

# THE <br> NORTHERN IRELAND 

## CENSUS 1991

## GENERAL REPORT

Editor: Trevor Evans<br>Author: Uel McMath

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For further information about this publication contact, Customer Services, Census Office for Northern Ireland, Northern Ireland Statistics and Research Agency, The Arches Centre, 11-13 Bloomfield Avenue, Belfast BT5 5HD, telephone 01232-526087, fax 01232-526949.

## Foreword

The Northern Ireland (NI) General Report reviews the NI Census operation from the early consultation and planning stages through to the production of output and a first assessment of the results.

The Census is the largest statistical exercise carried out by government. It provides an opportunity to obtain an up to date, accurate, comprehensive picture of the country's population and key facts about it. The results are indispensable for both national and local policy information, planning and effective targeting of resources. It provides the only source of directly comparable statistics for small areas and sparse population groups, and it is used as a reference base for many regular statistics series, such as population estimates and sample surveys.

The broad strategy for the 1991 Census was to base it on the methods employed for the 1981 Census. Throughout, the growth in users' needs for information had to be balanced against keeping the demands made upon the public within bounds and making the form as easy as possible to complete. These increased demands, and changes in the social and technical environment, meant that a number of new features had to be introduced and these are described in the Report.

For the first time in the GB and NI Censuses, microdata have been made available to users in the form of two Samples of Anonymised Records. The decision to issue these samples was only taken after consideration that the measures taken to anonymise the data and prevent identification of individuals were sufficient. Further details about the samples and their availability are included in the Report.

For most users, however, particularly those interested in local areas, small samples are no substitute for the traditional detailed tables of results. We have produced substantially more information than from the 1981 Census. The increase was as a result of two factors in particular. First, the new questions, particularly the Irish language question, which gave rise to a wider range of cross tabulations. Second, the users' recognised need for census information to help run their businesses, linked with their enhanced ability to organise and analyse the data effectively using modern computers. Although the printed volumes published by HMSO formed an important part of the output, most of the statistics are now disseminated electronically, with statistics available on diskette for personal computer use as well as computer mainframe tape.

The Census is a complex operation which requires meticulous planning. There is no second chance if things go wrong. Everything possible must be done to get things right first time. The overall coverage is well up to the international standard for the 1990 round of censuses and the quality of data has been maintained. For this thanks are due to the general public for filling in over half a million census forms, with completeness and accuracy; the vast army of temporary staff employed in taking the Census; the staff who undertook he initial coding and processing of the information; and the Census Office staff without whose planning, organisation and attention to detail no census would have been possible.

The Report provides a wealth of detail about how the Census was carried out and it is hoped that users will find it useful.

March 1997
N. Coven
(Registrar General)

## TG. Evans

(Census Manager)

## THE NORTHERN IRELAND CENSUS 1991

## GENERAL REPORT

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## CHAPTER 1

CONSULTATION

## 1. CONSULTATION

## THE NEED FOR CENSUS INFORMATION

1.1 The census of population is the most important single source of information about the size and characteristics of the country's most valuable resource - its population. The unique value of statistics generated from the census arises from:

- the completeness of coverage, because the census includes all places of residence and is compulsory;
- the comparability of the statistics across the whole country;
- the opportunities for inter-relating various characteristics of the population;
- the information available about small populations in either local areas or located throughout the country: and
- the historical continuity, in general, of statistics from census to census, which allows long-term change to be measured.
1.2 The census provides an authoritative statistical foundation for policy formulation and for planning and operational decisions in both the public and private sectors. It helps central and local government to distribute resources effectively where they are most needed; it supplies the demographic framework in which health boards, industry and commerce, and many others work; and it provides a vast source of information for academic research. It gives a statistical picture of society and the changes that take place within it.
1.3 The need for information from censuses is shared by the European Community. A directive calling member countries to hold a population census between 1 March and 31 May 1991, or for equivalent statistics to be prepared by other methods, was adopted on 26 May 1987.
1.4 The statutory authority for taking population censuses in Northern Ireland is the Census Act (Northern Ireland) 1969. This gives powers for taking a census in any year which is at least five years from the year of the previous census.


## BROAD PRINCIPLES

1.5 The Government's general proposals for the 1991 Census were based on five broad principles:

- a census must only ask for information where there is a demonstrated need, where it has been shown to be feasible to collect the information, and where there is no adequate and accessible alternative source;
- because a census is compulsory and everyone in the country is required by law take part, it must be generally acceptable to the public and reasonable in its overall demands;
- the confidentiality of the information provided by the public must be safeguarded;
- the results must be made available quickly; and
- the census must be taken with a carefully managed and economical use of resources.
1.6 A number of key features from the 1981 Census were retained for 1991:
- questions were again restricted to those that would be easy to answer, acceptable to the public, not regarded as an intrusion of privacy, and necessary to provide essential information for other planning and running of public and private sector services;
- the same method was used for planning Enumeration Districts.
- the procedures for delivery and collection were the same, that is, forms were delivered and collected by Enumerators, and were in general neither posted out nor posted back; and,
- high levels of data confidentiality and security were maintained.
1.8 These considerations provided the framework within which the consultations about the 1991 Census were conducted. An important early phase in planning the 1991 Census was to set up the machinery to ensure there was regular and thorough consultation with users about their needs, in terms of both the topics to be included and the form of the resulting statistics.


## CONSULTATION MACHINERY

1.9 The consultation process for the 1991 Census began in March 1986 when the Registrar General wrote to the Permanent Secretaries of Government Departments and the non-Departmental Public Bodies (NDPDs) for which they were responsible, asking them to indicate in the light of experiences from the 1981 Census, their data needs, and what changes in census questions they considered necessary for the 1991 Census. Members of the Northern Ireland Civil Service Statistics Co-ordinating Group (SCG) were also consulted. SCG was formed in 1985 with a remit of co-ordinating continuity of practice with respect to statistical analysis and research within Government Departments and their NDPBs in NI.

### 1.10 Responses to the Registrar General's request fell into three categories:-

i questions that prima facie had sufficient support for inclusion:
ii proposed amendments to 1981 questions to elicit additional information or improved response rates: and,
iii proposed new questions.
1.11 In order to consider the policy and broad planning arrangements for the 1991 Census, a Northern Ireland Census Committee (NICC) was set up in 1987 under the chairmanship of the Registrar General. Membership was drawn from the senior management of the Policy Planning Research Unit (PPRU) of the Department of Finance and Personnel. At its first meeting held in September 1987, taking account of the most recent developments in Great Britain on question content for the 1991 Census, the NICC reviewed the responses to the Registrar General's request of March 1986. They also discussed the implications of the May 1987 European Community Directive on the holding of population censuses in 1991 and the requirement to include certain core questions.
1.12 To ensure the academic community were kept informed on progress on the potential 1991 Census topics, the Registrar General wrote to the Directors of the Economic Council, the Policy Research Institute and the Research Council in Northern Ireland, and through them the wider academic community, to provide them with details of progress to date on census matters .

## Topics considered for the 1991 Census

1.13 In their deliberations on topic content for the 1991 Census, the NICC considered the core topics traditionally included in NI Censuses, the EC topic requirements and other topics not previously included in a NI Census. The latter included:

- identification of physically or mentally handicapped persons;
- second jobs /income;
- term time address of students and schoolchildren;
- receipt of benefits;
- disability or long-term illness;
- speaking / reading / writing of Irish Language;
- voluntary or involuntary sharing of dwellings;
- fuel or power used.
1.14 In May 1988, Permanent Secretaries and SCG were asked to provide comments on a draft submission to Ministers and the Secretary of State on the proposed topic content of the NI 1991 Census. The submission took account of discussions at NICC, the EC requirement and the draft 1991 Census White Paper which was shortly to be published in GB. Following the publication of the White Paper "1991 Census of Population" (Cmd 430), a Press Release was issued in NI to indicate that a Census of Population would be held in NI on 21 April 1991 to coincide with the Censuses being held in the rest of the United Kingdom on the same
day. The release stated that the questions proposed to be asked were generally similar throughout the UK.
1.16 The topics finally included are shown in the following table:

|  | 1991 Census <br> Question number |
| :--- | :---: |
| TOPICS |  |
| Household Topics | Panel A + H1 |
| Type of accommodation | H 2 |
| Number of rooms | H 3 |
| Tenure | H 4 |
| Availability of amenities (bath/shower, WC,) | H 4 |
| Central heating | H 4 |
| Water supply | H 4 |
| Domestic sewage disposal | H 5 |
| Number of cars or vans available |  |
| Personal Topics | 1 |
| * Address of enumeration \# | 2 |
| * Name | 3 |
| Sex | 4 |
| Date of birth | 5 |
| Marital status (including whether re-married) | 6 |
| Relationship in household | 7 |
| Whereabouts on Census night | 8 |
| Children born alive to ever married women | 9 |
| * Usual address | 10 |
| * Term time address of students and schoolchildren | 11 |
| * Usual address one year ago | 12 |
| Country of birth | 13 |
| Religion (to be answered on a voluntary basis) | 14 |
| Limiting long term illness | 15 |
| Irish language | 16 |
| Economic activity last week | 17 |
| Hours worked a week | 18 |
| Occupation | 19 |
| Industry of occupation | 20 |
| Address of place of work | 21 |
| Means of daily journey to work |  |
| Academic, professional and vocational qualifications |  |
|  |  |
| Not stored on computer except for postcode |  |
| \# This item of information was collected by the enumerators |  |
|  |  |
|  |  |

The list detailed in the table above includes two questions not asked in the 1981 Census and three not previously asked in any Northern Ireland Census. Questions on the number of children born alive to ever married women and hours worked a week were not asked in 1981, but were asked in 1961. Questions on term time address of students and schoolchildren, long term illness and Irish language had not been asked previously in a Northern Ireland Census.

### 1.18 Comparison with censuses in England, Wales and Scotland -

With few exceptions the topics proposed for Northern Ireland were identical to those for the rest of the United Kingdom. However, in Northern Ireland it was proposed to retain the traditional question on religion for answer on a voluntary basis and to re-introduce a question on the number of children born alive to ever married women. Neither question was asked in the GB Censuses. On the other hand the GB Censuses included a question on ethnicity which was not asked in the Northern Ireland Census. A language question was included for Wales (Welsh), Scotland (Scottish Gaelic) and in Northern Ireland (Irish language). In Scotland only, householders were asked for information on the lowest floor level of accommodation. All the United Kingdom Censuses included questions on term time address of students and schoolchildren, long term illness and hours worked.

### 1.19 Topics of particular relevance to Northern Ireland -

Religion - A voluntary question on Religion has been asked in every census in Ireland since 1821 and in every Northern Ireland census since 1926. The results of recent censuses (including 1981) indicated a growing reluctance to answer the question and there had been a substantial increase in the non-response rate, from $0.4 \%$ in 1951 to $18.5 \%$ in 1981 . This level of non-response made it more difficult to interpret the information obtained from the question. Despite this it was recommended that the question should be retained because of the centrality of religion to the demographic, social, economic and educational characteristics of Northern Ireland.

Number of children born alive to ever married women - Since 1938 data collected in GB at registration of births have included the age of the child's mother, but similar information was not collected in Northern Ireland until 1974. Northern Ireland was therefore some 36 years behind GB in terms of availability of reliable data. This affected population projections and did not permit changes in population to be determined with any degree of accuracy. To bridge the gap until reliable local data became available, the NICC proposed that a basic question on the number of children born alive in marriage be asked and how many of these children were born alive after 21 April 1990, be included in the 1991 Census.

### 1.20 Topics considered unsuitable for inclusion

Other topics were considered for inclusion but because the case made for them was not regarded as strong enough bearing in mind the overall budget constraint, the burden on the public, and in some cases, the availability of information from other sources, the NICC recommended that they should be excluded from the census. They included 'address five years ago', 'identification of physically or mentally handicapped people', 'identification of
persons who are in receipt of defined community health or personal social services', 'secondary employment', 'voluntary or involuntary sharing of dwellings', 'fuel or power used for cooking' and 'smoking habits of the population'.

## GEOGRAPHY REQUIREMENTS

1.21 In addition to being asked to consider the content of the 1991 Census, users were asked for their requirements for identifiable geographic areas for census output. Full details of the geographic boundaries recognised in the 1991 Census are described in Chapter 5. Deliberations centred around the following questions:

- what requirements would there be for census output for the traditional areas, e.g. electoral wards;
- what requirement there would be for continuity between areas for 1991,1981 and 1971; and
- what demand there would be for postcode based areas.
1.22 Following consultation, it was decided that to meet the needs of the majority of users, the statutory administrative area geography extant at the time of the census would form the basis for planning and output. Enumeration Districts would be created and their boundaries would not transgress those of with electoral wards. Ward based data could be aggregated to form the higher level areas of local government districts and the statutory areas of Health and Social Services and Education and Library Boards. Whilst it was decided not to produce output for postcode areas, a decision was taken that enabled the postcodes of enumerated addresses to be captured on the census computer system. (Note: See the Appendix to Chapter 9 which provides details of postcode related output produced from the 1991 Census).


## OUTPUT STRATEGY

1.23 In September 1989 once the proposed census topics had been agreed and the content of the 1991 Census form finalised, a 1991 Census Output Strategy paper was produced. The broad terms of the paper were as follows:
i the Preliminary Report would be published as soon as possible after Census day to give basic headcount data;
ii the Summary Report and other main reports would be produced within two years after the census date; and
iii methods to meet other demands for output such as Samples of Anonymised Records (SARs), requests for ad-hoc data and other non-standard output would be considered. The aim would be to develop a system capable of accommodating simultaneously the production of printed reports and other statistical requests by users.
1.24 During the two year period after the 1991 Census, discussion with various interested groups of users also took place on a variety of other census based products, such as:

- the Samples of Anonymised Records (with the Economic and Social Research Council - ESRC);
- the Enumeration District based Small Area Statistics (with the ESRC and Queen's University of Belfast - QUB);
- digitised ED boundaries (with Ordnance Survey of Northern Ireland - OSNI);
- the Enumeration District / postcode look-up file (with the ESRC and QUB); and,
- special data for EC, UN and Census Agencies.


## CONCLUSIONS

1.25 To plan and execute an effective census, a detailed programme of consultation with users is vital. This must cover the potential questions to be included, geography and dissemination of output. The 1991 Census consultation programme was appreciated by users and generally successful.
1.26 The consultative process ran from March 1986. In addition the Registrar General wrote to the Chief Executives of Districts Councils, Chairpersons of the Health and Social Services Boards and Education and Library Boards and the Chairman of the Central Services Agency inviting their views. The academic community, the Northern Ireland Council for Voluntary Action and other voluntary sector organisations were also consulted. The consultation process was valuable in identifying new questions and in making adjustments to existing questions. It also resulted in significant innovation and change, for example, the ED based Small Area Statistics and Sample of Anonymised Records Initiatives.
1.29 The result of the 1991 consultation was a selection of topics in the Census for which there was a demonstrable need for data, and a package of products which was targeted to meet those needs.

## CHAPTER 2

## PLANNING AND PREPARATION

## 2. PLANNING AND PREPARATION

## INTRODUCTION

2.1 Consultation with users, as described in Chapter 1, is a vital part of the preparations for a census. This Chapter describes the equally important planning, testing and legislative procedures which take place prior to the Census.
2.2 The Government announced in 1983 that there would not be a mid-term census in the 1980s but that the next census should be planned for 1991. In 1987 it was announced that Northern Ireland, in line with the other countries in the United Kingdom, was to hold a census in 1991, and proposals for its content would be announced at a later stage.
2.3 Planning for a census of population requires long term planning because:

- it is essential to allow time to test the wording of new questions and to consider the most appropriate and up to date procedures for data collection and analysis. For the 1991 Census, census content was considered from as early as 1986, a geography test was carried out in 1987 and question testing was undertaken in 1989;
- approval for the census is given by Parliament, within the general provisions of the Census Act (Northern Ireland) 1969 under which the census is taken;
- the measures to protect the confidentiality of information about individual people and households need to be scrutinised and considered carefully;
- the census test and the census itself need to be publicised. Moreover, and because Census Day is a fixed end-point, allowance must be made in the planning schedule for overcoming any problems encountered during the preparatory work.

The key dates in the preparation for the 1991 Census are shown in Figure 2.1.
ENUMERATION DISTRICT PLANNING - 1987 PILOT EXERCISE
2.4 Early in 1987 it was decided that the basis for field geography planning would be unchanged from that used in the 1981 census. This involved the use of Valuation Lists supplied by the DoE and maps supplied by the Ordnance Survey of Northern Ireland (OSNI).

### 2.5 A pilot exercise was conducted to test proposed ED planning system using

 information available from the DoE and OSNI. It was anticipated that the exercise would provide valuable information on the problems likely to be encountered during the 1991 full scale ED planning operation. (Details are given in Chapter 5).Figure 2.1 - Timing of tests and Parliamentary legislation: 1991 Census

| Consultation commences |  | x |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enumeration District planning test |  |  | $\mathbf{x}$ |  |  |  |  |
| GB Census White Paper |  |  |  | x |  |  |  |
| Census Test |  |  |  |  | x |  |  |
| NI Output strategy paper produced |  |  |  |  | $\mathbf{x}$ |  |  |
| The NI Census Order |  |  |  |  |  | x |  |
| The NI Census Regulations |  |  |  |  |  | x |  |
| The NI Census Confidentiality Order |  |  |  |  |  |  | x |
|  | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |

2.6 A total of 12 electoral wards were selected for the pilot exercise. They included four wards ( 2 urban and 2 rural) from each of Banbridge, Ballymoney and Cookstown local government districts.
2.7 Maps from OSNI and lists of rateable properties provided by DoE were scrutinised before staff drew the ED boundaries. This gave an initial indication of the extent to which listed properties were depicted on the maps. After the boundaries were drawn, planning lists (lists of rateable properties) were produced for each ED. Field visits were organised to compare the maps and planning lists with the situation on the ground.
2.8 The findings from the pilot exercise were presented to NICC and proved most useful in the preparations for the ED planning exercise. The main points to arise were:

- in some instances the OSNI maps did not depict all listed properties;
- the laborious task of producing ED planning lists could be alleviated with the development of an ED planning list computer system; and,
- that as the 1991 ED planning exercise was going to be labour intensive, staff selected for the work should be provided with proper support by way of map tables, photocopying facilities etc.

THE NORTHERN IRELAND 1989 CENSUS TEST

## Background

2.9 It has been the practice of the Office of Population Censuses and Surveys (OPCS) in GB to precede the decennial census with a number of voluntary census tests. Although a

Census Test is voluntary, whereas participation in a Census is compulsory, the tests yield valuable information on the response of the public to the inclusion of questions on certain topics (e.g. Irish language), to the wording of questions and to the general structure of the census form.
2.10 Census Tests had not been previously carried out in NI, the assumption being made that testing carried out in Great Britain was sufficient. However, there are a number of questions on topics reflecting NI concerns, which are not included in the GB censuses. Moreover. where the topic is common throughout the UK, variations in wording may be appropriate.
2.11 Northern Ireland Censuses differ from the GB census in several respects. The former includes a question on religion for answer on a voluntary basis. In the 1991 Census, questions on Irish language, and the number of children born alive to ever married women were included, whereas in GB a question on ethnic group was included. Also, the amenities and academic qualification questions asked in Northern Ireland differed to those asked in GB.
2.12 The Northern Ireland Census Test was undertaken, on behalf of the Census Office by the Statistics and Social Division (SSD) of the Policy Planning and Research Unit (PPRU), Department of Finance and Personnel.

## Objectives

### 2.13 The general objectives of the test were:

- to assess the public response to the proposed Census questions; and
- to assess the accuracy of responses.


## Test Method

2.14 The NI 1989 Census Test did not attempt to duplicate the GB 1989 Census Test. The latter was largely directed towards testing administrative systems by replicating their work in selected electoral wards, where every household was asked to participate. The NI test was designed to assess responses to questions specific to Northern Ireland.
2.15 The main questionnaire was based closely on the test form used by OPCS including questions on new topics proposed for the 1991 census. Two versions of the questionnaire (A and B) were used and allocated randomly to addresses in order to allow different approaches to wording and question content to be compared. The A form question on religion required respondents to select one of four tick boxes, whereas the $B$ form question used a slight modification of the traditional wording and allowed an open response. On household amenities, the A form included questions on insulation and fuel, and in general the questions on household amenities were more detailed than those on Form B. The exception related to central heating where the B form contained the more detailed question. A separate questionnaire was also included seeking the views of respondents on the number and acceptability of questions and the need for assistance by the interviewer. An assessment of
completion time and the number of persons omitted from the form due to the lack of space was also included.
2.16 Owing to the size of the test, Statistics and Social Division staff, were instructed to complete the fieldwork over a three week period. Participation was voluntary and where households agreed to take part, a census form was left for completion and an appointment made for its collection, at which stage certain key questions were asked again. Although the fieldwork was spread over a three week period, respondents were asked to reference their reply to the situation on the night of 4-5 June (Census Test day).
2.17 Four areas of Northern Ireland were selected for the fieldwork, namely the local government districts of Ballymena and Newry and Mourne, and East and West Belfast as defined on an electoral ward basis. These areas were chosen to give a coverage of the full range of rural and urban areas including both sides of the community. A total of 2,000 addresses, 500 from each area, was randomly extracted from the Northern Ireland rating list.

General Results
2.18 The overall response rate to the census test was $70 \%$. This compared favourably with the GB April 1989 Census Test where the average response rate was $60 \%$.
2.19 The range of data collected in the Census test was considerable. For analysis purposes, attention was directed towards new or untested questions, section on attitudes to the Census, and the validity of the responses. Non-response was also examined as was the relative utility of differences in question design.
2.20 A summary of the key results drawn from the test is as follows:

- there were no problems with the field operation aspects except that the pre-publicity leaflets appeared to have little effect;
- the response rate ( $70 \%$ overall) varied from $61 \%$ in West Belfast to $77 \%$ in Ballymena. In West Belfast there was noticable drop out of respondents in between the initial contact stage and the follow-up stage. Age, illness, lack of time and general antipathy to censuses were major reasons given for non-response. The specific questions on Irish language, religion and employment were also cited by some non-respondents;
- there was a substantial bias in respondents with young Roman Catholics in West Belfast, less likely to take part;
- the Irish language question was not answered by 12-14 \% of respondents. This was somewhat higher than average non-response to particular questions;
- the alternative versions of the religion question were equally well answered. A high level of non-statement of religion occurred in comparison with the social surveys;
- the question on the number of children born alive to ever married women was badly answered, with many of these women not answering;
- the question on term-time address was poorly answered;
- signposting on the employment question was not heeded and there was a reluctance to give descriptions of jobs or employers;
- over $15 \%$ of persons failed to answer the question on long term illness;
- increasing the length of the section on household amenities reduced the proportion of households answering. The more complicated question on access to WCs gave markedly poorer results;
- some $35 \%$ of households thought that the Census contained too many questions and $27 \%$ considered that certain questions should not have been included (principally religion, Irish language and employment). More than $19 \%$ of households reported difficulty with at least one question;
- workplace postcode was unknown to the majority of those in employment, with about $80 \%$ in rural areas failing to give a postcode; and,
- most questions were answered consistently. Exceptions were long-term illness, working for employers, looking after the home and Irish language.
2.21 The test provided the Census Office with extremely useful information when it came to deciding the final structure of the 1991 Census form. An evaluation of the NI 1989 Census Test is detailed in the Policy, Planning and Research Unit's Statistics and Social Division Occasional Paper No. 20 (Morris and Johnston) 1990.


## PARLIAMENTARY PROCEDURES

## The Census Order

2.22 One might, perhaps, expect the preparations for the census to begin by the Census Office seeking Parliamentary approval. However, a great deal of preliminary work is required to prepare specific proposals for a census which are practicable and which will meet users' needs, and it is necessary to complete this work before Parliament can be asked to approve the plans. These preparations are covered by the Census Act (Northern Ireland) 1969 which gives powers for taking a census of population in any year which is at least five years from the previous census. In addition, Ministers are consulted about the extent and nature of the preparatory work, and give their approval.
2.23 Under the 1969 Act, an Order in Council directing that a census shall be taken has to be laid before Parliament under the negative resolution procedure it is not debated. The Order prescribes:

- the date on which the census is to be taken;
- the persons by whom, and with respect to whom, the returns for the purpose of the census are to be made; and
- the particulars to be stated in the returns.

The matters in respect of which particulars may be required as set out in the Schedule to the Act are as follows:
(1) Name, sex, age;
(2) Occupation, profession, trade or employment;
(3) Nationality, birthplace, race, language;
(4) Place of abode and character of dwelling;
(5) Condition as to marriage, relation to head of family, issue;
(6) Education, professional and technical qualifications;
(7) Religion; and,
(8) Any other matters with respect to which it is desirable to obtain statistical information with a view to ascertaining the social condition of the population.
2.24 The Census Order (Northern Ireland) 1990 was made on 4 April 1990 by the Secretary of State for Northern Ireland and came into operation on 16 May 1990.

## The Census Regulations

2.25 To enable the Census Order to take effect the Department is empowered by the Act to make regulations governing the detailed arrangements for the conduct of the Census. The Census Regulations, containing reduced facsimile copies of the census forms, were made on 29 June 1990 and came into operation on 31 July 1990.

## Changes from the 1981 Census Order and Regulations

2.26 Apart from the inclusion of the new questions on long-term illness, and term-time address of students and schoolchildren, work experience during the last ten years and knowledge of the Irish language), and the inclusion of a question number of children born alive to ever married women - previously asked in the NI 1961 Census, the main differences between the Census (Northern Ireland) Order 1990 and the Order for the previous census were:

- simplification of the definition of civilian shipping to be included; and
- special provision to enable a person sleeping rough to authorise another person to complete a census form on his/her behalf whether or not he/she was incapable of doing it for himself/herself.
2.27 The Regulations for the 1991 Census differed from those for 1981 chiefly as follows:
- regulations relating to the issue of instructions by the Registrar General to the field staff were omitted, as the power to do this is already provided by the Census Act (Northern Ireland ) 1969.
- substantial change was made to the regulation forbidding anyone who was given information under the Census Order and Regulations to use it or disclose it without lawful authority; and
- changes were made to reduce the number of different census forms; the 1981 'L' form for communal establishments, the ' N ' form for HM ships, and the ' S ' form for other ships were combined into a new 'L' form.


## SECURITY AND CONFIDENTIALITY

## Legislation

2.28 The security and confidentiality of census information is protected by statute. Hitherto reliance had been placed on Section 2 of the Official Secrets Act 1911, to safeguard information after the census has been taken. That Section having been repealed in 1989, additional protection became necessary to cover people not involved in taking the Census. New legislation was introduced before the 1991 Census, namely the Census (Confidentiality) (Northern Ireland) Order 1991, which came into operation on 22 April 1991. This amended Section 7 sub-sections 4 and 5 of the Census Act (Northern Ireland) 1969 which provided for an offence of unlawful disclosure of census information. It did this by both substituting new subsections extending the offence to protect information collected in census related surveys (as well as information obtained in a census) and by defining the possible offenders, not just as 'any person employed in taking a census' but more broadly so as to include anyone under the control of the Registrar General or supplying services to him. The Act restricts the offence to disclosure of personal information. It provides defences for people who believe they have acted lawfully.

### 2.29 Under Section 7, subsection 1 of the Census (Northern Ireland ) Act 1969 it is an

 offence to contravene the Census Regulations. Regulation 15 (3) forbids the use, publication, or communication of census information by any person except for the purposes of the Census Act or in accordance with the Regulations. Furthermore, Regulation 16 requires anyone having custody of documents containing census information to keep them safe from unauthorised access.
## Data collection

2.30 Assurances about confidentiality of census information were given to the public in the Registrar General's letter on the census form. The information leaflet distributed to all households with the census form stated that all completed forms would be kept confidential and only used to produce information about the population in general, and that the Census Office would not give any information about identified individuals or households to anyone outside the Census Office (although the form could be produced as evidence in court in the prosecution of someone not completing it properly).
2.31 The legal provisions relating to census security and confidentiality were stressed in the measures taken by Census Office and in the instructions given to staff who handled the information, both in the field and during processing in Census Office. All field staff signed an undertaking (set out in Schedule 1 to the Regulations) to perform their duties faithfully and to fulfill all their obligations under the Census Act and the Regulations. The provisions of Section 7 of the Census Act (Northern Ireland ) 1969 (as amended by Articles 5(4) and 7(2) of and Schedule 3 to the Fines and Penalties (Northern Ireland) Order 1984 (a) and the Criminal Penalties etc. (Increase) Order (Northern Ireland) 1984 (b) were drawn to their attention and copies supplied to them. Assurances of confidentiality also extended to the Census Validation Survey questionnaires
2.32 The enumerators and any persons assisting them had to carry authority cards, which members of the public could ask to see. Furthermore, Enumerators were instructed to ensure that any companion or helper was properly authorised and had also signed the prescribed declaration.
2.33 An instruction manual was issued to members of the field staff in which the importance of confidentiality was emphasised to all levels of the field force. Among the instructions to Enumerators were the following:

- not to let any unauthorised person accompany them on their rounds;
- to ensure that they were talking to the right person when they called back to collect the form and obtain any missing answers;
- to discuss an Individual return only with the person to whom it related;
- to put forms in a secure place when not working on them;
- not to leave any completed forms unattended when on their collection rounds;
- not to talk to people about their work outside the Census organisation;
- not to give the forms to anyone outside the census organisation and never leave them unattended for someone else to pick up.
2.34 Enumerators were instructed to offer a special envelope in which the census form could be sealed and not seen by them wherever a household asked for such an envelope, or where the Enumerator encountered a household known to him/her. Enumerators were further instructed not to open such a Sealed Return, and that to do so constituted a breach of the Census Regulations.
2.35 Members of households who did not wish to give personal information to the head of household or form filler were able to request an Individual return which could be passed separately to the Enumerator under a sealed cover. Any subsequent queries would then be directed to the individual concerned and not to the householder. People in communal establishments who completed their own forms could also request this facility so that the person in charge of the establishment could not see their form.


## Processing

2.36 Appropriate security precautions were taken when collecting the completed census forms from field staff and transferring them via secure carrier for processing in Census Office. Although the census computer installation and processing were controlled by Census Office, all personnel working there had to sign a special undertaking that they would not divulge information gained in the course of their employment to any unauthorised person, either orally or in writing and that they were aware of the provisions of the Census (Confidentiality) (Northern Ireland ) Order 1991 and Regulation 16 of the Census Regulations (Northern Ireland) 1990.
2.37 Access to the offices where processing was carried out was strictly controlled; visitors were admitted only under escort and even then were not allowed to see the census forms or obtain copies of the tape files of the anonymised records of individuals and households. Extra precautions were taken to prevent unauthorised entry to the store in which the completed census forms were stored and to prevent unauthorised access to census documents and other material containing confidential information.
2.38 Names and addresses from the forms were not stored in the computer used to process the census data. However, the inclusion of names and addresses on the forms was essential for a number of purposes;

- to help the form filler identify each person in the household;
- to enable the field staff to apply to the appropriate person if information from the form was missing, and to enable Census Office to indicate whether or not the householder had fulfilled his or her legal obligation to provide the required information;
- to enable follow-up procedures to be directed to identifiable individuals; and
- for other purposes, for example, in helping Census Office to identify family types within households.
2.39 The computer system itself had built in safeguards preventing unauthorised access. Access to the computer was tightly controlled as was the use of computer terminals. The procedures used to safeguard access to the mainframe computer was considered by OPCS and deemed to be in keeping with the level of tight security applied by that organisation.


## Statistical output

2.40 Precautions were taken to ensure that published tabulations of statistical data did not directly, or indirectly, by linkage with other sources of information, reveal any information about identifiable individuals or households. Special precautions particularly applied to data released for areas smaller in size than local government districts. These precautions included:

- suppressing data for areas below certain thresholds ( 16 households and 50 usually resident persons);
- modifying of counts, other than totals, by the addition of $+1,0$ or -1 in a quasi-random pattern; and,
- top coding and broad-banding of categories for certain variables.

Fuller details on how the confidentiality measures were applied to the statistical output and their effect on the output are given in Chapter 8 - Census Products.

## Samples of Anonymised Records

2.41 Statistical output from the 1991 Census included, for the first time in a Northern Ireland Census, a product known as Samples of Anonymised Records (SARs), commissioned by, and made available from, the Economic and Social Research Council (ESRC). Known more commonly in other countries as Census Microdata or Public Use Samples, SARs differ from traditional census output of tables of aggregated statistics in that they are abstracts of individual records. There is no conflict with the confidentiality assurances given by the Registrar General when collecting the census information since the released records contain neither names or addresses nor any other information which would lead to the disclosure of information about an individual or household.
2.42 Two samples of anonymised records have been extracted from the 1991 Census database for Northern Ireland:

- a 2 percent sample of individuals in households and communal establishments; and,
- a 1 per cent hierarchical sample of households and individuals in those households.

These low sampling fractions offer protection against disclosure of any direct information which could be attributed to a particular individual or household. However, in order to protect the anonymity of respondents further, some alterations were made to the information from the full census database which was incorporated into the SARs. Fuller details of the SARs and the confidentiality measures inherent in the samples are provided in Chapter 8 Census Products.

PUBLICITY
2.43 Changes in public attitudes towards data collection, and concerns about privacy and confidentiality, led Census Office to adopt a more planned and considered approach to explaining and publicising the Census in 1991.
2.44 An advertising agency was contracted to develop an appropriate publicity programme for which the major objectives were to:

- create and sustain a favourable climate in which to conduct the census;
- make known the reasons for carrying out the census;
- ensure the message of confidentiality got across; and,
- be ready to help answer any questions when they arose.


## Publicity leaflets for householders

2.45 The two main items of publicity material aimed at householders were the Advanced Round Leaflet, which was delivered by Enumerators some 2 to 3 weeks before Census Day and the Information Leaflet delivered with the Census form. The aim of the Advance Round Leaflet was to raise public awareness of the Census. The aims of the Information Leaflet was were to encourage the public to complete the form by explaining the reasons for the Census, describing some of the uses made of the data obtained, and giving reassurances over confidentiality, thus complementing the letter from the Registrar General on the census form itself. Census Area Managers reported back that both the Advanced Round Leaflet and the Information Leaflet were effective in helping to get the desired message across to the public.

## Television, Radio and Poster advertising

2.46 To heighten public awareness of the time of the delivery of the leaflets and census forms in early April, an advertising campaign using television and radio commercials was undertaken. This was augmented by a display of posters on advertising hoardings and billboards throughout Northern Ireland. The advertising campaign concentrated on the following themes:

- Purpose of the census,
- Importance of the census,
- Confidentiality issues,
- The approach of census day, and
- Availability of the Census Freephone facility.
2.47 Also, in the run up to Census Day, the Registrar General and the Census Manager gave interviews on both television and radio, which re-iterated the aims of the census and gave further assurances on confidentiality issues. These interviews also gave the opportunity to put other key points to the public, and to address any potential criticism of the census.
2.48 A Question and Answer brief was produced for the 1991 census, and was developed for use within Census Office and by senior census field staff. The brief contained information on various aspects of the census, including; general background, the questions, legal and confidentiality issues, the inclusion of the religion and Irish language questions and how the census is carried out. The aim of the brief was to disseminate agreed answers to a wide range
of anticipated questions. It proved to be extremely useful, particularly when used by staff covering the Census Freephone enquiry facility.
2.49 A schools pack, distributed in February 1991, was well received by the education authorities and was included in the geography curriculum by a number of schools.

CONCLUSIONS
2.50 In an operation as complex and vast as a population census, decisions covering a wide range of issues have to be made well in advance of the event. There is only one opportunity to get things right and so meticulous preparation and planning are necessary.
2.51 The final decision on questions to include depends not only on the need for information expressed by census users, but equally on the effectiveness of the data collection methods and of the acceptance of such questions by the public. Testing enabled the Census Office to assess the effectiveness of questions and methods and to mount a census that was accepted by the public and delivered the data required.
2.53 Good relations need to established with the public, through well organised, focused publicity, in order to encourage their participation by increasing their awareness of the importance of the census, by giving assurances that the information provided would be kept confidential, and by assisting them in completing the questionnaire.

## CHAPTER 3

## MANAGING THE CENSUS

## 3. MANAGING THE CENSUS

## INTRODUCTION

3.1 The aim of this Chapter is to describe how the NI 1991 Census was managed, and to highlight some key points which will be considered in planning for 2001.
3.2 The 1991 NI Census was planned by the Census Office for Northern Ireland. In planning and developing a new census, account must be taken of changes in social climate, the information needs of users, and changes in the technological environment. There is also a need to improve procedures which did not work as well as planned in the previous census. Methods and procedures used then should not be repeated unless they can be shown to be still the most effective and efficient way of proceeding. Forward planning, testing and trialling are thus of critical importance.
3.3 The business planning of the censuses for the United Kingdom was coordinated by the UK Census Committee which consisted of the senior staff from the three UK Census Offices (Office of Population Censuses and Surveys (OPCS), General Register Office-Scotland (GRO(S)) and the Census Office for Northern Ireland (CONI)). In addition to its coordinating role, the Committee played a key part in steering the earlier phases of development, during which the shape and content of the census was decided. In this the Committee was assisted by groups representing the interest of census users in central and local government, academia and commercial organisations.
3.4 During planning for the 1991 NI Census, it was recognised that there was a need to adopt a standard project management system for the main work areas. It was decided that certain projects within the overall plan would be managed using a specialised project management methodology. As a result, the management procedures used for the 1991 Census IT project were based on the PRINCE (Projects in a Controlled Environment) methodology. PRINCE sets out the principles to be followed in:

- initiating and controlling a programme of work through management boards;
- structuring the work into 'projects', 'work packages', and 'tasks' that can be managed by individuals;
- taking account of inter-dependencies between the various activities, and dependencies upon external events, in order to manage and control risk;
- ensuring, by 'quality assurance' procedures, that each piece of work is completed to the required standard; and,
- assessing the impact on other work of any changes that may be proposed to the plan of work or the products, and deciding whether or not to implement such changes.
3.5 Within Census Office, the programme of work was broken down into identifiable projects that reflected specific tasks to enable the census to be carried out. Each project area
was analysed and work packages were allocated to specific staff. Progress was reported through line management to the Census Manager who had overall control for the development and implementation of all procedures.
3.6 Each item of work, in most cases a task or a step, resulted in one or more products. In the context of the overall project a product is not necessarily an output as seen by a census user, but is any document, computer program, dataset or other item produced in the course of the work. Some examples of major products in this sense are: the list of topics to be covered by the census, the contract for distributing census materials for staff in the field, (the instructions to field staff), census data validation procedures, the design of census tables and published census reports.
3.7 Procedures were introduced for products to be quality assured by suitably knowledgeable and experienced people before being "signed off" as accepted. Inevitably in such a large programme like the census some of the products will need to be changed after they have been completed and signed off. These either occurred because of external factors, changes to the programme and in some instances where mistakes had been discovered. A formal system of change control was set up to handle this, under which an analysis was made of the impact of any proposed change on the other parts of the programme, and in the light of this information the decision was taken on whether or not to implement the change.
3.8 Once the information on the census returns had been keyed and the masterfile assembled, similar data change control procedures were used to control and limit changes to the tabular output.


## STATISTICAL MANAGEMENT

3.9 Professional statistical input is a fundamental requirement for the census. As indicated the NI SCG was consulted by the NICC, with regard to the topics to be included in the Census.
3.11 More specific statistical advice was provided directly to Census Office by PPRU statisticans for the following:

- the design and evaluation of the 1989 NI Census test;
- the design of population bases for statistical output;
- output specification;
- the specification of statistical aspects of data collection, data processing and confidentiality protection procedures;
- to specify and commission the Census Validation Survey, and to assess and report on census coverage and the accuracy of the statistics, using the Survey and other sources;
- table acceptance; and,
- advice on Small Area Statistics datasets and the Samples of Anonymised Records.

EVALUATION
3.12 Evaluation reports for use within Census Office are an integral part of the management arrangements for each census since some staff with experience of the last census have moved on by the time that work on the next one is building up. For 1991, reports were prepared for a number of activities, for example; the IT project, data preparation and a summary of how effective the Census Area Managers considered the field operations to have been. These detailed assessments on the performance of the Census are key items when it comes to examining and trying to improve upon planning for the 2001 Census.

CONCLUSIONS
3.13 The control and management of the 1991 Census was generally effective and produced substantially more output for census users than any previous census, within budget and to timetable.
3.14 Although the management arrangements largely delivered the required results, earlier identification and consideration of operational issues which have a statistical component will be needed for 2001.
3.15 PRINCE project management is now established in Census Office, and will form a part of the 2001 operation from the outset.
3.16 Developments in information systems will no doubt continue at the current fast pace. While these may be examined and evaluated carefully, particular attention will be paid to fixing cut-off dates for major innovation, beyond which the risk of 'improved' methods is likely to be outweighed by the risk of problems or errors due to insufficient advance testing and trialling.
3.17 For the professional statistical input, improvements will be easier to bring about with a statistician situated within Census Office. This has already been acted upon.

# CHAPTER 4 

COSTS

## 4. COSTS

## FUNDING ARRANGEMENTS

4.1 Expenditure for the 1991 Northern Ireland Census was included in the funding voted by Parliament and allocated to the Northern Ireland block, specifically to the Department of Health and Social Services, the Department in which Census Office was then located.
4.2 One of the major issues in GB was whether the Census should be funded directly, as in the past, or whether it should be funded by transfers from the main government departments needing the census outputs. There was a strong consensus from users that the census was a multi-purpose, indivisible package, and that there could be no logical and sensible basis for dividing the basic cost.
4.3 Census Office charges for certain census outputs in accordance with Sections 4 (1) and 4 (2) of the Census Act (Northern Ireland) 1969, in order to offset some of the expenditure. Section 4 (1) covers the production of printed and published tables in reports, while Section 4 (2) allows for the production of abstracts. Section 4 (2) products are made available at the request of customers and paid for by them. They include The Small Area Statistics and other commissioned statistics. Dissemination is aided by Census Agencies which provide royalty payments to OPCS on behalf of Census Office. (For more information on Census outputs and income see Chapter 8).

## PLANNING ASSUMPTIONS

4.4 From the beginning of the planning stage, a number of differences between the 1991 and 1981 Censuses were recognised as essential in order to improve both the enumeration and the processing operations. In all other respects, estimates for the 1991 Census were made on the assumption that it would require similar resources, in real terms to the 1981 Census.
4.5 During the process to produce estimates of the total cost of the 1991 Census, a number of assumptions were made and changes in practices between the 1981 and the 1991 censuses were identified. For example, it was initially assumed that data from the 1991 census would be captured and processed by staff within the Central Information Systems Division (CISD) of the Department of Finance and Personnel, as was the case in 1981. However, when CISD became a facilities managed operation, it was decided that Census Office, to ensure confidentiality considerations were met in full, should procure its own mainframe computer system dedicated to the 1991 Census with appropriate data capture support.

## 1991 PROVISION OF FUNDS

4.6 Estimated costs for the 1991 Northern Ireland census operation over the ten-year cycle ( $1986-1996$ ) were estimated to be in the region of $£ 5.5$ millions. Annual estimates of expenditure within a three year rolling programme were provided by Census Office and
monies were allocated to the Department of Health and Social Services vote from the Northern Ireland block.

EXPENDITURE AND INCOME
Allocation of costs
4.7 The allocation of costs, on a percentage basis, between the main census activities is illustrated in Figure 4.1.


Figure 4.1-Allocation of costs for main activities of 1991 Census
4.8 The Policy / Publicity element in the above profile covers the costs of the on-going administrative planning and preparation for the census. Geography costs, which mainly includes the planning of Enumeration Districts is included in the overall costs of the Field Operation. Data preparation includes human resource costs in the input and out processing areas. Closer analysis of the census costs has identified the following broad trends:

- expenditure on policy and planning peaks before Census Day, but thereafter maintains a generally level profile;
- expenditure on geography and the field operation builds up rapidly before Census Day and subsequently drops quite abruptly, while expenditure on processing follows a gradual build up and reduces over a longer period.

Income
4.9 Considerable progress has also been made in preparing estimates of income which the 1991 Census will generate. At the time of writing it is estimated that Census Office will generate around $£ 190,000$ of receipts by the end of the financial year 1998-99. A profile of income received and income anticipated since data from the 1991 census became available is presented in Figure 4.2.
£ thousands


Figure 4.2-Income per year, Northern Ireland: 1991 Census

## CHAPTER 5

## GEOGRAPHY

## 5. GEOGRAPHY

## INTRODUCTION

5.1 A key requirement of the census is to obtain as full a coverage as possible of people and households. To achieve this the entire country is divided up into manageable areas for enumeration and for the subsequent production of statistics.

## CENSUS GEOGRAPHY IN NORTHERN IRELAND

5.2 In Northern Ireland the 1991 areas for enumeration - Enumeration Districts - were, where possible, based on those used for the 1981 Census but, as they were required to nest within the electoral wards and local government districts extant at the time of the census, some changes had to be made. Enumeration districts were also used as the base for the statistical output.
5.3 Producing an accurate and comprehensive geographic base for Northern Ireland was thus a major exercise. As in the 1981 Census, the Rating Division of the Department of the Environment for Northern Ireland assisted in the exercise by supplying information on changes to housing stock since the last census.

## GEOGRAPHIC BASE

5.4 The basic census area - the enumeration district - is the area allocated to an enumerator for data collection. Although 1981 Census enumeration districts were used as the base for the 1991 Census, it was not possible to use the whole set because of the effect of statutory boundary changes, and changes to housing stock. Comparable areas were retained where possible, but in the end less than one fifth of the 1981 enumeration districts remained unchanged for 1991.
5.5 The data produced during area planning were used to create a computerised geographic database, which linked enumeration districts with higher geographic areas.

## THE MAP BASE

5.6 In the planning exercise Census Office utilised a full set of 1:10,000 scale maps from Ordnance Survey. Additional large scale maps were provided for built-up areas, striking a balance between map coverage and the needs of field staff. In total, almost 8,000 maps were used, of which more than $95 \%$ were at the large $1: 2,500$ or $1: 1,250$ scales.
5.7 A comprehensive set of maps was created for each of the 26 local government districts in Northern Ireland. The maps ranged in scale from $1 ": 1$ mile to $1: 1250$. Statutory areas, electoral ward and enumeration districts were marked on the maps and uniquely
identified by codes. The boundary of each geographical area was colour coded to provide ease of identification.

## MAPS FOR FIELD STAFF

5.8 Feed back from the 1981 Census had indicated that the delineation of maps issued to field staff were, in some cases, inadequate. More large-scale coverage and more up-to-date maps were needed, and these were the prime requirements for the 1991 map base. The maps in the map folio were used to create copies for field staff. The quality of the copies was important and care was taken to ensure that the photocopying equipment used met the requirements.

### 5.9 Different maps were provided for field staff, depending on their needs:

- Census Area Managers were given maps showing the individual Census Districts managed by 20-26 Census Officers;
- Census Officers were supplied with a map showing the extent of the Census Districts and large scale reference maps showing all statutory and enumeration district boundaries.
- Enumerators were provided with detailed maps showing their areas.
5.10 After the Census a set of the maps depicting the enumeration district boundaries was provided to the Ordnance Survey of Northern Ireland (OSNI) in order to digitise the boundaries. The enumeration districts, and all the other statutory boundaries are now available in digital form (vector format) at $1: 50,000$ scale mapping from OSNI. Paper copies of the enumeration district maps are available from Census Office Customer Services for customers who have purchased the Small Area Statistics and require a boundary description to complement their data.


## ENUMERATION DISTRICT AND WORKLOAD PLANNING

## Methodology

5.11 The aim in planning was to provide each Enumerator within each local government district with a standard amount of work (an average workload) in terms of households. Total coverage of the country and control of the cost of data collection were two key objectives. The resultant set of areas had to provide a suitable base for processing the data, fulfil statutory obligations and preserve the confidentiality of individual people and households. The method of planning was not changed significantly from 1981, but for the first time, to help produce the geographic documentation required, enumeration district planning lists were produced by computer.
5.12 The starting point for planning was the 1981 enumeration district boundaries. Housing information obtained from the Rating Division of the Department of the Environment for

Northern Ireland provided the vital link for establishing changes to the numbers of houses from the last census. This, together with more up-to-date mapping, enabled Census Office to divide up each local government district in turn. Wherever possible the enumeration districts were left unchanged, but inevitably many had to be changed because of substantial development or demolition, or where statutory boundaries had undergone change.
5.13 Enumeration district planners, using OSNI maps and rating lists, first considered each of the local government districts to decide the average number of dwellings to be given to enumerators within that district to ensure an equal workload for each enumerator. Each local government district was assigned to the following categories:

| Category | $\begin{gathered} \text { Average } \\ \text { dwellings per } \\ \text { ED } \end{gathered}$ | Local Government Districts |
| :---: | :---: | :---: |
| A | 100 | Fermanagh |
| B | 101-125 | Armagh <br> Banbridge Down <br> Dungannon Moyle <br> Newry \& Mourne Omagh Strabane |
| C | 126-150 | Ballymoney Cookstown Larne Limavady Magherafelt |
| D | 151-175 | Antrim Ards Ballymena Coleraine Craigavon |
| E | 176-200 | Carrickfergus Derry Lisburn |
| F | 201-220 | Castlereagh Newtownabbey North Down |
| G | $221+$ | Belfast |

The average Northern Ireland figure was 155 dwellings per enumeration district.
5.14 The rating lists indicated all domestic properties by electoral ward and townland. The detailed list of properties was then considered in conjunction with OSNI maps which delineated the electoral ward and townland boundaries. Where possible townlands were built up to form enumeration districts with as equal a workload as possible. Consideration was also given to the type of terrain covered (access to bridges etc.), and whether areas were urban, rural or mixed. Townland boundaries were not straddled except in cases where urban area townlands had too many properties to include in one single enumeration district. The boundaries for these exceptions took account of physical features such as rivers, roads or railway lines. In all 3,729 enumeration districts were created. A breakdown of the number of wards and enumeration districts for local government districts is provided in the following table:

| Local Government <br> District | Number of <br> Electoral Wards | Number of <br> Enumeration Districts |
| :---: | :---: | :---: |
| Antrim | 19 | 88 |
| Ards | 20 | 162 |
| Armagh | 22 | 153 |
| Ballymena | 23 | 132 |
| Ballymoney | 16 | 71 |
| Banbridge | 15 | 92 |
| Belfast | 51 | 567 |
| Carrickfergus | 15 | 64 |
| Castlereagh | 21 | 118 |
| Coleraine | 21 | 120 |
| Cookstown | 16 | 89 |
| Craigavon | 26 | 155 |
| Derry | 30 | 182 |
| Down | 23 | 146 |
| Dungannon | 22 | 133 |
| Fermanagh | 23 | 214 |
| Larne | 15 | 76 |
| Limavady | 15 | 64 |
| Lisburn | 28 | 202 |
| Magherafelt | 15 | 90 |
| Moyle | 15 | 47 |
| Newry \& Mourne | 30 | 229 |
| Newtownabbey | 25 | 147 |
| North Down | 24 | 145 |


| Local Government <br> Districts (contd) | Number of Electoral <br> Wards (contd) | Number of <br> Enumeration <br> Districts (contd) |
| :---: | :---: | :---: |
| Omagh | 21 | 137 |
| Strabane | 15 | 106 |
| TOTAL | $\mathbf{5 6 6}$ | $\mathbf{3 , 7 2 9}$ |

5.15 Enumeration districts were subsequently given unique identification numbers within their electoral ward and local government district, and were drawn on Ordnance Survey maps at the largest scale available.

## SPECIAL ENUMERATION DISTRICTS

5.16 In Northern Ireland, Special Enumeration Districts (SEDs) were created for enumeration purposes only. They were planned on the basis of 100 or more people being expected to be present in a large communal establishment on Census Day. SEDs were enumerated separately by Census Office personnel and were not included within the Enumerator's ED planning lists. However, unlike GB, where data from SEDs were disseminated separately, in NI SED data were disseminated as part of the data for the ED in which they lay geographically.

## CENSUS DISTRICTS

5.17 Each of the local government district areas were divided into Census Districts comprising groups of EDs. These comprised, as far as possible, whole electoral wards.
5.18 The average size of a census district was 22 enumeration districts with a range varying from 18 to 26 .

AREAS CONTROLLED BY CENSUS AREA MANAGERS
5.19 Northern Ireland was divided into 7 Census Area Manager areas, each of which consisted of a number of census districts which nestled within whole local government district areas as follows:

CAM AREA 1: Cookstown )
Derry

Limavady ) . 531 Enumeration Districts
Magherafelt )
Strabane )

| CAM AREA 2 : | Ballymena | ) | 22 Census Districts 510 Enumeration Districts |
| :---: | :---: | :---: | :---: |
|  | Ballymoney | ) |  |
|  | Carrickfergus | ) |  |
|  | Coleraine | ) |  |
|  | Larne | ) |  |
|  | Moyle | ) |  |
| CAM AREA 3 | Antrim | ) | 18 Census Districts |
|  | Lisburn | ) | 437 Enumeration Districts |
|  | Newtownabbey | ) |  |
| CAM AREA 4 | Belfast | ) | 24 Census Districts |
|  |  |  | 567 Enumeration Districts |
| CAM AREA 5 | Ards | ) |  |
|  | Castlereagh | ) | 23 Census Districts |
|  | Down | ) | 571 Enumeration Districts |
|  | North Down | ) |  |
| CAM AREA 6 | Armagh | ) |  |
|  | Banbridge | ) | 26 Census Districts 629 Enumeration Districts |
|  | Craigavon | ) |  |
|  | Newry \& Mourne | ) |  |
| CAM AREA 7 | Dungannon | ) | 21 Census Districts |
|  | Fermanagh | ) | 484 Enumeration Districts |
|  | Omagh |  |  |

FIELD STAFF OPERATIONAL DOCUMENTS
5.20 Area profiles - The maps issued to supervisory field staff were supplemented by descriptive information about the content of their areas. These profiles helped Census Officers to check the areas prior to issuing documents to Enumerators. The profile contained:

- the ED identity;
- an ED planning list for each Enumeration

District;

- the estimated number of households per area;
- the estimated incidence of communal establishments, caravan sites and other special enumeration categories.
5.21 Enumeration District planning lists - All Census Officers and Enumerators were provided with a detailed Enumeration District planning list of each ED in their area. The
planning list provided details of the anticipated content of each ED. Addresses of all the domestic properties and communal establishments that lay within the ED at the time of planning, arranged in townland order within electoral ward, were included in the list.


### 5.22 All field staff were advised of establishments e.g. large hospitals, military

 establishments etc. that were to be enumerated centrally by Census Office.
## GEOGRAPHY FIELD CHECK

5.23 This check was the first major task of each Census Officer and was carried out after initial training. It was very important because it afforded the opportunity for the division of the Census District into EDs to be checked on the ground, and for the Census Officer to obtain a good understanding of the district. The Instructions for the check were necessarily detailed and Census Officers were only to inform their managers if significant discrepancies occurred.
5.24 The two key objectives were to check boundaries and the workloads of each Enumerator. The reason for the check was that planning carried out by the Census Office, in many cases some months before Census Day, was only as good as the information it was based on. Not all the maps were completely up to date. Details of changes to roads and other features were not always clear or confirmed, and changes to housing, either being demolished or developed, needed to be checked on the ground.
5.25 Census Officers were strongly recommended to keep suggested amendments to a minimum, and to justify wholly those needed. The recommendations were examined by the Census Office Geography planning team, with whom lay sole responsibility for initiating a change. Of the EDs created during the planning stage $15(0.4 \%)$ required boundary revisions following the geography field check.
5.26 Despite checking by the Census Officers, instances arose where information about additional households came to light in the early part of the enumeration. This resulted in some Enumerators having excessive workloads. However this was taken into account and in some cases additional payments were made to compensate enumerators for their extra work.

## GEOGRAPHIC PRODUCTS

5.27 There are a number of geographic products available for Northem Ireland from or via Census Office Customer Services Section:

- the Enumeration District - postcode look up directory, which lists for each enumeration district, the postcodes captured during the Census for all households and communal establishments;
- copies extracted from OSNI paper maps showing the boundaries of EDs; and
- digitised boundaries for the EDs (available directly from OSNI).

Full details of 1991 Northern Ireland Census outputs are given in Chapter 8.

## CHAPTER 6

## DATA COLLECTION

## 6. DATA COLLECTION

## INTRODUCTION

6.1 Planning for the data collection operation - the front end of the Census - covers a wide range of activities in addition to delivering and collecting the census forms. These include employment, legal, financial, technical, contractual and communications aspects. The planning is given added importance because of the immutable date of the census, agreed by Parliament.
6.2 Census Office had to put in place the large group of field staff upon whom the success of the Census largely depended. Support for the field staff had to be good and properly targeted, and Census Office worked closely with senior field staff to ensure that field operations started on time.
6.3 For 1991 some key changes were made to the 1981 data collection arrangements to cope with social changes and to make use of advances in technology.

KEY CHANGES FOR 1991
6.4 The changes introduced for 1991 were:

- New measures to monitor coverage and quality. Census Officers acted as quality controllers as well as the leaders of a group of enumerators.
- A larger, 12-page, household form was used to accommodate census users needs for extra questions compared with 1981, when an 8 -page form was used. The need to minimise the public burden required wider use of tick-box questions. In all nearly 2.4 million copies of 13 different public forms were produced for the 1991 Census, as well as some 100,000 copies of over approximately 100 operational support forms.
- Planning proceeded on the bases that the incidence of no-contact might rise. A postal follow-up to overcome this problem, should it arise, was developed.
- All field staff were made more aware of safety and security in the field. This was underpinned by the Health and Safety at Work (Northern Ireland) Order 1978; and new guidance was issued with the help of the Criminal Injuries Division of the Northern Ireland Office.
- Tighter control was introduced into field operations using a management information system with pre-set targets for Census Area Managers and Census Officers.
- Video training for field staff was introduced into the field staff training programmes to give Census Office better control over training delivery.
6.5 The 1991 Census operation was controlled centrally by Census Office. This involved the recruitment of a complete organisation to prepare for, carry out and manage the data collection exercise. The task of recruiting some 4,000 temporary part-time staff throughout Northern Ireland for the 1991 Census was a tremendous undertaking. The field staff structure is shown below.


## CENSUS AREA MANAGERS

CENSUS OFFICERS

CENSUS ENUMERATORS $(3,729)$
6.6 Census Office directly recruited and trained the Census Area Managers (CAMs) These managers recruited and trained Census Officers (COs), and the latter then recruited the remaining staff - Census enumerators and reserves. Additionally Census Office provided policy, procedural and technical guidance on recruitment at all levels.
6.7 Field staff were recruited, on a part-time basis, for varying periods. Census Area Managers were employed from 1 October 1990 to 30 June 1991; Census Officers from 3 December 1990 to 24 June 1991; and Enumerators from 11 March to 24 May 1991.

## Duties of field staff

6.8 Most field staff jobs could be carried out as a part-time activity by people already in regular full-time employment. However, efforts were made to find suitable people temporarily unemployed and offer them the opportunity of work on the Census.
6.9 The Census Area Managers were the senior field staff, responsible for the enumeration in rural areas of a maximum of up to 50,000 households and in urban areas of up to an upper limit of 120,000 households; and, for the other field staff who were required to carry this out. Census Area Managers (CAMs), recruited by open competition, were responsible for recruiting, training and managing around 24 Census Officers and 425 to 620 Enumerators. CAMs were required to assess progress against targets, to deal with local problems and to liaise with local organisations.
6.10 Census Officers (COs) were the local supervisors in charge of between 20 and 30 Enumerators. Census Officers were employed for around 6 months to enable them to recruit, train and lead local teams of enumerators. Census Officers also supervised the distribution and collection of supplies, the data collection operation, handled day to day problems, prepared management information progress reports and dealt with non-compliance.
6.11 The Enumerators delivered to, and collected census forms from up to 250 households. Enumerators were employed for about 2 months and were the main point of contact for the general public, ensuring forms were completed and providing assistance as necessary.
6.12 A number of other field staff were recruited as reserve enumerators and as interpreter. A small team of Census Office HQ staff acted as special enumerators for large communal establishments.

## Recruitment

6.13 The recruitment exercise undertaken by Census Office in 1991 was similar to that in 1981. Workloads of the CAMs and COs in 1991 were generally larger than in 1981. Thus it was necessary to recruit those grades of field staff earlier in 1991 than had been the case for the previous census. The recruitment strategy centered around an advertising campaign in national and local newspapers throughout Northern Ireland. An advertising agency was used to conduct the main Census publicity campaign, and the recruitment campaign was augmented by the use of recruitment posters in public places and government buildings.
6.14 Conditions of service were produced for each level of field staff. These contained a description of the job, details of pay rates and an outline of the effects of any state benefits. Extensive discussions took place between Census Office and the departments responsible for employment procedures, legislation, equal opportunities, safety and security.
6.15 Census Office recruited Census Area Managers directly. All posts were advertised in the Press. In all some 247 applications were received for the 7 Census Area Manager posts.
6.16 Vacancies for the other levels of field staff were advertised in a similar way, but a key role was played by the Training and Employment Agency. Not only were vacancies advertised in its offices, but application forms were available from there also. Application forms could also be obtained by writing to, or telephoning Census Office. However all applicants were requested to return completed forms directly to Census Office. The recruitment process was monitored using a management information system.
6.17 Although Census Area Managers were responsible for Census Officer recruitment, all the applications were returned to Census Office to comply with centrally controlled procedures. Application forms received by Census Office were forwarded to the appropriate CAMs. In all 847 applications were received for 158 jobs.
6.18 Applications for Enumerator posts were handled in a similar manner as those for the Census Officers. Again forms were returned to Census Office and subsequently forwarded to the CAMs, who in turn passed them to the Census Officers for processing. Over 6,000 applications were received for the 3,729 Enumerator posts.
6.19 Overall, the number of applications for the enumerator posts exceeded the number of posts available. However, in some locations Census Officers experienced a shortfall of applications. This problem, was overcome by having other enumerators complete the work for two Enumeration Districts. Enumerators so appointed, were remunerated accordingly.

## Pay

6.20 Field staff pay is one of the biggest single items in the Census budget and amounted to $£ 1.5$ million for the 1991 NI Census. Field staff were paid by cheque. Government accounting and audit standards were met, and close liaison was established with the relevant government departments for guidance on income tax, national insurance and expenses. The payroll system used by Census Office was an inherent part of the system managed and used by Establishment and Personnel Branch 1 (EP1) of the Department of Health and Social Services. Adding the Census field staff to the computerised system virtually doubled the Department's normal workload, and to lessen the considerable burden that was expected to fall on EP1 in the weeks in and around the enumeration period, an administrative payroll team was set up in Census Office. Staff from EP1 trained and guided Census Office staff in the administrative processes that were required to operate the system.
6.21 Pay rates for each of the field staff grades were as follows:

- Census Area Manager

Total fee - $\quad £ 5459.58$ paid monthly over a 9 month period from October 1990 to June 1991.

- Census Officer

Total fee - $\quad £ 1839.50$ paid as 5 stage payments over the period December 1990 to June 1991.

- Census Enumerator

Total fee - $\quad £ 257$ per ED paid as 3 stage payments over the total period 11 March 1991 to 24 May 1991. Additional payments of $£ 1.03$ per household were made to those enumerators who enumerated more than 10 households over the original estimated number within their enumeration districts. These payments were not made until September 1991 and were made like the previous payments, using the computerised payroll system.

- Reserve enumerators, employed during the Census to cover for field staff who were replaced for one reason or another, were paid on a pro-rata basis. Inactivated reserves were paid a flat rate retention fee.
6.22 The stage payments were geared to key tasks monitored by field staff managers. The Census Area Managers and Census Officers returned authorisation documentation to the Census payroll team in line with the different stages. The documents were processed and computerised payments made accordingly.


## Instructions and training

6.23 Written instructions and a training programme were developed for all field staff. The Instruction Manuals for Census Area Managers and Census Officers included a set of guides
and supplements which gave further information on particular topics or procedures. The Enumerator Instruction Manual consisted of a self-instructional booklet which could be used as a field reference guide. Development took place during 1989/90 and the sets of instructions reflected the changes brought about by new questions, new procedures and a sharper emphasis on the business objectives. Supplementary instructions were issued using a series of circulars to CAMs and COs.
6.24 CAM training concentrated on organisational, management, legal and employment issues; whereas Census Officer training, whilst covering the above topics, also included more on enumeration procedures. Enumerator training related directly to detailed enumeration procedures and documentation.
6.25 The training packages were designed to be used by people with little experience of training, and provided for the active participation of the trainees, with practical exercises and role playing. For the first time in a Northern Ireland Census, video training was used as an integral part of the training sessions. Three professional training videos were produced with the help of the OPCS Census Publicity Unit and the Central Office of Information.
6.26 Training of field staff was carried out on a cascade basis at pre-planned times to match major activities in field operations. It was vital that messages passed on were uniform across the country. Training began with an intensive Census Area Manager training course which imparted the messages and instructions to the first field staff appointed.
6.27 Training for the remainder of field staff was conducted at a series of day, short day or evening sessions.

## THE ENUMERATION

6.28 The enumeration procedures were required to cope with a wide range of different types of property, households and individuals, in both private residential and communal accommodation. The procedures needed to cover all the processes involved in the enumeration; identification of a household, delivery of forms, self enumeration, collection and checking of the forms; needed to be carried out uniformly and consistently throughout the country and designed such that they facilitated the involvement of part-time field staff.

## Enumeration Rounds

6.29 After field staff had been appointed and briefed, enumeration procedures were put into operation in four predetermined and structured phases: the advance round, delivery round, collection round and post-collection. The first three of these are depicted below:

| Advance Round | $4-8$ April 1991 |
| :--- | :--- |
| Delivery Round | $12-19$ April 1991 |
| CENSUS DAY | 21 April 1991 |
| Collection Round | $22-28$ April 1991 |

6.30 The Advance Round took place between 4 and 8 April 1991, with the primary objectives of listing addresses, noting points for later delivery, and leaving publicity leaflets about the Census to inform occupiers that an Enumerator would call. Enumerators were also able to familiarise themselves with their district, and check address counts against expected numbers with Census Officers.
6.31 The Delivery Round took place between 12 and 19 April, although in some instances forms were still being delivered the day before Census Day. Enumerators called at addresses, identified households and left appropriate forms with the household heads or other responsible people. Where necessary the public were also given assistance on the doorstep on how to complete the forms.
6.32 The third stage was the Collection Round which was planned to take place between 22 and 28 April 1991. Completed forms were checked briefly on the doorstep for possible omissions; further forms were issued in cases where contact had not yet been established or where there was some uncertainty about the occupation of the accommodation, and help was given in resolving any difficulties. A form, envelope and explanatory leaflet was also left at absent households asking householders to complete and return the form to Census Office.
6.33 The final stage was Post Collection. At this stage enumerators carried out more detailed form checks, contacted householders again to obtain missing information or to clarify answers, and passed over all completed forms and documents to Census Officers for further checking and eventual transmission to Census Office.

## Procedures for various types of buildings

6.34 Field procedures covered every type of building, but fell into a number of broad categories covering private and non-private accommodation:

- private residences (including flats and multi-occupied buildings);
- partly residential accommodation;
- communal establishments;
- unoccupied accommodation;
- mobile or temporary structures; and
- shipping.
6.35 The great majority of accommodation encountered by Enumerators was private residences occupied by a single household at which the standard delivery and collection procedures were used. However, there were also other types of households which had to be accurately identified to ensure complete coverage.


### 6.36 <br> The definition of a household is fundamental to the Census, and is:

> " either one person living alone or a group of people (not necessarily related) living at the same address with common housekeeping - that is, sharing at least one meal a day or sharing a living room or sitting room."

People staying temporarily with the household were included. This definition was provided on all Census forms distributed to private households.
6.37 Information about the arrangements for sharing accommodation was used by Enumerators to help ensure that the more complex households were recorded correctly. At each address enumerators determined which, and how many, forms to leave by utilising the definition of a household and enquiring about any other accommodation.
6.38 A special record was made of, accommodation which was unoccupied or vacant, where it was established the residents were absent, where it was established as student accommodation, or where it was a second residence (e.g. holiday accommodation) unoccupied on Census night. Procedures were developed to boost information about and coverage of known absent households, by asking these householders voluntarily complete a census form and forward it to Census Office.
6.39 Special arrangements were made to identify dwellings, particularly in built-up areas, where the division of buildings into separate accommodation (as opposed to purpose built flats or maisonettes) needed special attention. Procedures based on how the accommodation was shared or divided up determined the Enumerators' actions and the code used to classify the type of accommodation. These procedures provided details about shared dwellings - a key set of data for some census users.
6.40 The public form ' H ' (for households) was delivered to private households. Within households, the Census legislation allows for a return, form 'T' for individuals, to be used when a person aged 16 years or over wanted to keep information confidential. If any member of the household was known to the Enumerator, or where a member of a household wanted to keep his or her information confidential from the other household members or from the Enumerator, a Sealed Return envelope was offered which would be opened by the Census Officer so that the Census form would not be seen by the Enumerator.
6.41 The population in communal establishments, such as hotels and nursing homes, was enumerated using an 'L' form (for listing those present) and ' I ' forms (for individuals). The person in charge of the establishment was responsible for issuing and collecting forms within the establishment, and was required to list all people on the 'L' form and issue a separate ' I ' form to every resident or inmate present on Census night. Assistance was given where necessary, particularly in homes for the elderly and hospitals. Hotels and boarding houses were treated similarly. Small hotels and guest houses with fewer than 10 rooms were treated either as communal establishments or private residences depending on the numbers of residents or guests.
6.42 Enumerators were not required to enumerate large communal establishments, i.e. an establishment where it was expected that 100 or more people would be present on Census Day. Instead Census Office staff liaised directly with the managers of such establishments who had responsibility for the enumeration. CAMs and COs were provided with lists of the large communal establishments and they in turn informed enumerators not to include those establishments in their enumeration plans.
6.43 Non-residential accommodation, such as office blocks and shops, was simply checked to ensure that no-one was living there on Census night. There were also special rules about mobile or temporary structures. 'H' forms were used to enumerate houseboats. The enumeration of pleasure boats and other vessels (see para. 6.50 for the enumeration of commercial shipping) was only carried out by field staff where the craft were accessible.
6.44 At addresses where no contact could be made enumerators made several attempts before reporting the situation to the Census Officers. After the enumeration period if contact had still not been made with households, a post-out post back follow-up exercise was carried out by Census Office. This additional procedure helped to reduce the number of uncollected forms.
6.45 Post collection procedures involved detailed checking of forms and documents, completion of the Enumerator's Record Books, and arranging and numbering the forms in boxes.

## Field checks

6.46 Specially targeted field checks were developed for the first time to try to ensure that the overall coverage and enumeration of unoccupied accommodation was of the highest quality possible and that household ' H ' forms were fully completed. Two checks were carried out by Census Officers:-

- The Coverage Check compared the households found by the Enumerator against the number expected; any large discrepancies were investigated.
- The Unoccupied Household Spaces Check was designed to ensure that Enumerators were not treating households as unoccupied simply because of difficulty in contacting the occupants.


## Enumeration of Special Classes

6.47 The enumeration of persons in private households and small communal establishments was generally straightforward with Enumerators following the instructions laid down in the Enumerators' Instruction Manual. However there were groups of the population where it was difficult or impossible to enumerate within the main field operation and special arrangements were required.
6.48 The Special Classes were divided into two categories and enumerated as follows:

Category A: These groups lived in special environments which required central control of their enumeration by Census Office. They included residents within the following establishments:

1. HM Forces and Ministry of Defence (MOD) Establishments.
2. RUC Stations, training centres and establishments.
3. HM Prisons, Young Offenders Centres and Prison Service establishments.

Field staff were instructed to ignore any of these establishments.
Category B: These groups lived in special environments which were characterised by the nature of the person's employment, vocation or social status; or where persons were in transit on Census Day.

1. Commercial Shipping

Census Office made arrangements with HM Customs and Excise to enumerate all commercial shipping berthed in ports or harbours throughout Northern Ireland. Enumerators were instructed to ignore ships or boats of a commercial nature which were moored or berthed at marine locations within their Enumeration Districts.
2. Lighthouses, Lightships etc.

Census Office in liaison with the Commissioners of Irish Lights were directly responsible for the enumeration of any such location.
3. Foreign diplomats and Honorary Consuls

All foreign diplomatic interests (except for the American Consulate which is based in Belfast) are covered by local representatives living in private households. Detailed instructions were provided to the field staff directly involved in the enumeration of the American Consulate and its staff. As other foreign representatives were acting in an honorary capacity, they were enumerated in the normal manner.
4. Travellers arriving in Northern Ireland on Census Day

All travellers arriving in Northern Ireland on Census Day by air, sea, rail or coach were issued, by the respective travel organisations, with information leaflets advising them that a Census of Population was taking place in Northern Ireland on that day. It also instructed them to make sure to have their details included on a relevant census return, ('H' or 'I' forms), at the destination in Northern Ireland to which they were travelling.
5. 'Travelling people'
a) Permanent encampments: These sites were maintained by local district councils and overseen by wardens. Census Office had identified these sites and special instructions were given to the field staff who were asked to contact the warden, who would assist them in the enumeration. Each site was enumerated as a caravan site, with each caravan counted individually.
b) Unofficial encampments and isolated caravans: Enumerators were instructed to enumerate each caravan separately. In some cases the enumeration of unofficial sites proved difficult but Census Office liaised with the Community Relation Officers for the areas concerned to ensure the return of Census forms.
6. Travelling fairs and circuses

Most travelling fairs and circuses do not remain at particular locations for long periods. Enumerators were instructed to be aware of such groups in their area, and only carry out the enumeration if it was the intention of the proprietor to remain in their area on Census night. Each caravan was enumerated individually.

## 7. Religious Communities

Each Enumeration District planning list included any religious community that was within the Enumeration District area. Enumerators were instructed to make contact with the leader of the community and make arrangements for the enumeration. The community was usually enumerated as a communal establishment, but in some instances individual households within the community were enumerated separately.
6.49 In all cases where the assistance of other agencies was required for the enumeration of special classes, full discussions took place between Census Office and the agencies concerned in advance of Census Day. The appointment of liaison officers by the agencies and the timely development of special procedures ensured the proper enumeration of all special classes.

## OPERATIONAL CONTROL

## Census Office Headquarters

6.50 The organisation at Census Office was similar to that in previous Censuses, with a small team of staff planning and controlling field operations. Tight control and effective management information systems were necessary because of the concern about the ability to recruit an adequate number of suitable field staff, changing work patterns, and the need to deal with more public enquiries and demands.

## Field controls

6.51 Field procedures had been carefully developed over past Censuses to ensure that field work was carried out as uniformly as possible in all parts of the country. Field operations on the scale of the Census must be tightly controlled, with progress and performance being monitored so that targets are met within budget, and data quality and coverage remain at a high level. Communication between Census Office and nearly 4,000 temporarily employed field staff across the country was therefore vital.
6.52 The field operation was controlled by a range of methods. There was regular telephone contact with senior field staff and visits were made to them either individually or in groups. Mailshots, detailed instructions, training courses were also important and a clerical management information system kept Census Office headquarter staff abreast of what was happening throughout all the phases of the operation. .
6.53 The management information system was designed to give management in Census Office an operational summary within three days of the Enumerators - the first level of reporting - supplying reports to Census Officers. The information covered recruitment, supplies, enumeration and the identification of potential problems. Pre-defined progress reports gave, for example, detailed information on how stages of the enumeration, such as the delivery round, were progressing. The information collected through the management information system helped in the post-census evaluation of particular areas of the field operation.

## Organisation

6.54 The 7 Census Area Managers were managed centrally from the Census Office by a headquarters team. The team was in almost daily contact, mainly by telephone, with each of the Census Area Managers; resolving problems, supplying up-to-date information, providing advice, issuing additional instructions, progress-chasing and receiving management information. Telephone answering machines were installed in the homes of CAMs, and proved to be very useful. Management information reports from CAMs were analysed as soon as practicable and action necessary in the field was quickly relayed to the appropriate Census Area Manager. Some CAMs experienced problems in contacting Census Office during peak periods. The availability of additional dedicated telephone lines to Census Office would have alleviated this problem.
6.55 The headquarters team were operational from September 1989 and at a peak had about 15 staff. Managers and supervisory staff within the team were involved at an early stage in the development of the field procedures and were therefore able to provide a good support to the field staff. The headquarters team provided a contact service during the evenings and on the weekend of the week before Census Day.

## LOGISTICS

Delivery of Supplies
6.56 Census Office headquarter staff planned and managed the delivery of supplies, including the detailed estimates of the quantities needed at each level of field staff. The sorting of bulk quantities, packing and the despatch of all materials to, primarily, the COs, was contracted out through HMSO and was handled from the HMSO stores in Newtownards. Emergency supplies, on the other hand, were held centrally within Census Office.
6.57 CO and Enumerator maps and recruitment supplies were issued to CAMs at their first training course in October 1990. Supplies for the recruitment of enumerators were issued to Census Officers at their first training course during December 1990.
6.58 The bulk delivery of supplies to COs worked very well. This exercise took place on 2 March 1991. Although the carrier experienced some difficulty in making contact with some Census Officers on the day of delivery, no major difficulties arose. In such circumstances the carrier was able to leave supplies with a neighbouring Census Officer.

Collection of completed census forms
6.59 The collection of the completed census forms was carried out in a secure and controlled manner. Census Office engaged the services of a private sector to undertake the task. Enumerators were instructed to leave all completed census forms in ED boxes with their COs by 3 May 1991. It was from these addresses that the forms were collected. All routes and timetables were agreed between the Census Office and the carrier, and COs were given firm times of when they could expect the carrier to call.
6.60. In general, the collection went well. However, the carrier experienced difficulty in contacting some COs. Indeed, in a few instances, typically in rural areas, the carrier was unable to find some addresses. These problems were overcome by introducing a further collection round. This time, uncollected boxes of census forms were brought by Census Officers to central points for collection by the carrier. These collection points were arranged directly by the carrier and the CAMs. All census forms were returned by the carrier to a secure storage area within Castle Buildings

## Postal Returns

6.61 It was recognised that a number of people would choose to post their forms direct to Census Office, as had been the case in 1981. Around 1,000 forms were received in this way. Forms returned directly to Census Office were checked for completion and filed alongside the other forms before processing.

## Public enquiries - Census freephone service

6.62 In an operation the size of the census there is a need for effective communication between the public and the Census Office. Experience in 1981 showed that householders were anxious to know more about the delivery and collection arrangements and wanted more details about the Census, its questions and field staffing arrangements. Plans in 1991 incorporated a freephone telephone service, whereby members of the public who had queries regarding the census could contact Census Office direct if they had.
6.63 The Census relies on the co-operation of the public, and although there is a legal requirement to comply, it was important to give as much help as possible to the public to gain co-operation and minimise the use of legal sanctions. Staff within Census Office handled telephone and written enquiries from members of the public, various organisations or representatives and directed media enquiries through the appropriate channels.
6.64 Provision of a freephone telephone facility was particularly successful. The service, which was advertised in the press and on television, provided an immediate response to callers. A small team of Census Office staff were briefed on how to handle the calls and were provided with written guidance on how to answer the questions. In all some 436 calls were
received via the facility which was operational from 21 March to 8 May 1991, including the weekend of the census. Approximately $60 \%$ of all calls were received during the peak period 18 April-24 April 1991. Callers enquiries varied in nature but were mainly concerned with the non-receipt or non-collection of census forms.
6.65 Census Officers were given details on a daily basis of any householders in their areas who had not received a Census form, or from Census Day if it had not been collected. From early May, householders who claimed not to have received a form were sent one with a reply paid envelope.

## NON-COMPLIANCE

6.66 The census is compulsory and householders are required to complete their census forms under the provisions of the Census Act (Northern Ireland) 1969 and hand them back to the appointed field staff. Census Office has had the confidence of the general public throughout the history of census taking, but a very small minority of the public do not wish to, or feel they cannot, comply with this law. Procedures were devised to allow field staff to take certain actions in order to try to persuade recalcitrant householders to complete their census form, and, in the last resort, to start the due legal process.
6.67 Detailed procedures, instructions and documentation were drawn up in conjunction with the DHSS departmental solicitor, taking note of census precedents and the new requirements in Northern Ireland under the Police and Criminal Evidence (Northern Ireland) Order 1989. CAMs and COs received detailed briefing and instruction on non-compliance procedures during their training courses. Senior management within Census Office dealt with those cases which warranted prosecution

## CONCLUSIONS

6.68 Although all field staff were recruited on time, there were no reserves appointed in a number of Census Districts and CAMs in some instances had to ask field staff to double up to cope with shortfalls in recruitment. Although attracting sufficient suitable staff in these areas may not be a problem in 2001, it will still be essential to examine ways of ensuring full recruitment for all areas.
6.69 The case for special treatment for those claiming unemployment benefit, and effects on National Insurance and tax contributions, should be re-examined to avoid discouraging the unemployed from taking on a job in the census.
6.70 The level of field staff pay was criticised as being poor reward for the amount of work involved, for example in making repeated calls to contact many householders. Although never quantified, it is conceivable that poorer standards of enumeration may have resulted. It is vital that all field staff are given adequate incentives to sustain motivation and complete the task. Field staff pay will need to be re-examined thoroughly for 2001 to ensure the Census attracts the right calibre and number of staff.
6.71 Field staff instructions were generally comprehensive and effective, but further simplification and modularisation is desirable. It is essential, however, that the CAM and CO Instruction Manuals are completed before the appointment of these grades.
6.72 The field staff training programme was a success and provides a firm base for the future. It was generally felt that the training notes covered all the requirements for each of the relevant field grades. The notes had been pitched at the right level and there was little complaint about content or layout. There was a minor objection by some CAMs and COs to having to use verbatim speaking notes as they felt they could have put the point across more clearly. However this view was not widespread nor did it carry the support of Census Office staff who felt that the need existed to have the message delivered uniformly without the risk of local interpretation. The use of training videos was a success and field staff felt they were given an immediate understanding of the Census and what was required. It was recognised that, with the exception of the CAMs, the field staff represent a massive part-time labour force and it is therefore essential to try and achieve the following objectives in the course of the training:
a) impart all necessary knowledge; and
b) hold training sessions at a time best suited to maximise the impact of the information being given.
6.73 In the run-up to the 2001 census it may be worthwhile to review the overall training strategy, in particular Enumerator training and put a greater emphasis on practical work and the use of video and other technology based techniques, since the training sessions were quite onerous both for trainers and trainees.
6.74 Questionnaire design will need to be thoroughly researched and extensively tested before 2001 in order to ensure that changes in census users' data needs are met, and advantage is taken of advances in data capture technology.
6.75 Considerably more effort was made in 1991 than in 1981 to set up arrangements needed to enumerate the special sub-groups of the population. Overall the task was successfully carried out, with considerable help and co-operation being given to Census Office. This provides a good base for future development. Further work is required to attain effective enumeration of some special groups like travelling communities / gypsies and for those categorised as 'people sleeping rough'.
6.76 The field management information system proved its value in the control of field staffing and operations. Consideration should be given to computerising the system for the 2001 Census.
6.77 Census Office should consider establishing a Northern Ireland Census Public Enquiry Unit based in Census Office similar to that used by the GB Census Offices. Details of how to contact the public enquiry unit should be provided on all advertising and awareness leaflets.

## CHAPTER 7

## INPUT PROCESSING

## 7. INPUT PROCESSING

## INTRODUCTION

7.1 The Census is processed in two main parts. Input processing, described in this Chapter, covers the coding, capture, validation and edit of the census data to form a database containing all the information collected about individuals, whether living in households or communal establishments. Output processing, described in Chapter 8, comprises the creation of statistical tables and other outputs from the database and the dissemination of outputs to census users.
7.2 The input processing which included clerical processing, data keying and computer processing were carried out at a single site (although in separate rooms) in Census Office Headquarters, located in Castle Buildings, Stormont Estate, Belfast.
7.3 The main elements of the input processing work programme involved liaison with Accommodation Branch of the DHSS in specifying the accommodation for the processing office, with Personnel Management Branch (PMB) in the recruitment of coding and data capture staff, procuring the equipment, developing and testing the clerical and computer processing systems, and capturing and processing the data.

## $100 \%$ PROCESSING

7.4 As with all previous Northern Ireland Censuses, the responses to all the census questions on the census returns were processed ( $100 \%$ processing). This was different from the rest of the United Kingdom, where the responses to some questions were processed for all of the Census returns ( $100 \%$ items), while others were processed for only a ten per cent sample of households and a ten per cent sample of people in communal establishments ( $10 \%$ items).

## ACCOMMODATION

7.5 As already mentioned, input processing was carried out at a single site within Castle Buildings. Staffing and accommodation estimates were primarily produced on the planning assumption that 1991 processing would be similar to that of 1981. However, two significant factors led Census Office to recognise that accommodation requirements for 1991 would be much greater than those for 1981. These were a) the need for Census Office to procure and manage its own dedicated mainframe computer and data capture systems with support equipment, and b) the requirement to employ data processing staff for the data capture element of the processing. The following accommodation was allocated to Census Office for processing:
a) Main Office :
$8,000 \mathrm{sq}$. ft. of open planned office accommodation for up to 130 clerical staff for coding and administrative duties,
b) Computer room:
c) Data processing room:
d) Security Store: 3,000 sq. ft. of for storage of the boxes of Census forms during the processing operations.

Senior Census Office management within were located in cellular accommodation in the proximity of the main processing office.
7.6 In order to maintain the confidentiality of the Census, all zones of Census Office accommodation were regarded as secure areas. Access to these areas was restricted to authorised personnel. Visitors were accompanied at all times. Entry to the main processing office and the data processing room was controlled by card key access, whilst the computer room and the security store were protected by electronic intruder and atmospheric change detector alarms.

## STAFFING

7.7 As the previous census was in 1981, and the main outputs completed by 1984, there was necessarily a large reduction in staff during the intercensal period. Prior to the commencement of the processing phase in 1991 the complement of core staff within Census Office was increased on a phased basis to administer and organise data collection from the public. Core census staff were augmented by a dedicated team of IT staff from the Information Technology Group (ITG) of the DHSS, who assisted in the development of the systems and programs to be used during the processing phases.
7.8 The largest number of Census Office staff were required for the coding phase of the processing operation. In all, some 120 clerical staff were used. These staff, who were allocated to Census Office by the Personnel Management Branch (PMB) of the DHSS came from a range of backgrounds - some were transferred from other Branches within DHSS or other Government Departments; whilst others were new recruits into the Northern Ireland Civil Service.
7.9 Data capture staff were recruited separately and differently. Some staff, who were surplus to requirements following the Central Information Systems Division of the Department of Finance and Personnel becoming a facilities managed operation, were transferred to Census Office. However, most of the staff were recruited on a casual basis through public advertisement co-ordinated by Census Office and PMB. The selection process required applicants to undergo an ADP proficiency test and successful candidates were subsequently interviewed. During the peak period the data capture team comprised $1 \times$ EO2, $4 \times \mathrm{AOs}, 30 \times \mathrm{AAs}$ (full-time) and $16 \times \mathrm{AAs}$ (part-time).
7.10 The procurement of equipment for processing was done in two main tranches; one for the mainframe computer system with support hardware and software and the other for data capture equipment.
7.11 Census Office procured the data capture equipment from Central Information Systems Division before it became a facilities managed operation. The equipment, which included 40 McDonnell Douglas keystations, 3 keystation processors, a disk unit, a tape deck and other ancillary items was maintained under contract and for an annual fee by McDonnell Douglas Information Systems Ltd.
7.12 The Census mainframe computer system was an ICL Series 39 Level 25XP Distributed System with VME (v2.91) software. Full supporting system peripherals including hardware and software were provided by ICL with OPCS providing the TAU software required for tabulation (further details are given in Chapter 8).

## PROCESSING STRATEGY

7.13 The strategy for processing the 1991 Census began in 1989 as the 1991 NI Population Census - Main Census Processing Project. The main objective of the project was the provision of a computer service to Census Office for processing the 1991 Census data. The project, which was jointly managed and administered by staff from both Census Office and the ITG of DHSS provided a system:

- that was designed, written, tested, documented and implemented to ITG standards;
- that was implemented to a timescale that allowed maximum user familiarisation prior to the actual census date;
- that adhered to principles of data integrity, personal privacy, security and the Data Protection Act; and
- that improved the service to Census Office in areas that caused problems in earlier censuses by using local terminals and printing facilities in Census Office:


## Computer Assisted Coding

7.14 During the preparatory work it was considered necessary to investigate the practicability of automating certain clerical coding processes. The investigative work was carried out by Census Division in OPCS, with staff involved in the NI Census Processing Project closely monitoring any developments for read across implications. The evaluation of the investigations concluded that due to the comparatively small size of the NI Census operation the concept of introducing some degree of automated clerical processes for 1991 would not significantly increase the effectiveness of the coding operation. Consequently no
aspect of the coding operation was augmented by computer assisted coding. However the Postcode Address File (PAF) on CD-ROM was used to help resolve area and workplace queries arising from clerical coding.

## PROCESSING SYSTEM DEVELOPMENT AND TESTING

7.15 The input processing workflow was developed from that used for the 1981 Census. Each stage of the process was examined and improved wherever possible to produce the fully edited database more quickly. The systems were developed by Census IT staff, in close co-operation with Census Office staff, particularly during the system design stage, to ensure user requirements were met.
7.16 Systems testing is important on a large project such as the Census. The steps for testing the Input processing system were:

- production and overview of the testing plan,
- preparation of test specifications and test data,
- quality assurance of the specification,
- customer acceptance tests, and
- dress rehearsal.
7.17 The edit system was specified and designed as one program. This program was split into two parts, the Primary edit and the Correction edit. The primary edit checked all records individually to ensure that the data within each record was consistent with the pre-specified edit rules. The correction edit, which applied the same rules as the primary edit, re-checked the entire record if any data on the record had been amended. On completion of the capture and editing of all the data, a final validation suite program was used to check and ensure the integrity of the entire database.
7.18 Specially created data, constructed by a clerical team within Census Office, were used to test the Primary and Correction edits.


## Dress rehearsal

7.19 A dress rehearsal of the input systems, in which a quantity of test data was passed through all the stages of the computer system, was used to evaluate the performance of the system in conditions as similar to live running as possible. The dress rehearsal was useful in giving those involved practice and confidence in the developed systems. The results of the dress rehearsal was not only used to enhance the processing systems, but also fed back valuable information about the need to change staff instructions and revise coding processes.
7.20 As the processing systems development timetable was very tight, the dress rehearsal was confined to the input processing computer systems only. No testing of the clerical processes, including the coding operation, was carried out. This proved very significant as during the live coding operation flaws and errors in the clerical systems were discovered which could have been eradicated before live processing commenced. Future Census plans
should ensure that all aspects of the processing operation are sufficiently tried and tested before live processing commences.

PROCESSING OPERATIONS
7.21 The main elements in the workflow are illustrated in the Figure 7.1 below.


Fig. 7.1-Order of the main elements of Input Processing
7.22 The processing initially began with a clerical exercise to extract preliminary population figures for inclusion in the 1991 Northern Ireland Census Preliminary Report, published in July 1991. Figures were taken from the Enumerator's Record Books, but in some instances it was necessary to refer directly to the Census forms.
7.23 Input processing began towards the end of August 1991 and comprised:

- Coding to transcribe responses into numeric codes for computer processing,
- Data capture to key these codes into computer readable format, and;
- Editing to correct errors.

After being subjected to the above processes the data were ready for Output processing. Fig. 7.2 illustrates in detail the procedures for input processing.


Fig. 7.2-Illustration of the procedures involved in the 1991 Census Input processing

## Coding Operation

7.24 The coding operation was primarily based on the procedures that were used during 1981 processing. Six sections were created, with each having specific duties to perform or questions to code. The forms were processed sequentially in ED order within local
government districts and the entire operation took on the characteristics of a production line with boxes of forms being passed from one section to the next.
7.25 Coding control team - The coding control team comprised of 1 EO2 and, at peak times, up to 4 AOs who were responsible for the following:

- receipt of forms from the store,
- control of movement of forms around the sections,
- batch heading, and;
- preparation and grooming of the forms for data preparation.
7.26 Section 1 - This section was made up of 1 EO2, 2 AOs and 14 AAs. They ensured that census forms were correctly numbered sequentially and that people living in private and communal residences were recorded on the correct forms. The section was responsible for coding the written answers for the questions on the front and the back of the Census form. These included:

| . Form No.; |  |
| :--- | :--- |
| Grid reference (where not completed by enumerator); |  |
| . | No. of Males / Females in household; |
| . | Postcode of Household address; |
| . | Belfast Urban Area (BUA) code - if applicable; |
| . | Family type allocation; |
| . | Postcode of address; |
| . Accommodation type - Panel A and H1; |  |
| . $\quad$ Rooms; |  |
| . Tenure; |  |
| . $\quad$ Amenities; and |  |
| . Cars and Vans. |  |

The section was also responsible for coding the postcodes at Question 8 (Usual address), Question 9 (Term-time address) and Question 10 (Usual address one year ago); and the entirety of information on 'dummy' H forms which were completed by enumerators in circumstances where they were unable to obtain household forms.
7.27 Section 2 - This section comprised of 1 EO2 and 15 AAs and had responsibility for coding the answers to Questions 1 to 7 on the census form. These included:

- Sex;
- Date of birth;
- Marital status;
- Relationship in household;
- Whereabouts on Census night; and
- Number of children alive to ever married women.
7.28 Section 3-This section comprised 1 EO2 and 15 AOs and were responsible for coding the answers to Questions $8,9,10,11-14$ and 21 on the census forms. These included
- Usual address;
- Term time address of students and school children;
- Usual address one year ago;
- Country of birth;
- Religion;
- Long tern illness;
- Irish language; and
- Academic, professional and vocational qualifications.
7.29 Section 4 - This section, which was the largest and had responsibility for coding the more difficult questions, comprised 4 teams each made up of 1 EO 2 and 12 AOs. Staff in these teams coded the answers for Questions $15-20$ on the census forms. These included:
- Economic activity in week prior the Census day;
- Hours worked a week;
- Occupation and main tasks done in job;
- Name and business of employer;
- Address of place of work; and
- Normal mode of journey to work.

The Industry coding, which was derived from the answers provided at Question 18 of the Census form, was based on the activity level of the 1980 revision of the Standard Industrial Classification with some minor modifications. Coding was assisted by the provision of the List of Large Employers - a detailed listing, produced by the Department of Economic Development, which gave the names and addresses of employers along with other information including the Standard Industrial Classification code. Occupation coding was based on the Standard Occupational Classification.
7.30 Coding Support Team - This team comprised 1 EO2 and 6 AOs and their duties were to provide support to each of the coding sections. They had responsibility for resolving coding queries, including area queries with the help of the computer based Postal Address File; and, updating / revising the coding instruction manuals and guidance that was available to the coding teams.

## Data capture and transmission

7.31 On completion of coding, the forms were delivered to the data capture team for further processing. Data (coded entries on the forms) were keyed to disk. The keyed data were then verified to check if the capture was correct and if the forms were correctly sequenced. This was achieved by re-keying the data, and programs within the data capture software checked if re-keyed data matched the original data. Where discrepancies occurred, the forms were re-checked to determine the nature of the discrepancy. Data, when verified, were transmitted from disk to the ICL mainframe computer system for validation and masterfile creation.

## Validation and Edit

7.31 Data were received on the mainframe computer in batches - each batch corresponding to an ED. Each batch was subjected to the Primary Edit, which checked the validity of the entries by performing various structure and sequence checks. It identified missing, invalid
(e.g. a person aged 140 years) or inconsistent (e.g. a person aged 7 years, married and working full-time) data. Where data were found to be incorrect, the batch was rejected and the system produced printed output listing the discrepancies and errors.
7.32 The inconsistencies and errors were analysed clerically by an Edit team, which comprised 1 EO 2 and, at peak periods, up to 12 AOs . The data were corrected and re-entered to the mainframe via a transaction processing facility which allowed for direct replacement of the incorrect data. Following re-input, the batches were run through a Correction Edit which, for all intents and purposes, performed the same functions as the Primary edit. Batches which failed the Correction Edit were again rejected and re-submitted to the correction processes until validated.
7.32 When batches were free from inconsistency or error they were deemed to be valid. Such batches were transferred within the mainframe computer to the 1991 Census masterfile. When all the batches, i.e. EDs, were transferred to the masterfile, a composite check suite was applied to all the data. This final check ensured the integrity of all the data on the masterfile.

## Quality control

7.33 Quality controls were applied at all stages of the input operation. The check of returns from the field, preliminary population analysis and computer edits were all part of the total quality control system.
7.34 The quality of the coding operations was monitored by supervisors checking coders' work, recording errors and providing assistance where necessary. Coders' work was initially subjected to $100 \%$ checking. This continued until the coders gained competence and the error rates fell to acceptable levels. From this point onwards only $10 \%$ of the work was checked to ensure standards were maintained. However if coders' work fell below the quality standard they were returned to the $100 \%$ checking until such time as the quality standard was regained.
7.35 Similar checks were carried out for data preparation staff. In addition, the verification procedures helped supervisors to identify those staff who were making an unacceptable number of keying errors.
7.36 Dependent checking procedures have obvious weaknesses because the checker or verification operator can agree with the coder or keyer even if wrong. No allowance was made to have independent quality control procedures applied to the operations used during input processing.

## Management Information Systems

7.37 The ED box movement control system, operated by each section, provided information for management on progress and performance. Section supervisors supplied weekly reports of section progress against weekly targets and cumulative totals. Information gathered in the reports was used primarily to monitor how sections were performing in relation to each other. In a number of instances, staffing levels in some sections were temporarily adjusted, to ensure a balanced output of forms.
7.38 Computer audit trails provided daily information about the use of mainframe computer time, and weekly cumulative reports. The reports were also used to confirm that all necessary copies of the data had been taken, and as a check that no illegal jobs had been rum.
7.39 The timing of the various stages of processing is illustrated in Fig 7.3. The operation of processing the census returns went according to plan. No major problems were encountered and the processing timetable was not modified at any stage.


Fig. 7.3 Input Processing - Timing of activities

## CONCLUSIONS

7.40 Experience gained from processing the 1991 Census has highlighted a number of areas that should be reviewed before the next census. Improvements in these areas together with advances in technology and statistical methods, should enable the operation to be completed in less time and with improved quality in 2001.
7.41 The important conclusions drawn from the evaluation of 1991 processing are:

- the entire system was not developed early enough to ensure full testing allowing time to make changes and re-test well before the processing was scheduled to begin;
- coding instructions should be prepared and tested well in advance of the commencement of processing;
- coding staff should be trained in a dedicated training environment using suitable test material before progressing to live coding; and
- the data capture and edit stages should commence as soon after the commencement of coding as is practicably possible. This would result in the identification and rectification of common coding errors, and unsatisfactory processing at early stages in the operation.
7.42 New technology should be exploited to the fullest practicable extent in 2001. For input processing this may enable Census Office to:
- reduce the number of staff required for data capture by using Optical Mark Recognition (OMR) and /or Optical Character Recognition, possibly in conjunction with artificial intelligence methods making use of ancillary information about the census data being processed;
- reduce the number of staff required for clerical coding by further use of computer assisted coding methods, and possibly also by using simplified coding frames;
- provide a more flexible processing system that does not require the census records to be processed in sequence, and is therefore able to cope with late returns, postal returns (whether planned or as a contingency measure), and other logistic problems; and
- if possible without degrading the value of the census outputs, simplify the edit processes to speed processing and reduce the risk of major problems.


## CHAPTER 8

## CENSUS PRODUCTS

## 8. CENSUS PRODUCTS

## INTRODUCTION

8.1 This Chapter describes production and dissemination of the 1991 Census outputs which was modelled on the 1981 Census.
8.2 The GB White Paper "1991 Census of Population" (Cmd 430) on the 1991 Census, published in July 1988, stated that " the investment of time and resources in a national census is only justified if the results are made accessible to those who need them and reach them speedily in a clear and usable form". In Northern Ireland an Output Strategy Document, which incorporated the above objectives, was agreed with Government Departments through the Statistics Co-ordinating Group. The output programme and arrangements for dissemination were planned to meet those objectives.
8.3 In the pre-census consultation process users expressed the need for a wider range of statistical analyses than in 1981. This increase was partly due to the additional census questions (see Chapter 2), and increased user capability to interpret the information. As a result, the statistics from the 1991 Northern Ireland Census are more extensive than those produced from any previous population census.
8.4 In addition to providing statistics direct to users, Census Office has aimed to enhance the value of the census by co-operating with individuals and organisations undertaking research or developing products which help others to use census statistics, and by entering into business arrangements with Census Agencies to develop and market these products.

## DISSEMINATION POLICY

Legal basis
8.5 The Census Act (Northern Ireland) 1969, hereafter referred to as the Census Act, governs the way census results can be made available to users. Under Section 4(1), the Registrar General is required to:
" prepare abstracts of and reports on the census returns, and each report shall be printed and laid before both Houses of Parliament at as early a date as may be found practicable."
and Section 4(2) states:
"The Registrar General may, at the request of any local authority or person and on payment of such fee, if any, as he may determine, cause abstracts to be prepared containing statistical information which can be derived from the census returns but is not supplied by the census abstracts or reports and which, in his opinion, the authority or person may reasonably acquire."

The Census Act thus establishes two categories of census results, the Reports which are printed and published, and the Abstracts which are supplied to users at a charge.
8.6 As for previous censuses, the Act was interpreted to mean that the main census statistics should be available to Parliament before being publicly released.
8.7 The Act was also interpreted to mean that the marginal costs of producing statistical Abstracts under Section 4(2) should be recovered from census users; that is, costs additional to the cost of taking the census and processing the returns to prepare the Reports required under Section 4(1) of the Act. The restriction on the recovery of costs to the marginal element benefits customers, as the majority of costs are funded directly by the government.
8.8 Where the same Abstract is required by several customers the marginal costs of production can be shared, which further reduces unit charges. However, the condition of use make it clear that these customers may not pass the data to third parties without agreement as such action would endanger the requirement to recover costs. A 'customer', in the context of calculating unit charges and use of data, may be a particular organisation, or may be a sector of the user community comprising a number of similar organisations, for example, local government districts, Health and Social Services Boards, or higher educational establishments.

## Crown copyright

8.9 All text, statistical and other material in Census Reports and Abstracts, and information of any kind derived from the statistics or other material in the Reports is Crown Copyright. It may be reproduced only with the permission of Census Office.

## OUTPUT OBJECTIVES

8.10 The 1991 Northern Ireland Census Output Strategy provided the foundations for the dissemination of census results. Improvements had been achieved in the way that the 1981 Census was processed and disseminated, and it was intended that such improvements should be maintained in the 1991 Census, and improved upon wherever possible. The key objectives for 1991 were:

- to realise the greatest possible benefit from the investment in the Census, although there must be a commitment by users to meet costs of output not laid before Parliament;
- to provide prompt, accurate and comparable output for all parts of Northern Ireland;
- to establish, at the planning stage, a timetable of key dates and to provide a means of allowing some flexibility to respond to changing demands in output requirements; and,
- to ensure that output meets the assurances given when the information is collected, and is designed in a way that does not lead to the unauthorised disclosure of information about individuals or households.


## Output strategy

8.11 To achieve these objectives the broad strategy agreed during the pre-census consultations was that:

- the Preliminary report would be published as soon as possible after Census day to give basic headcount data;
- the Summary report and other topic reports would be produced within 2 years of the census date; and,
- ways would be examined of meeting other demands for unpublished data. The aim would be to develop a system capable of accommodating simultaneously, as far as possible, the production of printed reports and other statistical data requested by users. Census Office would liaise at the earliest mutually convenient date with the main potential users of census information in order to determine their likely requirements for unpublished data.


## DEFINITIONS

8.12 A census needs to be based upon definitions of many terms, such as household and resident, which are as relevant as possible, whilst providing sufficient comparability of the statistics over time. Where appropriate, the definitions used in the 1981 Census were retained for 1991, but there had to be some changes. (Details of 1991 definitions are normally provided as part of, or along with, output products).

## Population bases

8.13 People present on census night, as well as people usually resident (whether present or absent on Census night), were enumerated. However, to provide as complete a count as possible of usual residents, for the first time in a Northern Ireland census absent households were asked to complete a census form voluntarily on their return home. These data have been included in the main output.
8.14 The two main population bases that have been used are as follows:

- the population present in an area (Persons present) is the count of all people recorded as spending census night in the area, whether they usually live there or not;
- the usually resident population base in an area (Residents) is the count of all people recorded as resident in households in the area, even if they were elsewhere on census night, plus residents in communal establishments who were present in the establishment in census night. This population base
included people from wholly absent households who returned a form voluntarily.


## Geographic bases

8.15 Different geographic bases were used in Northern Ireland (see also Chapter 5). Enumeration Districts (EDs) were used as the base for data collection and input processing. However, for the first time in Northern Ireland, the traditional output geographic bases of electoral wards, local government districts and grid squares were augmented with the dissemination of census data at ED level. Also, as the postcode of each address of enumeration was entered into the computer for the first time in Northern Ireland, statistics were produced for areas defined in terms of postcode districts and postcode sectors.
8.16 The table below shows the standard areas in Northern Ireland for Census Statistics.

| AREA | REPORTS | COMMISSIONED OUTPUT | SAS | SAS(grid square <br> based) | $\begin{aligned} & \text { HEAD } \\ & \text { COUNTS } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Northern Ireland | X | X | X |  |  |
| Parliamentary Constituency |  | X | X |  |  |
| Local <br> Government District | X | X | X |  |  |
| Electoral Ward | X | X | X |  |  |
| Postcode District |  | X | X |  |  |
| Postcode Sector |  | X | X |  |  |
| Enumeration District |  |  | X |  |  |
| Belfast Urban Area | X | X | X |  |  |
| Health and Social Services Board |  | X | X |  |  |
| Education and Library Board |  | X | X |  |  |
| Grid square |  |  |  | X |  |
| Town | X |  |  | X |  |
| Townland |  |  |  |  | X |

8.17 As stated in paragraph 8.5 the Census Act provides for output as printed Reports or as Statistical Abstracts. In 1991 the Reports were sold for a charge to include recovery of printing and distribution costs by HMSO. The Abstracts were available on order, for a charge, from Census Office.
8.18 The main results from the 1991 Northern Ireland Census are provided in a series of 10 published Reports which primarily use the usually resident popuation base:

## 1. Preliminary Report

This report was published in July 1991 and contains provisional figures of the population and private households for each of the 26 local government districts with a brief statistical commentary.
2. Summary Report

The Summary Report was published in October 1992 and contains information for Northern Ireland and for each of the 26 local government districts. The subjects covered include age distribution, sex, marital status, birthplace, religion, households, tenure, amenities, occupation density, availability of cars, communal establishments, economically active population, employment status, long-term illness, term-time address of students and schoolchildren, and Irish language.

## 3. Belfast Urban Area

The Belfast Urban Area Report was published in December 1992 and contains information to ward level for the Belfast Urban Area as defined by the Department of Environment for Northern Ireland Town and Country Planning Service. The subjects covered include age distribution, sex, marital status, birthplace, religion, households, tenure, amenities, occupation density availability of cars, communal establishments, economically active population, employment status, long-term illness, term-time address of students and school children, and Irish language.

## 4. Religion

This Report was published in February 1993 and contains information at Northern Ireland level and some to local government districts on the main religious denominations. The subjects covered include population by age, sex, marital status, occupation, industry, and other characteristics.

## 5. Economic Activity

This Report was published in April 1993 and contains tables giving the figures for both the economically active and economically inactive population. The
employed population is analysed by industry and occupation classifications and relates to age, marital status, employment status, socio-economic groupings area of workplace etc. Most tables contain information at Northern Ireland level but some give details for local government districts.

## 6. Workplace and Transport to Work

This Report was published in June 1993 and contains details of the employed population in relation to area of workplace / residence. Workplace movement by socio-economic group, occupation, industry, and means of transport to work are detailed to local government district level.

## 7. Housing and Household Composition

This Report was published in September 1993 and contains tables giving information on households, tenure, occupation density, car availability, age, sex, marital status, and relate household composition to social and other economic characteristics. Most tables contain information at Northern Ireland level but some give details for local government districts.

## 8. Migration

This Report was published in October 1993 and contains tables giving information on the numbers and characteristics of the population who changed their usual address in the year before Census day. Migrant households are detailed by age, sex, marital status, etc. Some tables refer to Northern Ireland and others are detailed to local government districts.

## 9. Education

This Report was published in November 1993 and contains tables giving information at Northern Ireland level by age, sex, religion, occupation, and industry by highest level of academic qualification. Also included are socio-economic groups by religion and economic activity by marital status related to the highest level of academic qualification.

## 10. Irish language

This Report was published in December 1993 and contains information on population aged 3 years and over, recorded as having a knowledge of Irish language. The tables covered include knowledge by age, sex, religion, economic position and highest level of academic qualification to Northern Ireland level.
8.19 The Statistical Abstracts are supplied mainly in machine readable form, although small quantities can be supplied as hard copy. Commissioned by customers they are either:

- in a standard form particularly to provide results for areas and populations other than those covered in the Reports; or
- specially designed for individual uses.
8.20 There are also a number of supplementary products available from Census Office, in addition to products from outside agencies and organisations. Fuller details of data supplied as Statistical Abstracts are given below.


## Standard commissioned Abstracts

8.21 Standard statistical abstracts, commissioned by customers, provide results for users, in the same table layout, at a lower geographical area than that at which the table is published in any of the Reports.

## Specially commissioned abstracts

8.22 In addition to the output available as Reports or standard statistical abstracts described above, special abstracts can be commissioned and paid for by customers under Section 4(2) of the Census Act (Northern Ireland) 1969. These are more traditionally known as 'ad-hoc requests'. Such commissioned output may take the form of extensions to tables published in the Reports or expanded versions of standard distributions of variables, or new tables specified by customers. Some 170 tables, commissioned by various individuals and organisations, had been produced by the end of October 1995.

## Small Area Statistics (Grid square based)

8.23 A pre-defined list of data items are available for 100 metre grid squares in urban areas and for 1 kilometre grid squares in rural areas. Combining grid-square data provides users with data for small towns and villages. Also, as grid squares are fixed and do not vary over time the data can be geographically compared with those data produced for grid squares in 1971 and 1981.

## Small Area Statistics (ED Based)

8.24 For the first time in a Northern Ireland census a comprehensive dataset has been produced for a wide range of areas from ED up to Northern Ireland level. Under the UK Census Initiative, Census Office for Northern Ireland, in conjunction with the Economic and Social Research Council, produced an ED based Small Area Statistics (SAS) dataset for Northern Ireland. The Queen's University of Belfast assisted Census Office in the development of software to produce the datasets which consist of some 8000 counts arranged in 75 pre-specified tables that were designed closely on the SAS tables produced for Great Britain. The datasets, in whole or in part, are available in machine readable form and cover all census topics. As this NI SAS dataset is closely related to GB SAS datasets, it enables users to analyse census statistics on a UK basis.

## Samples of Anonymised Records

8.25 A major development for the 1991 Census was the production of two Samples of Anonymised Records which were produced at the request of the Economic and Social Research Council (ESRC), following a satisfactory independent review of confidentiality issues. The anonymised records are two samples of the records of individual data from the Census, sometimes called 'microdata' or 'public use data' in other countries. One is a two per cent sample of individuals in households and communal establishments, the other is a one per cent sample of households and individuals in these households. The samples give users considerable scope for preparing tables not otherwise issued or commissioned, and offer the opportunity to apply new techniques for statistical analysis. The samples are held and disseminated from a centre within the University of Manchester run by the ESRC.
8.26 The data in each sample are anonymised to ensure that confidentiality is demonstrably protected. Most 1991 Census items of the type used in the ED based Small Area Statistics are included, but the number of categories of some variables have been reduced. The lowest geographical level in the two per cent sample of individuals is a combination of local government districts (with a minimum population of 120,000 usually resident persons) in the two per cent sample of individuals. The one per cent sample of households is produced at Northern Ireland level only.

## Geographical products

8.27 ED / Postcode Directory - Census Office has made available to customers an ED/Postcode Directory to provide users with a means of associating EDs with unit postcodes. The Directory consists of a list of the postcodes and part postcodes (in cases where they are split between two or more EDs) for addresses of all households and communal establishments for each ED.
8.28 The scope for using 1991 census results on computer systems is considerably enhanced by the provision of the 1991 census ED boundaries in digital form. The boundaries, which have been digitised by Ordnance Survey of Northern Ireland (OSNI) at 1:50,000 scale, are available under lease form OSNI and can be formatted to specific customer requirements.

## Value-added products

8.29 For the first time Census Office, with assistance from Census Division within OPCS, has introduced a scheme for approved agencies to hold NI census statistics (mainly the ED based SAS) under licence, and to supply extracts to users on payment of royalties. Census Agencies, along with individual Licensees, have introduced a variety of means of accessing the statistics.
8.30 Statistics have been made available on-line through the Joint Academic Network (JANET), through the joint Economic and Social Research Council and Manchester Computing Centre initiative, and also via the GB Department of Employment's National On-Line Manpower Information System (NOMIS) run by the Department of Employment (now known as the Department for Education and Employment).
8.31 A list of all 1991 Census available products is given at the Appendix to this Chapter. Census Office has strict Conditions of Supply and Use for all products in order to preserve copyright, safeguard the recovery costs, and to ensure that confidentiality is protected. Full information is available from Census Customer Services - a contact point is given at the end of this Chapter.

## Software for handling abstracts

8.32 To help users handle and analyse abstracts, software has been produced by outside organisations with the support and assistance of the Census Offices in GB. SASPAC91 is a software package produced by the London Research Centre which enables the analysis on microframe and microcomputers of the ED based SAS. Powys County Council also designed and made available a package, C91, which is specifically designed for handling SAS datasets on PCs.

## ARRANGEMENTS FOR WIDER DISSEMINATION

8.33 The availability of machine-readable output has provided an opportunity for the customer base to be expanded via intermediary bodies. They may supply subsets of the census statistics by creating products to meet particular user needs. They do so under an agreement with Census Office. Fees are payable, and are based on the standard charges to ensure that there is no risk to the recovery of costs. Third parties supplied in this way are not permitted to pass on any of the Census material without the agreement of Census Office, in line with the Conditions of Sale for a customer supplied directly.

## Licensees

8.34 There are three types of licence available to Census customers. The first allows the Licensee to pass data to a single-named party, and the second allows the Licensee to publish statistics. Both these licences are granted in return for a licence fee paid in advance. The third type, a quarterly licence, allows a customer to pay a licence fee retrospectively every quarter based upon the amount of data accessed by, or passed to, third parties.

## Census Agencies

8.35 Agencies were originally set up in GB as an alternative channel of distribution to promote the supply of census statistics to a wider user base. In response to demand, Agencies have developed a variety of other products, for example products targeting marketing the areas or profiling clients' customers by area type. Data from other sources are often included in such products. Census Division within OPCS administer on behalf of Census Office for Northern Ireland the use of NI census data by Census Agencies. Fees are payable to OPCS by the Agencies, and a number of payment options are available. Seven organisations have been appointed as 1991 Census Agencies for the dissemination of 1991 NI census data.
8.36 A prospective Agency is required to show that no aspect of its activities could damage the reputation of the census operation and, in particular that no activity could threaten the confidentiality of census information or result in risks to confidentiality being perceived.
8.37 The expansion in the detail of the statistics and variety of products has increased significantly the need for support for customers. Up to the end of October 1995 some 2800 orders for 1991 Census data have been supplied to customers.
8.38 Census Office has a Customer Services Section, who supply statistical abstracts, give advice and issue publicity material and documentation about census products. They can also supply maps of ED boundaries to complement ED SAS data, and products from previous censuses.

## ANALYSIS OF SALES

8.38 Sales figures for census data provide tangible evidence of user demand. The revenue generated helps in part to offset the cost of the census. By the end of September 1995 income totalling $£ 121,474.00$ had been raised from the sale of census outputs.
8.39 Although many users now require data on computer media the demand for printed reports is still considerable. At June 19955,127 copies of the published census reports had been sold.

## THE OUTPUT PROCESSING SYSTEM

8.40 Development of output processing systems began well in advance of the census. The hardware and software elements used in output were new for 1991. All output processing was carried out on the ICL Census mainframe computer. As with input processing, the Structured Systems Analysis Design Method (SSADM), which is the standard for government applications, was used. The data from which outputs were produced were held in serial files and the majority of the computer processes were implemented in COBOL language. All systems were tested, as thoroughly as time allowed, by a three phase programme of systems testing, customer testing and final testing using real data.
8.41 The census tables were produced using TAU (Tabulation Utility), which had been developed in-house by OPCS. TAU was modified for use in NI to ensure greater compatibility with the NI census mainframe computer system. As a result the package did not offer the same facilities as that used in OPCS, but these restrictions did not impact on output processing. The facility was also enhanced with the addition of a statistical blurring procedure to protect confidentiality.
8.42 Following production and checking of the tables to be included in the topic reports, the data pertaining to each table were transferred to magnetic tape. The tapes were forwarded to OPCS who input each of the tables to an electronic publishing system. Camera ready copies of each table were returned to Census Office who organised printing through services provide by HMSO.
8.43 The main elements of output processing are represented in Figure 8.1.


Fig. 8.1 The main elements of output processing - 1991 NI Census

$$
\begin{array}{ll}
\text { Key: } & \text { SAS - Small Area Statistics } \\
& \text { SARs - Samples of Anonymised Records }
\end{array}
$$

8.44 Output processing was carried out to a pre-arranged timetable with priority being given to the production of tables for inclusion in the published reports. Following publication of the reports, output was produced as commissioned by customers and for the special datasets like the Small Area Statistics and Samples of Anonymised records. Quality checks were built into the processing system at various stages with IT staff checking the programs prior to production. After table production a quality assurance team within Census Office checked the output by comparing key counts. They also made comparisons between related tables and carried out arithmetical checks to ensure totals within tables were aggregated correctly.
8.45 Separate systems were used to produce the Preliminary Report as tables in it were compiled clerically from summary information contained in the Enumerator's Record Books.

## CONFIDENTIALITY

8.46 The main assurance given by the Government to the public when taking a census is that information about individuals and households will remain confidential. Although censuses in Northern Ireland are compulsory, in order to gain widespread co-operation it is important that a census is also seen to be confidential. In Northern Ireland this has been traditionally done by:

- stating assurances on Census forms and in publicity;
- legislation protecting against unauthorised disclosure of personal census information;
- taking stringent precautions to ensure that the data are secure while they are collected from the field, processed in Census Office, and subsequently held in storage; and
- protecting against inadvertent disclosure in the census outputs by devising and applying such additional processing procedures as may be necessary.

This section of the Report is concerned with this last aspect.
8.47 The principle asset of a census is its ability to provide information about the whole population, as opposed to a survey which provides information based on a sample. Because the census data are comprehensive, statistics can be produced for very small geographical units on a comparable basis and this leads to a risk that information about identifiable people or households may be disclosed. This can happen either directly by producing information for too small a population, or indirectly by the disclosure of information for a small number of individuals or households obtained by differencing statistics for two different geographical areas whose boundaries overlap.
8.48 Also, there are nowadays more and more datasets about individual people becoming available, particularly in the commercial sector. The ever increasing data handling capacity of computers leads to the possibility of someone seeking to match these datasets with the

Census statistics, and hence claim that they have received information about an identifiable person or household.
8.49 For the 1991 NI Census it was judged that some special measures were required in producing statistics for areas below local government district level. The actual risk of disclosure of information about identifiable individuals or households is arguably small. However, it was considered that members of the public might perceive a threat to the confidentiality of the information, and therefore special measures were implemented.

## Methods used

8.50 Thresholding - Output was not released (apart from a few basic counts) for areas where the number of people or households was below set thresholds. However the statistics for a below-threshold area were merged with those of a neighbouring area and the full statistics produced for the aggregate area provided the latter area met the threshold. As output for small geographical areas were only available from either the ED based Small Area Statistics or the grid square Small Area Statistics, thresholding was confined to these datasets. For ED based SAS the threshold was 50 residents and 16 households, and for grid square SAS the threshold was 25 residents and 8 households. The ED SAS threshold was higher because of the greater amount of detail in tables within the dataset.
8.51 Data modification (blurring) - Data modification was applied to all tables (except for those in the Summary Report) produced at ward level and below. The modification procedure involved the addition of $+1,0$ or -1 in a quasi-random pattern to each base cell within a table. Zero counts were not modified and the total counts produced were aggregations of the modified base cells. For SAS tables produced at ED level, the modification routine was applied twice. This was because of the amount of detail given in the SAS dataset.

## ORDER OF PROCESSING AND AVAILABILITY

8.52 To meet the requirement for early results, the Preliminary Report for Northern Ireland was published in July 1991. The figures in the Report, were provisional and represented the actual population present and enumerated in Northern Ireland on Census night.
8.53 Output processing began in July 1992 and main census Reports were published in series over the period from late October 1992 to mid December 1993 to the following timetable:

- Summary
- Belfast Urban Area
- Religion
- Economic Activity
- Workplace \& Transport to Work
- Housing \& Household Composition
- Migration
- Education
- Irish Language

23 October 1992
22 December 1992
26 February 1993
30 April 1993
25 June 1993
30 September 1993
29 October 1993
26 November 1993
21 December 1993
8.54 The grid square based Small Area Statistics were developed between January 1993 to April 1994 and became available in May 1994. The joint Census Office / ESRC project to produce Samples of Anonymised Records (SARs) commenced in September 1992. Census Office produced the SARs and presented the data to the Census Microdata Unit at Manchester during June 1994. The data were made available by the CMU in September 1994. The collaborative venture between Census Office, the ESRC and Queen's University of Belfast to produce an ED based Small Area Statistics Dataset began in January 1993 and was completed in January 1995 when data pertaining to the ED based SAS became available.
8.55 For the most part, the production of the Census results went according to plan. The Summary and Topic Reports were all published as scheduled. Some delays occurred during the development of the SARs and ED based SAS, but these were anticipated as their production involved procedures which were new and untried by staff within Census Office and DHSS (ITG).

## CONCLUSIONS

8.56 For 1991 Census Office sought to maximise the usefulness of the Census in response to user needs, by increasing the amount of data available and expanding the product range. Two notable new products were the Samples of Anonymised Records and the ED based Small Area Statistics; the latter augmented with the availability of digital ED boundaries. In addition, co-operation with other organisations has enabled software and other facilities for manipulation and analysis of certain products and digital boundary data to be made available to enhance the value of the core statistics. Business arrangements have been made with intermediary organisations thereby increasing the number of outlets, providing more varied means of dissemination, and enabling a wide range of value-added products to be developed with the minimum of extra cost to government. This extensive range of products constitutes a notable success, and plans for 2001 should build on this.
8.57 Standard output in the form of published Reports has been the traditional means by which Census Office produce data for the Registrar General under the requirements of Section 4 (1) of the Census Act (Northern Ireland ) 1969. However standard products, which cater for most uses, inevitably lack flexibility. For 2001 the balance between pre-specified standard outputs and ad-hoc services will to be reviewed.
8.58 Quality checks should be designed into all aspects of processing, to a much greater degree than in 1991, to keep data errors to a minimum. They should ensure that those errors that do arise are identified at the earliest possible stage to minimise the need for corrective action and consequential delay.
8.59 Special measures to protect confidentiality necessarily reduce the value of the information disseminated from a census. It is important that they are not more complicated than is needed to meet real requirements and public concern. Policy will need to be reviewed again for the 2001 Census in light of the outputs required by users, and the prevailing public attitude to this issue.
8.60 The worth and success of the 1991 Census output programme will ultimately and rightly be judged by customers. Just as user consultation played a key part in shaping the form and content of output, so consultation again provides the most important feedback on all aspects of dissemination. A user survey took place during 1994 in Northern Ireland. The exercise started with the issue of a questionnaire to customers. Whilst the main focus of the user survey was on 1991 performance, the opportunity exists for users to state further needs for information during the intercensal period as well as to look forward to 2001 and the form of outputs required. Census Office intends to maintain contact with census users throughout the intercensal period to provide a sound basis for meeting user requirements for the next census.

### 8.61 Contact point:

Census Customer Services may be contacted at:

Census Office for Northern Ireland<br>The Arches Centre<br>11-13 Bloomfield Avenue<br>Belfast<br>BT5 5HD

Tel: 01232526087
Fax: 01232526949

## APPENDIX

## List of Census Reports and other products

Figures in brackets indicate the numbers within each level in the series.
A. 1991 Census

## Published Reports

Preliminary Report for Northern Ireland

## Topic Reports

Summary<br>Belfast Urban Area<br>Religion<br>Economic Activity<br>Workplace and Transport to Work<br>Housing and Household Composition Report<br>Migration<br>Education<br>Irish Language

## Products

Small Area Statistics: 75 tables, for,
Northern Ireland
District Councils (26)
Parliamentary Constituencies (17)
Electoral Wards (566)
Postcode Sectors (223)
Enumeration Districts $(3,729)$
Belfast Urban Area
Health and Social Services Boards (4)
Education and Library Boards (5)

## Grid Square Small Area Statistics

Statistics at 100 metre grid squares are available for urban areas and for small towns and villages and at 1 kilometre squares for rural areas.

## Enumeration District/Postcode Directory

The Enumeration District/Postcode Directory has been produced to provide a means of associating EDs with postcodes to enable users to undertake their own analyses between the geographies of the Census and other datasets.

## Samples of Anonymised Records

Samples of Anonymised Records are abstracts of anonymised individual records from the census output database. There is no conflict with census confidentiality because the released records do not contain any information which would lead to the disclosure of information about an individual or household. The CMU at the University of Manchester hold the two files. These are a $2 \%$ file of individuals living in private households and communal establishments, and a $1 \%$ hierarchical file of private households and all individuals within them.

## Towns

The usually resident population, by sex and the number of households, is available for towns and villages.

## Townlands

The total present population, by sex and the number of enumerated households and unoccupied dwellings, are available for each townland.

## User Guides

User Guide 1: SAS - Introductory Notes and Table Outlines
User Guide 2: SAS - Explanatory Notes and Modification of Counts for Confidentiality
User Guide 3: Guide to Northern Ireland Census Statistics
User Guide 4: Directory of Enumeration Districts and Postcodes
User Guide 5: SAS - File Specification

## Maps

ED boundaries on paper copy for small areas.

## CHAPTER 9

## SUMMARY OF RESULTS

## 9. SUMMARY OF RESULTS

## INTRODUCTION

9.1 The range of products available from the 1991 Census has been described in Chapter 8. Some summary statistics have been selected from the datasets and are included in this Chapter to give a feel for the richness and variety of the Census as a data source. They are not intended to be a balanced summary of the Census results (for complete information see the full list of Census products given in the Appendix to Chapter 8).

## FIRST RESULTS

9.2 The first results from the Census were published in July 1991 in The Northern Ireland Census 1991 Preliminary Report, and gave figures for each local government district. The figures were derived clerically from information given in the Enumeration Record Books of where people were on Census night. The report was therefore not on the same basis as the main census outputs which were for people at their place of usual residence.

The total count for persons present for Northern Ireland recorded in the Preliminary Report was $1,569,971$, of which 764,818 were male and 805,153 were female.

## SUMMARY RESULTS FOR NORTHERN IRELAND

9.3 The first results to be produced following processing were presented in the Summary Report which was published in October 1992. The results provided data primarily for Northern Ireland as a region and for the local government districts. In some instances data were also provided for the electoral wards. In the Summary Report the count for persons present in Northern Ireland on Census night was recorded as $1,573,282$ persons while the usually resident population was recorded as $1,577,836$ persons. A profile of the persons present in Northern Ireland for each of the censuses is illustrated in Figure 9.1.

### 9.4 Some of the key results from the Northern Ireland Summary Report were:

- Some 1.6 million people were counted as residents in Northern Ireland. of whom $98.5 \%$ lived in 0.5 million households; population density ranged from 0.3 persons / hectare in Fermanagh and Moyle local government district areas to 24.3 persons / hectare in the Belfast local government district area.
- Of the 177,221 people aged 16 and over who had a limiting long-term illness, $52.8 \%$ were of pensionable age ( 65 years for men and 60 years for women), and $10.2 \%$ were of working age and economically active.
- $\quad 45.7 \%$ of households were living in accommodation with a household density of less than 0.5 persons per room, and only $4.8 \%$ had a density of more than 1 person per room; the proportion of such over-crowded households was highest
in Strabane local government district (10.4\%) and the lowest in North Down (1.3\%).
- Some $40.7 \%$ of households contained one or more dependent children (defined as persons aged 0-15 years in a household; or a person aged 16-19 years, never married, in full-time education and economically inactive). This proportion ranged from $32.4 \%$ in Castlereagh local government district to $50.6 \%$ in Derry local government district.
- Of those residents aged 16 and over who were economically active, $33.2 \%$ of men and $46 \%$ of women were in non-manual social classes (were social class is based on occupation).
- Of those residents aged 16 and over who were in employment, $54.6 \%$ of men and $80.7 \%$ of women were employed in service industries.
- Some $14.8 \%$ of employed residents aged 16 and over worked more than 40 hours per week, while $16 \%$ worked fewer than 31 hours per week.
- Travel by car was the dominant means of getting to work for residents aged 16 and over in households ( $65.6 \%$ of those employed, with $12.6 \%$ walking and $10 \%$ taking a bus).
- Some $8.2 \%$ of residents aged 16 years or over held educational qualifications above GCE 'A' level, $79.7 \%$ of whom had attained at least degree level.

Thousands

*1981 figure, as revised, takes accoumt of non-response
Figure 9.1-Population present: 1821-1991 Northern Ireland
9.5 Some key results about local government districts are as follows:

- Castlereagh local government district had the highest proportion of residents of pensionable age ( $18.8 \%$ ) Derry local government district had the lowest (10.7\%).
- Belfast local government district had the highest proportion of residents with limiting long-term illness ( $14.3 \%$ ) while Limavady local government district had the lowest (9.6\%).
- Just over one fifth of all households in Northern Ireland comprised persons living on their own. Belfast local government district had the highest proportion of single person households ( $29.7 \%$ ).
- Banbridge local government district had the highest proportion of households with two or more cars (27.4\%) and Belfast local government district the lowest (11.2\%). The average for the Northern Ireland region was found to be $19.9 \%$ of households.
- Belfast local government district had the highest proportion of households with no car (53.7\%); Armagh, with $24.9 \%$ had the lowest proportion of such households.


## TOPIC RESULTS

9.6 Detailed reports on the main census topics were published containing statistics mainly at regional and local government district levels. Full details of these Topic Reports are provided in Chapter 8 - Census Products. The following paragraphs provide some key results for particular subjects (Note: 1991 data pertaining to the subjects considered in the following paragraphs can be found in the Summary Report and series of Topic Reports).
9.7 Sex, age and marital status: Some key changes between 1981 and 1991 are:

- The proportion of resident men and women aged 16-29 who were still single (never married) increased by $12.4 \%$ percentage points to $43.8 \%$ for men, and by $4.1 \%$ percentage points to $31.2 \%$ for women.
- The proportion of the resident population aged 16 and over who were divorced increased from $0.8 \%$ and $2.0 \%$ and from $1.1 \%$ to $2.8 \%$ for males and females respectively from 1981 to 1991.
- At local government district level the divorced population (as a proportion of all residents aged 16 and over) was highest in Carrickfergus (3.4\%) and lowest in Dungannon (1.1\%) and Magherafelt (1.1\%).


Figure 9.2 - Comparison of resident males / females by marital status: Northern Ireland 1991

### 9.8 Persons aged 60 years and over:

- There were 272,229 residents aged 60 and over ( $17.3 \%$ of the population).
- At local government district level, the proportion of residents aged 60 and over was highest in Belfast ( $23.1 \%$ ) and lowest in Omagh (11.3\%).
- Just under a third ( $32.0 \%$ ) of households in Northern Ireland contained one or persons of pensionable age or over. Some $12.9 \%$ of households comprised a person of pensionable age living alone.
- Of households with one or more residents of pensionable age or over, $58.9 \%$ lived in owner occupied accommodation and $39.9 \%$ lived in rented accommodation; compared with $62.3 \%$ and $36.8 \%$ respectively of all households.


### 9.9 Limiting long-term illness:

- The total number of residents in Northern Ireland who were recorded in the Census as having a long-term illness was 186,067 . Of these 171,028 were living in households ( $11 \%$ of all residents in households), and 15,039 were in communal establishments ( $64.6 \%$ of all residents in establishments).
- $\quad 11.1 \%$ of all resident males in NI were reported as having a long-term illness where as the equivalent figure for resident females was $12.5 \%$.


Figure 9.3-Profile of resident males/females reporting long-term illness by local government district: Northern Ireland 1991
9.10 Usual Residence:

- The 1991 Census counted $1,577,836$ people as being usually resident in Northern Ireland. This included persons in households that were wholly absent from their usual residence on Census day, but who voluntarily chose to complete a census return upon their return.
- There were some 10,958 visitors recorded as being present in Northern Ireland on Census night, $41 \%$ of whom were born in Great Britain.
- Of the 381,874 students and schoolchildren resident in Northern Ireland, 7,932 had a term-time address in Northern Ireland other than their home address, and a further 7,985 had a term-time address outside of Northern Ireland.
9.11 Housing and availability of cars:
- The number of owner occupied households was 330,198 (62.3\%) compared with 225,621 (49.4\%) in 1981.
- Among all main religions, households with a Presbyterian head had the highest proportion of owner-occupiers ( $69.2 \%$ ), followed by households with a Methodist as head ( $66.2 \%$ ). Households with a head from the Roman Catholic religion had the lowest proportion (58.1\%).
- The number of households renting from a public authority was 155,817 (29.4\%) in 1991 compared with 179,192 (39.3\%) in 1981.


Figure 9.4-Households by tenure type: Northern Ireland 1991

- Some 342,240 households had one or more cars available to them in 1991.
- Some 464,812 cars were available to residents in 1991 compared with 343,526 in 1981.
- $19.9 \%$ of households had two or more cars available in 1991 compared with $13.5 \%$ in 1981.
9.12 Communal Establishments:
- There were 37,583 persons enumerated in communal establishments in 1991 (nearly $2.4 \%$ of all persons present in Northern Ireland on Census night).
- Of the 37,583 persons present in communal establishments, 23,298 were recorded as being usually resident. Of these, just over $55 \%$ were of pensionable age ( 65 years in men and 60 years in women).
- Just under 3.3\% of usual residents of pensionable age reside in private nursing homes for the old and disabled.
9.13 Religion: The main results on this topic were published in the Religion Report. Some key results are as follows:
- $89.0 \%$ of residents in Northern Ireland were recorded as having a religion, whilst $3.8 \%$ were recorded as having no religion. $7.3 \%$ of residents did not state whether they had a religion or not.


## Residents



Figure 9.5-Residents by religion: Northern Ireland 1991

- The breakdown for the religious groups were: Roman Catholic $38.4 \%$, Presbyterian $21.4 \%$, Church of Ireland $17.7 \%$, Methodist $3.8 \%$, Other denominations $7.8 \%$, None $3.8 \%$ and Not stated $7.3 \%$
9.14 Household composition: The main results on this topic were published in the Housing and Household Composition Report. Some key results were as follows:
- Some 530,369 households were counted, an increase of $16.2 \%$ compared with the 1981 figure of 456,348 , whereas the number of residents in households only increased by $6.4 \%$.
- The proportion of households with only one person increased from $18.7 \%$ in 1981 to $22.6 \%$ in 1991.
- Under 1000 households ( $942-0.17 \%$ ) were resident in shared dwellings and just over 2,250 (2254-0.42\%) households were resident in non-permanent dwellings.
- The average number of resident persons per household was 2.93 .


Figure 9.6 - Households by size: Northern Ireland 1991


A: All households
B: All households with fixed bath or shower
C: All households with inside fush toilet (WC)
D: All households with outside fiush toilet (WC) only
E: All households connected to pubic water supply
F: All households connected to public sewer
G: All households with central heating in at least some rooms

Figure 9.7-Households by amenities: Northern Ireland 1991
9.15 Economic Activity: The main results on this topic from the 1991 Census on the economic activity of the population aged 16 and over were published in the Economic Activity Report. Some key results are as follows:

- Some $58.4 \%$ of the $1,167,938$ people resident in Northern Ireland aged 16 years and over were economically active (that is, employed full or part-time, self-employed, on a government work or training scheme, or unemployed).
- In the week preceding Census day, of the population aged 16 and over, $72.7 \%$ of males and $45.2 \%$ of females were economically active. Of these $81.0 \%$ of males and $89.2 \%$ of females were in employment.
- Of the 574,950 people employed, just under $12.8 \%$ were self-employed. This compares with just under $11 \%$ in 1981.
- Men accounted for $52.7 \%$ of the total employees. Of the 231,006 female employees, $63.6 \%$ were married, and around $43.5 \%$ of those married were employed on a part-time basis.
- The self-employed population disaggregated into those with employees and those without employees shows the respective percentages for the males to be $34.5 \%$ and $65.5 \%$ and for the females to be $48.9 \%$ and $51.1 \%$. Male managers, foreman and supervisors, and professional employees make up $12.5 \%, 5.2 \%$ and $5.2 \%$ of the employees in employment category, whilst the respective female figures are $5.5 \%, 4.3 \%$ and $1.6 \%$.


Figure 9.8 - Employed population by age bands: Northern Ireland 1991
9.16 Irish language: The main results on this topic for 1991 were published in the Irish Language Report. Some key results are as follows:

- $9.5 \%$ of the resident population of Northern Ireland aged 3 years and over stated that they had some knowledge of the Irish language (ranging from the ability to speak Irish only to the ability to speak, read and write Irish). $87.9 \%$ stated they had no knowledge of Irish and $2.6 \%$ did not provide an answer to the question.
- More than half of those who said they had some knowledge of Irish (55.6\%) could speak, read and write the language.
- $20.8 \%$ of the resident population of Northern Ireland aged 16 years and over, with degree level or higher qualifications, had some knowledge of Irish. This compares to $6.2 \%$ of the population aged 16 years and over, with no formal qualifications of any kind, who had some knowledge of Irish.
- $\quad 9.1 \%$ of the economically active population and $8.7 \%$ of the economically inactive population stated that they had some knowledge of Irish.
9.17 Migration: The main results in this topic were published in the Migration Report. Some key results are as follows:
- $0.64 \%$ of the resident population of Northern Ireland on Census Day 1991 had lived in Great Britain within the year preceding Census Day, $0.09 \%$ had lived in the Republic of Ireland and $0.25 \%$ had lived abroad.
- $73,132(4.6 \%)$ of the resident population had migrated (within the year preceding Census Day) within their own local government district. Of these, just under 66,000 ( $90.2 \%$ ), were located in wholly migrant households.
- There were 7,283 wholly migrant households, containing over 17,711 residents, who, in the year preceding Census day, had moved to their local government district from another local government district in Northern Ireland.
- Of all migrants, there were more female $(58,887)$ than male $(55,015)$ and more single $(57,127)$ than married $(48,748)$, within one year preceding Census Day .


### 9.18 Workplace and transport to work: The main results on this report were

 produced in the Workplace and Transport to Work Report. Some key results on this topic are as follows:- $84.7 \%$ of the working population were employed within Northern Ireland, $0.3 \%$ were employed elsewhere in the United Kingdom, and $0.3 \%$ were employed in the Republic of Ireland. $14.6 \%$ of the employed population had a 'not stated / no fixed workplace'.
- $84.7 \%$ of the working population worked in the local government district in which they were usually resident.
- $28.1 \%$ of the working population worked in a local government district other than the local government district of usual residence.
- The most commonly used method of transport to work for residents in private households was as the driver of a car or van $-50.6 \%$ of the employed population travelled to work in this way. The next most common method, adopted by $12.6 \%$ of the employed population, was to travel on foot.

Emloyed population


Mode of travel to work

Figure 9.9-Employed residents by mode of travel to work: Northern Ireland 1991

## FURTHER INFORMATION

9.19 Further information on all Census results can be obtained from Customer Services Section at the Census Office. A contact address is given at the end of Chapter 8.

## CHAPTER 10

# THE 1991 CENSUS VALIDATION SURVEY 

(Author: Jacquie Hyvart)

## 10. THE 1991 CENSUS VALIDATION SURVEY

## WHY A CENSUS VALIDATION SURVEY

10.1 The 1961 Censuses in Great Britain (GB) marked the beginning of formal statistical checks on the completeness and quality of census enumeration. Some limited demographic checks, using birth and death registration records for instance, had taken place immediately after the 1951 Census, but these were not as extensive, nor as pre-planned, as those devised for subsequent Censuses. The more recent checks have centred on re-enumeration of a sample of households previously covered by the Census enumerators. To a large extent, the need for these checks resulted from the more prominent use of Census data in the formulation and execution of policies and programmes within national and local government.
10.2 Northern Ireland, although following GB Census practice in other respects, has not previously conducted a survey of this type. However in planning the 1991 Census, it was decided to follow the GB practice and carry out a NI Validation Survey. It's remit was to cover two main aspects of data collection:
a. Coverage: the extent to which the 1991 Census was a comprehensive enumeration of the population; and
b. Quality: the accuracy of the information obtained about the people and households recorded by the Census.
10.3 The coverage aspect was designed to look at whether or not a Census form had been received from every household in the CVS sample, and whether or not every member of the sampled households was included on the Census forms that had been returned. The quality aspect addressed variability in the responses made to the same question at two different points in time, although the consequences of differing respondents and possible lapses in respondents' memories have to be taken into consideration.

## METHOD OF SURVEY

10.4 The survey of a sample of 2,000 households (randomly selected from the rating list) was carried out by the Social Survey Unit of the Department of Finance and Personnel and took place during June and July following the Census. Non-private accommodation was excluded from the CVS because of the transient nature of large sections of the population that occupied such accommodation.
10.5 It is expected that better quality information would be available from those households covered by the CVS than had been available from the same households' Census forms, primarily because it is carried out on a relatively small scale and attention can therefore be concentrated on those aspects of the census most likely to cause errors. In addition, highly trained and experienced field staff can be employed on Census validation work and the difference between what the census enumerators record and what the CVS interviewers find, can be considered an estimate of the error in the Census.
10.6 Unlike GB , and due to differences in the administrative and legal framework in NI, CVS interviewers here were provided with no prior information on their sampled households. The Census information was added later when the CVS completed schedules were handed over to Census Office for coding and data preparation.
10.7 In completing their schedules, CVS interviewers attempted to interview those household members who had completed the original Census form. However, in some cases this was not possible as the census form completion may have involved more than one person or the original Census respondent may have been unavailable.
10.8 The interview followed the Census format and covered questions of a general household nature together with questions on individual household members (or persons who were in the household on Census night). CVS respondents were also asked to comment on the actual Census operation - the questions, the form delivery and the collection process.

## SOURCES OF ERROR IN THE CENSUS

10.9 The accuracy of answers given in the Census depends on a number of factors:
(i) the reaction of householders to the 1991 Census and the contents of the Census form;
(ii) the level of understanding of householders in completing the form according to the definitions and instructions;
(iii) the degree of involvement of other persons in the household. The Census form was addressed to the Head, joint Head, or other member of the household, aged 16 or over, and in practice may have been completed by any one or a combination of these people. Where information was given by proxy it may have been obtained by the person who completed the form asking the others in the household, for details or it may have been entered without them having been consulted;
(iv) the potential duplication of data, for example where persons may have been wrongly included as present on Census night on two different forms; and
(v) the accuracy of recording data, for example a householder recording information on other members of the household might provide inaccurate data on some of the personnel social characteristics such as address one year ago or qualifications obtained.

## SOURCES OF ERROR IN THE CVS

10.10 As with the Census, the accuracy of the responses to the questions in the CVS depends on several factors:
(i) CVS interviewers were instructed, where possible, to conduct the CVS interview with the person/persons in the household who had filled in the original Census form. However where this was not possible, another member of the household was interviewed. This introduces potential for inaccuracy when household members are asked to comment on other household members' personal characteristics on which they may have incomplete knowledge;
(ii) there is also the potential for error arising from inadequate recollection of the circumstances affecting a particular household on Census night (for example, the whereabouts of residents / non-residents on Census night).

## COVERAGE ANALYSIS

Household coverage -
10.11 The first level of coverage investigation involved looking at whether or not each household in the CVS sample had received and returned a completed Census form. Of the 2,000 household selected to take part in the CVS, 1,590 participated. The 1,590 household schedules were then returned to Census Office to have the corresponding Census data transcribed. Within Census Office it was possible to trace a completed Census form for each household in the reduced CVS sample $(1,590)$ even though a small number of CVS respondents had (incorrectly) recorded a 'NO' to the CVS question asking whether or not they had received a Census form.

## Persons coverage -

10.12 CVS respondents were asked to record details on the usual residents and any visitors to their addresses on Census night. From their responses interviewers made a note of the total persons in the household who were (i) resident and present, (ii) not resident and present, and (iii) resident and not present at the time of the Census.
10.13 Table 10.1 compares the CVS and Census counts of households by number of persons usually resident / present on Census night. The table shows that the usually resident population for the sampled households from the CVS analysis is 4,703 persons, compared with 4,762 persons from the analysis of sampled households' Census forms - a net difference of 31 persons ( $0.66 \%$ more persons recorded by the CVS than by the Census). However, it should be noted that whilst in total there were 31 more persons recorded by the CVS than by the Census, differences in the counts for individual households could occur in either direction. The table shows that there were 21 more persons recorded as non-resident in the Census than in the CVS.

### 10.14 Possible explanations for these differences are:

(i) persons may have been classified as non-resident on the Census form when they should have been classified as resident. This may have been due to misunderstanding of the instructions for completion;

Table 10.1-CVS / Census count of households by persons

| USUALLY RESIDENT AND PRESENT POPULATION |  |  |  |  | USUALLY RESIDENT AND NOT PRESENT POPULATION |  |  |  | NOT RESIDENT POPULATION |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Persons | CVS <br> Households | CVS Persons | Census Households | Census Persons | CVS <br> Households | CVS Persons | Census Households | Census Persons | CVS <br> Households | CVS <br> Persons | Census Households | Census Persons |
| 0 | 32 | 0 | 37 | 0 | 1505 | 0 | 1505 | 0 | 1568 | 0 | 1553 | 0 |
| 1 | 332 | 332 | 335 | 335 | 58 | 58 | 64 | 64 | 19 | 19 | 29 | 29 |
| 2 | 414 | 828 | 405 | 810 | 13 | 26 | 9 | 18 | 2 | 4 | 4 | 8 |
| 3 | 289 | 867 | 288 | 864 | 7 | 21 | 3 | 9 | 0 | 0 | 2 | 6 |
| 4 | 275 | 1100 | 275 | 1100 | 0 | 0 | 2 | 8 | 0 | 0 | 2 | 8 |
| 5 | 140 | 700 | 144 | 720 | 2 | 10 | 3 | 15 | 0 | 0 | 0 | 0 |
| 6 | 68 | 408 | 68 | 408 | 3 | 18 | 2 | 12 | 0 | 0 | 0 | 0 |
| 7 | 21 | 147 | 23 | 161 | 1 | 7 | 1 | 7 | 1 | 7 | 0 | 0 |
| 8 | 11 | 88 | 9 | 72 | 1 | 8 | 1 | 8 | 0 | 0 | 0 | 0 |
| 9 | 2 | 18 | 2 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 2 | 20 | 2 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 2 | 22 | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 1 | 12 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1,590 | 4,555 | 1,590 | 4,531 | 1,590 | 148 | 1,590 | 141 | 1,590 | 30 | 1,590 | 51 |

Usually resident population
$\begin{array}{ll}\text { CVS } & 4703 \\ \text { Census } & 4671\end{array}$
Difference
31 (Percentage Difference $=0.66 \%$ )
(ii) the person or persons completing the Census form may have failed to include some persons who should have been included, whereas the CVS recorded them accurately when interviewers explained the instructions for completion;
(iii) if there had been a genuine change in the number of persons usually resident in a particular household during the period between Census date and the date of the CVS interview, the CVS respondent may have incorrectly recalled who was usually resident in the household on Census night; and
(iv) persons could also have been omitted form the Census form because it did not have space to record details for any more than 6 persons. In theory however this should not have happened since the Census enumerators had been instructed to enquire of the householder whether or not one Census form was sufficient to need their needs. In the CVS, 42 households recorded more than 6 persons usually resident whilst the Census recorded 40.
10.15 It would appear from Table 10.1 that a household containing 11 usually resident and present persons had been omitted from the Census as had a household containing 13 usually resident and present persons. However, this was not the case. For example, one household had recorded 13 persons as usually resident in the CVS but had recorded 10 as such $i$ the Census. It also had recorded one person as usually resident and not present in the Census, thereby accounting for 11 of the 13 . Events of a similar nature occurred for other households throughout the range of household sizes. For example, one household which recorded 5 persons as usually resident and present in the Census, recorded 4 persons usually resident and present and 1 person usually resident and not present in the CVS.

Table 10.2 - Percentage age distribution of the usually resident population

| AGE GROUP | CVS | CENSUS |
| :---: | :---: | :---: |
| $0-9$ | 15.04 | 14.31 |
| $10-19$ | 15.77 | 15.62 |
| $20-29$ | 15.99 | 16.69 |
| $30-39$ | 13.73 | 14.09 |
| $40-49$ | 12.02 | 12.09 |
| $50-59$ | 9.91 | 9.93 |
| $60-69$ | 8.88 | 8.78 |
| $70-79$ | 5.98 | 5.89 |
| $80-89$ | 2.47 | 2.42 |
| $90+$ | 0.22 | 0.02 |

10.16 An analysis of the ages of the usually resident population as recorded by the Census and CVS in Table 10.2 clearly shows very similar percentages for persons in each of the age groups specified. The main disagreements are in the 0-9 age group where the Census has less ( $14.31 \%$ ) than the CVS ( $15.04 \%$ ), and in the $20-29$ age group where the Census has
more (16.69\%) than the CVS (15.99\%). In respect of these differences however, it must be always borne in mind that the person filling in the Census form and the respondent to the CVS may not have been one and the same person and over estimation and under estimation of just one year of age at the extremities of these age bandings, could result in the different percentages. In order to test the actual scale of these differences, a statistical (Census vs CVS) analysis of the ages of the two groups of children aged under 10 was carried out. The result was not significant.
10.17 An analysis of the recorded sex of persons participating in the CVS and the Census is shown in Table 10.3. There is close agreement between the two data sources.

Table 10.3-Percentage sex distribution of the usually resident population

| SEX | CVS | CENSUS |
| :---: | :---: | :---: |
| Males | 47.69 | 47.76 |
| Females | 52.31 | 52.24 |

MID - YEAR ESTIMATES
10.18 Mid-year estimates of the population of Northern Ireland are calculated annually but are bench marked to the most recent Census. Due to the non-enumeration problems experienced in the 1981 Census, the mid-year estimates for the years 1981 through to 1990 were based on revised 1981 Census figures calculated in 1985.
10.19 The final 1991 mid-year estimate of population of NI calculated to be $1,601,387$. The reasons for the difference between this figure and that shown in the published reports are:
(i) mid-year estimated utilise Census data on the transfer base definition rather than the definitional bases as published in the Census reports (see Annex 1 to this Chapter);
(ii) there is a timing difference between the Census data of 21 April and the mid-year estimate data of 30 June; and
(iii) the methodology used to calculate mid-year estimates allocates students to their term-time addresses rather than their usually resident home addresses as in the published Census counts.
10.20 In keeping with the approach adopted in GB, in order to ensure no under recording in the mid-year estimates of population, the 1991 MYE for NI was uprated by a factor of $0.66 \%$. This is the percentage difference, identified earlier in this chapter, between the usual residents of NI as counted in the CVS in comparison with those counted in the Census. Since statistical tests have failed to identify any significant differences between CVS and the Census counts
of specific age groups the $0.66 \%$ uprating factor has been applied across the board to all ages to ensure that the NI population figure is not misrepresented in any of the calculations for which it is used. Subsequent to the production of the 1991 mid-year estimate for NI, a retrospective revision of the previous decade's mid-year estimates was carried out. The growth in population over the period is depicted by Figure 10.1.

TOTAL POPULATION


Figure 10.1 - Trend in Northern Ireland population
(1981-1990: 1981Census based
1991: 1991 Census based)

## RESPONSE

10.21 The second objective of the CVS was to determine the overall quality of responses given by householders, to the questions asked on the 1991 Census form.

Possible sources of error
10.22 As mentioned earlier, one of the reasons for response error in the Census, is the practice of asking one person in each household to complete the Census form on behalf of everyone else in that household. The CVS interviewers attempted, where possible, to ask their questions of this person, but where this was not possible proxy replies were permitted. This left open the possibility for errors on two counts viz; -
(i) where the original Census respondent recorded answers for other members of their household without any consultation with those people; and
(ii) where the CVS respondent was neither the original Census respondent and / or did not refer to other household members to ensure the accuracy of responses.
10.23 CVS interviewers were asked to probe any areas of uncertainty encountered, but as CVS interviewing took place up to 8 weeks after Census day, some omissions / errors due to inadequate memory recall were inevitable.

## Method

10.24 The data were analysed in terms of the percentage exact agreement which occurred between the CVS and the Census responses to each question (i.e. where a CVS and a Census response matched completely).

RESULTS
10.25 To examine the extent of agreement, only observation which had valid CVS and Census answers were used. As some of the questions had a high non-response rate in the CVS, comparisons were sometimes based on a reduced set of questionnaires.
10.26 Figures 10.2 and 10.3 illustrate the percentage exact agreement obtained between Census and CVS responses to a range of questions. Generally speaking, on questions relating to fixed objects or particular household characteristics, the agreement is very good. These are fixed properties which the respondents can be expected to have little difficulty in responding to accurately. On the more personnel characteristics of individuals, although respondents can be assumed to have good knowledge of their own circumstances, they do not necessarily have the same degree of knowledge of those on whom they are reporting.
10.27 The quality check has also shown that there are some questions where there was a high degree of disagreement between the CVS and the Census responses, for example, the questions on number of rooms, hours worked in main job, employment in week before Census night, journey to work and qualifications obtained.

Number of rooms (Table 10.4)
10.28 The lowest level of exact agreement between the CVS and the Census was on the question, 'How many rooms does the household have for its own use?' Consistent answers were only given in $60.6 \%$ of the responses. The majority of disagreements involved a difference of only one room; in comparison with the CVS for households reporting 1-5 rooms the Census over recorded, and for households reporting $6+$ rooms it under recorded. It has been found in previous Post Enumeration Surveys of England and Wales, that much of the over recording was the result of households wrongly including bathrooms and small kitchens (under 2 metres wide).

Figure 10.2

## CVS CENSUS QUALITY ANALYSIS

Percentage Exact Agreement- Household Schedule
Percentage Exact agreement


Figure 10.3

Percentage Exact agreement- Individual schedule
Percentage Exact Agreement


Table 10.4-'On Census night, how many rooms did the household have for its own use'?

| CVS form results | Census form results TOTAL |  | One |  | Two |  | Three |  | Four |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | H'holds | \% | H'holds | \% | H'holds | \% | H'holds | \% | H'holds | \% |
| TOTAL | 1590 | 100.00\% | 6 | 0.38\% | 28 | 1.76\% | 71 | 4.70\% | 213 | 13.40\% |
| One | 3 | 0.19\% | 3 | 0.19\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Two | 14 | 0.88\% | 2 | 0.13\% | 9 | 0.57\% | 31 | 1.90\% | 0 | 0.00\% |
| Three | 631 | 3.96\% | 0 | 0.00\% | 13 | 0.82\% | 33 | 2.08\% | 12 | 0.75\% |
| Four | 236 | 14.84\% | 1 | 0.06\% | 4 | 0.25\% | 29 | 1.82\% | 142 | 8.93\% |
| Five | 582 | 36.60\% | 0 | 0.00\% | 2 | 0.13\% | 5 | 0.31\% | 50 | 3.14\% |
| Six | 391 | 24.59\% | 0 | 0.00\% | 01 | 0.00\% | 0 | 0.00\% | 9 | 0.57\% |
| Seven | 153 | 9.62\%! | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Eight | 86 | 5.41\% | 0 | 0.00\% | 0 | 0.00\% | 1. | 0.06\% | 0 | 0.00\% |
| Nine | 29 | 1.82\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Ten | 16 | 1.01\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Eleven | 7 | 0.44\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Twelve | 2 | 0.13\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Thirteen | 11 | 0.06\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | D.00\% |
| Fourteen | 2 | 0.13\% | 0 | 0.00\% | 01 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Fifteen | 11 | 0.06\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |


| CVS form results | Census form results Five |  | six |  | Seven |  | Eight |  | Nine |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | H'holds | \% | H'holds | \% | H'holds | \% | Hholds | \% | H'holds | \% |
|  |  |  |  |  |  |  |  | 528\%' |  |  |
| TOTAL | 515 | $32.39 \%$ i $0.00 \%$ | 397 | 24.97\% | 166 | $10.44 \%$ $0.00 \%$ | 84 0 | $5.28 \%$ $0.00 \%$ | 33 0 | 2.08\% |
| Two | 01 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Three | 2 | 0.13\% | 01 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Four | 41 i | 2.58\% | 71 | 0.44\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Five | 381 | 23.96\% : | 1091 | 6.86\% | 19 | 1.19\% | 1 | 0.06\% | 0 | 0.00\% |
| six | 76 | 4.78\%, | 236 | 14.84\% | 49 | 3.08\% | 8 | 0.50\%\| | 1 | 0.06\% |
| Seven | 13. | 0.82\% | 40 | 2.52\% | 71 | 4.47\% | 21 | 1.32\% | 4 | 0.25\% |
| Eight | 2. | 0.13\% | 4 | 0.25\% | 19 ; | 1.19\% | 43 | 2.70\% | 12 | 0.75\% |
| Nine | 0 : | 0.00\% | 1 | 0.06\% | 41 | 0.25\%\| | 7 | 0.44\% | 9 | 0.57\% |
| Ten | 0 | 0.00\% | 0 | 0.00\% | 2 | 0.13\% | 3 | 0.19\% | 5 | 0.31\% |
| Eleven | 01 | 0.00\% | 0 | 0.00\% | 1 | 0.06\% | 1 | 0.06\% | 1 | 0.06\% |
| Twelve | 0 | 0.00\%, | 0 | 0.00\% | 01 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Thirteen | 01 | 0.00\% ! | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |
| Fourteen | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\%! | 1 | 0.06\% |
| Fifteen | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% | 0 | 0.00\% |


10.29 The level of agreement on the question 'hours worked in main job' in week before Census night' was $68.2 \%$. In comparison with the Census which recorded that 992 Census respondents had worked 0 hours, the CVS recorded 345 of these as working 1 hour or more, (104 worked more than 40-49 hours). Of the 2,149 Census respondents who stated that they worked 1 hour or more, 139 were reported by the CVS to have worked 0 hours. It is possible that the CVS / Census responses fail to agree for certain groups of people who for example may work varying hours on a periodic basis and had difficulty in remembering the number of hours worked in the week preceding the Census.

## Employment in week before Census night (Table 10.6)

10.30 Agreement between the CVS and the Census on the question of the person's employment in the week before Census night, was $77.8 \%$. Areas of greatest disagreement were in: looking after the home and family, at school or other full-time education and working for an employer part-time.

## Journey to work (Table 10.7)

10.31 The level of exact agreement between the CVS and the Census responses on the question, 'how was the longest part of the daily journey to work normally made' was $80.2 \%$. The means of transport where there was most agreement was 'driving car or van'. Greatest disagreement was 'car or van-pool sharing driving'. For every mode of transport, apart from the 'other' category, the Census recorded a higher number of responses. In this case different responses could have arisen from different forms of transport being used on different days or from people reporting that they drove a car every day instead of sharing the driving in a car pool.

## Educational qualifications (Table 10.8)

10.32 Exact agreement between the CVS and the Census on the educational qualifications question came to $82.5 \%$. Of the 232 respondents who had been recorded in the Census as having attained degree level or higher qualifications, 30 were recorded by the CVS interviewers as having only attained some form of lower level qualification. Of the other 1,871 who had been recorded in the Census as having no formal qualifications, 158 were found in the CVS to have at least CSE qualifications. Although 456 (12.9\%) in this sample had not responded to the Census question on educational qualifications, the majority of these (308) did not respond to the CVS question indicating that they had not obtained any formal qualifications.

Table 10.5-Hours worked per week in main job in week before Census night

Census Form

| CVS Time CVS Form | TOTAL |  | Don't know |  | 0 Hours |  | 1-9 Hours |  | 10.19 Hours |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Persons | \% | Persons | \% | Persons | \% | Persons | \% | Persons | \% |
| TOTAL | 3526 | 100.00 |  | 01 | 1377 | 39.05 | 681 | 1.93 | 94 | 2.67 |
| Don't know | 125 | 3.55 |  | 01 | 401 | 1.13 | 5 | 0.14 | 5 | 0.14 |
| O Hours | 1131 : | 32.081 |  | 01 | 992 | 28.13 | 17 | 0.48 | 9 | 0.26 |
| 1-9 Hours | 74 | 2.10 ! |  | 01 | 26 | 0.74 | 34 | 0.96 | 5 | 0.14 ! |
| 10-19 Hours | 126 | 3.57 |  | 01 | 391 | 1.11 | 5 | 0.14 | 56 | 1.591 |
| 120-29 Hours | 187! | 5.30 ; |  | 01 | 41. | 1.16 | 1. | 0.03 | 12 | 0.34 ! |
| 30-39 Hours | 871 | 24.701 |  | 01 | 95 | 2.69 | 2 | 0.06 | 2 | 0.06 |
| $40-49$ Hours | 759 | 21.531 |  | 01 | 104 | 2.95 | 2 | 0.06 | + | 0.001 |
| 50-59 Hours | 102 | 2.89 |  | 0 | 11 | 0.31 | , | 0.00 |  | 0.001 |
| 60-69 Hours | 80 | 2.27 |  | 0 | 161 | 0.45 | , | 0.00 |  | 0.001 |
| 70-79 Hours | 32 ! | 0.91 |  | 0 | 7 | 0.20 | 1 | 0.03 |  | 0.001 |
| 80-89 Hours | 201 | 0.57 |  | 0 | 5 | 0.14 | , | 0.00 |  | 0.001 |
| $90-99$ Hours | 91 | 0.26 |  | 0 | * | 0.00 | 1 | 0.03 |  | 0.001 |
| 100+ Hours | 10 | 0.28 |  | 0 | 1 | 0.03 | - | 0.00 | - | 0.00 |
| Other | . | 0.001 |  | 01 | 1 | 0.00 | 1 | 0.001 | - | 0.001 |

Table 10.5 (Contd.)
Consus Form

| CVS Tims CVS | 20-29 Hours |  | 30-39 Hours |  | 40-49 Hours |  | 50.59 Hours |  | 60-69 Hours |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Persons | \% | Persons | \% | Persons | \% | Persons | \% | Parsons | \% |
| TOTAL | 156 | 4.42 | 909 | 25.78 | 741 | 21.02 | 79 | 2.241 | 49 | 1.39 |
| Don't know | 21 | 0.06 | 27 | 0.77 | 32 | 0.91 | 5 | 0.14 | 4 | 0.11 |
| 0 Hours | 101 | 0.281 | 36 | 1.02 | 56 | 1.59 | 4 | 0.11 | 3 | 0.091 |
| 1-9 Hours | 3 ! | 0.09 | 2 | 0.06 | 4 | 0.11 |  | 0.001 | 3 | 0.001 |
| 10-19 Hours | 111 | 0.31 | 6 | 0.17 | 6 | 0.17 | 1 | 0.03 | $\cdots$ | 0.001 |
| 20-29 Hours | 112 | 3.18 | 16 | 0.45 | 5 | 0.14 |  | 0.00 | 1 | 0.001 |
| 30-39 Hours | 14 | 0.401 | 618 | 47.53 | 127 | 3.60 | 5 | 0.14 | 1 | 0.03 |
| 40-49 Hours | 31 | 0.09 | 183 | 5.19 | 440 | 12.48 | 18 | 0.51 | 4 | 0.11 |
| 50-59 Hours | $\cdots$ | 0.001 | 16 | 0.45 | 41 | 1.16 | 27 | 0.77 | 6 | 0.17 |
| 60-69 Hours | 1 1 | 0.03 | 2 | 0.06 | 19 | 0.54 | 13 | 0.37 | 23 ! | 0.651 |
| 70.79 Hours | $\cdots$ | 0.00 | 2 | 0.06 | 8 | 0.23 | 3 | 0.09 | 41 | 0.11 |
| 80-89 Hours | - | 0.00 | 1 | 0.03 | 2 | 0.06 | 1 | 0.03 | 31 | 0.09 |
| $90-99$ Hours | * | 0.00 | $\cdots$ | 0.00 | , | 0.00 | 1 | 0.03 | 11 | 0.031 |
| $100+$ Hours | . | 0.001 | $\cdots$ | 0.00 | 1 | 0.03 | 1 | 0.03 | + | 0.00 |
| Other | - | 0.001 | $\cdots$ | 0.00 | , | 0.00 | 1 | 0.00 | 1 | 0.00 |

Tsble 10.5 (Contd.)
Census Form

| CVS Time CVS Form | 70-79 Hours |  | 80-89 Hours |  | 90-99 Hours |  | $100+$ Hours |  | Other |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Parsons | \% | Persons | \% | Persons | \% | Persons | \% | Parsons | \% |
| TOTAL | 201 | 0.571 | 16 | 0.45 | 12 | 0.34 | 5 | 0.14 |  | 0.00 |
| Don't know | 1 | 0.03 | 1 | 0.03 | 1 | 0.03 | 2 | 0.06 |  | 0.00 |
| 0 Hours | - | 0.00 | 3 | 0.09 | 1 | 0.03 |  | 0.00 |  | 0.00 |
| 1-9 Hours | 1 | 0.00 | . | 0.00 | , | 0.00 |  | 0.00 |  | 0.00 |
| 10-19 Hours |  | 0.00 | - | 0.00 | 1 | 0.03 |  | 0.00 |  | 0.00 |
| 20-29 Hours | - | 0.00 | - | 0.00 |  | 0.00 |  | 0.00 |  | 0.00 |
| 30-39 Hours | 1 | 0.03 | 1 | 0.03 | 2 | 0.06 |  | 0.00 |  | 0.00 |
| 40-49 Hours | 2 | 0.06 | . | 0.00 |  | 0.00 | 9 | 0.03 |  | 0.00 |
| 50-59 Hours | 1 | 0.03 | , | 0.00 |  | 0.00 |  | 0.00 |  | 0.00 |
| 60-69 Hours | 4 | 0.11 | 2 | 0.06 |  | 0.00 |  | 0.00 |  | 0.00 |
| 70-79 Hours | 7 | 0.20 |  | 0.00 | , | 0.00 |  | 0.00 |  | 0.00 |
| $80-89$ Hours | 3. | 0.09 | 3 | 0.09 |  | 0.00 | 1 | 0.03 |  | 0.00 |
| 90-99 Hours | . | 0.00 | 1 | 0.03 | 5 | 0.14 |  | 0.00 |  | 0.00 |
| $100+$ Hours | 7 | 0.00 | 5 | 0.14 | 1 | 0.03 | 1 | 0.03 |  | 0.00 |
| Other | , | 0.001 | , | 0.00 | 1 | 0.00 | , | 0.00 |  | 0.00 |


| Consus For | Tola |  | Workng for anomployer full-ime |  | Workning Tor anemployer part-time |  | $\begin{aligned} & \text { Seli-employed,employing } \\ & \text { other people } \end{aligned}$ |  | Self-employed, not employing olher peopl |  | $\begin{aligned} & \text { Unpaid work ing a } \\ & \text { family businoss } \end{aligned}$ |  | Government employmer or training scheme |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| cVS Form | Persons | 8 |  |  | Persons | 8 |  |  |  |  | Persons | 8 | Persons | \% |
| rotal | 3526 | 100.00 | 1215 | 37.46 | 227 | 6.44 | 110 | 3.12 | 144 | 4.08 | 17 | 0.48 | 39 | 1.11 |
| Working for an employer full-time | 1218 | 34.54 | 1121 | 31.79 | 0 | 0.28 | 12 | 0.34 | 21 | 0.60 |  | 0.00 | 6 | 0.17 |
| Working tor an | 263 | 46 | 23 | 0.65 | 37 | 5.30 |  | 0.00 | 2 | 0.06 |  | 0.00 | 6 | 0.17 |
| Seth employed, | 110 | 3.12 | 4 | 0.11 | 3 | 0.09 | 82 | 2.33 | 14 | 0.40 | 1 | 0.03 |  | 0.00 |
| employing other people Solf-employed, rot | 132 | 3.74 | 15 | 0.43 | 1 | 0.03 | 9 | 0.26 | 95 | 2.69 | 4 | 0.11 |  | 0.00 |
| employing other people |  |  |  |  |  |  |  |  |  | 20 | + |  |  |  |
| Unpeld work in a farilly business | ${ }^{23}$ | 0.65 | 1 | 0.03 | 1 | 0.03 | 2 | 0.06 | 3 | 0.09 | 3 | 0.09 |  | 0.00 |
| Govermment emplaye | 26 | 0.74 | 7 | 0.20 | 2 | 0.06 |  | 0.00 |  | 0.00 |  | 0.00 | 14 | 0.40 |
| amo Walting to start a job | 6 | 0.17 | 1 | 0.03 |  | 0.00 |  | 0.00 |  | 0.00 |  | 0.00 |  | 0.00 |
| derraady acceptod | 242 | 6.86 | 5 | 0.14 | 2 | 0.06 | 1 | 0.03 | 3 | 0.09 |  | 000 |  |  |
| Unomployed ane looking for a job |  | 6.66 |  | 0.14 | ${ }^{2}$ | 0.06 |  |  |  | 0.09 |  | 0.00 | 3 | 0.09 |
| A A school or other full-ime aducatom | 185 | 5.25 |  | 0.00 | 4 | 0.11 |  | 0.00 |  | 0.00 | 3 | 009 | 5 | 0.14 |
| Unable to work. long-ter | 197 | 5.59 | 2 | 0.06 | 1 | 0.03 | 2 | 0.06 |  | 0.00 |  | 0.00 |  | 0.00 |
|  | 429 | 12.17 | 1 | 0.03 | 1 | 0.03 |  | 0.00 | 3 | 0.09 | 3 | 0.09 |  | 0.00 |
| Looking after home or family | 523 | 14.83 | 1 | 0.03 | 10 |  | 2 | 0.06 | 2 |  | 3 | 0.09 | 3 | 0.09 |
| Other | 17 | 0.48 | 1 | 0.03 |  | 0.00 |  | 0.00 |  | 0.00 |  | 0.00 |  | 0.00 |
| Donil know |  | 0.00 |  | 0.00 |  | 0.00 |  | 0.00 |  | 0.00 |  | 0.00 |  | 0.00 |
| Did Not Answer | 155 | 4.40 | $33)$ | 0.94 | 5 |  |  |  | 1 | 0.03 |  | 0.00 | 2 | 0.0 |




Table 10.8- Highest level of educational qualifications obtained


10.33 By virtue of its scale of operation, and the fact that persons are compelled by law to respond, a Census is the most comprehensive statistical exercise carried out to enumerate the entire population. However, for a variety of reasons $100 \%$ coverage may not be obtained. The 1991 CVS was designed to give an indication of the degree of enumeration of the 1991 Census of private households and persons usually resident therein on Census night.
10.34 It is concluded that the 1991 Census was a comprehensive enumeration of the population. No one in the CVS sample had failed to receive a Census form. However the CVS count of usual residents was $0.66 \%$ greater than the Census count. In terms of the quality of the responses recorded, the results varied depending on the questions being asked. This may be the result of the respondents inability to interpret the questions in the way in which they had been designed for interpretation. But as this report has recorded, this variability could also be attributed to things other than the quality of Census responses. For example, a CVS interviewee who was not the Census respondent. Overall the CVS indicates that the quality of the responses given in the Census was accurate, particularly in the case of household characteristics and easily defined personal circumstances.
10.35 A major difference between the Northern Ireland CVS and that carried out by the Office of Population Censuses and Surveys (OPCS) is in the amount of prior information the CVS interviewers had with them before they began interviewing. Northern Ireland CVS interviewers were not in possession of the Census responses previously given by their interviewees, whereas the OPCS interviewers had this information to hand before field work began. This enabled them to question contradictory responses and eliminate errors which could arise through either mismatching information or inadequate memory recall.
10.36 How then do we apply what we have learnt from this CVS to our next Census in 2001? Firstly, as with the 1991 Census, every step must be taken to ensure that Census forms are successfully delivered to every household and establishment in the country. The application of a Geographical Information System (GIS) should allow for continuous and speedy updating of enumeration districts and the supply of accurate maps to the enumerators. Secondly, from the coverage aspect, we must ensure that every person in the country is provided with the means to be enumerated. This involves large households being supplied with sufficient forms to meet their needs. Thirdly, from the quality aspect, each question must be designed and formatted in such a way that there is no ambiguity associated with its interpretation, and fourthly the means of recording responses must be such that the respondents are able to provide concise and unambiguous statements of their personal circumstances.
10.37 Each Census incorporates refinements and lessons learnt from past experiences. The 1991 Census and the CVS has provided us with a guide to the course to follow in 2001 both for the Census itself and for the 2001 Census Validation Survey.

## Chapter 10 - Appendix 1

## CENSUS POPULATION BASES

## Usually resident population - present / absent base

This is a count of all persons recorded as a resident in households in an area, even if they present elsewhere on Census night, plus residents in communal establishments who were present in the establishment on Census night.

## Usually resident population - transfer base

This is a count of all present residents in an area, plus a 'transfer' count of visitors elsewhere in the United Kingdom and the Republic of Ireland on Census night, plus absent residents in enumerated households who were outside the British Isles on Census night, back to their area of residence.

## CHAPTER 11

## LOOKING FORWARD: <br> THE CENSUS DEVELOPMENT PROGRAMME

## 11. Looking Forward: The Census Development Programme

11.1 After completing the 1991 Census fieldwork, the Census Offices took a broad look at options for the future. A policy evaluation and reappraisal programme was undertaken which, inter alia, was to consider the possibility of developing various different ways of collecting the primary data for which the Census has hitherto been the main source. Widespread consultation took place with users. However, most of them said that they were generally satisfied with the traditional form of the Census, though they would like more frequent and timely information, and that they had little enthusiasm for alternative approaches such as register-based systems or rolling censuses.
11.2 In view of the need to limit public expenditure, Ministers decided in light of these views from users, that the best use of the available resources throughout the 1990s would be in developing improved methods for use in a traditional form of census in 2001, rather than in exploring possible alternatives further. The major proposals for a policy evaluation and reappraisal were therefore reduced into a Census Development Programme. Though more narrowly focussed than the original planned study, this will nevertheless review a wide range of options for the 2001 Census.
11.3 The key requirements of the Census is to produce statistical information which meets users' needs, gives the best possible value from a large investment and addresses any of the problems discovered in 1991. To achieve this, changes will be necessary in census methods. These need to be thoroughly developed so that they can be brought in without risk to the operation. There are two particular reasons why 1991 methods cannot be re-used in 2001. First, social and behavioural factors which affect the Census are changing. For example, there is an increasing number of one person households; attitudes towards Government are less compliant; and, for a variety of reasons, people are more difficult to contact. These changes have implications both for collection methods and for changes in the way census topics are chosen and the questions worded. Secondly, technological change continues to open up new opportunities. Not only must the basic processing systems be reviewed and decisions made about replacement, but also the programme will need to continue to explore developments in information processing. This will provide for more cost-effective methods of planning collection areas, better ways of capturing and coding the data, and better ways of disseminating census results.
11.4 The date for the Census is set by legislation and many of the activities are time critical. The Order and Regulations necessary under the Census Act (Northern Ireland) 1969 must be made well before the Census to allow, for example, for census forms to be prepared and printed, and for detailed planning of statistical reports. It has also become usual (because a census involves every household in the country and because of the considerable importance of the results) for the Government to issue a White Paper containing proposals for the content of a census well in advance of Parliamentary debates. The Parliamentary timetable in turn imposes deadlines on all developments necessary for the Government to be able to put forward firm and effective proposals.
11.5 The Programme for the 2001 Census began in 1993-94 and has been focusing on a broad evaluation of the options for the use of new and improved methods. These will be narrowed down to a small number for a major field and processing trial in 1997. Following
this, the design of all of the main features of the census will be decided and incorporated into a Dress Rehearsal in 1999. This will allow the Census Offices a period of up to 18 months in which to correct any faults detected by the Dress Rehearsal and re-test the system, and thereby reduce the risk in the Census operation itself to the minimum level practicable. The programme is built around four strategic aims:
i. to ensure that the question content of the census is appropriate to meet the demonstrated requirements of customers, taking account of considerations of value for money;
ii. to deliver census products and services to meet legal obligations and customers' needs within stated quality standards and to a pre-defined timetable;
iii. to ensure that all aspects of the census collection operation, and the dissemination of results, are acceptable to the public and comply with Data Protection law;
iv. to demonstrate that the Census represents value for money.
11.6 To help guide the programme the strategic aims are supplemented by sets of planning objectives and assumptions derived from consultation with users and assessments made from the position of census respondents and the Census Offices. These objectives will evolve as planning proceeds and together with the assumptions will be developed and built into a full specification for the 2001 Census as the research programme unfolds. Input from census users will play a key part in this work. The programme of consultation with users in planning the 1991 Census was one of the successes and it resulted in a number of innovations and developments. It will be important to maintain this dialogue through the intercensal period in order to keep be aware of developing user needs, and to keep the Census Development Programme focused on the areas which will yield the greatest benefit.
11.7 The trialling of methods and procedures, and the development of prototypes are important elements of the Census Development Programme. A small scale testing programme was started in 1995 to trial possible questions, alternatives for the design of the census questionnaire and acceptability to the public of possible topics. It is also being used to gather information about the quality of the data that would be collected and measure the overall burden on the public of alternative question sets and questionnaire designs.
11.8 A significant milestone will be reached in 1997 when a Census Test will be concurrently conducted by the Census Offices for Great Britain and Northern Ireland. The main aims of the Tests are to try out revised enumeration procedures, different types of census questionnaire, new and revised questions, a new method of planning enumeration areas, and more automated data processing techniques. The results of the 1997 Census Test will largely determine the content and methods of the 2001 Census. Conclusions will feed into a Government White Paper to be produced in 1998. There will be a Dress Rehearsal in 1999 to mimic all 2001 census operations.
11.9 In summary, the Census Development Programme will identify, test, evaluate, and develop all the methodologies and procedures needed for the 2001 Census.

## APPENDICES



Wh

## 1991 Census

NORTLERN:IRELAND
H Form for Private Houscholds

To the fiead or Joint Heads or members of the Household aged 16 or over:

## Please complete this form for all members of the household, inchudiag

 children, and have it ready for collection on Monday 22nd April. Your Census Enumerator will call to coliect it then or soon afterwards and will help you with the form if you have any difficulties. The enclosed leaflet explains why the Census is necessary and how the information is used.Completion of the form is compuisory under the Census Act (Northem Ireland)1969. If you refuse to complete it. or give false information. you may have to pay a fine of up to $\$ 400$. There is no penalty for refusing to state religious denomination as this is a voluntary question.

Your answers will be treated in strict confidence and used only to procduce statistics. No names and addresses will be put into the computer; only the postcode will be entered. The forms will be kept securely and ureated as confidental No information about named indivituals will be passed by the Census Office to any other Government Department or to any other authority or person.

Anyone using or disclosing census information improperly will be liable to prosecution. For example. it would be improper for you to pass on to someone else information which you have been given in confidence by a visitor to enable you to complete the Census Form.

If any member of the household aged 16 or over does not wish you. or another member of the household. to see their information. please ask the Enumerator for an Individual form with an envelope
After completing the form. please sign the declaration on the last page Thank you for your co-operation.

## Please read these instructions before filling in this form

## A Househoid:

A bousebold comprises either one person living alone or a group of people (not necessarily related) living al the same address witb common bousekeeping . that is, sharing at least one meal a day or sbaring a living room or sitting room.

People stayng temporanily uith the bousebold are included

- If there is more than one household in this building, answer for your household only
- First check Panel A and then answer questions H1 on this page and H2 to H 5 on the back page.

When you have answered the household questions. answer the questions on the inskde pages about each member of your household.

- If a member of the household is completing an Individual Form please enter their name and answer questions 5 and 6 on this form.
- Then complete Panel B and Panel C on the back page
- Answer each question by ticking the appropriate box or baxes where they are prozsided
- Please use ink or ballpoint pen.

Enquiries to:-
Census Office
Deparment of Health and Social Services
Castle Buildings
Stormont
BELFAST BTA 3RA
Telephone Belfast 763939


Important - please read the notes before answering the questions.
In answering the rest of the questions please include:
every person who spends census night (21-22 April) in this household. lachuding anyone atrying temporarily.

- any other people who are usually members of the household but on census night are absent on holiday, at school or college, or for any other reason. even if you know they are being included on another census form elsewhere.
anyone who arrives here on Monday 22nd April who was in Northern Ireland on Sunday 21st April and who has not been included as present on another census form.
- any baby born before 22 April. even if still in hospital. If not yet given a name write BABY and the sumame.

魏 Write the names in BLOCK CAPITALS starting with the head or a joint head of household.

## Marital status:

On the 21 st April what is the person's marital status?
If separated but not divorced. please tick 'Married (first marriage)' or Re-married' as appropriate
Please tick one box

Helationship inihouseholdis
Tick the box which indicates the relationship of each person to the person in the first column.

A stepchild or adopred child should be included as the son or daughter of the step or adoptave parent.

Write in relationship oi 'Other relative' - for example. father, daughter-in-law. niece. uncle. cousin. W'rite in position in household of an 'Linrelated' person - for example. boarder. housekeeper. friend. flatmate, foster child.

## Whicrebouts onaigh of $21-22$ april 19$)^{2}$

Please tick the appropriate box to indicate where the person was on the night of 21-22 April 1991.

## All-märricdewidiowed, stparatedandedivorcedivomen: <br> 家

All mamed. widowed. separated and divorced women in the household.
a - enter in Box 1 the total number of children born alive to her
b- enter in Box 2 how many of these children were born alive after 21 st Apni 1990 .

## Isual diddresis

If the person usually lives here please tick 'This address'. If not. tick 'Elsewhere' and write in the persoris usual address.

For students and children away from home duning term time. the home address should be taken as the usual address.
or any person who lives aviay from home for pan of the week, the home address hould be taken as the usual address.

Any person who is not a permanent member of the household should be asked what he or she considers to be his or her usual address.

9 Term time address of students and sehowil children-
If not a student or schoolchild. please tick first box.
or a student or schoolchild who lives here during term time, tick This address

If he or she does not live here during term time, tick 'Elsewhere and write in the current or most recent term time address.



Important - please read the notes before answering the questions.
In answering the rest of the questions please include:

- every person who spends census night (21-22 April) in this household. inchuding anyone staying temporarly.
- any other people who are usually members of the household but on census night are absent on holiday, at school or college, or for any other reason, even if you know they are being included on another census form elsewhere
- anyone who amives here on Monday 22nd April who was in Northem Ireland on Sunday 21 st April and who has not been included as present on another census form.
any baby born before 22 April, even if still in hospital. If not yer given a name write BABY and the sumame

Write the names in BLOCK CAPITALS starting with the head or a joint head of household.

If the person's usual address one year ago (on the 21st April 1990) was the same as his or her current usual address (given in answer to question 8), please tick 'Same'. If not tick 'Different' and write in the usual address one year ago.

If everyone on the form has moved from the same address. please write the address in full for the first person and indicate with an arrow that this applies to the other people on the form

For a child born since 21st April 1990. tick the 'Child under one' box

Please tick the appropriate box.

## Heligion:

Please state the Religion. Religious Denomination or Body to which the person belongs. The general term 'Protestant' should not be used alone and the denomination should be given as precisely as possible.

If none artue NONE

Ooes the person have any long term illness. health problem or handicap which limits his her dailv activities or the work he/she can do?

Include problems which are due to old age.



| Person No. 4 |
| :--- |
|  |
|  |
|  |



Question 8
Diferent $\square_{3}^{2}$
Child under one $\square_{3}$
If 'Different', please withe ithe person's address and postrode on the 21st April 1990 below in
 person's uddress xni poencocic on the 210 April 1950 below in blocy captrals
 preserar name of the counary


In answenng the rest of the questions please include
every person who spends census night ( $21-22$ April) in this household, inctuding anyone staying temporarily.

- any other people who are usually members of the household but on census night are absent on holiday, at school or college. or for any ocher reason, even if you know they are being included on another census form eisewhere.
- anyone who arrives here on Monday 22nd April who was in Northem Ireland on Sunday 21st April and who has noi been included as present on another census form.
any baby bom before 22 April. even if still in hospial. If not yer given a name write BABY and the sumame.

Write the names in BLOCK CAPTIALS starting with the head or a joint head of household.


Person No. 2


This question is for all persons aged 3 or over (born before 22nd April 1988)


Answers to the remaining questions are not required for any person under 16 years of age (born after 21st April 1975)

Whether working fetired looking afict the home ece last week:
Which of the following things wias the person doing last week?
Please read carefully inght through the list. If the person did more than one of the things listed last week. tick all the descriptions that apply.

| $C_{i z u a i ~ o r ~ t e m p o r a n y ~ w o r k ~ s h o u l d ~ b e ~ c o u n t e d ~ a t ~ b o x e s ~}^{\text {a }}$ 1. 2.3 or $t$. Also tick boxes 1.2 .3 or 4 if the person had a noo last weeek but was off sick. on holiday. iemporanly land off or on strike. Working jor an empiover :5 part time if the hours worket. excluding ant ovenme and meal breaks. are usually 30 hours or less a weeex tbox 2). |
| :---: |
| tapaic norix in a family business including a shop or fa:m. |
| I.:iude ior example ACE Scheme. Youth Training Programme and job Training Programme. |


Inctude voluntary work and any other 3ctwiry


| Ferson No. 3 - 23 |
| :--- |
|  |
|  |
|  |
|  |


| Forson No. 4 . 24 |
| :--- |
| Name and surname |
|  |
|  |



This question is for all persons aged 3 or over (born before 22nd April 1988)


Answers to the remaining questions are not required for any person under 16 years of age (born after 21st April 1975)



Important - please read the notes before answening the questions.
In answering the rest of the questuons please include:

- ever person who spends census night ( $21-22$ Apri) in this household. inchuding anyone staying temporarily.
- anv other people who are usually members of the household but on census nighs are absent on holiday. at school or college. or for any other reason, even if you know they are heing included on another census form eisewhere.
- anyone who arrives here on Monday 22nd April who was in Norhem Ireland on Sunday 21 st April and who has nor been included as present on another census form.
any baby bom before 22 Apnl. even if sull in hospital. If not yet given a name write BABY and the surname.

Write the names in BLOCK CAPrIALS starting with the head or a joint head of household.

## Please read A below, tick the box that applies and follow the instruction by the box ticked. This will tell you which questions to answer for each person.



Did the person have a paid job last week or do unpaid work in a family business. including a shop or farm (any of the boxes 1.2,3.4 or 5 ticked at question 15)?

Has the person had a paid job within the last 10 years?



Please read A below, tick the box that applies and follow the instruction by the box ticked. This will tell you which questions to answer for each person.


Name, sex and date of birth of people to be included
lmportant - please read the nores before answering the questions
In answering the rest of the questions please include
every person who spends census night (21-22 April) in this household. inchuding anyone staying temporarily.

- any other people who are usually members of the household but on census night are absent on holiday. at school or college, or for any other reason. even fyou know they are being included on another census form elsewhere.
anyone who arrives here on Monday 22nd April who was in Nornhem Ireland on Sunday 21st April and who has not been included as present on another census form.
any baby bom tefore 22 April. even if still in hospital. If not yet given a name write BABY and the sumame.

Write the names in BLOCK CAPITALS starting with the head or a joint head of household.


Please give the full address of the person's place of work.
For a person emploved on a site for a long period give the address of the site.
For a person not working regularly at one place who reports daily to a depot or other fixed address. give that address.

For a person not reporting daily to a fixed address. tick box 1
For a person working mainly át home, tick box 2 .
Armed Forces - iease blank.


Please tick the appropriate box to show how the longest part, by distance. of the person's daily jurnev to work is normally made.

For a person using different means of transport on different days, show the means most often used.

Car or van includes three-wheeled cars and motor caravans.

```
Academic, professional and vocational qualifications-
```

A. Please tuck the appropriate boxes if the person has obtained any of the qualifications listed aside.

[^0]

| Person No. 4 | 24. |
| :---: | :---: |
|  |  |

Person No. $5 \quad 25$

| Person No. ${ }^{\text {a }}$ | -26 |
| :---: | :---: |
|  |  |



Please answer questions H2-H5 about your household's accommodation


Printed in ibe Usuted Kingdom for HMSO
Dd. 303784 . C22. $10 / 92$ Gp. 14672


To the Head or Joint Heads or members of the Household aged 16 or over

Please complete this form for all members of the houschold, including children, and have it ready for collection on Monday 22nd April. Your Census Enumerator will call to collect it then or soon afterwards and will help you with the form if you have any difficulties. The enclosed leallet explains why the Census is necessary and how the information is used.

Cumpletion of the form is compulsory under the Census Act (Northem Ireland)1969. If you refuse to complete it. or give false information. you may have to pay a fine of up to $\mathbf{5 0 0}$. There is no penalty for refusing to state religious denomination as this is a voluntary question.

Your answers will be treated in strict confidence and used only to produce statistics. No names and addresses will be put into the computer; only the postcode will be entered. The forms will be kept securely and treated as confidential. No information about named individuals will be passed by the Census Office to any other Government Deparment or to any other authority or person.

Anyone using or disclosing census information improperly will be liable to prosecution. For example. it would be improper for you to pass on to someone else information which you have been given in confidence by a visitor to enable you to complete the Census Form.

If any member of the household aged 16 or over does not wish you. or another member of the household. to see their information. please ask the Enumerator for an Individual Form with an envelope

After completing the form. please sign the declaration on the last page Thank you for your co-operation.


R Mc:
Regis


| Panel A. <br> To becompleted by- the Enumerator and amended. if necessary, by the person(s) signing this form. | H 1 Accommodation <br> If bux-7 or box 8 in Panel a is ticked, tick one box below to: show the type of accommodation which your household occupies. |
| :---: | :---: |
| Tick one box to show the type of accommodation which this household occupies. <br> A caravan or other mobile or temporary structure <br>  | A one roomed flatilet <br> With private bath or shower, WC and kitchen facilities. <br> One room or bedisit, not melf-contained (to move from your room to bathroom, WC or kitchen facility you have to use a hall, landing or stairway open to other households). <br> A self-contained flat or accommodation with 2 or more roorms, having bath or shower, WC and kitchen facilities $\square$ 3 all behind its own private door. <br> 2 or more nooms, not self-contained (to move between rooms or to bathroom, WC, or kitchen facilities you have to use a hall, $\square$ 4 landing or stairway open to other households). |

Important - please read the notes before answering the questions

In answering the rest of the questions please include:
every person who spends census night (21-22 April) in this household, inchuding anyone staying temporarlly.

- any other people who are usually members of the household but on census night are absent on holiday. at school or college, or for any other reason. even if you know they are being included on another census form elsewhere.
anyone who arrives here on Monday 22nd April who was in Northern Ireiand on Sunday 21st April and who has not been included as present on another census form.
any baby born before 22 April, even if still in hospital. If not yet given a name write BABY and the sumame.

Write the names in BLOCK CAPITALS starting with the head or a joint head of household.


On the 21st April what is the person's marital status?
If separated but not divorced. please tick 'Married (first marriage)' or
'Re-married' as appropriate.
Please tick one box.

## Relationshipinhouscheld

Tick the box which indicates the relationship of each person to the person in the firs column.

A stepchild or adopred child should be included as the son or daughter of the step or adoprive parent.

Write in relationship of 'Other relative' - for example. father, daughter-in-law, niece. uncle. cousin. Write in position in household of an 'Linrelated' person - for example, boarder. housekeeper. friend. flatmate, foster child.

## Whereabout omaigh of 21-22, prill 1991

Please tick the appropriate box to indicate where the person was on the night of $21-22$ April 1991.

## All-märied widowed, separated and divorecdivomen $\therefore$ :

All married. widowed. separated and divorced women in the household.
a - -nter in Box 1 the total number of children bom alive to her.
b- enter in Box 2 how many of these children were born alive after 21 st April 1990 .

## Usual äddress

If the person usually lives here please tick 'This address', If not, tick 'Elsewhere' and write in the person's usual address.

For students and children away from home during term time, the home address should be taken as the usual address.

For any person who lives away from home for part of the week, the home address should be taken as the usual address.

Any person who is not a permanent member of the household should be asked what he or she considers to be his or her usual address.

## Term time address of students and sehool children:

> If not a student or schoolchild, please tick first box.

For a sudent or schoolchild who lives here during term time, tick 'This address'.

If he or she does not live here during term time, tick 'Elsewhere' and write in the current or most recent term time address.


## Portcode



| Person No. 4. |  |
| :--- | :--- |
| Name and numame | 24 |
|  |  |
|  |  |
|  |  |


| Person No. 5 | 25 |
| :--- | ---: |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

## Person No. 6 <br> 



Poeseode

important - please read the notes before answering the questions.
In answering the rest of the questions please include:

- every person who spends census night (21-22 April) in this household including anyone staying temporarily.
- any other people who are usually members of the household but on census night are any other people who are usually members of the household but on census night are
absent on holiday, at school or college, or for any other reason, even if you know they are being included on another census form elsewhere.
- anyone who arrves here on Monclay 22nd April who was in Northem Ireland on Sunday 21st April and who has not been included as present on another census form.
any baby bom before 22 April. even if still in hospital. If not yet given a name write BABY and the surname.

Write the names in BLOCK CAPITALS starting with the head or a joint head of household.

If the person's usual address one year ago (on the 21st April 1990) was the same as his or her current usual address (given in answer to question 8), please tick 'Same'. If not tick 'Different' and write in the usual address one vear ago.

If everyone on the form has moved from the same address. please write the address in full for the first person and indicate with an arrow that this applies to the other people on the form.

For a child born since 21st April 1990, tick the 'Child under one' box

Please tick the appropriate box

Please state the Religion. Religious Denomination or Body to which the person belongs. The general term 'Protestant' should not be used alone and the denomination should be given as precisely as possible.

If none write NONE.

- Does the person have any long term iliness. heaith problem or handicap which limits his her daily activities or the work he/she can do?

Include problems which are due to old age.



If 'Elocwhere', plense write in the present name of the coungyy.


Important - please read the notes before answering the questions
In answering the rest of the questions please include:

- every person who spends census night (21-22 April) in this household inchuding anyone stayling temporarity.
- any other people who are usually memivers of the household but on census night are absent on holiday, at school or college, or for any other reason, even if you know they are being included on another census form eisewhere.
- anyone who arrives here on Monday 22 nd April who was in Northem Ireland on Sundsy 21 st April and who has not been included as present on another census form.
any baby bom before 22 April, even if still in hospital. If not yet given a name write BABY and the surname.

Write the names in BLOCK CAPITALS starting with the head or a joint head of household.


Person No. 2
22
Name and surname




This question is for all persons aged 3 or over (born before 22nd April 1988)


Answers to the remaining questions are not required for any person under 16 years of age (born after 21st April 1975)

Which of the following things was the person doing last week?
Please read carefully right through the list. If the person did more than one of the things listed last week. tick all the descriptions that apply.

| Casuai or temporary arork should be counted at boxes 1. 2. 3 or 4 . Also tick boxes 1.2 .3 or 4 if the person had a 'oo last week but was off sick, on holiday. :emporarily laid off or on strike. Working for an empoover is part time if the hours worked. excluding anv overume and meal breaks. are usually 30 hours or iess a week (box 2). |
| :---: |
|  |  |
|  |
| Inc:uce ior example ACE Scheme. Youth Training Programme and Job Training Programme. |




This question is for all persons aged 3 or over (born before 22nd April 1988)


Answers to the remaining questions are not required for any person under 16 years of age (born after 21st April 1975)




Please read A below, tick the box that applies and follow the instruction by the box ticked. This will tell you which questions to answer for each person.



Please read A below, tick the box that applies and follow the instruction by the box ticked. This will tell you which questions to answer for each person.

important - please read the notes before answering the questions
In answenng the rest of the questions please include:

- every person who spends census night (21-22 April) in this household, inctuding anyone staying temporarily.
- any other people who are usually members of the household but on census night are absent on holiday, at school or college, or for any other reason. even if you know they are being included on another census form elsewhere.
anyone who amves here on Monday 22nd April who was in Northern Ireland on Sunday 21st April and who has not been included as present on another census form.
any baby bom before 22 April. even if still in hospital. If not yet given a name write BABY and the sumame

Write the names in BLOCK CAPITALS starting with the head or a joint head of horusehold.


Please give the full address of the person's place of work.
For a person employed on a site for a long period give the address of the site
For a person not morking regularly at one place who reports daily to a depot or other fixed address. give that address.

For a person not reporting daily to a fixed address, tick box 1 .
For a person rorking mainly at home, tick box 2 .
Armed Forces - ieave blank.


Please tick the appropriate box to show how the longest part, by distance, of the person's daily journey to work is normally made.

For a person using different means of transport on different days, show the means mosr often used.

Car or yan includes three-wheeled cars and motor caravans.
A. Please tick the appropriate boxes if the person has obtained any of the qualifications listed aside.
B. Has the person obtained professional or vocational qualifications such as nursing or teaching qualifications?
If yes. please state qualifications held.



Please answer questions H2-H5 about your household's accommodation


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[^0]:    B. Has the person obtained professional or vocational qualifications such as nursing or teaching qualifications
    If yes. please state qualificauons held.

