.....

If this Household was not in this address on 9th March, 1971, where

.....

.....

POST-ENUMERATION CHECK

No. of Persons in this address on 9th March, 1971 : MALE FEMALE TOTAL

Household Income per month: HK$

	Name *(all persons in this address on 9th March, 1971)*	Sex	Date of Birth *(state whether Chinese/ Western reckoning)*	Age in complete years as at 9th March, 1971	Activity status	Occupation
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						

SUB – TYPE OF ACCOMMODATION

Checked By:

.....

Chief Enumerator No. .....

..... April, 1971.

ORIGINAL ENUMERATION
(To be filled in at Headquarters)

No. of Persons: MALE FEMALE TOTAL

Household Income per month: HK$

	Name	Sex	Age in complete years as at 9th March, 1971	Activity status *(Code No.)*	Occupation *(Code No.)*
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

SUB – TYPE OF ACCOMMODATION

Checked By:

.....
Statistical Clerk

..... 1971.

FINDING

Household Income:

Person	Sex	Age	Activity status	Occupation

Checked By:

SUB – TYPE OF ACCOMMODATION

.....
Statistical Clerk

..... 1971.

HONG KONG CENSUS 1971

Sheet No. .....

POST-ENUMERATION CHECK (MARINE)

MARINE DISTRICT	
LICENCE NO. OR NAME OF BOAT	

1. Was this boat in harbour at Marine Census (23rd January, 1971)? Yes/No

2. If so, in which harbour? .....

POST-ENUMERATION CHECK

No. of Persons on Board this Boat on 23rd January, 1971 : MALE FEMALE TOTAL

Household Income per month: HK$

	Name *(all persons on board this boat on 23rd January, 1971)*	Sex	Date of Birth *(state whether Chinese/ Western reckoning)*	Age in complete years as at 23rd January, 1971	Activity status	Occupation
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						

TYPE OF CRAFT

Checked By: .....

Chief Enumerator No. .....

..... FEB 1971.

ORIGINAL ENUMERATION: *Schedule No.* .....
(To be filled in at Headquarters)

No. of Persons: MALE FEMALE TOTAL

Household Income per month: HK$

	Name	Sex	Age in complete years as at 23rd January, 1971	Activity status *(Code No.)*	Occupation *(Code No.)*
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

TYPE OF CRAFT

Checked By: .....

Statistical Clerk

..... 1971.

FINDING

Household Income:

Person	Sex	Age	Activity status	Occupation

Checked By: TYPE OF CRAFT

.....
Statistical Clerk

..... 1971.

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